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Biomaterial (Garlic and Chitosan)-Doped WO3-TiO2Hybrid Nanocomposites: Their Solar Light Photocatalytic and Antibacterial Activities

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Abstract
In this work, WO3-TiO2, chitosan-blended WO3-TiO2, and garlic-loaded WO3-TiO2 nanocomposites were synthesized by the sol-gel and precipitation technique. The synthesized nanocomposites were characterized by XRD, FE-SEM, HR-TEM, EDX, UV-DRS, FT-IR, and TG-DTA analysis. The photocatalytic efficiency of the three synthesized nanocomposites on the degradation of dyes such as rhodamine B (Rh-B), methylene blue (MB), and methyl orange (MO) as organic pollutants was evaluated under solar light irradiation. The results show that garlic-loaded WO3-TiO2 nanocomposites act as an excellent photocatalyst than chitosan-blended WO3-TiO2 and WO3-TiO2 nanocomposites. Further, the antimicrobial activity of the synthesized nanocomposites was examined against Gram-negative bacteria (Escherichia coli) by the well diffusion method. Garlic-loaded WO3-doped TiO2 nanocomposites have demonstrated good antibacterial activity over chitosan-blended WO3-TiO2 nanocomposites and WO3-TiO2 nanocomposites. The possible reason may be the presence of organic sulfur compounds in garlic. © 2020 American Chemical Society.

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Production, characterization and application of nanocarriers made of polysaccharides, proteins, bio-polyesters and other biopolymers: A review

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Abstract
Chitosan, collagen, gelatin, polylactic acid and polyhydroxyalkanoates are notable examples of biopolymers, which are essentially bio-derived polymers produced by living cells. With the right techniques, these biological macromolecules can be exploited for nanotechnological advents, including for the fabrication of nanocarriers. In the world of nanotechnology, it is highly essential (and optimal) for nanocarriers to be biocompatible, biodegradable and non-toxic for safe in vivo applications, including for drug delivery, cancer immunotherapy, tissue engineering, gene delivery, photodynamic therapy and many more. The recent advancements in understanding nanotechnology and the physicochemical properties of biopolymers allows us to modify biological macromolecules and use them in a multitude of fields, most notably for clinical and therapeutic applications. By utilizing chitosan, collagen, gelatin, polylactic acid, polyhydroxyalkanoates and various other biopolymers as synthesis ingredients, the 'optimal' properties of a nanocarrier can easily be attained. With emphasis on the aforementioned biological macromolecules, this review presents the various biopolymers utilized for nanocarrier synthesis along with their specific synthetization methods. We further discussed on the characterization techniques and related applications for the synthesized nanocarriers. © 2020

Author Keywords
Polyhydroxyalkanoate; Polysaccharides; Protein

Index Keywords
biopolymer, chitosan, collagen, cosmeceutical, gelatin, growth
factor, liposome, nanocarrier, paclitaxel, polyester, polyhydroxyalkanoic acid, polylactic acid, polysaccharide, solid lipid nanoparticle, vaccine, vasculotropin, biomaterial, biopolymer, drug carrier, polyester, polysaccharide, protein; atomic force microscopy, cancer immunotherapy, coacervation, drug delivery system, electrospray, emulsion, energy dispersive X ray spectroscopy, Fourier transform infrared spectroscopy, gene delivery system, human, in vivo study, macromolecule, mass fragmentography, metabolite, nanofabrication, nanopharmaceutics, nanotechnology, nonhuman, nuclear magnetic resonance spectroscopy, nutrient, photodynamic therapy, photon correlation spectroscopy, physical chemistry, protein synthesis, Review, scanning electron microscopy, solvation, tissue engineering, transmission electron microscopy, tumor microenvironment, ultraviolet visible spectroscopy, vaccination, X ray powder diffraction, chemistry, drug delivery system; Biocompatible Materials, Biopolymers, Drug Carriers, Drug Delivery
Systems, Humans, Nanotechnology, Polyesters, Polysaccharides, Proteins, Tissue Engineering

Chemicals/CAS
chitosan, 9012-76-4; collagen, 9007-34-5; gelatin, 9000-70-8; paclitaxel, 33069-62-4; polylactic acid, 26100-51-6; vasculotropin, 127464-60-2; protein, 67254-75-5; Biocompatible Materials; Biopolymers; Drug Carriers; Polyesters; Polysaccharides; Proteins

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Association of leucine-rich repeat kinase 2 gene rs10878307 polymorphism and Parkinson's disease risk in South India—A meta-analysis and molecular dynamics simulation

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Abstract
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Index Keywords
genomic DNA, leucine rich repeat kinase 2, leucine, leucine rich repeat kinase 2, protein serine threonine kinase; adult, amplification refractory mutation system polymerase chain reaction, case control study, controlled study, female, genetic association, genetic predisposition, genotype, human, India, Letter, major clinical study, male, molecular dynamics, molecular pathology, mutation rate, Parkinson disease, priority journal, protein domain, single nucleotide polymorphism, South India, wild type, genetics, meta analysis, metabolism, Parkinson disease; Humans, India, Leucine, Leucine-Rich Repeat Serine-Threonine Protein Kinase-2, Molecular Dynamics Simulation, Parkinson Disease, Protein-Serine-Threonine Kinases

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Solid-state synthesis of Ag-doped PANI nanocomposites for their end-use as an electrochemical sensor for hydrogen peroxide and dopamine

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Abstract
Polyaniline protected silver nanoparticles (Ag-doped PANI nanocomposites) were synthesized successfully by a solid-state mechano-chemical oxidative polymerization. AgNO3 acted as a metal precursor as well as an oxidizing agent. The prepared Ag-doped PANI nanocomposites were characterized by various techniques such as TEM, FE-SEM, XRD, FTIR and UV–vis spectroscopy. XRD confirmed the cubic FCC form of the Ag nanoparticles with an average crystal size of ~36.04 nm for the Ag-doped PANI nanocomposites. FE-SEM and TEM analysis of Ag-doped PANI nanocomposites revealed the formation of spherical as well as semi-spherical Ag nanoparticles embedded in the PANI polymer matrix. Cyclic voltammogram revealed excellent electrochemical responses and electrocatalytic behavior of the Ag-doped PANI nanocomposites/GCE for hydrogen peroxide (H2O2) and dopamine (DA). Based on cyclic, amperometric and differential pulse voltammetric analysis, it was found that H2O2 undergoes reduction whereas DA is oxidized at the surface of the modified Ag-doped PANI nanocomposites/GCE. For H2O2 and DA, the detection limits as measured from differential pulse voltammetric analysis were 0.03 μM and 0.12 μM, respectively. © 2020

Author Keywords
Ag-doped PANI; Electrochemical sensor; Mechano-chemical polymerization; Nanocomposites

Index Keywords
Amines, Chemical analysis, Electrochemical sensors, Fourier transform infrared spectroscopy, Hydrogen peroxide, Metal nanoparticles, Nanocomposites, Neurophysiology, Oxidation, Peroxides, Polyaniline, Polymer matrix composites, Silver compounds, Silver nanoparticles, Synthesis (chemical), X ray diffraction; Cyclic voltammograms, Detection limits, Differential pulse, Electrocatalytic behavior, Electrochemical response, Solid-state synthesis, VIS spectroscopy, Voltammetric analysis; Silver metallography

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Impact of Tm3+ and Tb3+ rare earth cations substitution on the structure and magnetic parameters of Co-Ni nanospinel ferrite
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Abstract
Tm-Tb co-substituted Co-Ni nanospinel ferrites (NSFs) as (Co0.5Ni0.5) [TmxTbxFe2−2x]O4 (x = 0.00–0.05) NSFs were attained via the ultrasound irradiation technique. The phase identification and morphologies of the NSFs were explored using X-rays diffraction (XRD), selected area electron diffraction (SAED), and transmission and scanning electronic microscopes (TEM and SEM). The magnetization measurements against the applied magnetic field (M-H) were made at 300 and 10 K with a vibrating sample magnetometer (VSM). The various prepared nanoparticles revealed a ferrimagnetic character at both 300 and 10 K. The saturation magnetization (Ms), the remanence (Mr), and magneton number (nB) were found to decrease upon the Tb-Tm substitution effect. On the other hand, the coercivity (Hc) was found to diminish with increasing x up to 0.03 and then begins to increase with further rising Tb-Tm content. The Hc values are in the range of 346.7–441.7 Oe at 300 K to 4044.4–5378.7 Oe at 10 K. The variations in magnetic parameters were described based on redistribution of cations, crystallites and/or grains size, canting effects, surface spins effects, super-exchange interaction strength, etc. The observed magnetic results indicated that the synthesized (Co0.5Ni0.5)[TmxTbxFe2−x]O4 NSFs could be considered as promising candidates to be used for room temperature magnetic applications and magnetic recording media. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

Author Keywords
Magnetic features; Microstructure; Morphology; Nanospinel ferrites; Rare-earth elements

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Clinical implications in orbital and pterional flap surgeries as well as radioimaging studies to determine topographical prevalence and characterization of meningo-orbital foramen in orbits of the Indian population [Implicaciones clínicas en cirugías de colgajo orbitario y pterional, así como estudios de radioimagen para determinar la prevalencia topográfica y la caracterización del foramen meningoorbitario en órbitas de la población India]

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Abstract
SUMMARY: The pear-shaped bony orbit connects with intracranial cavity via foramina's and fissures. The Meningo-orbital Foramen(MOF) is usually present in greater wing of sphenoid close to lateral edge of Superior orbital fissure. It provides a route for an anastomosis between the orbital branch of the middle meningeal artery(MMA) and recurrent meningeal branch of Ophthalmic Artery(OA) and hence, risk of damage during surgeries can occur. To verify occurrence and location, with morphology of MOF in dry orbits and the impending clinical hazards in surgeries pertaining to the orbit, document and analysis it to determine a standardized guideline. The presence for MOF was studied in 446 dry orbits with its location from the supra orbital margin (SOM), front zygomatic suture (FZS), the lateral tubercle of Whitnall (WT)and the lateral end of superior orbital fissure(SOF) along with its patency, laterality and number of foramina's present. Nylon probes, long divider/pins, compass and Vernier callipers was used to check the patency and various parameters. The study noted the percentage prevalence of MOF as 69 % with communication with middle cranial fossa(MCF) being 76 % of 69 % and the average distance from SOM, FZS, WT and lateral end of SOF being 35.58 mm, 24.9 mm, 26.6 mm and 0.92 mm. On comparison with various population studies, certain similarities and differences with regards to different parameters were noted. Prevalence of MOF was mostly unilateral and showed multiple foramina, that can act as channels for arteries, a variant of MMA or OA, that supply orbital structures or tumour growths. Thus, awareness of this variation is of prime importance to ophthalmologists and neurosurgeons as well as interventional radiologists, in preventing haemorrhagic condition which could further raise the difficulties in operative procedures and surgical outcomes. © 2020, Universidad de la Frontera. All rights reserved.

Author Keywords
Frontozygomatic suture; Meningo-orbital foramen; Orbit; Pterional flap; Superior orbital fissure; Whitnall tubercle

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Phthalates exposure and attention-deficit/hyperactivity disorder in children: a systematic review of epidemiological literature

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Abstract

Epidemiological studies have proven that children mental health can be affected by environmental pollutants which are believed to be visible in the form of psychological disorder later in their childhood. Moreover, the effects of children mental health are evidently clear in the case of phthalates which have been observed to increase psychological disorder, specifically attention-deficit hyperactivity disorder (ADHD). Hence, the present study aims to conduct a systematic review and provide an overview of the existing literature on the association between urinary phthalate metabolite concentrations and ADHD symptoms among children by emphasizing the confounding factors and limitations. Additionally, this review addressed the possible phthalate mechanism insights in human body including its impact on ADHD symptoms. In this case, 16 epidemiological studies (five cross-sectional, nine cohort and two case control studies) that met all the inclusion criteria were selected out of the total of 427 papers screened to show varying quantitative associations between phthalate exposure and ADHD symptoms among children with confounding factors and limitations in the existing studies in regard to the exposure and outcomes. This review also attempted to present possible explanation on phthalate mechanism in children body and its connection on neurodevelopment and ADHD symptom development which remains unclear in most of the studies. Finally, it is highly recommended for further research to carefully design cohort studies from prenatal to later childhood development with a complete sample size in order to understand phthalate impacts on children health. © 2020, Springer-Verlag GmbH Germany, part of Springer Nature.

Author Keywords

Attention-deficit/hyperactivity disorder; Children; Epidemiological; Exposure; Phthalate

Index Keywords

child health, concentration (composition), detection method, epidemiology, mental health, phthalate, pollution exposure, secondary metabolite, symptom; phthalic acid, phthalic acid derivative; attention deficit disorder, child, cross-sectional study, female, human, pollutant, pregnancy; Attention Deficit Disorder with Hyperactivity, Child, Cross-Sectional Studies, Environmental Pollutants, Female, Humans, Phthalic Acids, Pregnancy

Chemicals/CAS

phthalic acid, 88-99-3; Environmental Pollutants; phthalic acid; Phthalic Acids

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Facile synthesis and biophysical characterization of egg albumen-wrapped zinc oxide nanoparticles: A potential drug delivery vehicles for anticancer therapy

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Abstract
In the present investigation, an innovative method was evolved for the synthesis of egg albumin doped Zinc oxide nanoparticles (Ea-ZnO NPs). The biophysical characterizations of Ea-ZnO NPs were assessed by UV–Vis., FT-IR, XRD, TEM and DLS analysis. UV spectrum exhibited a distinctive absorption peak at 310 nm. The synthesized Ea-ZnO NPs materialized as a spherical and hexagonal platelet-like structure with 20–60 nm in diameter through TEM. The anticancer and biocompatibility potential of Ea-ZnO NPs was evaluated against MCF-7 cancer cell line. Anticancer activity of Ea-ZnO NPs on MCF-7 by MTT assay having significant cytotoxicity and proportionately decreased cellular viability. Gene expression study (RT-PCR) and Western blot analysis indicated that the Ea-ZnO NPs stimulated ROS, which in turn up the regulated transcription of mRNA levels of apoptotic genes such as p53, bcl-2, caspase-3 and caspase-9 while significantly downregulated the expression of anti-apoptotic gene Bcl-2. The outcome deliberates that Ea-ZnO NPs can specifically repress the gene expression of MCF-7 by ROS damage and cytotoxicity intervened cell death. Overall, the Ea-ZnO NPs can be a potential drug for anticancer therapy. © 2020 Elsevier B.V.

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Anticancer activity; Drug development; Egg white (albumin); Protein expression; RT-PCR; ZnO nanoparticles

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Fan-chirp Transform based Thermal Wave Imaging

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Abstract

Non-stationary optical stimulus based infrared non-destructive testing modality has gained much attention from past decades. Various post processing techniques based on signal and image processing have been proposed for better visualization and quantification of subsurface defects for Non-Stationary Thermal Wave Imaging (NSTWD. In present work, a new post processing approach named fan chirp transform is adapted to perfectly match the chirp rate from sample thermal response to facilitate better visualization of defects. The merit of proposed method is compared with the conventional post processing methods like Fast Fourier Transform (FFT) phase, pulse compression (PC) and principle component analysis (PCA). By considering the parameter of merits such as signal to noise ratio of defective pixels and full width at half maxima for defect sizing. It is observed that the adapted Fan-Chirp transform provides better defect detection and better signal to noise ratios. © 2020 IEEE.

Author Keywords

Fan Chirp Transform Fast Fourier Transform; Non-stationary thermal wave imaging; Pulse compression

Index Keywords

Defects, Fast Fourier transforms, Image processing, Nondestructive examination, Optical data processing, Processing, Visualization; Defect detection, Non destructive testing, Post-processing techniques, Postprocessing methods, Principle component analysis, Signal and image processing, Subsurface defect, Thermal wave imaging; Signal to noise ratio

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Efficacy of antimicrobial and larvicidal activities of green synthesized silver nanoparticles using leaf extract of plumbago auriculata lam

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Abstract
This work reports the synthesis of silver nanoparticles (AgNPs) using aqueous extract of Plumbago auriculata, and evaluates their antibacterial and larvicidal activities. The synthesized silver nanoparticles were characterized by various spectroscopy techniques, such as FTIR, XRD, TEM, EDX, Zeta potential, and DLS. The synthesized AgNPs exhibited significant antibacterial activity against Gram-positive and Gram-negative bacteria, such as Bacillus subtilis, Staphylococcus aureus, Escherichia coli, and Klebsiella pneumoniae. Furthermore, synthesized nanoparticles inhibited the fourth instars larvae of Aedes aegypti and Culex quinquefasciatus at the concentration of 45.1 and 41.1 µg/mL respectively. Results of dose-dependent studies showed that synthesized nanoparticles were also effective at low concentrations. Molecular docking studies performed with the salivary protein and odorant-binding protein of Aedes aegypti and Culex quinquefasciatus demonstrated that the naphthoquinone compound plumbagin exhibited reliable binding affinity towards the two enzymes. The findings thus reveal that the plant extract and its nanoparticles can be a better alternative to available chemicals to control mosquitos. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

Author Keywords
Antibacterial; Larvicidal activity; Mosquito repellant; Plumbago auriculata; Silver nanoparticles; TEM; XRD

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Functional sr0.5ba0.5sm0.02fe11.98o4/x(ni0.8zn0.2fe2o4) hard-soft ferrite nanocomposites: Structure, magnetic and microwave properties
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Abstract
This paper reports the correlation between the composition of the functional Sr0.5Ba0.5Sm0.02Fe11.98O19/x(Ni0.8Zn0.2Fe2O4) hard-soft nanocomposites (SrBaSmFe/x(NiZnFe) NCs), where 0.0 ≤ x ≤ 3.0, and their structural features, magnetic, and microwave properties. SrBaSmFe/x(NiZnFe) hard/soft ferrite NCs are produced using the one-pot citrate combustion method. According to the XRD analysis, all samples showed the co-existence of both SrBaSmFe and NiZnFe phases in different ratios. Magnetic properties are measured in a wide range of magnetic fields and temperatures (10 and 300 K) and correlated well with the composition of the investigated samples. The microwave properties (frequency dispersions of the magnetic permeability, and electrical permittivity) are discussed by using the co-axial method in the frequency range of 0.7-18 GHz. Non-linear dependences of the main microwave features were observed with varying of composition. The microwave behavior correlated well with the composite theory. These results could be used in practice for developing antenna materials. © 2020 by the authors.

Author Keywords
Hard/soft ferrite; Magnetic properties; Microwave absorption; Nanocomposite; Structural properties

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Fabrication of silica supported Turkevich silver nanocomposites for efficient photocatalytic performance
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Abstract
Herein, a novel approach is reported to design metallodielectric silica (SiO2) supported Turkevich silver nanoparticles (Ag NPs) for direct fabrication of SiO2/Ag nanocomposites (NCs). The technique utilizes electrostatic interaction of ex situ synthesized amine-functionalized positively-charged SiO2 NPs and citrate-capped negatively-charged Ag NPs. The formation of nanoparticles was confirmed using various analytical techniques and explored for photocatalytic degradation of methyl orange (MO) at ambient temperature under sunlight irradiation. SiO2/Ag-NCs showed significant degradation of MO (94.50% in 40 min) with an estimated apparent degradation rate of 6.9 ×10−2 min−1, can be attributed to efficient charge separation by Ag NPs decorated on SiO2 NPs. This strategy may offer innovative considerations for the design of photocatalyst/carrier nanocomposites. © 2020 Elsevier B.V.

Author Keywords
Methyl orange; Photocatalytic activity; SiO2/Ag nanocomposites; Turkevich silver nanoparticles

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Adsorption kinetics feature extraction from breathprint obtained by graphene based sensors for diabetes diagnosis
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Abstract
The correlation between blood glucose and breath acetone suggested by several studies has spurred the research community to develop an electronic (e-nose) for diabetes diagnosis. Herein, we have validated the in-house graphene based sensors with known acetone concentration. The sensor performances such as sensitivity, selectivity and stability (SSS) suggested their potential use in acquiring breath print. The 10% higher mean saturation voltage for 30 diabetic subjects ensured a discrimination accuracy of 65% with a positive correlation (r = 0.88) between biochemically measured and non-invasively estimated (glycated haemoglobin) HbA1c. For the improvement of classification rate, thirteen features associated with the adsorption kinetics were extracted from the breathprint from each of the three sensors. The features given as an input to the Naïve Bayes classification model fetched an accuracy of 68.33%. Elimination of redundant features by distinction index and one-R feature ranking algorithm results in Naïve Bayes algorithm with improved performances. The success rate has improved to 70% using the subset of features ranked by one-R algorithm. These results indicated the use of feature ranking algorithms and prediction models for the improvement in accuracy of our in-house fabricated graphene based sensors.

Index Keywords
biological marker, graphite; adsorption, algorithm, Bayes theorem, breath analysis, chemistry, diabetes mellitus, female, genetic procedures, human, kinetics, male, methodology, procedures, statistical model; Adsorption, Algorithms, Bayes Theorem, Biomarkers, Biosensing Techniques, Breath Tests, Diabetes Mellitus, Female, Graphite, Humans, Kinetics, Linear Models, Male, Research Design

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Vijay Ananth, S.[a] , Srimurugan, R.[b] , Jayaseelan, V.[c] , Geethan, A.[d] , Francis Xavier, J.[e]

Experimental investigation on superplastic forming behavior of AA 6063/SiCp using stir casting
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Abstract
Super pliancy is a reasonable method for framing complex-molded structures. The strategy has the benefits of convey in uncommon formability and possibly giving great dimensional tolerance. Stir casting method was effectively used to prepare the AA6063/SiCp composite and followed by rolling process was repeated until the sheet reduces to the required thickness of 2.5 mm. With the gas pressure forming the composites were tested for superplastic forming. Instantaneous change in heights were measured through LVDT (Linear Variable Differential Transformer). Gas pressure forming tests were conducted on various percentages of SiCp composites. The biaxial superplastic forming tests were conducted at various temperatures between 520°C to 600°C and pressures between 0.2 MPa to 0.7 MPa. At the temperature of 600°C and 0.7 MPa the cracks were formed and the components were deformed. © 2020 Author(s).

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Balasubramanian, K.[a] , Rajeswari, N.[b] , Risheek Shankar, M.[a]

Analysis of natural fibre mat and fibre hybrid composites
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Abstract
Natural fibre-reinforced hybrid composites can be a better replacement for plastic materials. In the present study, natural materials like Bamboo fibre woven mat, Aloe Vera fibre Woven mat, and Sisal fibre are used with epoxy as resin. The Testing of composites in predominantly used to identify the material properties to use it in design, analysis and also to develop structural design allowable. The aim of this paper is to analyze the mechanical properties of bio hybrid composite, which are studied and compared and in order to quantify the characteristics of prepared bio degradable composite materials in various combinations, the tests like tensile, flexural, water absorption and Hardness are conducted and analysed. © 2020 Author(s).

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Srimurugan, R.[a] , Vijay Ananth, S.[b] , Geethan, A.[c] , Jayaseelan, V.[d] , Francis Xavier, J.[e]

Experimental investigation on diffusion bonding of dissimilar metals
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Abstract
Diffusion bonding is one of the metal joining process to join same and well as dissimilar metals. In this project stainless steel and copper plates were joined together with the interlayer of cupronickel sheet. The temperature was maintained in the range of 800-850°C. At the same time of heating compression load also acting on the specimensupto 5 MPa. To prevent the oxidation process vacuum of 10-4 Torr was maintained. The experiment was conducted for 60 Min. distinct diffusion zones were formed in the joined area of the specimens. The experiments were conducted with different temperatures and pressure. The shear strength of the specimens was tested and at 825°C have maximum shear strength of 8.47KN. © 2020 Author(s).

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Jayaseelan, V.[a] , Geethan, A.[b] , Francis Xavier, J.[c] , Srimurugan, R.[d] , Vijay Ananth, S.[e]

Optimizations of extrusion semidie angle and fabrication of extrusion die
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Abstract
Extrusion is the important manufacturing process and many components have been manufactured. Extrusion load play the major role for that the selection of die angle. A pilot study has been conducted for selecting a suitable die design for the present work. The selection of the semidie angle has been determined for the die of inlet diameter 12 mm and outlet diameter 8 mm. Hot die steel (H-13) is used as the die material for this study. © 2020 Author(s).

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Arun Vasantha Geethan, K.[a] , Francis Xavier, J.[b] , Srimurugan, R.[c] , Vijay Ananth, S.[d] , Jayaseelan, V.[e]

Design and analysis of chain strip in roller conveyor under tensile load
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Abstract
The chain drives are the primary systems used in order to transmit power, and act as the effective means of material handling. Chain conveyors ultimately experience tension due to wear. The tension generated on this conveyor setup needs to be supplanted, consequently would affect the efficiency and increases to perform such an important activity of an industry. Roller and chain transports are predominantly used in the mills where sugar, paper, fertilizer and cements are produced in large quantities. Such material handling systems are more reliable and appropriate in the metal casting industries in which the foundry practices and heat treatment processes are inevitable. This report discusses on the physical responses of the chain drive upon elastic loading and also contemplates on the internal resistances. Analysis on such experimentations brings in fruitful results and suggestions so as to minimize the constraints related to time and cost, to the aforesaid industries. © 2020 Author(s).

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Thermoresponsive surfaces designed for the proliferation and differentiation of human pluripotent stem cells
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Abstract
Thermoresponsive surfaces enable the detachment of cells or cell sheets by decreasing the temperature of the surface when harvesting the cells. However, human pluripotent stem cells (hPSCs), such as embryonic stem cells and induced pluripotent stem cells, cannot be directly cultured on a thermoresponsive surface; hPSCs need a specific extracellular matrix to bind to the integrin receptors on their surfaces. We prepared a thermoresponsive surface by using poly(N-isopropylacrylamide-co-butylacrylate) and recombinant vitronectin to provide an optimal coating concentration for the hPSC culture. hPSCs can be cultured on the same thermoresponsive surface for 5 passages by partial detachment of the cells from the surface by decreasing the temperature for 30 min; then, the remaining hPSCs were subsequently cultured on the same dishes following the addition of new cultivation media. The detached cells, even after continual culture for five passages, showed high pluripotency, the ability to differentiate into cells derived from the 3 germ layers and the ability to undergo cardiac differentiation. © 2020

Author Keywords
Biomaterial; Cardiomyocyte; Human pluripotent stem cell; Thermoresponsive polymer; Xeno-free culture

Index Keywords
Acrylic monomers, Amides, Biomaterials, Cytology; Cardiomyocytes, Cell sheet, Embryonic stem cells, Extracellular matrices, Human pluripotent stem cell, Induced pluripotent stem cells, Pluripotent stem cells, Thermo-responsive, Thermoresponsive polymer, Xeno-free culture; Stem cells; poly(n isopropylacrylamide co butylacrylate), polymer, recombinant protein, unclassified drug, vitronectin, vitronectin; Article, atomic force microscopy, cell differentiation, cell proliferation, coating (procedure), coculture, contact angle, continuous culture, controlled study, extracellular matrix, germ layer, heat sensitivity, human, human cell, human embryonic stem cell, induced pluripotent stem cell, priority journal, stem cell culture, surface property, temperature dependence, X ray photoemission spectroscopy, cell differentiation, cell proliferation, embryonic stem cell, pluripotent stem cell; Cell Differentiation, Cell Proliferation, Embryonic Stem Cells, Humans, Pluripotent Stem Cells, Vitronectin

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Microgrid development for remote residential customers power supply

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Abstract
The paper discusses a practical case of creating an autonomous microgrid for remote residential customers power supply. Due to the specifics of the geographic location, the main scenarious, considered within the framework of the study are : distribution network conncetion, creation of a diesel power plant, creation of an autonomous hybrid micro-grid based on wind power plants and energy storage. In the study, a load forecast has been made and a methodology for determining the installed capacity of the main generation sources is presented. According to the criteria of technological efficiency and environmental safety, the option of creating an autonomous microgrid was adopted for implementation. © 2020 IEEE.

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Energy balance; Energy storage; Hybrid systems; Microgrid; Renewable energy sources

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Strategic planning of renewable energy sources implementation following the country-wide goals of energy sector development

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Abstract
The paper describes the methodology for consideration of renewable energy sources in strategic plans of fuel and energy sector development. The inclusion of renewable energy projects in energy development programs is carried out based on the results of an integrated ranking of technical, economic and environmental criteria. For power generation facilities based on renewable energy sources, the energy potential is additionally addressed in accordance with the list of power generation technologies under consideration, which makes it possible to obtain the values of the installed capacity utilization factors, and, as a consequence, to judge on the technological and commercial feasibility of renewable energy projects implementation. The paper provides an example of a ranked list formulation of renewable energy projects for a real regional power system. © 2020 IEEE.

Author Keywords
Energy sector strategic development; Feasibility analysis; Multi-criteria problem; Renewable energy sources

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Srinivasan, G.R.[a c] , Sharma, Y.[b] , Vijayalakshmi, S.[a] , Ranjitha, J.[a]

Computational analysis of triglyceride molecule involving in transesterification reaction
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Abstract
This present study deals with the quantum computational analysis of palmitic-oleic-stearic acid based triglyceride molecule available in waste animal fat, which involves in transesterification reaction during biodiesel production. From stereospecific analysis, stearic acid, oleic acid and palmitic acid, and were found at SN1, SN2 and SN3 positions respectively. The proposed triglyceride model was developed using Gaussian 09 and computational analyses were carried out using Density functional theory (DFT) method. Based on geometric optimization, the average bond length between C-C bond, C=C bond, C-H bond, C-O bond and C=O bond was measured as 1.53Å, 1.33Å, 1.09Å, 1.43Å and 1.23Å respectively. Average dipole moment of the triglyceride molecule was measured as 1.3010 Debye while electronic dislocation was noted in X+Z direction. In addition, the overall molecular energy was found to be - 2522.7425 a.u. and optimization energy as -58.95 kJ/mol. Also, vibrational frequencies were analysed using the IR spectrum whereas electrostatic potential were mapped for the triglyceride molecule. © Published under licence by IOP Publishing Ltd.

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Invitro efficacy of antioxidant activity in ethanolic and aqueous leaf extracts of Andrographis paniculata Nees and Rhinacanthus nasutus Kurz

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Abstract
Plants are adundantly and are very promisive to be used as source of drugs in many diseases or infections and also it is a main agents of antioxidants which prevents the oxidative stress that are caused by the free radicals. There are numerous studies based on the pharmaceutical and classifiication of medicinal plants throughout the world. Leaves, fruits, roots are most frequently plant parts used in many research and studies. Here the present study was aimed to evaluate the in vitro antioxidant activity of aqueous and ethanol leaf extracts of Andrographis paniculata Nees and Rhinacanthus nasutus Kurz. Antioxidant is a substance which is used to prevent some types of cell damage in the body. Determination of their in vitro antioxidant activity were carried out by using methods such as DPPH (2,2-diphenyl-1picrylhydrazyl assay), ABTS (2,2′-azinobis (3-ethylbenzothiazolin 6-sulfonic acid assay), FRAP (ferric reducing antioxidant power assay) and SOD (super oxide anion scavenging) assay, H2O2 (hydrogen peroxide radical scavenging) assay. Moreover the ethanolic leaf extracts showed best antioxidant activity than the aqueous leaf extracts. Experimental results reveals that the leaves of A. paniculata have potent antioxidant and free radical scavenging activity than R. nasutus. Further investigation must be done for these two medicinal plants for the discovery of the bioactive compounds. © International Journal of Research in Pharmaceutical Sciences.

Author Keywords
ABTS; Andrographis paniculata Nees; Antioxidant; DPPH; FRAP; In vitro; Rhinacanthus nasutus Kurz; SOD

Index Keywords
1,1 diphenyl 2 picrylhydrazyl, 2,2' azinobis(3 ethylbenzothiazoline 6 sulfonic acid), Andrographis paniculata extract, ascorbic acid, ferric chloride, hydrogen peroxide, potassium ferricyanide, Rhinacanthus nasutus extract, superoxide dismutase, trichloroacetic acid, unclassified drug; antioxidant activity, Article, DPPH radical scavenging assay, ferric reducing antioxidant power assay, hydrogen peroxide scavenging assay, spectrophotometry, super oxide anion scavenging assay

Chemicals/CAS
1,1 diphenyl 2 picrylhydrazyl, 1898-66-4; 2,2' azinobis(3 ethylbenzothiazoline 6 sulfonic acid), 28752-68-3; ascorbic acid, 134-03-2, 15421-15-5, 50-81-7; ferric chloride, 7705-08-0; hydrogen peroxide, 7722-84-1; potassium ferricyanide, 13746-66-2; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1; trichloroacetic acid, 14357-05-2, 76-03-9

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Ilango, S.[a] , Saikumar, P.[b] , Kandhaswamy, S.[c] , Jayakumar, S.[d]

Neuroprotective potential of costus speciosus on neurotransmitters levels in noise stress condition in rats
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Abstract
Exposure to overwhelming stress could lead to development of mental dis-orders and worsening of existing ones. The impact produced by exposure to stress might be affected by the seriousness of the stressor, the time amid which it is connected (acute vs. chronic). In traditional practice of medicine, C. speciosus extract exhibits antistress action so we aimed to test whether this extract plays a vital role in maintaining the brain's chemical transmitters levels during acute noise stress conditions. The levels of Dopamine (DA), Nore-pinephrine (NE) and Serotonin (5HT) were analysed by reverse phase HPLC in cerebral cortex and hippocampus brain tissue of acute noise stress exposed, C. speciosus extract (250mg and 500mg) and fluoxetine treated rats. Nore-pinephrine and dopamine were found to be increased in contrast to 5-HT levels in stressed group of rats, whereas CSE 500 mg could alleviate the said alter-ation. This study highlights the importance of C. speciosus extract therapy to noise stress induced rats by testing the neurotransmitters levels in brain tissue to understand its therapeutic potential. © 2020 International Journal of Research in Pharmaceutical Sciences. All rights reserved.

Author Keywords
C. speciosus; Neuroprotective; Neurotransmitters; Noise stress

Index Keywords
acetonitrile, Cheilocostus speciosus extract, cysteine, dopamine, edetate calcium disodium, fluoxetine, neuroprotective agent, neurotransmitter, noradrenalin, perchloric acid, plant extract, serotonin, serotonin uptake inhibitor, sodium metabisulfite, superoxide dismutase, unclassified drug; acoustic stress, acute stress, animal experiment, animal model, animal tissue, Article, audiometry, behavior, body weight, brain cortex, brain tissue, central nervous system, Cheilocostus speciosus, column temperature, controlled study, debris, feeding, flow rate, fluorescent detection, high performance liquid chromatography, hippocampus, homogenate, learning, male, memory, noise, nonhuman, noradrenalin brain level, oxidative damage, rat, reversed phase high performance liquid chromatography, Soxhlet extraction

Chemicals/CAS
acetonitrile, 75-05-8; cysteine, 4371-52-2, 52-89-1, 52-90-4; dopamine, 51-61-6, 62-31-7; edetate calcium disodium, 62-33-9; fluoxetine, 54910-89-3, 56296-78-7, 59333-67-4; noradrenalin, 1407-84-7, 51-41-2; perchloric acid, 7601-90-3; serotonin, 50-67-9; sodium metabisulfite, 7681-57-4, 7757-74-6; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1

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Aromatic spice nutmeg attenuates memory deficits in rotenone model of parkinson's disease
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Abstract
PD is a multifactorial neurodegenerative disorder with features such as tremor, rigidity, bradykinesia, postural instability, and dementia. Neuropathologically, selective loss or death of dopaminergic neurons is the hallmark of PD. In PD, elevated oxidative stress, mitochondrial dysfunction and neuroinflammation were reported. Rotenone (an isoflavone obtained from Fabaceae associated vegetation such as the jicama vine plant) induces oxidative stress, mitochondrial dysfunction, inflammation and apoptosis in cell line and animal models. It was useful in the evaluation of neuroprotective properties on cell line and animal models of PD. Drugs with anti-oxidant potential helped to control the cellular stress, free radical formation, neurotransmitter level in PD animal models. Nutmeg, an aromatic spice exhibited memory enhancing, anti-oxidant, anticonvulsant properties. It is an excellent body detoxifier and stimulator of the brain due to the presence of pharmacologically active compounds such as eugenol, isoelemicin, isoeugenol, methoxyeugenol, myristic acid, myristicin, saponins and lignin. Macelignan (a compound present in nutmeg) having the low molecular weight and hydrophobic nature could pass beyond the blood-brain barrier. In this study, we explored the cognitive profile of rotenone-induced model of PD treated with MFSE extract (MFSE) by behavioural tests (Morris water maze test, T-maze test and Elevated plus maze Test). Rotenone was injected to male Wistar albino rats by intraperitoneal route (2.5mg/kg daily) for 30days. MFSE treated rats showed significant improvement in cognition in rotenone-induced PD model. It might be due to its neuroprotective and anti-cholinesterase properties. © 2020 Global Research Online. All rights reserved.

Author Keywords
Anti-cholinesterase; Dopamine (DA); Memory; Myristica fragrans seeds extract (MFSE); Neuroprotection; Nutmeg; Parkinson's disease (PD); Rotenone

Index Keywords
cholinesterase inhibitor, dopamine, eugenol, isoeugenol, lignin, myristic acid, Myristica fragrans seed extract, myristicin, neurotransmitter, rotenone, saponin, sunflower oil, unclassified drug; amnesia, animal model, apoptosis, Article, controlled study, maze test, memory, nervous system inflammation, neuroprotection, nonhuman, nutmeg, oxidative stress, Parkinson disease, rat, skill, spatial memory

Chemicals/CAS
dopamine, 51-61-6, 62-31-7; eugenol, 97-53-0; isoeugenol, 97-54-1; lignin, 9005-53-2; myristic acid, 1715-79-3, 544-63-8; myristicin, 607-91-0; rotenone, 83-79-4; saponin, 8047-15-2; sunflower oil, 8001-21-6

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Analgesic effects of Mathan Thylam-A pharmacognostic review

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Abstract
Mathan Thylam is a medicated oil which is widely used as a topical medicine. In native of Siddha system, this oil is prescribed to heal all types of ulcers and wounds. It is very effective in curing severe carbuncle ulcer of diabetes, diabetic foot ulcers. The oil has a wide variety of other therapeutic topical applications such as eczema, bedsores itches, weeping eczema, wounds, fol-liculitis, anal fistula, ear infections, per anal abscess, alopecia, non-healing of cut and burns wounds. The vital compositions of the mathan thylam are con-stituted with thurusu (copper sulphate), datura leaf and coconut oil. These active ingredients, present in mathan thylam acts to play a major role in healing ulcers. In this study, we aimed to prove the analgesic effect of mathan thylam. As a result of the presence of datura leaf, mathan thylam can be used as an unsurpassed analgesic than any other medicated oils. This oil is used to reduce pain as well as inflammation. The Phytochemical and GCMS analysis of a hydroalcoholic extract of the mathan thylam revealed the presence of coumarin, steroid, alkaloid, saponin, furan, quinine and triterpenoid. This comprehensive review includes information on botany, phytochemistry, pharmacology and ethnomedical uses of datura, which is the key ingredient in mathan thylam to be used as a topical analgesic. © 2020 International Journal of Research in Pharmaceutical Sciences.

Author Keywords
Analgesic; Datura; Mathan Thylam; Scopolamine; Topical medicine

Index Keywords
albumin, alkaloid, analgesic agent, coconut oil, copper sulfate, coumarin, flavonoid, furan, glycoside, hyoscyamine, mathan thylam, mathanoil, phenol, plant extract, potassium nitrate, quinine, saponin, spasmolytic agent, steroid, tannin, triterpenoid, unclassified drug; analgesic activity, Article, ash, botany, Datura, diabetes mellitus, diabetic foot, inflammation, mass fragmentography, mucilage, nonhuman, pain, pharmacology, phytochemistry, plant juice, plant leaf, plant root, plant seed, scientific literature, ulcer, wound

Chemicals/CAS
coconut oil, 8001-31-8; copper sulfate, 7758-98-7, 7758-99-8; coumarin, 91-64-5; furan, 110-00-9; hyoscyamine, 101-31-5, 306-03-6; phenol, 108-95-2, 3229-70-7; potassium nitrate, 7757-79-1; quinine, 130-89-2, 130-95-0, 14358-44-2, 549-48-4, 549-49-5, 60-93-5, 7549-43-1; saponin, 8047-15-2; tannin, 1401-55-4

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Determination of in vitro antioxidant activity of the leaves extracts of ehretia pubescens
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Abstract
The foods from plants were known to ensure against degenerative diseases and maturing because of their antioxidant activity credited to their high polyphenolic content. Information on antioxidant activity of Indian medicinal plant is abundant. To the best of our knowledge, biological properties have not been accounted in the literature for this species of Ehretia. As a point, this is the first results to assess the anti-oxidant activity of the plant Ehre-tia pubescens Benth which belongs to the family Ehretiaceae. The antioxi-dant activity of Methanol, Hexane, Ethyl acetate and Aqueous extracts of E. Pubescens was determined using the DPPH free radical scavenging activity, ABTS radical scavenging activity and reducing power assay. The DPPH scavenging activity showed higher activity observed in methanolic extract (63%) of E.pubescens than ethylacetate (54%), hexane (44%) and aqueous (30%). Similarly the ABTS assay showed highest inhibition in methanolic extract (58%) than ethylacetate (43%), hexane (38%) and aqueous (32%) extracts. The reducing power assay of different extracts was increased in methanolic extract (54%) than ethylacetate (40%), hexane (34%) and aqueous (28%) extracts. Overall, the methanolic and ethyl acetate extract had higher antioxi-dant properties than other extract. However, in this study, Ehretia Pubescens Benth extracts exhibit great potential for antioxidant activity and may be useful for their nutritional and medicinal functions. © International Journal of Research in Pharmaceutical Sciences.

Author Keywords
Antioxidant; Assays; Ehretia pubescens; Free Radicals; Oxidation

Index Keywords
acetic acid ethyl ester, antioxidant, Ehretia pubescens extract, hexane, methanol, nutraceutical, plant extract, potassium ferricyanide, sodium dihydrogen phosphate, trichloroacetic acid, unclassified drug; ABTS radical scavenging assay, antioxidant activity, antioxidant assay, Article, cancer prevention, DPPH radical scavenging assay, EC50, Ehretia pubescens, ferric reducing antioxidant power assay, IC50, in vitro study, medicinal plant, nonhuman, oxidative stress, plant leaf, Reducing power assay, Soxhlet extraction

Chemicals/CAS
acetic acid ethyl ester, 141-78-6; hexane, 110-54-3; methanol, 67-56-1; potassium ferricyanide, 13746-66-2; sodium dihydrogen phosphate, 7558-80-7, 7632-05-5; trichloroacetic acid, 14357-05-2, 76-03-9

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Documents

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Industry experience of developing day-ahead photovoltaic plant forecasting system based on machine learning
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Abstract
This article highlights the industry experience of the development and practical implementation of a short-term photovoltaic forecasting system based on machine learning methods for a real industry-scale photovoltaic power plant implemented in a Russian power system using remote data acquisition. One of the goals of the study is to improve photovoltaic power plants generation forecasting accuracy based on open-source meteorological data, which is provided in regular weather forecasts. In order to improve the robustness of the system in terms of the forecasting accuracy, we apply newly derived feature introduction, a factor obtained as a result of feature engineering procedure, characterizing the relationship between photovoltaic power plant energy production and solar irradiation on a horizontal surface, thus taking into account the impacts of atmospheric and electrical nature. The article scrutinizes the application of different machine learning algorithms, including Random Forest regressor, Gradient Boosting Regressor, Linear Regression and Decision Trees regression, to the remotely obtained data. As a result of the application of the aforementioned approaches together with hyperparameters, tuning and pipelining of the algorithms, the optimal structure, parameters and the application sphere of different regressors were identified for various testing samples. The mathematical model developed within the framework of the study gave us the opportunity to provide robust photovoltaic energy forecasting results with mean accuracy over 92% for mostly-sunny sample days and over 83% for mostly cloudy days with different types of precipitation. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

Author Keywords
Feature engineering; Forecasting; Graphical user interface software; Machine learning; Photovoltaic power plant

Index Keywords
Adaptive boosting, Data acquisition, Decision trees, Electric power plants, Machine learning, Meteorology, Photovoltaic cells, Professional aspects, Solar power generation, Solar power plants, Structural optimization; Feature engineerings, Forecasting accuracy, Horizontal surfaces, Industry experience, Meteorological data, Photovoltaic energy, Photovoltaic power plant, Remote data acquisition; Weather forecasting

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Estimation of stature using ulnar length in a population of Chennai

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Abstract
Estimation of stature plays a major role in the field of Forensic Medicine and anthropometry especially helps in establishing the identity of an individual from mutilated, decomposed and amputated body parts. In our study, stature was estimated from the percutaneous length of ulna. Study sample consisted of 96 adult males and 66 adult females between the age group of 18-22 years, born and brought up in Chennai. The length of the of the right and left ulna was measured with a vernier caliper from the tip of the olecranon to the styloid process and the height of the individual was measured with a calibrated stadiometer. The measurements were noted in the proforma. The data was statistically analyzed and linear regression formulae were derived. © 2020, Institute of Medico-Legal Publications. All rights reserved.

Author Keywords
Linear regression; Stature; Ulnar length

Index Keywords
adult, anthropometry, Article, body height, body mass, female, human, India, linear regression analysis, major clinical study, male, median nerve, prevalence, ulnar nerve, young adult

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Sterilization and disinfectants used in a dental office-a review
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Abstract
As dentists, we must disinfect and clean all equipments and countertops between patients with a recommended hospital-grade bactericidal product. Nonvisible blood and saliva does not mean it is absent on environmental surfaces. Blood and saliva are present throughout dental treatment. If a patient becomes ill as a result of an exposure to a pathogen or a bacterium that is later found in our dental office surfaces, the employer and or dentist is at risk of being responsible for the patient's illness and associated compensatory damages. Understanding and recognizing the risk of disease will drastically reduce patient illness, practice liability and employee illnesses. Dentists cannot pretend that this is only a theoretical problem. Therefore the dental community needs to stay updated of the rapidly evolving standard of care and do its best to comply with the standard of care in daily practice. © 2020, Institute of Medico-Legal Publications. All rights reserved.

Author Keywords
Chemical Disinfection; Fumigation; Pathogens; Sterilization

Index Keywords
disinfectant agent, formaldehyde, glutaraldehyde, paraformaldehyde; Article, bactericidal activity, cleaning, coughing, dental procedure, dentist, dentistry, disease transmission, employer, health care personnel, Hepatitis B virus, Hepatitis C virus, hospital waste, Human immunodeficiency virus, microbial contamination, sneezing, training

Chemicals/CAS
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Role of silorane composites in dentistry-an overview of the composition and properties
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Abstract
Siloranes are a class of composites introduced in dentistry, introduced by Weinmann et al in 2005. The term silorane is derived from siloxane and oxirane. The combined form of these two chemical compounds forms siloranes, which are biocompatible and hydrophobic in nature. The polymerization mechanism of silorane composites is described as a cationic ring opening polymerization reaction that causes opening and expansion of the polymeric chain. This reduces the volumetric shrinkage when compared to methacrylate based composites. This article highlights the composition and properties of silorane composites. © 2020, Institute of Medico-Legal Publications. All rights reserved.

Author Keywords
Biocompatibility; Bonding mechanism; Polymerization shrinkage; Silorane

Index Keywords
camphorquinone, chemical compound, diphenyliodonium salt, ethylene oxide, free radical, methacrylic acid, resin, silorane; animal cell, biocompatibility, bond strength, cementation, chemical bond, chemical composition, covalent bond, cytotoxicity, dental bonding, dental pulp stem cell, dental restoration wear, dentistry, drug delivery system, fibroblast, human, hydrophobicity, mechanical stress, microleakage, mouse, mutagenicity, NCTC clone 929 cell line, nonhuman, polymerization, restorative dentistry, Review, sorption detoxification, volumetry, water sorption

Chemicals/CAS
camphorquinone, 465-29-2, 10373-78-1; diphenyliodonium salt, 1483-72-3, 1483-73-4; ethylene oxide, 16002-48-5, 32587-16-9, 36376-18-8, 75-21-8; methacrylic acid, 18358-13-9, 79-41-4

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Sihivahanan, D.[a] , Nandini, V.[a] , Rajesh, E.[b] , Anitha, N.[b]

Goethite nanofibers as bio-fillers in dental composite resin

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Abstract
Composite resins represent an important member of biomaterials family that have been evolving due to the needs in biocompatibility and mechanical properties. Fillers in a variety of forms and types have been evaluated and the impact of fillers to improve the performance of the dental composites have been studied in vast. Various composite resin fillers tested had revealed its own strengths and weaknesses. Bio polymers when they are reinforced with biofillers can produce novel biocomposites. The biocomposites with the biofillers will replace and be a substitute for synthetic fibre-reinforced composites. In recent years, natural bio-fibres have gained attention as suitable reinforcements in polymeric matrices. These bio-fillers possess high specific strength and can be effectively used for dental composites resin. The most commonly occurring natural bio-fibres are the teeth of limpets. The teeth of limpets have a distinctive composite nanostructure which comprises of high-volume fractions of reinforcing goethite nanofibers to provide mechanical integrity. The limpet tooth is effective at resisting failure to abrasion. The goethite nanofibers are expected to be significant for novel dental biomaterials with extreme strength and hardness. © 2020, Institute of Medico-Legal Publications. All rights reserved.

Author Keywords
Bio-filler; Dental Composite resin; Nano-filler; Nanoparticles

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Mahapatra, N.[a] , Aravindha Babu, N.[b] , Behura, S.S.[a] , Rajesh, E.[b]

A brief review on haematoxylin: An irreplaceable tissue stain
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Abstract
Haematoxylin is the most popular nuclear counterstain used in routine histopathogical techniques for staining tissues. It is derived from the tree Haematoxylum Campechianum (H.campechianum). The history of haematoxylin reveals centuries of war, strife and discovery dating from the Mayans and Aztecs who used it as an ink and fabric dye to the war resulting in the invasion of Mexico by European countries. H.campechianum was later named as logwood and block wood by the invaders that used it to generate haematoxylin crystals to be utilized in textile industry. The recognition to introduce haematoxylin as biological stain goes to Waldeyer. But later Bohmer introduced the technique of coupling a mordant to the dye making it colorfast and thus, haematoxylin remains a very unique and vital stain in histology till date. © 2020, Institute of Medico-Legal Publications. All rights reserved.

Author Keywords
Counterstain; Haematoxylin; Histology; Stain

Index Keywords
alum haematoxylin, aluminum potassium sulfate, carbohydrate, carboxylic acid, chromium, chromium haematoxylin, haematein, hematoxylin, iron, iron haematoxylin, lead, lead haematoxylin, lipid, molybdenum, molybdenum haematoxylin, quinine, quinine carboxylic acid, tungsten, tungsten acid haematoxylin, unclassified drug; acid differentiator, afterchrome, Amoeba (genus), blueing, cell organelle, connective tissue, cytology, differentiation, histopathology, metachrome, Microfilaria, mordant, mordant differentiator, nervous tissue, onchrome, oxidising differentiator, progressive staining, regressive staining, Review, ripening, staining, systematic review, textile industry, vital stain

Chemicals/CAS
aluminum potassium sulfate, 10043-67-1; chromium, 16065-83-1, 7440-47-3, 14092-98-9; hematoxylin, 517-28-2; iron, 14093-02-8, 53858-86-9, 7439-89-6; lead, 7439-92-1, 13966-28-4; lipid, 66455-18-3; molybdenum, 7439-98-7; quinine, 130-89-2, 130-95-0, 14358-44-2, 549-48-4, 549-49-5, 60-93-5, 7549-43-1; tungsten, 7440-33-7

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Amudha, S.[a] , Vijayakumar, M.[a] , Shankar, P.[b]

Knowledge and attitude of pediatricians with regard to emergency management of dental avulsion-a survey
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Abstract
Dental trauma is a very significant problem encountered in both primary and the permanent dentition.In preschool children the trauma rate is as high as 18% of all injuries. Among all facial injuries, dental injuries are the most common of which avulsions occur in 1–16% of all dental injuries. Among dental traumatic injuries, avulsion results in major functional and esthetic disturbances for patients. Epidemiological studies revealed that children from 8 to 12 years often suffer a dental injury.The teeth most commonly avulsed in both the primary and the permanent dentition are the maxillary central and lateral incisors. The longer the avulsed tooth is out of its socket, the less likely it will remain in a healthy functional state after replantation. The prognosis of replanted permanent teeth depends primarily on (i) prompt and appropriate first care, commonly provided by non-health professionals at the site of the accident, (ii) the storage media of the avulsed tooth prior to replantation, and (iii) the viability of periodontal ligament remnants on the root surface. Research has shown that immediate replantation is the best and most appropriate treatment for the traumatically avulsed permanent teeth. The aim of this study is to assess the basic knowledge of dental trauma and its management among pediatricians. © 2020, Institute of Medico-Legal Publications. All rights reserved.

Author Keywords
Avulsion; Paediatrician awareness

Index Keywords
salt water; Article, avulsion injury, child, dental surgeon, female, fracture, health personnel attitude, human, incisor, knowledge, male, maxilla, maxillary central incisor, maxillary lateral incisor, milk, pediatrician, periodontal ligament, permanent tooth, questionnaire, reimplantation, tooth injury

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Ragunathan, H.[a] , Sankar Narayanan, R.[b] , Aswath, N.[b]

An infected sac in the mandible – a case report

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Abstract
Dentigerous cyst is the second most common cyst. It is usually associated with the impacted third molars, canines and premolars. Clinically they present with asymptomatic swelling, bony expansion and radiographically they are well defined and the larger cyst leads to destruction of bone later leading to pathological fracture. They are chances where this cyst can be misdiagnosed when seen only clinically withan infected tooth. Radiographic investigation is the gold standard in diagnosing the lesion and its extent for treatment planning. The protein content of the cyst fluid also helps in the diagnosis. Here is a case where the patient complained of a decayed tooth along with swelling in the left side of face and how the diagnosis changed after proper history and radiographic investigation. © 2020, Institute of Medico-Legal Publications. All rights reserved.

Author Keywords
Dentigerous cyst; Impacted; Radiographic Investigation

Index Keywords
Article, canine tooth, computer assisted tomography, enucleation, human, human tissue, keratinization, mandible, odontogenic cyst, premolar tooth, submandibular lymph node, teratoma, third molar, tooth sac

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Aloevera: The miracle plant and its uses in dentistry – A review
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Abstract
Aloevera has been in used by humans since times immemorial. Its health benefits are well known. Ancient Greeks and Egyptians used it in their daily routine and in battle fields due to its many miraculous properties. Studies have proved the antiseptic, anti-inflammatory, anti-viral, anti-fungal and wound healing properties of aloe vera plant. Recently it has garnered a lot of interest regarding its use in dentistry as it is completely natural and there are no side effects reported with proper usage. This paper gives an overview of the uses of this wonder plant in various departments of dentistry. © 2020, Institute of Medico-Legal Publications. All rights reserved.

Author Keywords
Aloevera; Anti-inflammatory; Antibacterial; Antioxidant; Antiviral

Index Keywords
antifungal agent, antioxidant, antivirus agent, mouthwash; Aloe vera, antibacterial activity, antifungal activity, antiinflammatory activity, antimicrobial activity, antiviral activity, burning mouth syndrome, column chromatography, dentistry, gingiva bleeding, gingiva disease, gingival index, halitosis, human, lichen planus, maxillofacial surgery, mouth hygiene, nonhuman, pemphigus, periodontal disease, periodontics, plaque index, prosthodontics, Review, thrush, tooth calculus, wound healing

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Nutrigenomics and its role in periodontal health – a review
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Abstract
Nutrigenomics is an emerging form of science involving tools that assess the benefit of diet and nutrition in various disease conditions at molecular and genetic level. Nutrigenomics investigates the relationship of nutrient regimen in maintaining health. This article reviews the role of nutrients in maintaining periodontal health and the use of nutrigenomics in understanding genotype, phenotype diet interactions on periodontal health of an individual and the effect of dietary modification on periodontal disease progression. © 2020, Institute of Medico-Legal Publications. All rights reserved.

Author Keywords
Nutrigenomics; Nutrition; Periodontal disease; Periodontal health

Index Keywords
alpha tocopherol, antioxidant, ascorbic acid, calcium, cathelicidin, glutathione, interleukin 4, omega 3 fatty acid, reactive oxygen metabolite, short chain fatty acid, superoxide dismutase, toll like receptor 4, vitamin D, vitamin D receptor; dental health, dietary fiber, dietary intake, disease exacerbation, gene expression, genetic polymorphism, genotype, human, immune response, intestine flora, lifestyle modification, nutrigenomics, oxidative stress, periodontal disease, periodontitis, phenotype, protein expression, proteomics, Review, tooth plaque

Chemicals/CAS
alpha tocopherol, 1406-18-4, 1406-70-8, 52225-20-4, 58-95-7, 59-02-9; ascorbic acid, 134-03-2, 15421-15-5, 50-81-7; calcium, 7440-70-2, 14092-94-5; cathelicidin, 170006-50-5; glutathione, 70-18-8; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1; toll like receptor 4, 203811-83-0

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Management of biomedical waste in hospital and health care organizations-a review
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Abstract
Bio-Medical Waste (BMW) is a global concern. In common parlance BMW means any waste generated in the process of diagnosis, treatment, immunization and research related to human beings and animals. Due to improper or poor waste management practicesa huge risk is posed to the health of public, patients, professionals and also cause environmental disturbance. The Union Ministry of Environment and Forests under the provision of Environment [protection] act, 1986 which brought the focus back on this issue. These rules apply to all the people who are connected to generation, collection, receiving, storage, transportation and handling or biomedical waste in any form. This article aims to highlight the categories, segregation and management protocols by various government and non-government organizations and spread knowledge about the same. © 2020, Institute of Medico-Legal Publications. All rights reserved.

Author Keywords
-Bio-Medical Waste; Chemical LiquidWaste; Hazardous waste; Human anatomical waste; Infectious waste; Non-hazardous waste

Index Keywords
adult, forest, health care organization, human, immunization, infectious waste, non-governmental organization, review, waste management

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Waste management in dental practices A simplified model for biomedical waste management in dental practices - A pilot project at Thane
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Papillary endothelial hyperplasia in breast lesions
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Abstract
A non-malignant lesion of cutaneous and subcutaneous tissue known as Papillary Endothelial Hyperplasia (PEH) is of rare occurrence. It is still more uncommon in the breast tissue. Often it is wrongly diagnosed as angiosarcoma. The differentiating features are papillary endothelial hyperplasia existing in an organized thrombus and absence of significant cell atypia (1). Three cases of PEH are discussed in patients treated by radiation therapy for breast carcinoma. © 2020, Advanced Scientific Research. All rights reserved.

Author Keywords
Breast Lesions; Masson's Pseudo-angiosarcoma; Papillary Endothelial Hyperplasia (PEH)

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fibrin; adult, Article, benign neoplasm, breast carcinoma, breast lesion, breast tissue, cancer chemotherapy, case report, cell proliferation, clinical article, contusion, echomammography, endothelium cell, female, histology, human, human cell, human tissue, lumpectomy, middle aged, needle biopsy, papillary dermis, Papillary Endothelial Hyperplasia, radical mastectomy, skin nodule, stain, subcutaneous tissue, thrombus, wide excision

Chemicals/CAS
fibrin, 9001-31-4

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Structural, morphological and optical properties of multifunctional magnetic-luminescent ZnO@Fe3O4 nanocomposite

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Abstract
In the present work, non-toxic luminescent ZnO nanoparticles (NPs) and magnetic Fe3O4 NPs were separately prepared by co-precipitation method. In order to get the ZnO@Fe3O4 nanocomposite (NCs), both these NPs were embedded in silica matrix. Powder XRD reveals that the formation hexagonal wurzite structure of ZnO and cubic inverse spinel structure of Fe3O4. Both phases were combined in the prepared ZnO@Fe3O4 NCs. FT-IR spectra showed the absorption peaks confirmed the presence of metal-oxygen stretching bands in ZnO NPs, Fe3O4 NPs and ZnO@Fe3O4 NCs samples. VSM results showed both magnetite and ZnO@Fe3O4 have superparamagnetic, whereas the saturation value for ZnO@Fe3O4 NCs was tremendously decreased. Photoluminescence (PL) spectra of ZnO and ZnO@Fe3O4 illustrated that both samples have very good luminescence property. PL intensity of ZnO@Fe3O4 NCs has been reduced as compared to the intensity of bare ZnO NPs. However, ZnO@Fe3O4 still hold very good luminescence property. The as-prepared ZnO@Fe3O4 NCs were successfully demonstrated for magnetic resonance imaging contrast agent application. Hence, it can be simultaneously used for MRI contrast agent as well as optical imaging applications. © 2020 Elsevier B.V.

Author Keywords
Luminescence; Magnetite; MRI contrast Agent; X-ray powder diffraction; Zinc oxide; ZnO@Fe3O4 NCs

Index Keywords
II-VI semiconductors, Iron oxides, Luminescence of inorganic solids, Magnetic resonance imaging, Magnetite, Nanocomposites, Nanomagnetics, Optical properties, Oxide minerals, Precipitation (chemical), Silica, Zinc oxide; Coprecipitation method, Inverse spinel structures, Luminescence properties, Magnetic resonance imaging contrast agents, MRI contrast agents, Nanoparticle (NPs), Photoluminescence spectrum, Superparamagnetics; ZnO nanoparticles

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Growth and characterization of Catena-((μ4-dihydrogen oxalate)-bis(μ3-hydrogen oxalato)-(μ2-dihydrogen oxalate)-tetra-aqua-di-rubidium) {Rb(HC2O4)(H2C2O4)(H2O)2}1∞ single crystal for nonlinear optical applications

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Abstract
A versatile, optically active, metal organic frame work, Catena-((μ4-dihydrogen oxalate)-bis(μ3-hydrogen oxalato)-(μ2-dihydrogen oxalate)-tetra-aqua-di-rubidium) {Rb(HC2O4)(H2C2O4)(H2O)2}1∞ (CDBDTR), was grown by the process of slow evaporation using water as the solvent. Single XRD showed that the crystal belongs to the triclinic crystal system with the space group P1. The assigned vibrational frequencies of the compound were identified by the FTIR and FT-Raman techniques. The UV–Vis spectrum revealed the cut off wavelength of the crystal to be 233 nm, and due to this low cut off, it occupies a place in optoelectronic devices. Using the UV-spectra, several optical constants were assessed. The surface morphology was studied using HR-SEM analysis. Energy dispersive X-ray analysis (EDXA) confirmed the presence of rubidium in the crystal. The thermal stability of the crystal was investigated using TG/DTA analysis. The dielectric response of the grown crystal has been thoroughly analysed. A photoluminescence study showed that the crystal has a high degree of luminescence, and its single peak emission affirms its highly ordered crystalline nature. The life time was also analysed. The crystal offers adequate resistance to laser radiation with a threshold value of 4.78 GW/cm2. By the Kurtz–Perry technique, the second harmonic generation of the crystal was assessed. The third order nonlinearity was explored using the Z-Scan technique. The figures of merit W and T were calculated in order to find the aptness of the crystal as a promising candidate for optical switching and optical limiting applications. © 2019 The Physical Society of the Republic of China (Taiwan)

Author Keywords
Dielectric studies; MOFs, Nonlinear optical material; Single XRD technique; UV–Visible studies; Z-scan technique

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Experimental investigation on the effect of glass fiber orientation on impact damage resistance under cyclic indentation loading using AE monitoring

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Abstract
This paper investigates the effect of glass fibre orientation on the impact damage evolution and post-impact residual strength of glass/epoxy laminates, using mechanical and acoustic emission (AE) analysis. The glass fibre reinforced polymer (GFRP) composite laminates with stacking sequence such as 0°, 90°, [±45°] and [0°/90°] were tested. The indentation-induced damage behaviour was examined in GFRP composite laminates by conducting drop weight impact and quasi-static indentation (QSI) tests to induce barely visible impact damage (BVID). Both tests provided essentially the same results for damage modes, dent depth, back surface crack size and load-deflection history. Mechanical parameters such as peak force, incident energy, absorbed energy, rebound energy and linear stiffness were used for the quantification of the indentation response. The AE parameters, such as amplitude, rise time, counts and energy were considered for monitoring damage progression during QSI loading. Also, other parameters linked to AE monitoring, such as the rise angle (RA), Felicity ratio (FR) and sentry function (SF) were measured for evaluating damage progression in each cycle of indentation. These results showed the [±45°] laminates having higher indentation damage resistance compared to other fibre orientation, whereas residual compressive strength was high for 0° laminates. © 2019 Informa UK Limited, trading as Taylor & Francis Group.

Author Keywords
acoustic emission; felicity ratio; Glass fibre; indentation damage; residual strength; sentry function

Index Keywords
Acoustic emissions, Compressive strength, Fiber reinforced plastics, Glass fibers, Indentation, Laminated composites, Paper laminates, Tensile strength; Barely visible impact damages, Experimental investigations, felicity ratio, Glass fibre reinforced polymers, Impact damage resistance, Indentation damage, Residual compressive strength, Residual strength; Acoustic emission testing

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AE based failure load prediction of GFRP composite laminates using multivariate statistical analysis
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Abstract
This work focuses on the investigation of flexural strength in glass fiber reinforced (GFRP) composite laminates. Composite laminates with stacking sequence of [0°/90°]14 were fabricated by hand lay-up technique. Laminates with pre-induced defects were introduced through fibre cut in the 7th layer and the delamination between the 7th and 8th layers. Totally thirty five specimens with ASTM D 790-02 were cut from the fabricated laminates by using water jet cutting. In each case, seven specimens were considered from the fiber cut, delamination, virgin and impact for conducting flexural test with acoustic emission (AE) monitoring. AE response via events, counts, duration and amplitude were obtained for different categories of specimens under flexural loading. A standard probability distribution (Weibull distribution) was fitted to the obtained curves from the tested specimens of each case. The probability density function contained different statistical parameters (α, β) for different cases of specimens. An empirical model was developed for predicting the failure load using regression analysis. © 2020 Author(s).

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Sonochemical synthesis and visible light induced photocatalytic property of reduced graphene oxide@ZnO hexagonal hollow rod nanocomposite

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Abstract
The reduced graphene oxide (RGO) sheets (1–4 wt %) containing ZnO hexagonal hollow rods (GZC) nanocomposites were fabricated via sonochemical method. The synthesized composites were characterized using Fourier transform-infrared spectroscopy (FT-IR), X-ray diffraction (XRD), UV-vis diffuse reflectance spectroscopy (UV-vis-DRS), Raman spectroscopy, thermo gravimetric analysis (TGA), field-emission scanning electron microscopy (FE-SEM), energy dispersive analysis of X-rays (EDX), high resolution transmission electron microscopy (HRTEM) and electrochemical impedance spectroscopy. The formation of hexagonal hollow ZnO rod was discussed with growth mechanism and their morphology was confirmed with FESEM and HRTEM analysis. The visible light driven photocatalytic activity of pure ZnO and an incorporation of varying weight percentages of GO into ZnO catalyst (GZC) were evaluated by using the methyl orange (MO) and methylene blue (MB) aqueous dye solutions as model organic pollutants. Among the developed nanocomposites, 3 wt% GZC nanocomposites possesses the highest degradation efficiency, that is, 90.72, 89.72% at 180, 240 min for MB and MO respectively with enhanced visible light absorption range. © 2020 Elsevier B.V.

Author Keywords
Hexagonal hallow rod; Nanocomposite; Photocatalyst; Reduced graphene oxide; Sonochemical synthesis; ZnO

Index Keywords
Aromatic compounds, Azo dyes, Degradation, Dyes, Electrochemical impedance spectroscopy, Enamels, Field emission microscopes, Fourier transform infrared spectroscopy, Graphene, Gravimetric analysis, High resolution transmission electron microscopy, II-VI semiconductors, Light, Light absorption, Organic pollutants, Reduced Graphene Oxide, Scanning electron microscopy, Sonochemistry, Spectrum analysis, Thermogravimetric analysis, Zinc oxide; Degradation efficiency, Energy dispersive analysis of X-rays, Field emission scanning electron microscopy, Fourier transform infra red (FTIR) spectroscopy, Photocatalytic property, Reduced graphene oxides (RGO), UV-Vis diffuse reflectance spectroscopy, Visible light absorption; Photocatalytic activity

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Sridharan, M.[a] , Kamaraj, P.[b] , Vennila, R.[c] , Huh, Y.S.[d] , Arthanareeswari, M.[a]

Bio-inspired construction of melanin-like polydopamine-coated CeO2as a high-performance visible-light-driven photocatalyst for hydrogen production

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Abstract
In recent years, cerium oxide has been the most widely studied photocatalyst due to its unique properties. However, bare CeO2shows poor photocatalytic performance under visible-light irradiation because it absorbs only UV light that leads to fast recombination of photogenerated electron-hole pairs. Therefore, surface modification can be one of the effective strategies to improve the visible-light absorption and reduce the recombination rate of photogenerated charge carriers. Herein, a series of CeO2/polydopamine (CeO2@PDA) composites were successfully fabricated by the polymerization of dopamine on the surface of CeO2. Our results demonstrated that the surface modification of CeO2by a small amount of PDA could effectively inhibit the photocatalytic reaction; this not only promoted the photoelectron injection and reduced the charge recombination rate, but also controlled the overgrowth of Pt cocatalyst. As compared to bare CeO2, CeO2@PDA shows remarkable photocatalytic hydrogen production performance. This composite also presents good durability and stability for the photocatalytic hydrogen production reaction. Thus, this study provides a new insight into the preparation of CeO2composites with effective solar energy conversion. © The Royal Society of Chemistry and the Centre National de la Recherche Scientifique 2020.

Index Keywords
Amines, Biomimetics, Carrier mobility, Cerium oxide, Energy conversion, Light, Light absorption, Photocatalytic activity, Solar energy; Photocatalytic hydrogen production, Photocatalytic performance, Photocatalytic reactions, Photogenerated charge carriers, Photogenerated electrons, Visible light absorption, Visible light driven photocatalysts, Visible-light irradiation; Hydrogen production; cerium oxide nanoparticle, dopamine derivative, hydrogen, melanin, polydopamine, unclassified drug; Article, chemical modification, chemical structure, coating (procedure), light absorption, nanofabrication, photocatalysis, polymerization, priority journal, solar energy, surface property, synthesis

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Spatial pollution rose pattern of SO2in the vicinity of a typical thermal power station in India
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Abstract
Air pollution is one of the greatest environmental evils. The Multi-Plume industrial source complex Short-term Period Regulatory (MPC-SPR) model is an alternate model to EPA and it is exclusively developed for regulatory purposes in India. The MPC-SPR model is based on a Gaussian Plume dispersion model from continuous elevated point sources. The processes as considered in the models are similar to ISCST3. The data requirements for dispersion analysis consist of three important parts: the emission inventory, the meteorological data and the monitoring data. A detailed emission inventory has been prepared by gathering data such as stack height, stack diameter, stack temperature, velocity, and rate of discharge of SO2 from the industries. Emission inventory has been Neyveli prepared data gathered from CARD such as stack coordinate, stack height, exit stack diameter and emission rate of SO2. The Meteorological data such as wind speed and Wind direction were observed from the Meteorological observatory at Vadalur. The hourly meteorological file to the MPC-SPR models have been prepared, which is similar to that of the ISCST3 model. The MPC-SPR Model was used to simulate the dispersion pattern of SO2 in the month of January 2019 by considering the emission from all the industrial stacks situated within the study area. © 2020 Author(s).

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Assessment of knowledge of oral pathologists and postgraduate students on safe laboratory practices during the COVID.19 pandemic

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Abstract
Background: Oral pathologists are involved in laboratory diagnosis and receive specimens of biopsy, oral cytologic smears and samples for hematology, biochemistry and microbiology and thus are at a risk for laboratory-acquired infections, which may occur inadvertently and can be considered as an occupational hazard. Aim and Objectives: This study was conducted during the coronavirus disease (COVID-19) pandemic to assess the knowledge of oral pathologists and oral pathology postgraduate students regarding the safe laboratory practices, procedures and guidelines. Materials and Methods: The study was a cross-sectional online questionnaire-based study. Questions were framed to evaluate the knowledge on specimen/sample collection, its handling, disposal and protective measures for laboratory personnel. The study population comprised oral pathologists and oral pathology postgraduate students of various dental colleges in India. A Google Doc format was used to create an effective computerized questionnaire system, and the link was forwarded to around 500 participants. The survey was fielded online between August 29, 2020, and September 5, 2020. Three hundred and twelve responses were received, which were downloaded as spreadsheets for subsequent data analysis. Results: Mean value of right answers for the oral pathologists was 8.11 ± 2.02 and for postgraduate students was 7.38 ± 1.75. When the knowledge score between the two groups was compared, a statistically significant difference was found. Conclusion: This article compares and highlights the knowledge lacunae among the oral pathologists and oral pathologists postgraduate students in relation to guidelines to be followed for safety in the laboratory. Adhering to these biosafety regulations reduces occupational health hazards and enhances a safe working environment in the laboratory. © 2020 Wolters Kluwer Medknow Publications. All rights reserved.

Author Keywords
COVID-19; laboratory guidelines; oral pathologist; postgraduates; questionnaire study

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bilirubin, ceruloplasmin, copper; acute liver failure, bilirubin blood level, case report, ceruloplasmin blood level, child, clinical article, computer assisted tomography, hepatomegaly, human, image analysis, jaundice, liver, liver transplantation, male, Note, priority journal, school child, Wilson disease, liver, Wilson disease; Copper, Hepatolenticular Degeneration, Humans, Liver

Chemicals/CAS
bilirubin, 18422-02-1, 635-65-4; ceruloplasmin, 9031-37-2; copper, 15158-11-9, 7440-50-8; Copper

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Arunkumar, S.[a] , Chidambara Vinayagam, S.[a] , Lakshmanan, S.[b] , Arul Antony, S.[a]

Citrus Extract Modified Graphene Oxide as a Green and Heterogeneous Organocatalyst for the Synthesis of Imidazole Derivatives

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Abstract
A naturally benign convention was created with a surface change of graphene oxide by citrus extract as catalyst was prepared by a straight-forward chemical modification method. The prepared catalyst's catalytic activity was examined by the synthesis of imidazole derivatives at room temperature. It shows a strong acidic catalytic and sustainable organocatalyst. The prepared catalyst was characterized using different analytical procedures like elemental analysis, Fourier transforms infrared spectroscopy (FT-IR), powder X-ray diffraction (PXRD), energy-dispersive X-ray analysis (EDS), scanning electron microscopy images (SEM) and transmission electron microscopy images (TEM) analysis. The catalytic activity shows high activity and can be reused without significant loss of catalytic activity after five times. A present catalyst works easily under room temperature. © 2020 Chemical Publishing Co.. All rights reserved.

Author Keywords
Citric acid; Graphene oxide; Imidazoles; Organocatalyst

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Crystal growth, optical, spectroscopic studies, PL behaviour and Hirshfield surface analysis of a third-order nonlinear optical Cesium Hydrogen Oxalate Dihydrate (CHOD) single crystal

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Abstract
Single crystal of oxalato-bridged, Cesium-extended frame work, Cesium Hydrogen Oxalate Dihydrate (CHOD), has been synthesized by slow evaporation solution growth technique. Diffraction studies were used to identify the geometry of the atoms present in the primitive cell of the crystal. The title compound has crystallized in triclinic category-bearing space group P-1. Spectroscopic investigation of the compound was done by FTIR and FT-Raman techniques. From UV–Vis studies, optical absorption edge was ascertained as 241 nm. It has excellent optical transmission window throughout the visible region. Energy dispersive X-ray analysis (EDAX) affirms the presence of Cesium in the compound. Fluorescence decay of the molecules present in the excited state for the crystal was studied. Hirshfield surface maps intermolecular contacts present in the crystal and the contributions made by the contacts were assessed by 2D Finger print plots. Z-Scan studies ascertain the magnitude of nonlinear refractive index and nonlinear refraction. © 2020, Springer Science+Business Media, LLC, part of Springer Nature.

Index Keywords
Cesium compounds, Crystal growth, Energy dispersive X ray analysis, Excited states, Hydrogen, Light absorption, Light transmission, Oxalic acid, Refractive index, Single crystals, Spectroscopic analysis, Surface analysis, X ray diffraction analysis; Energy dispersive Xray analyses (EDAX), Intermolecular contacts, Nonlinear refractive index, Optical absorption edge, Solution growth technique, Spectroscopic investigations, Spectroscopic studies, Third-order nonlinear optical; Nonlinear optics

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Sustainable preparation of gold nanoparticles via green chemistry approach for biogenic applications
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Abstract
Novel premises of ‘Green Nanotechnology’ have tremendous impacts towards industrial scale revolution. The furtive extracted from natural precursors have driven to the generation of biogenic resources for the fabrication of cutting-edge nanomaterials in simple and cost-effective process. This inspection is an intension of the coupling hypothesis of Nanotechnology via ‘Green-Chemistry’ avenue. So, as to diminish the negative effects of technological applications in the health of human beings and the environment, society is focused towards a greener future. Nanoscience assures a promising future by its improvement in green chemistry to develop the 'Greenary Nanoscience and Nanotechnology'. The improvement and execution of chemical assisted processes in order to reduce the usage of harmful substances, the ‘Green Chemistry’ approach is one and only remarkable authentication, which attributed to long range surface area and higher pore volume of gold-nanoparticles. As of now, the efficient biogenic mechanism dramatically reduces the utilization and hazardous reagents have been employed to low-price natural and waste products to yield value-added nanomaterials with extensive relevance, suggesting an economical and green solution to environmental issues. In depth investigation of this critical review illustrates, novel biogenic screening platform was also conducted against antimicrobial strains and degradation of gold-nanoparticles products well explored-from selection precursors evolved from natural extracts, as well as eventually disintegration into bio-degradable yet potentially recyclable byproducts. © 2020 Elsevier Ltd

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Linear and nonlinear optical investigation of l-arginium adipate single crystal for photonic applications

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Abstract
The l-arginium adipate (LAA) single crystal, is an organic component material efficiently grown by a simple technique called slow evaporation solution technique at ambient temperature. The monoclinic crystal system with the space group of P21 is exhibited for LAA from the X-ray diffraction analysis. FTIR spectroscopy that designates different molecular vibrations existing in LAA crystal was studied. The absorbance spectrum from the UV profile proclaims very less cut-off wavelength down to 206 nm and its wide optical band gap is also calculated. The perfection of the crystal is shown from Urbach's energy determination. The extent of polarization phenomena was examined for selected temperatures at dissimilar frequencies from the dielectric studies. The double harmonic output and triple-order nonlinear response for LAA are inspected from Kurtz-Perry and Z-scan technique, respectively. © 2020, Springer Science+Business Media, LLC, part of Springer Nature.

Index Keywords
Energy gap, Fourier transform infrared spectroscopy, Single crystals, Uranium metallography, Vanadium metallography, X ray powder diffraction; Absorbance spectrum, Cutoff wavelengths, Energy determination, Monoclinic crystal systems, Non-linear response, Photonic application, Polarization phenomena, Solution techniques; Nonlinear optics

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Parvez M, M.[a] , Shanmugam, J.[b] , Ghali, V.S.[c]

Decision tree-based subsurface analysis using Barker coded thermal wave imaging
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Abstract
Non-stationary thermal wave imaging is emerging as a reliable alternative procedure due to its depth scanning and defect detection capabilities to assess the integrity of the materials. This investigation proposes a Decision Tree based anomaly detection in Barker Coded Thermal Wave Imaging (BCTWI). It facilitates automatic detection and visualization of anomalies with better spatial accuracy in a single view to help even an inexperienced personnel to easily assess subsurface features.
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Author Keywords
Barker coded thermal wave imaging; Decision tree; Non-stationary thermal wave imaging; Thermal wave imaging

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Binary sequences, Decision trees; Alternative procedures, Automatic Detection, Defect detection, Nonstationary, Spatial accuracy, Subsurface features, Thermal wave imaging; Anomaly detection

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Synthesis of nickel sulfide and nickel–iron sulfide nanoparticles from nickel dithiocarbamate complexes and their photocatalytic activities

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Abstract
[Ni(dtc)2] (dtc = N-(pyrrole-2-ylmethyl)-N-thiophenemethyldithiocarbamate (1), N-methylferrocenyl-N-(2-phenylethyl)dithiocarbamate (2), N-furfuryl-N-methylferrocenyldithiocarbamate (3), and (N-[pyrrole-2-ylmethyl]-N-thiophenemethyldithiocarbamato-S,S′)(thiocyanato-N)(triphenylphosphine)nickel(II) (4) complexes were prepared and characterized by elemental analysis, infrared, ultraviolet–visible, and nuclear magnetic resonance (1H and 13C) spectroscopies. The data were consistent with the formation of square planar nickel(II) complexes, which was confirmed by single-crystal X-ray diffraction studies on 2 and 4. Fe···Fe interactions exhibited by complex 2 led to supramolecular aggregation. The structure of 4 reveals intermolecular and intramolecular C-H···Ni anagostic interactions. The anion-sensing properties of 2 were studied with halide ions by cyclic voltammetry. It was observed that 2 acts as sensor for bromide. Complexes 1, 2, and 3, were utilized to prepare nickel sulfide, nickel–iron sulfide-1, and nickel–iron sulfide-2, respectively. The composition, structure, morphology, and optical properties of nickel sulfide and nickel–iron sulfides were examined using powder X-ray diffraction, transmission electron microscopy, energy-dispersive X-ray spectroscopy, ultraviolet–visible, fluorescence, and infrared spectroscopy. Powder X-ray diffraction patterns of nickel sulfide, nickel–iron sulfide-1, and nickel–iron sulfide-2 indicate the formation of orthorhombic Ni9S8, cubic NiFeS2, and cubic Ni2FeS4, respectively. The photocatalytic activities of as-prepared nickel sulfide and nickel–iron sulfide-1 nanoparticles were investigated for photodegradation of methylene blue and rhodamine-B under ultraviolet irradiation. Nickel–iron sulfide-1 nanoparticles show slightly higher photodegradation efficiency compared with the nickel sulfide nanoparticles. © 2020 John Wiley & Sons, Ltd.

Author Keywords
dye degradation; nickel sulfide; nickel(II)dithiocarbamates; nickel–iron sulfide; single-source precursors

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Aromatic compounds, Complexation, Cyclic voltammetry, Energy dispersive spectroscopy, High resolution transmission electron microscopy, Infrared spectroscopy, Irradiation, Nanoparticles, Nuclear magnetic resonance spectroscopy, Optical properties, Photocatalytic activity, Photodegradation, Rhodamine B, Single crystals, Sulfur compounds, Synthesis (chemical), X ray diffraction; Anion-sensing properties, Energy dispersive X ray spectroscopy, Nickel sulfide nanoparticles, Photodegradation efficiency, Photodegradation of methylene blue, Single-crystal X-ray diffraction studies, Supramolecular aggregation, Ultraviolet irradiations; Nickel compounds

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Investigation of indentation damage resistance on normal and inclined plane of glass/epoxy composite laminates using acoustic emission monitoring

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Abstract
This work relates to the investigation of indentation induced damage resistance in glass fiber reinforced polymer composite laminates under normal and inclined planes. Uni-directional [0] and cross-ply [0/90] glass fiber reinforced polymer composite specimens were subjected to 0° and 20° indentation loading with acoustic emission monitoring. The specimens were loaded at the centre using a hemispherical steel indenter with 12.7 mm diameter. Mechanical responses such as force–displacement behavior, absorbed energy and resulting damage area were used for the quantification of the indentation damage. Acoustic responses such as normalized cumulative counts, energy, duration and peak frequency were considered for monitoring damage progression during 0° and 20° indentation loading. The residual compressive strength of the glass fiber reinforced polymer specimens following indentation was measured by testing them under in-plane loading, once again with acoustic emission monitoring. The correlation between mechanical and acoustic strain energy was used for the evaluation of the damage severity of the laminates. The result revealed indentation damage resistance in cross-ply laminates as 65.08% and 68.01% higher than uni-directional laminates for 0°, whereas for 20°, there was a reduction in the damage resistance in cross-ply laminates to 43.27% and 57.39%. These were higher than uni-directional laminates under the displacements of 2 mm and 3 mm, respectively. The conclusion from these results was that transverse shear load at 20° inclination of laminate leads to reduction in residual compressive strength. Moreover, uni-directional glass/epoxy laminates have better residual compressive strength than cross-ply laminates for both 2 mm and 3 mm indentation displacements. © The Author(s) 2020.

Author Keywords
acoustic emission; Damage resistance; glass fiber reinforced polymer; indentation loading; residual compressive strength

Index Keywords
Acoustic emissions, Beams and girders, Compressive strength, Fiber reinforced plastics, Glass fibers, Indentation, Laminated composites, Loads (forces), Machinery, Polymers, Reinforcement, Sandwich structures, Strain energy; Acoustic emission monitoring, Damage resistance, Glass fiber reinforced polymer, Glass-fiber reinforced polymer composites, Glass/epoxy composite, Mechanical response, Residual compressive strength, Transverse shear loads; Acoustic emission testing

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Living Donor Liver Transplantation Following Transcatheter Aortic Valve Implantation for Aortic Valvular Disease
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Abstract
Over the last few decades, outcomes with living donor liver transplantation (LDLT) have improved significantly. This has resulted in patients who were denied liver transplantation previously, due to various comorbidities and high risk, now being considered for LDLT. This includes patients with severe valvular heart disease such as aortic stenosis. These patients require aortic valve replacement to help cope with significant perioperative hemodynamic changes. High-risk cardiac procedures like aortic valve replacement are associated with serious perioperative morbidity and mortality in patients with end-stage liver disease. Since the advent of transcatheter aortic valve implantation (TAVI) in 2002, there have been a few case reports of its successful use prior to deceased donor liver transplantation, but there is no literature on this procedure before LDLT. In this article, we report our experience with 2 patients, the first patient with infective endocarditis-induced acute aortic regurgitation and the second patient with bicuspid aortic stenosis who underwent uneventful TAVI followed by successful LDLT. In conclusion, with the increasing expertise and experience in this procedure, an increasing number of potential recipients, previously considered as high-risk transplant candidates, can now be offered liver transplantation by performing pretransplant TAVI. © The Author(s) 2019.

Author Keywords
aortic valve replacement; aortic valvular disease in liver transplantation; infective endocarditis; living donor liver transplantation; transcatheter valve replacement

Index Keywords
acetylsalicylic acid, antibiotic agent, clopidogrel, fresh frozen plasma; acute kidney failure, adult, aortic regurgitation, aortic valve calcification, aortic valve disease, Article, bacterial endocarditis, case report, Child Pugh score, clinical article, cryoprecipitate, dual antiplatelet therapy, echocardiography, endotracheal intubation, erythrocyte concentrate, female, heart left ventricle ejection fraction, heart left ventricle enddiastolic pressure, heart output, heart stroke volume, human, left ventricular diastolic dysfunction, liver transplantation, living donor, male, middle aged, mitral valve regurgitation, Model For End Stage Liver Disease Score, multidisciplinary team, pericardial effusion, pulmonary hypertension, Streptococcus mitis, thromboelastometry, transcatheter aortic valve implantation, tricuspid valve regurgitation, aortic valve disease, complication, diagnostic imaging, end stage liver disease, liver transplantation, living donor, procedures, transcatheter aortic valve implantation, treatment outcome; Adult, Aortic Valve Disease, Echocardiography, End Stage Liver Disease, Female, Humans, Liver Transplantation, Living Donors, Male, Middle Aged, Transcatheter Aortic Valve Replacement, Treatment Outcome

Chemicals/CAS
acetylsalicylic acid, 493-53-8, 50-78-2, 53663-74-4, 53664-49-6, 63781-77-1; clopidogrel, 113665-84-2, 120202-66-6, 90055-48-4, 94188-84-8

Tradenames
Evolut R, Medtronic; Sapien 3, Edwards

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Production, optimisation and engine characteristics of beef tallow biodiesel rendered from leather fleshing and slaughterhouse wastes

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Abstract
Presently, biodiesel is considered as an effective alternate fuel owing to its high sustainability and robustness. This paper concentrates on the biodiesel production from waste beef tallow rendered from subcutaneous and intramuscular wastes discarded from leather tanneries and slaughterhouses. The maximum fat content was estimated to be 92.5% and 3.05%, whereas maximum rendering efficiency was determined to be 92% and 75% for subcutaneous and intramuscular wastes, respectively. The rendered waste tallow was converted into biodiesel using ethanol as a solvent and l-valine amido ethyl methyl imidazolium bromide ([l-Vaemim]Br) as a novel ionic liquid catalyst. The most optimised reaction parameters are as follows: molar ratio of 1:7.5, catalyst concentration of 20 wt% of tallow, reaction temperature of 75 °C and reaction time of 160 min. Properties of the produced biodiesel have been tested in accordance with ASTM Standards, where the results were found to be within the permissible range. The engine characteristics of biodiesel exhibited increased heat release rate and maximum cylinder pressure, reduced emission levels than compared to ordinary diesel; in addition, its performance characteristics were similar to diesel, thereby making it a suitable replacement for existing fossil fuel. © 2019, Springer-Verlag GmbH Germany, part of Springer Nature.

Author Keywords
Animal slaughterhouses; Fatty acid esters; Leather tanneries; Subcutaneous and intramuscular wastes; [l-Vaemim]Br

Index Keywords
Amino acids, ASTM standards, Catalysts, Diesel engines, Fatty acids, Fossil fuels, Ionic liquids, Leather, Molar concentration, Molar ratio, Organic solvents; Biodiesel production, Catalyst concentration, Fatty acid esters, Heat Release Rate (HRR), Leather tanneries, Maximum cylinder pressure, Performance characteristics, Slaughterhouse waste; Biodiesel

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Synthesis and characterizations of biocompatible polymers and carbon nanotubes-based hybrids for biomedical applications

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Abstract

The outstanding physico-chemical properties of carbon nanotubes (CNTs) applied to rectify the problems in bone tissue engineering through enhancing cell proliferation, adhesion and viability, which lead to the improvement in bone replacement, growth and healing. Hence, in this study, biocompatible polymers functionalized with CNTs and then synthetic bone minerals i.e. hydroxyapatite has been stabilized onto CNTs-polymer matrixes. Structural morphology of the materials was analyzed by spectroscopic/microscopic analyses. The cytotoxic property of nanohybrids was examined on osteoblast-like MG-63 cells. The lack of significant cytotoxic effect of nanohybrids suggested that the nanohybrids are considered as promising candidates for bone tissue engineering applications. © 2019, © 2019 Taylor & Francis Group, LLC.

Author Keywords

Bone tissue engineering; carbon nanotubes; hydroxyapatite; nanohybrids; polymers

Index Keywords

Biocompatibility, Bone, Cell engineering, Cell proliferation, Functional polymers, Hydroxyapatite, Medical applications, Polymers, Tissue, Tissue engineering; Biocompatible polymer, Biomedical applications, Bone replacement, Bone tissue engineering, Cytotoxic effects, Nanohybrids, Structural morphology, Synthesis and characterizations; Carbon nanotubes

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Abstract
Abstract: This present study deals with production of biodiesel from waste beef tallow using co-solvent based transesterification. Waste tallow was dry rendered from discarded fleshing and processing wastes; whose maximum fat content was estimated to be 48.35 ± 0.87%, collectively. Following this, biodiesel was produced from rendered tallow using methanol as primary solvent; and ethanol as co-solvent in presence of potassium hydroxide as base catalyst. Ideal range for reaction parameters were decided based on reaction parameters optimized for methanol based and ethanol based transesterification separately. Accordingly, the optimal reaction conditions for methanol-ethanol based transesterification are as follows: (1) oil to alcohol molar ratio: 1:6; (2) methanol to ethanol molar ratio: 3/3; (3) catalyst concentration: 0.55% KOH; (4) reaction temperature: 70 °C; (5) reaction time: 35 min and produced a maximum yield of 97.2 ± 1.08%. Apart from production optimization, the resultant biodiesel/tallow methyl ethyl ester (TMEE) was evaluated for its thermal & physicochemical properties as per ASTM D6751 standards. Interestingly, the fuel properties of TMEE were found to be superior than compared to tallow methyl esters and was accounted by presence of ethyl esters in them. Graphic abstract: [Figure not available: see fulltext.] © 2020, Springer Nature Switzerland AG.

Author Keywords
Beef tallow; Co-solvent transesterification; Methanol-ethanol system; Process optimization; Tallow methyl ethyl ester

Index Keywords
Biodiesel, Catalysts, Esters, Ethanol, Methanol, Molar concentration, Molar ratio, Optimization, Physicochemical properties, Potassium hydroxide, Rendering (computer graphics), Transesterification; Biodiesel production, Catalyst concentration, Optimal reaction condition, Primary solvents, Processing wastes, Production optimization, Reaction parameters, Reaction temperature; Organic solvents

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Agastinose Ronickom, J.F.[a] , Retnakaran Sobhana, A.[b] , Robert, F.[c] , Nadaradjane, S.M.R.[d] , Chelliah, S.K.[e]

Automated damage detection and characterization of polymer composite images using Tsallis-particle swarm optimization-based multilevel threshold and multifractals

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Abstract
Automatic detection and quantification of damage in the composite structure are a vital requirement in the assessment of the overall structural integrity of modern aerospace systems. In this work, the indentation-induced damage in the glass fiber-reinforced polymer composite (GFRP) laminates is investigated using multilevel threshold-based particle swarm optimization (PSO) and multifractals. Initially, the digital images are acquired after the composite laminates are subjected to 5 mm, 6 mm, and 7 mm indentation displacements. The indentation-induced damage images are filtered using anisotropic diffusion filter and damage regions are segmented using Tsallis-PSO method. The magnitude of the damage is analyzed using multifractal spectrum features. Results show that Tsallis-PSO with the four-level thresholds is optimal for the segmentation of the damage. Tsallis-PSO is also able to segment the boundaries of the damage precisely. The damage due to different levels of indentation depth is well differentiated by the multifractal spectrum features. Multifractal spectrum constructed using the scale, ranges from q = −1 to +1, discriminates the damage with a high statistical significance of P <.001. The damage dimension linearly progresses (R =.993) with increasing the level of indentation depth. Even though, the proposed process pipeline is an initial step of investigation of damages in GFRP, this framework can be used in the industries for the quantification of damage in GFRP composite laminates. © 2020 Society of Plastics Engineers

Author Keywords
automated damage detection; GFRP composite laminates; indentation-induced damage; multifractal; Tsallis-PSO

Index Keywords
Fiber reinforced plastics, Fractals, Laminated composites, Particle reinforced composites, Particle swarm optimization (PSO), Spectrum analysis; Aerospace systems, Anisotropic diffusion filters, Automatic Detection, Composite laminate, Glass-fiber reinforced polymer composites, Multi-fractal spectrum, Polymer composite, Statistical significance; Damage detection

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Solvothermal synthesis and characterizations of graphene-ZnBi12O20 nanocomposites for visible-light driven photocatalytic applications

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Abstract
The Bismuth based Zinc metal oxide (ZnBi12O20) nanorods were synthesized via single step solvothermal approach. The characterization of synthesized hybridized structure was done by several analysis such as X-ray diffraction (XRD), UV–Vis diffuse reflectance spectroscopy (UVvis–DRS), Fourier transform-infrared spectroscopy (FT–IR), Thermogravimetric analysis (TGA), Raman spectroscopy, Field-Emission scanning electron microscopy (FESEM), Energy dispersive analysis of X-rays (EDX), High-resolution transmission electron microscopy (HRTEM), X-ray photoelectron spectroscopy (XPS) and electrochemical impedance spectroscopy. The photocatalytic activity of ZnBi12O20 and an incorporation of varying weight percentages of GO (1–4 wt %) into ZnBi12O20 catalyst (GZBC) were analyzed under visible light irradiation by the degradation of an aqueous solution of Methylene blue (MB) and Methyl orange (MO) dye. Among various developed nanocomposites, 3 wt% GZBC reduced graphene oxide exfoliated nanocomposites has revealed the degradation efficiency as 96.04, 94.52% at 100 and 120 min for MB and MO respectively with enriched visible light absorption range. The photocatalytic property of 3 wt % reduced graphene oxide exhibits higher degradation behavior than that of other synthesized nano-composites. © 2020 Elsevier Ltd and Techna Group S.r.l.

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COVID-19: A promising cure for the global panic

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Abstract
The novel Coronavirus disease 2019 (COVID-19) is caused by SARS-CoV-2, which is the causative agent of a potentially fatal disease that is of great global public health concern. The outbreak of COVID-19 is wreaking havoc worldwide due to inadequate risk assessment regarding the urgency of the situation. The COVID-19 pandemic has entered a dangerous new phase. When compared with SARS and MERS, COVID-19 has spread more rapidly, due to increased globalization and adaptation of the virus in every environment. Slowing the spread of the COVID-19 cases will significantly reduce the strain on the healthcare system of the country by limiting the number of people who are severely sick by COVID-19 and need hospital care. Hence, the recent outburst of COVID-19 highlights an urgent need for therapeutics targeting SARS-CoV-2. Here, we have discussed the structure of virus; varying symptoms among COVID-19, SARS, MERS and common flu; the probable mechanism behind the infection and its immune response. Further, the current treatment options, drugs available, ongoing trials and recent diagnostics for COVID-19 have been discussed. We suggest traditional Indian medicinal plants as possible novel therapeutic approaches, exclusively targeting SARS-CoV-2 and its pathways. © 2020 Elsevier B.V.

Author Keywords
Coronavirus disease 2019 (COVID-19); Indian traditional medicine; Mechanism of action; SARS-CoV-2; Therapeutic approach

Index Keywords
Diagnosis, Hospitals, Medical applications, Risk assessment, Viruses; Coronaviruses, Current treatments, Global public health, Health-care system, Mechanism of action, Number of peoples, SARS-CoV-2, Therapeutic approach; Diseases; abacavir, arbidol, beta1a interferon, chloroquine, didanosine, eculizumab, emtricitabine, favipiravir, fingolimod, hydroxychloroquine, hydroxychloroquine sulfate, interferon beta serine, lamivudine, lopinavir plus ritonavir, losartan, methylprednisolone, nitric oxide, pirfenidone, remdesivir, ribavirin, sarilumab, sildenafil, sofosbuvir, stavudine, tenofovir disoproxil, thalidomide, tocilizumab, unindexed drug, zalcitabine, zidovudine; COVID-19, disease spread, health care, immune response, infectious disease, medicinal plant, medicine, public health, risk assessment, severe acute respiratory syndrome, symptom, virus; CD4+ T lymphocyte, CD8+ T lymphocyte, central nervous system, computer assisted tomography, conformational transition, coronavirus disease 2019, Coronavirus infection, drug classification, drug repositioning, human, Human coronavirus 229E, Human coronavirus OC43, influenza, latent period, medicinal plant, Middle East respiratory syndrome, nasopharyngeal swab, pharynx examination, priority journal, real time polymerase chain reaction, Review, SARS-related coronavirus, severe acute respiratory syndrome, severe acute respiratory syndrome coronavirus 2, symptomatology, viral clearance, virus entry, virus infectivity, virus morphology, virus mutation, virus replication, virus transmission, virus virulence, Betacoronavirus, Coronavirus infection, pandemic, virus pneumonia; Coronavirus, SARS coronavirus; Betacoronavirus, Coronavirus Infections, Humans, Pandemics, Pneumonia, Viral

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abacavir, 136470-78-5, 188062-50-2; arbidol, 131707-23-8; beta1a interferon, 145258-61-3, 74899-71-1; chloroquine, 132-

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Therapeutic efficacy of mimosa pudica-aegle marmelos formulation on diabetes mellitus
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Abstract
In the present study, the antidiabetic formulation was evaluated for the invitro antidiabetic, antioxidant and a pilot invivo study was conducted with a mixture of herbal powders, i.e. Mimosa pudica L and Aegle marmelos (L) Corr. The formulation was screened for its antioxidant activity using DPPH free radical assay and inhibitory effect against the α-glucosidase and lipase compared with the standard. Assays were carried out at the concentration varying from 50 – 500 µg/ml (antioxidant activity) and 20 – 100 µg/ml (antidiabetic). Results of the present study have clearly indicated that the formulation possesses significant α-glucosidase enzyme inhibition property ranges from 41.4%-12.42% in the different concentration of aqueous extract and similarly pancreatic lipase inhibition potential at 50% with value of 100µg /ml revealed the significant activity. Moreover, the formulation administered in the diabetic patient reduces the glucose level of fasting and postprandial level, notably; thus, it indicates that it is a promising drug candidate that proves antidiabetic activity. © 2020, J. K. Welfare and Pharmascope Foundation. All rights reserved.

Author Keywords
Aegle marmelos; Antidiabetic formulation; Diabetes mellitus; Mimosa pudica; Mimosa pudica

Index Keywords
Aegle marmelos extract, antioxidant, Mimosa pudica extract, plant extract, plant medicinal product, unclassified drug; adult, Aegle marmelos, antidiabetic activity, antimicrobial activity, antioxidant activity, antioxidant assay, Article, case report, clinical article, diabetes mellitus, enzyme assay, enzyme inhibition, glucose blood level, high performance liquid chromatography, human, insulin sensitivity, lipid storage, male, medicinal plant, middle aged, Mimosa pudica, nonhuman, oxidative stress, phytochemistry, pilot study, ultra performance liquid chromatography, upregulation

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Protective effects of edible plants against nicotine induced reproductive toxicity –A review
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Abstract
Numerous examinations have announced that the Nicotine present in tobacco smoke adverse affects sperm parameters, fundamental plasma, and different other richness factors. These harms are because of the natural finding that smoking expands the degree of free radicals, consequently bringing about oxidative pressure. Accordingly, an increment of free radicals, DNA harm and lipid peroxidation in human sperm may happen to bring about impedance of sperm quality. nicotine organization in trial creatures was initiate to influence spermatogenesis, epididymal sperm count, motility and treating capability of sperms. Huge quantities of restorative herbs have been recorded in siddha framework that improve spermatogenesis and increment the nature of sperm. The present review gives an outline on the relationship between male richness incited by nicotine and defensive impacts of different natural plants on it. The paper additionally features the dynamic, common standards, and rough concentrates of plants, which have been valuable in improving nicotine instigated testicular harms and supportive in spermatogenesis and multiplication. Despite the fact that the discoveries of this survey propose numerous herbs are extremely viable against nicotine actuated male barrenness still increasingly clinical preliminaries are prescribed to show their viability on nicotine instigated male infertility. © 2020 | All rights reserved.

Author Keywords
Antioxidants; Free Radicals; Male infertility; Nicotine; Testosterone; Tobacco

Index Keywords
Chlorophytum borivilianum extract, curcumin, Eruca sativa extract, nicotine, Nigella sativa extract, plant extract, protective agent, testosterone, unclassified drug; antioxidant assay, black cumin, Chlophytum borivilianum, coconut, Crocus sativus, cytotoxicity, date (fruit), drug efficacy, drug induced disease, endocrine disease, Eruca vesicaria subsp. sativa, genotoxicity, ginger, lipid peroxidation, male, male infertility, medicinal plant, morphometry, Nicotiana tabacum, nonhuman, oxidative stress, phytotherapy, prevalence, reproductive toxicity, Review, sperm quality, spermatogenesis, spermatozoon count, spermatozoon motility, tea, testis tissue, testis weight, testosterone blood level, testosterone synthesis, Urtica dioica

Chemicals/CAS
curcumin, 458-37-7; nicotine, 54-11-5; testosterone, 58-22-0

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Anti inflammatory effect of Bacopa monnieri (Brahmi) on swollen joints – A case study
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Abstract
The arthritis is a chronic, inflammatory, autoimmune disease characterized by Pain, edema and stiffness of the joints. Chronic stages of arthritis causes swelling in and around the affected joints. The Siddha herbal medicines are becoming familiar as they possess less adverse effects. Plenty of anti-inflammatory herbs are described in Siddha system of medicine. The plant, bacopa monnieri maintains its original place in the management of various diseases, including arthritis, and acts as anti-inflammatory drug. Hardly a few studies are available to prove the antiarthritic and anti-inflammatory properties of Bacopa monnieri. In ancient Siddha literature Bacopa has been highlighted for its antiarthritic properties especially prescribed to reduce the swelling caused by increased synovial effusion. The current study is aimed to assess the antiarthritic and anti inflammatory properties of Bacopa (Brahmi) paste on swollen arthritic joints. A male patient aged 70 was selected from IPD, Pothu maruthuvam department, Sri Sairam Siddha Medical College & Research Center, Chennai-44. Bacopa Paste applied over swollen arthritic ankle joints showed good progress in very few days of treatment. © International Journal of Research in Pharmaceutical Sciences.

Author Keywords
Anti InflammatoryBacopa monnieri; Chronic arthritis

Index Keywords
Bacopa monnieri extract; aged, ankle pain, antiinflammatory activity, arthralgia, Article, case report, clinical article, edema, human, joint swelling, knee pain, male, medial malleolus, osteoarthritis

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Kaur, G.[a c] , Reddy, T.V.K.[a] , Venkatesh, K.V.[a] , Mahalakshmi, K.[b]

Effects of chitosan oligosaccharide and calcium hypochlorite on E. Faecali dentinal biofilm and smear layer removal-SEM analysis

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Abstract

Background: The complex structure and irregularities of root canal walls are liable for infection by several bacterial species. Thus, the use of irrigants and auxiliary chemical solutions associated with instrumentation is necessary for effective eradication of the biofilm as well as complete removal of the smear layer. Aim: To evaluate the effects of calcium hypochlorite and chitosan oligosaccharide (COS) in disinfecting Enterococcus faecalis root canal biofilm and smear layer removal with minimal erosion. Materials And Methods: A total of 70 mandibular premolars were decoronated at the cementoenamel junction. The samples were biomechanically prepared, sterilized in an autoclave, and incubated with E. faecalis (ATCC-29212) bacteria for 21 days. Cleaning and shaping were done till maximum apical file size of #45 K. Specimens were randomly divided into 4 groups: GROUP I: Control Group, GROUP II: 5% Sodium Hypochlorite (NaOCl) solution followed by 17% EDTA solution, GROUP III: 5% Calcium Hypochlorite [Ca(OCl)2] solution followed by 17% EDTA solution and GROUP IV: 5% Ca(OCl)2solution followed by 1% COS. The samples were subjected to microbial count followed by smear layer removal under scanning electron microscope (SEM) at coronal, middle and apical third. Statistical Analysis Used: Kruskal-Wallis Test and post-hoc Scheffe's test. Results: It was observed that Group IV showed the lowest amount of CFU count/mL and the highest amount of smear layer removal with a statistically significant difference (P < 0.05) when compared with the other three Groups. Conclusion: 5% Ca(OCl)2solution with 1% COS solution effectively removed the Enterococcus faecalis biofilm and smear layer from the root canals with minimal erosion. © 2020 Wolters Kluwer Medknow Publications. All rights reserved.

Author Keywords

Calcium hypochlorite; chitosan oligosaccharide; Enterococcus faecalis; smear layer

Index Keywords

biomedical and dental materials, calcium derivative, calcium hypochlorite, chitosan, edetic acid, oligosaccharide; biofilm, dental surgery, human, root canal preparation, scanning electron microscopy; Biofilms, Calcium Compounds, Chitosan, Edetic Acid, Humans, Microscopy, Electron, Scanning, Oligosaccharides, Root Canal Irrigants, Root Canal Preparation, Smear Layer

Chemicals/CAS

chitosan, 9012-76-4; edetic acid, 150-43-6, 60-00-4; Calcium Compounds; calcium hypochlorite; Chitosan; Edetic Acid; Oligosaccharides; Root Canal Irrigants

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Blossom, R.[a] , Rao, B.[b] , Rekha, K.[a]

Bilateral invasive ductal carcinoma in male breast
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Abstract
Bilateral invasive ductal carcinoma was seen in a 54 year old male patient. The bilateral breast mass showed microcalcifications on mammography and biopsy showed grade 2 papillary invasive ductal carcinoma. The patient gave a history of bilateral breast mass and bloody nipple discharge with a positive family history of breast carcinoma. © 2020, Advanced Scientific Research. All rights reserved.

Author Keywords
Bilateral Invasive; Male Breast; Ultrasonogram Image

Index Keywords
estrogen receptor, progesterone receptor; adult, Article, breast calcification, breast carcinoma, breast discharge, breast epithelium cell, breast tumor, case report, clinical article, echography, genetic screening, histology, histopathology, human, human tissue, image analysis, immunohistochemistry, male, mammography, middle aged, radical mastectomy, sentinel lymph node, tumor volume

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Nagarajan, A.[a] , Sakthivelu, A.[a] , John, A.[a] , Ravichandar, R.[b]

The treatment of gastric mucosa-associated lymphoid tissue lymphoma using radiotherapy

(2020) *Indian Journal of Medical and Paediatric Oncology*, 41 (4), pp. 559-561.

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Index Keywords
CD20 antigen, CD3 antigen, CD5 antigen, common acute lymphoblastic leukemia antigen, Ki 67 antigen, protein bcl 2, protein bcl 6, receptor type tyrosine protein phosphatase C; abdominal distension, adult, cancer prognosis, cancer radiotherapy, cancer staging, case report, clinical article, computer assisted tomography, disease association, disease duration, disease free survival, dyspepsia, endoscopic biopsy, eradication therapy, follow up, gastric dysmotility, gastric mucosa associated lymphoid tissue lymphoma, gastrointestinal endoscopy, Helicobacter infection, Helicobacter pylori, human, human tissue, immunohistochemistry, intensity modulated radiation therapy, lymphadenopathy, male, marginal zone lymphoma, middle aged, Note, positron emission tomography-computed tomography, priority journal, radiation dose distribution, radiotherapy dosage, standardized uptake value, stomach cancer, stomach ulcer, survival time

Chemicals/CAS
protein bcl 2, 219306-68-0; protein tyrosine phosphatase; receptor type tyrosine protein phosphatase C

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Ilango, S.[a] , Pindigiri, S.[b] , Kandhaswamy, S.[c] , Jayakumar, S.[d]

Preliminary phytochemistry, gas chromatography-mass spectrometry, and high-performance thin-layer chromatography fingerprint analysis of ethanol extract of Costus speciosus rhizomes and its therapeutic implications

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Abstract
Background: Costus speciosus is an ornamental plant mainly found in Southeast Asia. It is used in complementary and alternative medicine and claimed to have various therapeutic uses. Objective: The present study was done to highlight the phytochemical analysis of the ethanol extract of C. speciosus using preliminary phytochemical assays, gas chromatography-mass spectrometry (GC-MS), and high-performance thin-layer chromatography (HPTLC) fingerprint analysis for flavonoids. Results: The ethanol extract was prepared by Soxhlet method. The percentage yield was approximately 9.26 wt/vol. Preliminary phytochemical analysis of the plant extract revealed the presence of carbohydrates, proteins and amino acids, glycosides, alkaloids, phytosterols, flavonoids, saponins, tannins, and phenolic compounds. The GC-MS analysis showed six major peaks which were later identified to be 1-Dodecene, tridecane, 1-Hexadecene 2(4H)-Benzofuranone, 5,6,7,7a-tetrahydro-4,4,7a-trimethyl, phytol acetate, hexadecanoic acid, and ethyl ester. HPTLC fingerprint analysis of flavonoids showed the presence of nine different types of flavonoids. Conclusion: Our study concludes that the various isolated phytochemicals including flavonoids could be the cause for the potential therapeutic benefit of Costus speciosus. © 2020 JPR Solutions. All rights reserved.

Author Keywords
Costus speciosus; Flavonoids; Gas chromatography-mass spectrometry; High-performance thin-layer chromatography fingerprint analysis; Phytochemistry; Therapeutic uses

Index Keywords
alkaloid derivative, antidiabetic agent, antineoplastic agent, antioxidant, carbohydrate, costunolide, Costus speciosus extract, coumarin derivative, diosgenin, flavonoid, glycoside, liver protective agent, phenol derivative, phytosterol, plant extract, saponin derivative, tannin derivative, unclassified drug; antidiabetic activity, antioxidant activity, antiproliferative activity, Article, controlled study, high performance thin layer chromatography, human, liver protection, mass fragmentography, photochemistry, phytochemistry, retention time, Soxhlet extraction

Chemicals/CAS
costunolide, 553-21-9; diosgenin, 512-04-9

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Myristica fragrans seeds alleviate motor behavioural changes in rotenone model of parkinsons disease
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Abstract
Parkinson's disease (PD) the second most common and progressive neurodegenerative disorder affecting the old aged people. PD caused due to the depletion of population of dopaminergic (DA) neurons in niagro striatal system of brain. Natural and synthetic substances such as 6-hydroxydopamine, Rotenone, 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine, Paraquat, LPS and cycad were ascertained to be neurotoxic, crossed the blood brain barrier and caused deleterious effects over Dopaminergic neurons. Rotenone (plant derived pesticide) inhibitor of complex I in mitochondrial electron transport chain causes dopaminergic neuron cell death. In the current study, we investigated the effect of MFSE against rotenone induced PD model in rats by behavioural parameters (open field test, narrow beam walking test, hanging test). Rats were administered rotenone by intra-peritoneal route (2.5mg/kg daily) 30days. MFSE treated rats alleviated rotenone induced motor behavioural impairments significantly. It might be due to its positive interaction between dopaminergic neurons mediated through its anti-inflammatory, anti-oxidant, anti-epileptic properties. © 2020, Advanced Scientific Research. All rights reserved.

Author Keywords
Myristica fragrans; Nutmeg; Parkinsons Disease (PD); Rotenone (Rot)

Index Keywords
myristica fragrans extract, plant extract, rotenone, unclassified drug; animal experiment, animal model, Article, behavior assessment, controlled study, hanging test, locomotion, male, motor dysfunction, motor performance, narrow beam walking test, nerve degeneration, nonhuman, nutmeg, open field test, Parkinson disease, plant seed, rat

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Cutaneous Leishmaniasis Presenting as Macrocheilitis in a Postliver Transplant Pediatric Patient

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Muscle enzymes in newly diagnosed hypothyroid patients

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Abstract
Background & Objective: In hypothyroidism Muscle involvement is common. 30-80% of hypothyroid patients presenting with symptoms such as weakness, fatigue, tiredness & myalgia. Objective of the study is to determine the level of creatine kinase, lactate dehydrogenase (LDH) and aspartate transaminase (SGOT) and other thyroid parameters before and after the treatment of hypothyroidism. Methods and Materials: 50 newly diagnosed hypothyroid cases were included in the study. Serum analysis (Serum T3, T4, TSH) was performed to confirm the hypothyroid state in all subjects and CK, LDH and SGOT levels were determined. The tests were conducted again after patients were followed up for 3 months. Results: The mean value of T3, T4, FT3, FT4 was found to be 1.03±1.63, 3.3±2.51, 1.79±0.71, 1.14± 0.93& 63.84±35.23 before treatment and 1.38 ± 0.27, 5.92 ± 1.32, 3.09 ± 1.17, 1.36 ± 0.29& 18.45 ± 13.27 respectively after 3 months of treatment.There was a tatistically significant difference in T4, FT3 and TSH between the pre and post treatment group (<0.001). Conclusions: In our study serum enzymes like CK, LDH and AST were elevated which may help to diagnose hypothyroidism earlier, at the same time it determines the severity of hypothyroidism. © 2020, Advanced Scientific Research. All rights reserved.

Author Keywords
Aspartatransaminase (SGOT); Creatine kinase(CK); Hypothyroidism; Lactate dehydrogenase (LDH)

Index Keywords
alanine aminotransferase, alkaline phosphatase, aspartate aminotransferase, C reactive protein, creatine kinase, gamma glutamyltransferase, lactate dehydrogenase, liothyronine, thyroid hormone, thyrotropin; adult, Article, aspartate aminotransferase blood level, creatine kinase blood level, enzyme activity, enzyme linked immunosorbent assay, erythrocyte sedimentation rate, exercise, female, follow up, human, hypothyroidism, lactate blood level, lactate dehydrogenase blood level, leukocyte count, liothyronine blood level, major clinical study, male, observational study, platelet count, prospective study, tertiary care center, thyroid function, thyroid function test, thyrotropin blood level, thyroxine blood level

Chemicals/CAS
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Characterization of indentation damage resistance and thermal diffusivity of needle-punched Musa sapientum cellulosic fiber/unsaturated polyester composite laminates using IR thermography

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Abstract
This work focuses on the evolution of a novel technique, employed to fabricate a plant fiber-reinforced composites without any hazardous chemical treatment for alternative carcinogenic synthetic fiber-reinforced polymer composites. The fibers were extracted from the agro-waste pseudostem of banana plant. Anatomical studies were carried out on fibers to ratify their reinforcement potentiality. The cellulosic fibers were needle-punched and commingled with unsaturated polyester for fabricating nonwoven needle-punched banana fiber composites (NPBFC). Quasistatic indentation tests were conducted for inducing damage on NPBFC, random banana fiber composites (RBFC), and random glass fiber composites (RGFC). Mechanical parameters, such as, peak force, linear stiffness, dent depth, and absorbed energy were used for evaluating indentation damage resistance. However, the optimal properties were achieved at 40 wt% fiber content. The load-bearing capacity of NPBFC having 2420 N is supercilious than RBFC and comparable with RGFC. Moreover, the extent of damage area and thermal diffusivity for optimized NPBFC are 178 mm2 and 0.11 mm2/s, respectively, computed using infrared thermography technique. This result reveals that the optimized NPBFC has better indentation damage resistance and thermal insulating property than RBFC and RGFC. This study concludes that the synthesized NPBFC can be used for the application of industrial safety helmet and automotive parts. © 2020 Society of Plastics Engineers

Author Keywords
banana fiber; needle punching; quasistatic indentation; thermal diffusivity; thermography

Index Keywords
Accident prevention, Diffusion, Fiber reinforced plastics, Fruits, Laminated composites, Needles, Polyesters, Reinforcement, Risk management, Thermal diffusivity, Thermography (imaging), Thermography (temperature measurement); Banana fibers, Fiber reinforced polymer composites, Needle punching, Polyester composite laminates, Quasi-static indentation, Quasi-static indentation tests, Thermal insulating properties, Thermography techniques; Fibers

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Reliable optoelectronic switchable device implementation by CdS nanowires conjugated bent-core liquid crystal matrix

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Abstract
Enhancing the performance of high luminescent and dielectrically capable cadmium sulfide nanowire (CdS NW) is of great importance, because of their promising ability in analyzing the dimensionality and size. The tuned physical characteristics of semiconductor CdS NWs allowed the manipulation of both electronic and optoelectronic devices at the nanoscale by dispersing a new bent core (BC) liquid crystal (LC) compound. This was derived from a 4-chlororesorcinol central core unit with two terephthalate based rod-like units carrying chiral (S)-3, 7-dimethyloctyloxy (namely ‘CPDB’) terminal chains, which have been synthesized in a pure solvo-chemical process. The mesomorphic properties of the newly-prepared bent-core LC, exhibiting an enantiotropy ‘Sm A’ phase as a result of dispersing 0.005% of CdS NWs, were investigated by several spectroscopic investigations. In addition, the hydrothermal fabrication of CdS NWs with a high-yield was modified with a cationic agent, cetyltrimethyl ammonium bromide (CTAB), which was utilized as a compatibilizer for providing a better interaction with LC molecules and giving a homogeneous solution. This work focused on the experimental investigation and optimization, using a combinational view of bent-core liquid crystal (CPDB) compound dispersion which was achieved in a controllable manner. The product of the resulting composite matrix has a very outstanding and promising behavior, e.g. semiconductor nanostructures emission polarization that can be manipulated using an external bias modulation of the novel switchable device, which was found quite convincing in the recent trends of brand-new technologies. In particular, the electro-optic responses by POM of various mesophases were investigated from the view point of the CdS incorporated bent-core LC matrix formation and transitional phase variants of ‘ON’ and ‘OFF’ states, which were depending on the geometrical parameters of CdS NW's. Finally, the future challenges and prospects of any other nanomaterials dispersed into CPDB compound which will give rise to an increase of the mesomorphic range by preserving the mesophase type were explored in detail. © 2019 Elsevier B.V.

Author Keywords
Bent-core liquid crystal (CPDB) compounds; CdS nanowires; Dielectric properties; Electro-optical; Switchable devices

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Growth, spectroscopic, HOMO-LUMO energies, MEP, hardness and TG/DTA studies of acid potassium hydrogen fumarate as an efficient nonlinear optical material

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Abstract
An impressive, nonlinear optically active single crystal, acid potassium hydrogen fumarate (2KC4H3O4.C4H4O4)(APHF)was grown by slow evaporation technique. Single crystal X-ray diffraction analysis confirms packing array and attribute of molecular geometry. FTIR and FT Raman studies aid to identify basic functional groups present in the crystal. UV–Vis spectral analysis predicts cut off wavelength as 295 nm. The Photo luminescence spectra shows an emission around 453 nm and its lifetime was also detected. Low dielectric constant of APHF can be utilized for microelectronics device fabrications. Vicker's microhardness test reveals the greater mechanical strength of APHF. TG and DSC studies shows thermal stability up to 253 °C.The total charge spread is described by Molecular electrostatic potential. Low HOMO-LUMO energy gap affirms the chemical softness of the material. The negative third order nonlinear parameters like refractive index (n2), absorption coefficient (β) and susceptibility (χ3) were estimated by Z-scan studies. © 2020 Elsevier B.V.

Author Keywords
Crystal growth; Nonlinear optical material; TG/DTA studies; Vicker's microhardness; Z-Scan

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Abstract
Abstract: The (E)-2-(benzo[d]thiazol-2-yl)-3-(5-(4-(diphenylamino) phenyl) thiophen-2-yl) acrylonitrile TP1 dye has been investigated as new fluorescent chemosensor for cyanide anions. The dye TP1 acted as strong turn on fluorescent sensor after addition of the cyanide anions. Upon addition of cyanide anions to dye TP1 solution induced a change in the solution color from red to green color under the naked-eye detection. While no color change could be observed in presence of other common-anions. The detection limit of dye TP1 for cyanide anions was found to be 4.24 × 10−8 M. Graphic abstract: [Figure not available: see fulltext.] © 2020, Springer Nature Switzerland AG.

Author Keywords
Colorimetric; Cyanides; Hemi cyanine; Triphenylamine

Index Keywords
Color, Cyanides, Dyes, Eye protection, Fluorescence; Aqueous medium, Color changes, Cyanide anions, Detection limits, Fluorescent chemosensor, Fluorescent sensors, Merocyanine dye, Naked-eye detection; Ions

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Neuroprotective effect of Bacopa monnieri against aluminum chloride-induced oxidative stress and apoptosis in the hippocampus of Wistar rats

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Abstract

Introduction: Aluminum (Al) is proven to cause pathogenesis in neurodegenerative disorders such as Alzheimer's disease. Our study explored the potential effect of Al in apoptosis and neuroprotective role of Bacopa monnieri (BM) against aluminum chloride (AlCl3) -induced neuronal damage in the hippocampus of Wistar rats. Materials and Methods: Sixty male Wistar rats were assigned into five groups: Control group was administered orally with distilled water, and 0.5% tween 80, AlCl3group received aluminum chloride (AlCl3); protective groups (BM100+AlCl3group and BM200+AlCl3group) were concurrently administered with AlCl3and BM at two different doses; BM200 group received only BM. The administration of drug and chemical lasted for 4 weeks. The hippocampal malondialdehyde (MDA) and glutathione peroxidase (GPx) levels were estimated at the end of the experiment. Furthermore, neuronal quantification was performed in the dentate gyrus of the hippocampus to identify the viable neurons and dark neurons. Results and Discussion: BM reduced the neuronal deterioration caused by AlCl3as it is evident from more number of viable neurons and few dark neurons seen in protective groups compared with AlCl3group. This observation is supported by oxidative stress markers such as GPx and MDA, which are also critical regulators of apoptosis. Conclusion: BM protected the neurons in the dentate gyrus of hippocampus from neuronal insults produced by AlCl3. © 2020 JPR Solutions. All rights reserved.

Author Keywords

Aluminium chloride; Alzheimer's disease; Apoptosis; Bacopa monnieri; Dentate gyrus; Glutathione peroxidase; Hippocampus; Malondialdehyde

Index Keywords

aluminum chloride, distilled water, glutathione peroxidase, herbaceous agent, malonaldehyde, polysorbate 80; adult, animal experiment, animal tissue, antioxidant activity, apoptosis, Article, Bacopa monnieri, brain nerve cell, controlled study, dentate gyrus, hippocampus, male, nervous system development, neuroprotection, neurotoxicity, nonhuman, oxidative stress, rat

Chemicals/CAS

aluminum chloride, 7446-70-0, 7784-13-6; glutathione peroxidase, 9013-66-5; malonaldehyde, 542-78-9; polysorbate 80, 9005-65-6, 8050-83-7

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Phylogenetic characterization of biofilm forming multidrug resistant Candida albicans and Non albicans Candida causing vulvovaginal candidiasis

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Abstract
Introduction: Vulvovaginal candidiasis(VVC) is an important health disorder among women which is caused due to drug resistance in Candida species. C.albicans is the most common pathogenic species among Candida. However, the Non albicans Candida (NAC) species is on the rise, so the appropriate identification of the Candida sp. will pave way for better management and minimising the emergence of drug resistance. The aim of this study is to analyse the species distribution and their antifungal susceptibility pattern of Candida sp. in patients with suspected vaginitis. Materials and methods: A total of 153 women of age 15–40 years with complaints suggestive of vaginitis were clinically examined and high vaginal swabs were taken from them. Samples were inoculated on Sabouraud Dextrose agar and Hi-Crome Candida differential agar. Identification of Candida sp. was performed using conventional methods and with Vitek2 Compact (Biomerieux France) using vitek 2 cards for identification of yeast and yeast like organisms (ID-YST cards). Multidrug resistant Candida isolates were analysed for biofilm forming ability and their identification was confirmed with amplification and sequencing of internal transcribed space regions with specific PCR. Results: In total, 63 Candida isolates were identified from the samples. Candida albicans (59%) was the most common species isolated in the study. The Non albicans Candida species (41%) isolated in the study were C. tropicalis, C. glabrata, C. krusei and C. auris. Discussion: C. albicans is one of the common opportunistic fungal pathogen which causes mucocutaneous infections of genital and non-genital tracts of healthy individuals. It is a polymorphic yeast which exists in different morphologies which facilitates its survival under stress environments by forming biofilms. High prevalence of non albicans Candida sp. in this study indicates the importance of conducting epidemiological surveys to measure the occurrence of NAC. Multiplex PCR is a rapid and reliable method to identify the Candida sp. causing vulvovaginal candidiasis. Although fluconazole still appears to be effective against most of the Candida isolates, resistance rate of this drug to the Candida sp. emphasises the need for performing antifungal susceptibility testing and alternate drug therapy in the routine practice. © 2020 Elsevier Inc.

Author Keywords
Biofilm; Candida species; Resistance; Vulvovaginal candidiasis

Index Keywords
amphotericin B, antifungal agent, clotrimazole, fluconazole, fungal DNA, itraconazole, nystatin, virulence factor; adolescent, adult, antifungal susceptibility, Article, biofilm, Candida, Candida albicans, Candida auris, Candida glabrata, Candida kruisii, Candida tropicalis, female, fungus culture, gene mutation, human, major clinical study, multidrug resistance, multiplex polymerase chain reaction, nonhuman, phylogeny, priority journal, sample, scanning electron microscopy, species distribution, vagina candidiasis, vaginitis, vulvovaginal disease, yeast

Chemicals/CAS
amphotericin B, 1397-89-3, 30652-87-0; clotrimazole, 23593-75-1; fluconazole, 86386-73-4; itraconazole, 84625-61-6; nystatin, 1400-61-9, 34786-70-4, 62997-67-5

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microRNA-146a gene polymorphism alters human colorectal cancer susceptibility and influences the expression of its target genes in toll-like receptor (TLR) pathway

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Abstract
Gastrointestinal (GI) cancers are among the prime causes for cancer deaths worldwide demanding competent methods for prediction and diagnosis. MiR-146a, a key modulator of immunity and inflammation, harbors a single nucleotide polymorphism (SNP) rs2910164 which leads to ineffectual suppression of the miR146a targets TNF receptor-associated factor 6 (TRAF6) and interleukin-1 receptor-associated kinase 1 (IRAK1). In the current study, we aimed to bring out the relationship of rs2910164 with GI cancers and their impact on the target genes. We conducted a case-control study with 180 gastrointestinal cancer patient and 230 cancer-free control recruits. The polymorphism was genotyped using Polymerase Chain Reaction-Restriction Fragment Length Polymorphism (PCR-RFLP) method and the target gene expression was done by quantitative Real Time PCR. Our study reported that the polymorphism studied had no association with GI cancers as such, but it was significantly associated with the risk of human colorectal cancer (CRC). Following these results, expression of Nuclear factor kappa B (NF-κB), TRAF6 and IRAK1 were analyzed in the archived CRC tissues for the three genotype carriers. The expression of IRAK1 and TRAF6 genes were found to be elevated in the GC and CC carriers and NF-κB which regulates the expression of miR-146a by negative feedback mechanism was also elevated in the mutant genotypes. This is the first study to show that miR-146a polymorphism increased the susceptibility to CRC apparently by influencing the expression of its target genes in an Indian population. © 2020 Elsevier B.V.

Author Keywords
Colorectal cancer; microRNA-146a; rs2910164; TLR signaling pathway

Index Keywords
immunoglobulin enhancer binding protein, interleukin 1 receptor associated kinase 1, microRNA 146a, tumor necrosis factor receptor associated factor 6; adult, Article, blood sampling, cancer risk, cancer susceptibility, case control study, colorectal cancer, controlled study, DNA extraction, DNA polymorphism, female, gene expression, gene expression level, genetic polymorphism, genotype, genotyping technique, histopathology, human, human tissue, major clinical study, male, middle aged, negative feedback, polymerase chain reaction restriction fragment length polymorphism, priority journal, real time polymerase chain reaction, RNA extraction, RNA isolation, single nucleotide polymorphism, TLR signaling

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The study was ethically approved by the Institutional Ethics Committee of Sri Ramachandra Institute of Higher Education and Research (Deemed to be University) IEC-NI/13/APR/33/39. The study was conducted as per the declaration of Helsinki and ICMR ethical guidelines for biomedical research. The study was explained to all the participants and their voluntary written consent was obtained before collecting the blood samples.

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Experimental Investigation of Heat transfer and Friction Factor Characteristics with Triangular-cut Twisted Tape (TCTT) Inserts

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Abstract
An experiment was conducted to investigate the heat transfer characteristics and friction factor characteristics of a concentric tube fitted with triangular-cut twisted tape (TCTT) insert with a twist ratio Y of 5.4 and depth of triangular cut of 1.2 cm, which were studied for laminar flow. This investigation also is used to find the heat transfer coefficient, Nusselt number and Reynolds number. The heat transfer enhancement was caused with the flow of fluid between the plain twisted tapes and TCTT. The experimental value of plain tube and triangular-cut twisted tube obtained from the experimental work and these two statistical data were compared with the results. The results show that the enhancement of heat transfer rate induced with plain and TCTT inserts increases with the increase in Reynolds number. The Reynolds numbers were varied in the range of 5710–18,366. The Reynolds number in the tube with triangular- cut twisted tape insert were enhanced by 1.1–1.3 times compared with smooth twisted tape inserts. The configuration of TCTT insert offered higher heat transfer rate and friction factor than that of the plain twisted inserts. © 2019, The National Academy of Sciences, India.

Author Keywords
Friction factor; Heat transfer rate; Plain twisted; Triangular-cut twisted; Twist ratio

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The gas chromatography-mass spectrometry study of one herbal formulation, Trikatu Churnam
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Abstract
Introduction: The present study deals with the gas chromatography-mass spectrometry (GC-MS) analysis of one Ayurvedic digestive powder, Trikatu Churnam. Materials and Methods: The Trikatu Churnam was procured for standard Ayurvedic vendor at Chennai and was subjected to GC-MS analysis by the standard as per the standard procedure. Results: The GC-MS profile indicated the presence of some important biomolecules such as longipinocarveol, trans-., beta-bisabolene, caryophyllene oxide., alpha.-ylangene, dodecanedioic acid, ursodeoxycholic acid, 1(2H)-naphthalenone, octahydro-4a,8a-dimethyl-7-(1-methylethyl)-, [4aR-(4a.alpha.,7.beta.,8a.alpha.)]-, 3-methyl-1-adamantaneacetic acid, thiazole-2,4(3H,5H)-dione, 5-benzylideno-3-[(ethylphenylamino)methyl]-, and i-propyl 5,9,17-hexacosatrienoate, which has medicinal roles indicating the efficacy of Trikatu Churnam as a medicine for digestive disorders. Conclusions: The above results and discussion indicates that Trikatu churnam is a good formulation for digestive disorders. © 2020 JPR Solutions. All rights reserved.

Author Keywords
Alpha-ylangene; Ayurvedic; Beta-bisabolene; Caryophyllene oxide; Digestive; Dodecanedioic acid; Longipinocarveol; Trans-; Trikatu Churnam

Index Keywords
1(2h) naphthalenone, 3 methyl 1 adamantaneacetic acid, 5 benzylideno 3 [(ethylphenylamino)methyl], alpha ylangene, ayurvedic drug, beta bisabolene, caryophyllene oxide, dodecanedioic acid, i propyl 5,9,17 hexacosatrienoate, longipinocarveol, octahydro 4a,8a dimethyl 7 (1 methylethyl), thiazole 2,4(3h,5h) dione, trikatu churnam, unclassified drug, ursodeoxycholic acid; Article, controlled study, digestive system function disorder, mass fragmentography

Chemicals/CAS
caryophyllene oxide, 1139-30-6; ursodeoxycholic acid, 128-13-2, 2898-95-5

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The gas chromatography-mass spectrometry study of one Ayurvedic formulation avipathi churnam
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Abstract
Objective: The study envisages finding the molecules present in one Ayurvedic medicine, Avipathi churnam, which is prescribed to treat digestive disorders by gas chromatography-mass spectrometry (GC-MS) analysis. Materials and Methods: Avipathi churnam was procured from standard Ayurvedic medicine vendor at Chennai, India, and was subjected to GC-MS analysis following standard procedures. Results: The GC-MS profile shows the presence of some important biomolecules of medicinal importance such as cis-5,8,11-Eicosatrienoic acid, methyl ester, 6,6-Dimethyl-2-(2-methyl-allyl)-1,6-dihydropyrimidine-4-Carbonitrile, 3-Cyclohexene-1-methanol.,alpha.,alpha.,4-trimethyl-, acetate, 2(1H)-Isoquinolinecarboximidamide, 3,4-dihydro-.,beta.-ylangene, Caryophyllene oxide, 7-Methyl-Z-tetradecen-1-ol acetate, 12-Hydroxy-14-methyl-oxa-cyclotetradec-6-en-2-one.,beta.-sitosterol, 9, 19-Cyclolanost-24-en-3-ol, acetate, (3.beta.)-, Ursodeoxycholic acid, Butyl 9.cis., and 11.trans.-octadecadienoate which augur well with the medicinal properties of Avipathi churnam. Conclusion: The GC-MS analysis results indicate the medicinal efficacy of Avipathi churnam as a good digestive formulation. © 2020 JPR Solutions. All rights reserved.

Author Keywords
11-Eicosatrienoic acid; 2(1H)-Isoquinolinecarboximidamide; 3; 3-Cyclohexene-1-methanol; 4-dihydro-; 4-trimethyl-; 6; 6-dihydropyrimidine-4-Carbonitrile; 6-Dimethyl-2-(2-methyl-allyl)-1; 7-Methyl-Z-tetradecen-1-ol acetate; 8; Acetate; Alpha; Alpha; Avipathi churnam; Ayurvedic; Beta.-ylangene; Caryophyllene oxide; Cis-5; Gas chromatography-mass spectrometry; Methyl ester

Index Keywords
avipathi churnam, ayurvedic drug, unclassified drug; Article, Ayurveda, drug identification, mass fragmentography, molecular weight, nonhuman, retention time

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Abstract
Objective: The present study deals with the gas chromatography-mass spectrometry (GC-MS) analysis of one Ayurvedic tooth powder Dasanakanti Churnam to understand the various molecules present in it. Materials and Methods: The medicine, Dasanakanti Churnam, was procured from a standard Ayurvedic vendor at Chennai and was subjected to GC-MS analysis following standard procedure. Results: It was observed that some medicinally important molecules such as.alpha-campholenal, isoborneol, 1H-indole, 3-methyl-, eugenol.,beta-ocimene, benzenebutanoic acid.,alpha.,alpha.-dimethyl-.gamma.-oxo-, cis-5,8,11,14,17-eicosapentaenoic acid, n-hexadecanoic acid, 2-phenyl-3-methoxy-cyclopropane-1-carboxylic acid, dodecanoic acid, phenylmethyl ester, cyclobutanecarboxylic acid, 2-phenylethyl ester, 6,9,10-trimethoxy-12H-benz(6,7)oxepino(2,3,4-i,j)isoquinoline, succinic acid, di(3,7-dimethyloct-6-en-1-yl) ester, octanoic acid, 1-ethenyl-1,5-dimethyl-4-hexenyl ester, 5-(1-Cyclohexenyl)-5-ethyldihydro-4,6(1H,5H)-pyrimidinedione.,beta.-carbolin-1-one, 6-methyl-2,3,4,9-tetrahydro-.,beta.-carbolin-1-one, 6-methyl-2,3,4,9-tetrahydro-, trans-Farnesol, benzamide, and 2-methoxy-N-allyl- were present which indicated far-reaching medicinal roles in tune with that of Dasanakanti Churnam. Conclusion: It is concluded that Dasanakanti Churnam, as shown by the GC-MS profile, contains some important molecules that help Dasanakanti Churnam as a good medicine. © 2020 JPR Solutions. All rights reserved.

Author Keywords
1H-Indole; 3-Methyl-; Alpha-campholenal; Ayurvedic; Beta-ocimene; Dasanakanti Churnam; Eugenol; Gas chromatography-mass spectrometry; Isoborneol

Index Keywords
2 phenyl 3 methoxycyclopropane 1 carboxylic acid, 5 (1 cyclohexenyl) 5 ethyldihydro 4,6(1h,5h) pyrimidinedione, 6,9,10 trimethoxy 12h benz(6,7)oxepino(2,3,4 i, j)isoquinoline, alpha campholenal, ayurvedic drug, benzamide, benzenebutanoic acid, carboxylic acid derivative, cyclobutanecarboxylic acid, dasanakanti churnam, ester derivative, eugenol, farnesol, icosapentaenoic acid, indole, isoborneol, lauric acid, ocimene, octanoic acid, palmitic acid, succinic acid, unclassified drug; Article, Ayurveda, chemical composition, mass fragmentography, powder

Chemicals/CAS
benzamide, 55-21-0; eugenol, 97-53-0; farnesol, 4602-84-0; icosapentaenoic acid, 10417-94-4, 1553-41-9, 25378-27-2, 32839-30-8; indole, 120-72-9; isoborneol, 124-76-5; lauric acid, 115-05-9, 143-07-7; ocimene, 13877-91-3; octanoic acid, 124-07-2, 1984-06-1, 74-81-7; palmitic acid, 57-10-3; succinic acid, 110-15-6

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The gas chromatography-mass spectrometry study of one Ayurvedic oil, Kunthalakanti Thailam

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Abstract
Objective: There is an urgent need to prove the authenticity of Ayurvedic medicines in the light of modern scientific knowledge. Methods: The present study deals with the gas chromatography-mass spectrometry (GC-MS) analysis of one herbal oil, Kunthalakanti Thailam, to understand the molecules present there in. Kunthalakanti Thailam was bought from a standard Ayurvedic vendor from Chennai. It was processed and GC-MS analysis was done by standard procedures. Results: The GC-MS report indicated the presence of mostly fatty acids and their esters which have potent antioxidant and antiallerg ic properties such as N-Hexadecanoic acid, 2-Methyl-3-93-methyl-but-2-enyl)-enyl)-oxetane, 3, 7-decadien-2-one, and 10-(3,3-dimethoxyloxiran dimethyl-, (E, E)-, +/- which have medicinal activities which help in keeping the homeostasis of the scalp and maintain good health to hair follicles and hair. Some important biomolecules have medicinal properties supporting the validity of skin treatment with this oil. Conclusions: The presence of these biomolecules having medicinal properties supports the validity of Kunthalakanti Thailam as skin and hair health treatment. © 2020 JPR Solutions. All rights reserved.

Author Keywords
Ayurvedic; GC MS; Herbal oil; Kunthalakanthi Thailam; N-Hexadecanoic acid

Index Keywords
1,3 benzodioxole,5,5' (tetrahydro 1h,3h furo[3,4 c]furan 1,4 diyl)bis (1.alpha,3a.alpha,4.beta,.6a.alpha), 2 butanone, 1,1,1 trifluoro, 2 [2 [2 (2,2,3,3,3 pentafluoropropanoyl)oxyethoxy]ethoxy]ethyl 2,2,3,3,3 pentafluoropropanoate, 4 acetoxy 3 methoxystyrene, ayurvedic drug, cyanamide dimethyl, diallylphenylmethylsilane, furan,2 methoxy, hexadecanoic acid,2 hydroxy ester, hexanal,5,5 dimethyl, n hexadecanoic, oil, oxostephamiersine, photocitral b, phthalic acid,cyclobutyltridecyl ester, trichlo[3.2.2.0]nonqne 2 caboxylic ester, unclassified drug; Article, Ayurveda, coconut, Cyperus rotundus, Eclipta prostrata, Indigofera, Indigofera aspalathoides, Indigofera tinctoria, Kunthalakanti thailam, mass fragmentography, molecular weight, nonhuman, Phyllanthus emblica, retention time, Terminalia bellirica, Vetiveria

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The gas chromatography-mass spectrometry study of one Ayurvedic Rasayana, Sonitha Amritha Rasayanam
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Abstract
Objective: The present study deals with the GC-MS analysis of one Ayurvedic Rasayana medicine, Sonitha Amritha Rasayanam. The medicine is used for purifying the blood and for skin diseases. Methods: The medicine was procured from standard Ayurvedic vendor at Chennai and was subjected to GC-MS analysis with due procedure. Results: The GC-MS profile indicated the presence of molecules such as ketone, isopropylidenecyclopropyl methyl, benzoic acid, hydrocinnamic acid, 1-butanone, 2-hydroxy-1-phenyl-, myrtenoic acid, ethyl ester, 1, 1-diphenyl-4-phenylthiobut-3-en-1-ol, arteannuic acid, 1,1-diphenyl-4-phenylthiobut-3-en-1-ol, (1Ar-(1aalpha,4abeta,8as(*)))-4a,8,8-trimethyloctahydrobenzo. ©cyclopropa(d)pyran-2,4-dione, 1,2-Benzenedicarboxylic acid, and mono(2-ethylhexyl) ester which do have medicinal value directly or indirectly indicating the role of this medicine as an effective skincare tonic. Conclusion: This knowledge could lead to further research to pinpoint the roles of each molecule toward the medicinal role of Sonitha Amritha Rasayanam.

Author Keywords
1-Butanone; 2-hydroxy-1-phenyl-; Arteannuic acid; Ayurvedic; Benzoic acid; Ethyl ester; Gas chromatography-mass spectrometry; Hydrocinnamic acid; Myrtenoic acid; Sonitha Amritha Rasayanam

Index Keywords
1 butanone, 1 diphenyl 4 phenylthiobut 3 en 1 ol, 1,1 diphenyl 4 phenylthiobut 3 en 1 ol, 1,2 benzenedicarboxylic acid mono(2 ethylhexyl)ester, 2 hydroxy 1 phenyl, 2 [4 methyl 6 (2,6,6 trimethylcyclohex 1 enyl)hexa 1,3,5 trienyl]cyclohex 1 en 1 carboxaldehyde, 3 oxo 10(14) epoxyguai 11(13) en 6,12 olide, acetic acid (benzoylamino)hydroxy, androsta 1,4 dien 3 one 17 hydroxy 17 methyl (17alpha), apocynin, artemisinic acid, ayurvedic drug, benzene 2 methoxy 1,3 dimethyl, benzoic acid, benzoyl isocyanate, corydine, hydrocinnamic acid, isopropylidenecyclopropyl methyl, ketone, ketone isopropylidenecyclopropyl methyl, mono(2 ethylhexyl) ester, myrtenoic acid ethyl ester, phthalic acid, unclassified drug, [3,3 dimethyl 2 (3 methylbuta 1,3 dienyl)cyclohex 1 enyl]methanol; Acalypha indica, Article, Ayurveda, Hemidesmus indicus, mass fragmentography, nonhuman

Chemicals/CAS
apocynin, 498-02-2; artemisinic acid, 80286-58-4; benzoic acid, 532-32-1, 582-25-2, 65-85-0, 766-76-7; hydrocinnamic acid, 501-52-0; phthalic acid, 88-99-3

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Gas chromatography-mass spectrometry study of one Ayurvedic Rasayana drug, Dhanwantari Rasayanam
(2020) *Drug Invention Today*, 14 (5), pp. 783-786.

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Abstract
Objective: The present study deals with the gas chromatography-mass spectrometry (GC-MS) analysis of one famous nerve stimulating tonic, Dhanwantari Rasayanam. This knowledge of the molecules present in this medicine could indicate the mechanism of action of this medicine, which is basically used to treat nerve-related disease such as paraplegia, hemiplegia, and muscle wasting. Materials and Methods: Dhanwantari Rasayanam was brought from standard Ayurvedic vendor from Chennai. The GC-MS analysis was conducted following standard procedures. Results: It was observed that there are some important biomolecules such as heptanediamide, N,N'-di-benzoyloxy-, 5-Hydroxymethylfurfural.,beta.-Asarone, Tetradecanoic acid, 15-Hydroxypentadecanoic acid, oleic acid, hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester, hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester, and 26-Nor-5-cholesten-3.beta.-ol-25-one show some interesting biological activities which are in tune with the medicinal roles of Dhanwantari Rasayanam. Conclusion: The results indicate a positive correlation between the medicinal roles of molecules present in GC-MS profile and that of the Rasayanam itself. © 2020 JPR Solutions. All rights reserved.

Author Keywords
5-Hydroxymethylfurfural; Ayurvedic; Beta.-Asarone; Dhanwantari Rasayanam; Gas chromatography-mass spectrometry; Hemiplegia; Heptanediamide; Hexadecanoic acid; Oleic acid; Paraplegia

Index Keywords
15 hydroxypentadecanoic acid, 2 hydroxy 1 (hydroxymethyl)ethyl ester, 26 nor 5 cholesten 3 beta ol 25 one, 5 hydroxymethylfurfural, ayurvedic drug, beta asarone, heptanediamide, myristic acid, oleic acid, palmitic acid, unclassified drug; Article, biological activity, controlled study, mass fragmentography

Chemicals/CAS
5 hydroxymethylfurfural, 67-47-0; beta asarone, 5273-86-9; myristic acid, 1715-79-3, 544-63-8; oleic acid, 112-80-1, 115-06-0; palmitic acid, 57-10-3

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The gas chromatography-mass spectrometry study of one ayurvedic medicine, Induppukanam

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Abstract
Objective: The present study deals with the gas chromatography-mass spectrometry (GC- MS) analysis of one digestive Ayurvedic formulation, Induppukanam. Materials and Methods: Induppukanam was procured form a standard Ayurvedic vendor at Chennai and was subjected to GC-MS analysis following standard procedure. Results: Some important molecules such as thymol, Methyl-4,7,10,13-hexadecatetraenoate, Chloroacetic acid, pentadecyl ester, Methyl-4,7,10,13-hexadecatetraenoate, Santalol, E-cis,epi-.beta.-, n-Hexadecanoic acid, 4-Vinylbenzoic acid, 2-Phenyl-3-methoxy-cyclopropane-1-carboxylic acid, Ricinoleic acid, 5-Methyl-5-triazolo(1,5-a)pyrimidine etc. have mostly actions related to hormonal balance. The role of some molecules such as 1,2,3-Benzenetriol, (4R,5S)-4-Hydroxymethyl-5-hydroxytricyclo[4.4.0.0(3,8)]decane, Nonane, 2,2,4,4,6,8,8-heptamethyl-, (R)-(-)-14-Methyl-8-hexadecyn-1-ol, 9-Octadecenoic acid, (E)- and 2H-Pyrazino[1,2-b]isoquinoline-1,3(4H,6H)-dione, and 2-(4-fluorophenyl)-11,11a-dihydro-8,9-dimethoxy- are known. Conclusion: The direct evidence of Induppukanam as digestive formulation is not reflected by the molecules, whose roles are known. It will be of interest to work on those molecules whose medicinal roles are not reported yet, which could lead to a better understanding of the mechanism of action of Induppukanam. © 2020 JPR Solutions. All rights reserved.

Author Keywords
Ayurvedic; Chloroacetic acid; E-cis,epi-.beta.; Gas chromatography-mass spectrometry; Induppukanam; Methyl-4,7,10,13-hexadecatetraenoate; Methyl-4,7,10,13-hexadecatetraenoate; N-Hexadecanoic acid; Pentadecyl ester; Santalol

Index Keywords
14 methyl 8 hexadecyn 1 ol, 2 phenyl 3 methoxycyclopropane 1 carboxylic acid, 2h pyrazin[1,2 b]isoquinoline 1,3(4h,6h) dione, 4 hydroxymethyl 5 hydroxytricyclo[4.4.0.0(3,8)]decane, 4 vinylbenzoic acod, 5 methyl 5 triazolo(1,5 a)pyrimidine, 9 octadecenoic acid, ayurvedic drug, chloroacetic acid, induppukanam, methyl 4,7,10,13 hexadecatetraenoate, nonane, pentadecyl ester, pyrogallol, ricinoleic acid, santalol, thymol, unclassified drug; Article, Ayurveda, drug formulation, human, mass fragmentography

Chemicals/CAS
chloroacetic acid, 14526-03-5, 79-11-8; nonane, 111-84-2; pyrogallol, 87-66-1; ricinoleic acid, 141-22-0, 7431-95-0; thymol, 89-83-8

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The GC-MS study of one ayurvedic formulation tiktaka ghrita

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Abstract
Objective: The present study deals with the gas chromatography-mass spectrometry (GC-MS) analysis of one Ayurvedic formulation, Tiktaka Ghrita, which is prescribed for skin diseases. Materials and Methods: The medicine was procured from standard Ayurvedic vendor at Chennai and was subjected to GC-MS analysis after due processing. Results: It was observed that there are some important biomolecules such as Eucalyptol, o-Acetyl-L-serine, Phenylethyl Alcohol, 2-Allyl-3-hydroxy-2-methylsuccinic acid, 1-ethyl ester, Glycerine, Succinic acid, ethyl non-5-yn-3-yl ester, Cyclohexanecarboxylic acid, 1-ethyl-, Benzeneethanol, 4-hydroxy-, and 2,4,6,(1H,3H,5H)-Pyrimidinetrione, 5-acetyl- which augur well with the medicinal role of Tiktaka Ghrita. Conclusion: It was observed that the molecules present in the GC-MS profile do show some relationship with that of Tiktaka Ghrita as a medicine. © 2020 JPR Solutions. All rights reserved.

Author Keywords
1-Ethyl ester; 2-Allyl-3-hydroxy-2-methylsuccinic acid; Ethyl non-5-yn-3-yl ester; Eucalyptol; Gas chromatography-mass spectrometry; Glycerine; O-Acetyl-L-serine; Phenylethyl Alcohol; Succinic acid; Tiktaka Ghrita

Index Keywords
1 ethyl ester, 2 allyl 3 hydroxy 2 methylsuccinic acid, ayurvedic drug, cineole, cyclohexanecarboxylic acid, ethyl non 5 yn 3 yl ester, glycerol, o acetylserine, phenethyl alcohol, serine, succinic acid, unclassified drug; Alhagi pseudalhagi, Andrographis paniculata, Article, Ayurveda, Azadirachta indica, Cyperus rotundus, Holarrhena antidysenterica, mass fragmentography, Picrorhiza kurroa, Piper longum, Trichosanthes dioica

Chemicals/CAS
cineole, 470-82-6, 55962-72-6; glycerol, 56-81-5; phenethyl alcohol, 60-12-8; serine, 56-45-1, 6898-95-9; succinic acid, 110-15-6

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The gas chromatography-mass spectrometry analysis of one Ayurvedic formulation, Srikhandasavam

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Abstract
Objective: The aim of the present study is to known about the types of molecules present in one Ayurvedic medicine, Srikhandasavam prescribed for alcohol de-addiction and liver protection, by gas chromatography-mass spectrometry (GC MS) analysis. Materials and Methods: Srikhandasavam was procured from standard Ayurvedic vendor at Chennai and subjected to GC MS analysis by standard procedure. Results: It was observed from the GC MS report that there are some very important present in Srikhandasavam which augur well with the role of this medicine. Conclusion: It is concluded that Srikhandasavam is a very good and potent medicine for alcohol de-addiction. © 2020 JPR Solutions. All rights reserved.

Author Keywords
2,3-2H-Quinolin-2-one; 3,3,4,6-tetramethyl; Ayurvedic; Ethyl hydrogen succinate; Gas chromatography-mass spectrometry; Phenylethyl alcohol; Srikhandasavam

Index Keywords
2,3 2h quinolin 2 one, 4 hydroxy 3 nitophenylacetic acid, 4 hydroxy 3 nitrophenylacetic acid, 4 pyridinol, 2,6 dimethyl 34 pyridinol[methylthio], alcohol, ayurvedic drug, bicyclo[2.2.1]heptan 2 one, bicyclo[2.2.1]heptan 2 one 1,7,7 trimethyl, disulfide, disulfide di tert dodecyl, ethyl hydrogen succinate, heptadecane, 2,6,10,15 tetramethyl 2,6,10,15 tetramethyl, herbaceous agent, isoquinolin 6,7 diol 1 carboxy acid, n acetyl 1 methyl, isoquinolin 6,7 diol 1 carboxylic acid, lactose, morpholine 4 (6 propyl 1 cyclohexen 1 yl), nonane, phenethyl alcohol, pyrogallol, srikhandasavam, stearic acid, thieno[2,3 b]thiophen 2 amine n,n dimethyl, unclassified drug; alcoholism, Article, Ayurveda, chemical analysis, comparative study, controlled study, drug formulation, drug identification, drug screening, drug synthesis, liver protection, mass fragmentography, nonhuman, prescription

Chemicals/CAS
alcohol, 64-17-5; disulfide, 16734-12-6; lactose, 10039-26-6, 16984-38-6, 63-42-3, 64044-51-5; nonane, 111-84-2; phenethyl alcohol, 60-12-8; pyrogallol, 87-66-1; stearic acid, 57-11-4, 646-29-7

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Anti-arthritic Property of Sahacharadi Kashayam against Freund's Complete Adjuvant Induced Arthritis in Wistar Rats

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Abstract
Introduction: The available modern molecular drugs for the therapy of Rheumatoid arthritis are beset with several side effects and alternative drugs are urgently needed. The present investigation was performed to evaluate the anti-arthritic activity of Sahacharadi Kashayam (SK), an Ayurvedic formulation, against Freund's complete adjuvant (CFA) - induced arthritis in rats. Methods: In this experimental trial, SK was administered at doses of 0.5, 1.0 and 1.5 ml/kg body weight orally to adjuvant (CFA) induced arthritic rats. The anti-arthritic activity was evaluated by using paw volume, haematological parameters and arthritic biomarkers. The efficacy of the Kashayam was compared with the standard Leflunomide (10 mg/kg) drug. Results: Significant reduction in paw volume and thickness by SK (0.5 ml dose) has been found and there was considerably improvement in haematological parameters and arthritic markers in CFA rats till 14 days. After 14th day SK treatment with doses (1.0 and 1.5ml), however, reoccurrence of inflammation and pathological changes were observed in rats. Conclusion: The study clearly indicated the anti-arthritic role of SK. Future studies, however, are warranted to provide a new approach in relation to the therapeutic dose and treatment period of SK which may eventually lead to the development of a new category of the anti-arthritic agent. © 2020 Phcogj.Com. This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International license.

Author Keywords
Anti-arthritic activity; Arthritis; biomarkers; Sahacharadi Kashayam

Index Keywords
antirheumatic agent, ayurvedic drug, biological marker, C reactive protein, hemoglobin, leflunomide, rheumatoid factor, sahacharadi kashayam, unclassified drug; adjuvant arthritis, animal experiment, animal model, animal parameters, antiinflammatory activity, Article, Ayurveda, controlled study, drug efficacy, erythrocyte count, female, hemoglobin blood level, hind paw, leukocyte count, nonhuman, paw edema, paw thickness, paw volume, rat, single drug dose, Wistar rat

Chemicals/CAS
C reactive protein, 9007-41-4; hemoglobin, 9008-02-0; leflunomide, 75706-12-6; rheumatoid factor, 9009-79-4

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Neuro-protective effect of ayurveda formulation, saraswatharishtam, on scopolamine induced memory impairment in animal model

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Abstract
Introduction: In the management of neurodegenerative and neuropsychiatric diseases, memory loss remains very challenging. Saraswatharishtam (SWRT) is an ayurvedic formulation prescribed for several neurological ailments like acute anxiety, partial memory loss, slurred speech, neuro-degenerative diseases like Parkinson's, Alzheimer's etc. Methods: Present study explores the possibilities of curative effects of SWRT on Scopolamine induced memory impairment and to compare the effects of commonly used drug Piracetam. Adult Wistar Swiss albino mice were used for this experiment and divided into five different groups for the treatments of the drugs in various combinations. The first group was vehicle treated control while the second group was treated with scopolamine to induce memory impairment. The third groups of animals were treated with Scopolamine where the mice were pretreated with standard neuro-protective drug Piracetam, while the fourth and fifth groups of animals were treated with scopolamine and the animals were pretreated with SWRT at the doses of 200 and 400 mg/kg respectively to compare with the effect of Piracetam. Scopolamine was administered on day eight, only for 45 minutes in all the cases (Group I- Group V). Several neurobehavioral parameters were examined to confirm the neuro-protective effects of SWRT. Results: Saraswatharishtam significantly reversed the memory loss in mice model as revealed from elevated plus maze, radial maze and rectangular maze experiments justifying its neuroprotective potential as observed in usually used synthetic Piracetam. SWRT was found to be nontoxic and very promising antioxidant recorded from acute and chronic toxicological studies. Conclusions: It is suggested that SWRT, could be used as safe and easily available Ayurveda medicine to treat neurological dysfunctions without any side effects. Further translational research is needed to explore its neuro-protective potential. © 2020 Phcogj.Com. This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International license.

Author Keywords
Antioxidant; Ayurvedic; Elevated Plus Maze; Neuro-protection; Piracetam; Saraswatharishtam; Scopolamine

Index Keywords
ayurvedic drug, catalase, glutathione, neuroprotective agent, piracetam, saraswatharishtam, superoxide dismutase, unclassified drug; acute toxicity, adult, animal experiment, animal model, animal tissue, antioxidant activity, Article, Ayurveda, chronic toxicity, controlled study, drug effect, elevated plus maze test, locomotion, motor coordination, mouse, neuroprotection, nonhuman, radial arm maze test, reference memory, scopolamine-induced cognitive defect, treatment outcome, working memory

Chemicals/CAS
catalase, 9001-05-2; glutathione, 70-18-8; piracetam, 7491-74-9; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1

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Graphene based ceria nanocomposite synthesized by hydrothermal method for enhanced supercapacitor performance

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Abstract
Reduced graphene oxide – cerium oxide (rGO-CeO2) nanocomposite is prepared by simple hydrothermal method for enhanced charge storage supercapacitor performance. The prepared nanocomposite is characterized by various techniques, such as X-ray diffraction (XRD), Fourier Transform – Raman Spectra (FT-Raman), Field Emission - Scanning Electron Microscope (FE-SEM), High Resolution –Transmission Electron Microscope (HR-TEM), Thermo-gravimetric and Differential Thermal Analysis (TG-DTA), Cyclic Voltametric (CV), Galvanostatic Charge/Discharge (GCD) and Electrochemical Impedance Spectroscopy (EIS) studies to understand its morphology, composition, thermal stability and charge storage efficiency as electrode material. The nanocomposite formation is confirmed with FE-SEM and HR-TEM images where the ceria is anchored on the surface of the graphene sheets and the interplanar distances are observed as fringes. The Energy Dispersive Analysis of X-Ray (EDAX) has provided substantial evidence for the nanocomposite formation with the elemental composition. The maximum specific capacitance is measured as 280 F/g using GCD studies. The surface area of the nanocomposite is determined using the Brunauer-Emmett-Teller (BET) analysis. © 2020

Author Keywords
Cerium oxide; Cyclic voltametry; Electrochemical studies; Galvanostatic charge/discharge; Graphene oxide; Reduced graphene oxide; Supercapacitors

Index Keywords
Differential thermal analysis, Electrochemical impedance spectroscopy, Graphene, Graphene oxide, Morphology, Oxides, Reduced Graphene Oxide, Scanning electron microscopy, Supercapacitor, Transmission electron microscopy; Brunauer emmett tellers, Cyclic voltametry, Electrochemical studies, Elemental compositions, Energy dispersive analysis of X-rays, Field emission scanning electron microscopes, Galvanostatic charge/discharge, Nanocomposite formations; Cerium oxide

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Fabrication of manganese oxide decorated copper oxide (MnO2/CuO) nanocomposite electrodes for energy storage supercapacitor devices

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Abstract
This paper reports the fabrication of MnO2–CuO nanocomposite by a hydrothermal approach for supercapacitor applications. The crystal nature, morphology and chemical states of synthesized MnO2–CuO nanocomposite were examined by powder XRD, FT-IR, HRSEM, TEM, EDX, XPS and its electrochemical performance of as prepared nanocomposite materials as supercapacitor electrodes is measured by CV, GCD and EIS, The MnO2–CuO nanocomposite shows a higher specific capacitance (279.12 Fg−1) than individual compounds of MnO2 (175.51 Fg−1) and CuO (191.06 Fg−1) at a current density of 0.5 Ag−1. The cycle life of the composite was also excellent. After 10,000 cycles, it maintained 91.26% of its beginning capacitance. The electrochemical results showed that the MnO2–CuO nanocomposite is a suitable material for electrode fabrication of a supercapacitor. © 2020 Elsevier B.V.

Author Keywords
Electrodes; HR-TEM; MnO2-CuO; Nanocomposite; Supercapacitor; XPS

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Capacitance, Electrochemical electrodes, Electrodes, Fabrication, Manganese oxide, Nanocomposites, Supercapacitor, X ray photoelectron spectroscopy; Chemical state, Electrochemical performance, Electrode fabrication, MnO2-CuO, Nanocomposite electrodes, Specific capacitance, Supercapacitor application, Supercapacitor electrodes; Copper oxides

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Pathogenic Escherichia coli (E. coli) detection through tuned nanoparticles enhancement study
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Abstract
Objective: This study aims to detect pathogenic Escherichia coli (E. coli) bacteria using non-destructive fluorescence microscopy and micro-Raman spectroscopy. Results: Raman vibrational spectroscopy provides additional information regarding biochemical changes at the cellular level. We have used two nanomaterials zinc oxide nanoparticles (ZnO-NPs) and gold nanoparticles (Au-NPs) to detect pathogenic E. coli. The scanning electron microscope (SEM) with energy dispersive X-ray (EDAX) spectroscopy exhibit surface morphology and the elemental composition of the synthesized NPs. The metal NPs are useful contrast agents due to the surface plasmon resonance (SPR) to detect the signal intensity and hence the bacterial cells. The changes due to the interaction between cells and NPs are further correlated to the change in the surface charge and stiffness of the cell surface with the help of the fluorescence microscopic assay. Conclusions: We conclude that when two E. coli strains (MTCC723 and MTCC443) and NPs are respectively mixed and kept overnight, the growth of bacteria are inhibited by ZnO-NPs due to changes in cell membrane permeability and intracellular metabolic system under fluorescence microscopy. However, SPR possessed Au-NPs result in enhanced fluorescence of both pathogens. In addition, with the help of Raman microscopy and element analysis, significant changes are observed when Au-NPs are added with the two strains as compared to ZnO-NPs due to protein, lipid and DNA/RNA induced conformational changes. © 2020, Springer Nature B.V.

Author Keywords
Bacteria; E. coli; Fluorescence spectroscopy; Gold and ZnO nanoparticles; Pathogen; Raman

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Bacteria, Cell membranes, Cytology, Escherichia coli, Fluorescence, Fluorescence microscopy, Fluorescence spectroscopy, Gold nanoparticles, II-VI semiconductors, Metal nanoparticles, Morphology, Pathogens, Scanning electron microscopy, Surface morphology, Surface plasmon resonance, Zinc oxide; Cell membrane permeability, E. coli, Micro Raman Spectroscopy, Pathogenic Escherichia coli, Raman, Raman vibrational spectroscopy, The scanning electron microscopes (SEM), Zinc oxide nanoparticles; ZnO nanoparticles; antiinfective agent, Escherichia coli protein, gold, metal nanoparticle, zinc oxide; cell membrane permeability, chemistry, drug effect, Escherichia coli, fluorescence microscopy, isolation and purification, metabolism, microbial sensitivity test, pathogenicity, surface property; Anti-Bacterial Agents, Cell Membrane Permeability, Escherichia coli, Escherichia coli Proteins, Gold, Metal Nanoparticles, Microbial Sensitivity Tests, Microscopy, Fluorescence, Surface Properties, Zinc Oxide

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Brand associations: An innovative methodological approach on consumer behaviour
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Abstract
Clothing with high branded images has a great an immense impact in garment market for satisfying the desire of customers. Benefit seeking is one of the driving forces for consumers to begin their buying process. When people talk about the clothes they buy and why they buy them, they show a variety of logics. An understanding of why customers select one brand over another and what factors generate such kind of want is crucially important to fashion marketers. Positive brand associations are developed if the product which the brand depicts is durable, marketable and desirable. The customers must be persuaded that the brand possess the features and attributes satisfying their needs. © 2020 SERSC.

Author Keywords
Brand Association; Brand Equity; Brand Influence; Consumer Behaviour

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Supramolecular self-assembly of a novel 2-aminopyrazinium hydrogen tartrate single crystal through hydrogen bonds: Experimental analyses and theoretical investigations

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Abstract
The equimolar molecular adducts 2-aminopyrazinium hydrogen tartrate (APZHT) has been synthesized and inspected by the experimental and theoretical access. The molecular structure of APZHT was elucidated by single crystal X-ray diffraction analysis and it confirms the monoclinic crystal system with P21/n space group. To validate the observed experimental results and investigate the molecular properties of APZHT molecule, density functional theory (DFT) calculations have been carried out by Gaussian 09 program. Molecular structure optimization, vibrational frequency calculation and molecular properties such as Mulliken atomic charge distribution, frontier molecular orbital analysis and natural bond orbital analysis have been studied by DFT calculation. The natural bond orbital analysis was carried out to interpret hyper conjugative interaction and intramolecular charge transfer. The frontier molecular orbital analysis shows the pharmaceutical activity of the compound. The antibacterial activity for APZHT compound was screened against human pathogens. © 2020 Elsevier B.V.

Author Keywords
Antibacterial; Hydrogen bonding; Single crystal; XRD

Index Keywords
Charge transfer, Crystal atomic structure, Density functional theory, Molecular orbitals, Molecular structure, Rapid thermal annealing, Self assembly, Single crystals, Structural optimization, X ray powder diffraction; Antibacterial, Frontier molecular orbitals, Intra-molecular charge transfer, Monoclinic crystal systems, Natural bond orbital analysis, Single crystal X-ray diffraction analysis, Supramolecular self-assemblies, Theoretical investigations; Hydrogen bonds

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Sekar Babu, K.[a] , Bupesh, G.[b] , Vasanth, S.[b]

Influence of Yogic Practices on Blood Sugar Level of Type-2 Diabetes Mellitus
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Abstract
The percentage of diabetic patients all over the world is increasing day by day. Diabetes is the third widespread and serious disease after heart disease and cancer. Lifestyle diseases characterize those diseases whose occurrence is primarily based on the daily habits of people and are a result of an inappropriate relationship of people with their environment. The main factors contributing to lifestyle diseases include bad food habits, physical inactivity, wrong body posture and disturbed biological clock. A report, jointly prepared by the World Health Organization (WHO) and the World Economic Forum, says India will incur an accumulated loss of $236.6 billion by 2015 on account of unhealthy lifestyles and faulty diet. Yoga is microcellular in its action. At the internal organs are massaged, sensitivity to insulin and uptake of sugar are enhanced. To observe the blood sugar level variation among practitioners and non-practitioners of yoga and propose yoga as a better method to manage blood sugar level in type 2 diabetics male. The study was conducted in 22 type-2 diabetics' male patients from various places in Chidambaram town, Tamilnadu were selected as subjects and they were divided into two equal group namely experimental and control groups. Than the yogic practices. The obtained data from the experimental and control groups, before and after the experimental period were statistically analyzed with analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05 level for all the cases to test the significance. After intervention with yoga for eight weeks the study group showed a significant the reduction in blood sugar level from 168.45 to 138.55 mg/dl was however proved to be significant statistically. These findings suggest that blood sugar level of diabeties may benefit from yogic practice to reduce the blood sugar level. © 2020 All Rights Reserved

Author Keywords
blood sugar level; Diabetic; yogic practice

Index Keywords
sugar; Article, body mass, body position, clinical article, controlled study, female, human, male, non insulin dependent diabetes mellitus, physical inactivity, systolic blood pressure, World Health Organization, yoga

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Influence Of Varied Yogasanas On Selected Biochemical Variables
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Abstract
The aim of this study was designed to find out the effects of varied yogasanas namely, Yogasana and pranayama on the selected biochemical variables. Sixty male students studying in the Department of Physical Education, Annamalai University were selected randomly as subjects and their age ranged between 22-28years. They were divided into three groups of twenty each. Group I served as Asana; Group II Pranayama and Group III as control. Yogasana and pranayama practices were given to experimental groups and control group was not given any exposure and were kept under control. Initial and Final data were collected on lipid profiles, cholesterol and triglycerides and statistically analyzed using ANCOVA and Scheffe's Post hoc test Results showed that Asana and Pranayama treatment moderates the lipid levels and influences antioxidant status of young healthy individuals. © 2020, Biochemical and Cellular Archives. All Rights Reserved.

Author Keywords
antioxidant status; Asana; cholesterol; Pranayama; tryglycerides

Index Keywords
antioxidant, cholesterol, lipid, triacylglycerol; adult, Article, biochemical analysis, college student, controlled study, human, human experiment, lipid fingerprinting, male, physical education, pranayama, reinforcement, yoga

Chemicals/CAS
cholesterol, 57-88-5; lipid, 66455-18-3

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Vijayalakshmi, K.[a] , Raghuram, P.[a] , Saravanan, K.[b] , Krithika, C.[a] , Kannan, A.[a]

Validity of 3-Tesla diffusion-weighted magnetic resonance imaging for distinction of reactive and metastatic lymph nodes in head-and-neck carcinoma

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Abstract
Objectives: The objective was to study the relationship of 3-Tesla (3T) diffusion-weighted magnetic resonance imaging (DW-MRI) with apparent diffusion coefficient (ADC) value for distinction of reactive and metastatic lymph nodes (LNs) in head-and-neck carcinoma (HNC) patients and to determine the ADC cutoff value for metastatic LNs at various levels. Materials and Methods: 3T DW and T1- and T2-weighted imaging sequences were done in 34 patients with biopsy-proven primary HNC of 100 cervical LNs ≥1 cm in diameter. The mean ADC values were compared with histopathologically proven LNs using the independent t-test. ADC cutoff value was evaluated with sensitivity, specificity, accuracy, positive predictive value, negative predictive value and a receiver operating characteristic curve analysis. Results: The mean ADC value of reactive LN was 1.2933 × 10-3mm2/s and metastatic LN was 0.908 × 10-3mm2/s. An ADC cutoff value was 0.868 × 10-3mm2/s with 84% sensitivity, 96% specificity, 93% accuracy, 87.5% positive predictive value, and 94.7% negative predictive value. A significant difference in mean ADC value between reactive and metastatic LNs was noted (P< 0.001). Conclusion: 3T DW-MRI is useful in differentiating reactive and metastatic cervical LNs in HNC patients. However, studies with larger sample size have to be performed to validate ADC threshold value with 3T DW-MRI in differentiating between reactive and metastatic LNs for clinical practice. © 2020 Wolters Kluwer Medknow Publications. All rights reserved.

Author Keywords
Apparent diffusion coefficient values; cervical nodes; diffusion magnetic resonance imaging; head-and-neck neoplasms

Index Keywords
adult, aged, apparent diffusion coefficient, Article, cancer patient, cervical lymph node, diffusion weighted imaging, female, head and neck carcinoma, histopathology, human, lymph node, lymph node metastasis, major clinical study, male, middle aged, predictive value, primary tumor, reactive lymph node, sensitivity and specificity, tumor biopsy, very elderly, diagnostic imaging, diffusion weighted imaging, head and neck tumor, lymph node, lymph node metastasis, pathology, procedures, receiver operating characteristic, reproducibility; Adult, Aged, Diffusion Magnetic Resonance Imaging, Female, Head and Neck Neoplasms, Humans, Lymph Nodes, Lymphatic Metastasis, Male, Middle Aged, Reproducibility of Results, ROC Curve, Squamous Cell Carcinoma of Head and Neck

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Kathiresan, G.[a] , Mohanta, K.[b] , Asari, K.V.[a]

Forebode: Forecasting based on dynamic truncated back propagation and enhanced L1 regularization

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Abstract
The rapid proliferation demand of exploring the big data has urged the use of data-hungry algorithm like deep learning. Deep learning is one of the cornerstone technology behind emerging real-time applications include image and speech recognition, natural language processing, recommender systems, autonomous vehicles, etc. A notable consequence of development in such applications has been the capability of utilizing computing to better awareness and predict the evolution of weather data in prediction analytics. The great success of deep neural networks in the prediction analytics relies on the precise selection of neural network architecture with the optimal. As with the LSTM architecture, several research works have hypothesized the probabilities for forthcoming activities. By employing the back propagation technique, the LSTM model adjusts itself in proportion to the error signal while training the neural network to obtain optimal results. Despite, the back propagation becomes insignificant and makes the vanishing gradient issue when the back propagated error in the network acquires vanishingly smaller values in each layer. In addition, the LSTM enables the learning of complex representations of data that enhances the performance of the prediction model. Even though, escalating the complexity makes the system as more vulnerable to over fitting of data while training the neural network that degrades the prediction accuracy. To cope up with this constraint, this work presents the Forecasting Based On Dynamic truncated back propagation and Enhanced L1 regularization (FOREBODE) approach for prediction. It performed the prediction through the dynamic truncated back propagation and enhanced L1 regularization method. The dynamic truncated back propagation eliminates the vanishing gradient issue by selecting the back propagation time steps regarding the error function and deterministic weight. It allows the convergence of the system within a reasonable time. The enhanced L1 regularization method employs Particle Swarm Optimization (PSO) method to select the optimal features through the penalty term (λ) that helps to avert the over fitting of data even with the advent of recent data. The experimental framework illustrates that the FOREBODE approach surpasses the existing Anticipated Reweighted Truncated Back propagation (ARTBP) approach in terms of precision by 10.25%. © IAEME Publication Scopus Indexed

Author Keywords
Back propagation; Deep learning; LSTM; Neural network; Over fitting; Prediction; Vanishing gradient

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Sharma, R.K.[a] , Irusapparajan, G.[b] , Periyaazhagar, D.[c] , Salini, P.[d] , Arulkumar, S.[e]

Relative study on new carrier-PWM approach designed for cascading three-phase impedance source MLI
(2020) *International Journal of Electrical Engineering and Technology*, 11 (2), pp. 27-34.

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Abstract
This document exhibits the contrast of the diverse COP-PWM approaches on behalf of 7-level three-phase cascading Z-source inverter. Appropriate headed for switching arrangement redundancies, in attendance definite degrees of liberty to create the multiple levels of AC signal. This effort displays the utilization of CFD arrangement. This Z-source build on cascading MLIs are fried through the diverse COP-PWM approaches having sine signal and 3rd harmonic injection orientation by means of triangular wave carriers. It's detected to facilitate the COP-PWM-3 approach through sine orientation feed bargain less harmonics and COP-PWM-1 approach by means of 3rd harmonic injection feed enhanced RMS value on its AC output. The success of the PWM approaches urbanized with CFD be confirmed through MATLAB / SIMULINK. © IAEME Publication

Author Keywords
CFD; COP-PWM; PWM Approach; Source MLI

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Priyadharshini, E.[a] , Suresh, S.[b] , Srinivasan, S.[a] , Manikandan, A.[c]

Electrochemical performance of TiO2–C nanocomposite as an anode material for lithium-ion battery
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Abstract
The Titanium dioxide–Carbon (TiO2–C) nanocomposite (NC) was fabricated by a hydrothermal method. The present work is to introduce the carbon material in Li-ion batteries for optimizing it to better electrical performance and to enhance its property. Lithium-ion battery is prepared by using titanium tetrachloride and commercial filter paper as the carbon source. The battery performance is highly influenced by the weight ratio of TiO2–C in the sample. For this work, a new method is adapted to tune the weight percentage of TiO2 and carbon in the composite while elevating calcination temperatures. Optimized battery performance of TiO2 nanocomposite was analyzed by 150 cycles at various calcination temperatures viz., 400 °C, 450 °C, and 500 °C, the charge capacities have existed at 301 mAh g−1, 352 mAh g−1, and 402 mAh g−1 at a current density of 100 mA g−1. The first discharge capacity was achieved for three prepared samples (400 °C, 450 °C, and 500 °C) to be 1068 mAh g−1, 1271 mAh g−1, and 1467 mAh g−1 at a current density of 100 mA g−1. The prepared electrode shows high charge and discharge capacity during long cycling. © 2020, Springer Science+Business Media, LLC, part of Springer Nature.

Index Keywords
Anodes, Calcination, Carbon, Electric discharges, Ions, Nanocomposites, TiO2 nanoparticles, Titanium dioxide; Anode material for lithium ion batteries, Battery performance, Calcination temperature, Electrical performance, Electrochemical performance, First discharge capacities, Hydrothermal methods, Titanium tetrachlorides; Lithium-ion batteries

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Raziya Banu, M.[a b] , Ibrahim, M.[c] , Prabhu, K.[a] , Rajasankar, S.[d]

Withaferin-A Protects the Nigral Dopamine Neuron and Recovers Motor Activity in Aged Rats
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Abstract
Withaferin-A (WA) was evaluated for its neuroprotective efficacy on the dopamine (DA) neurons of the substantia nigra (SN) and striatum (ST) in aged rats. Wistar albino rats were divided into group I, young (3 months old); group II, aged (24 months old); group III, aged rats supplemented with WA (50 mg/kg bodyweight once per day for 30 days), and group IV, young rats supplemented with WA (50 mg/kg bodyweight). At the end of the experiment period, the animals were subjected to various motor behavior analyses, and were sacrificed by transcardial perfusion. The brains were dissected out and subjected to various analyses, including histological, histomorphometrical, and immunolocalization of the tyrosine hydroxylase (TH) enzyme. The data of rotarod analysis ($p < 0.001$) showed a significant motor impairment in aged rats (number of falls 10.2 ± 0.86) and reduction in retention time (31.23 ± 2.56 s) compared to young controls (2.41 ± 0.35 and 84.05 ± 5.15 s). The stride length was significantly reduced ($p < 0.001$) in aged rats (4.21 ± 0.57 and 4.38 ± 0.61 cm) when compared to young control rats (6.98 ± 0.25 and 7.13 ± 0.70 cm). The histomorphometric data of the aged animals showed a significant reduction in the neuronal diameter ($p < 0.001$), density ($p < 0.001$), and volume ($p < 0.001$) in the SN of aged rats when compared to young rats. Immunohistology demonstrated a marked reduction in the levels of TH enzyme in both the SN and ST of aged animals when compared to young rats. Both structural and functional impairments were reversed in the aged animals after the supplementation of WA ($p < 0.001$). The present study clearly indicates that WA attenuates the ageing-mediated motor degenerative changes in the SN and ST of aged rats and ascertains its neuroprotective potential. © 2020 S. Karger AG, Basel. Copyright: All rights reserved..

Author Keywords
Ageing; Dopamine; Striatum; Substantia nigra; Withaferin-A

Index Keywords
tyrosine 3 monooxygenase, withaferin A, neuroprotective agent, tyrosine 3 monooxygenase, withaferin A, withanolide; aged, aging, animal experiment, animal model, animal tissue, Article, behavior change, cell density, cell size, controlled study, corpus striatum, dopaminergic nerve cell, functional disease, groups by age, immunohistology, immunolocalization, locomotion, male, morphometry, motor activity, motor dysfunction, neuroprotection, nonhuman, priority journal, rat, stride length, substantia nigra, Wistar rat, anatomy and histology, animal, brain, cytology, dopaminergic nerve cell, drug effect, metabolism, motor activity, pathology, substantia nigra; Aging, Animals, Brain, Corpus Striatum, Dopaminergic Neurons, Male, Motor Activity, Neuroprotective Agents, Rats, Rats, Wistar, Substantia Nigra, Tyrosine 3-Monooxygenase, Withanolides

Chemicals/CAS
tyrosine 3 monooxygenase, 9036-22-0; withaferin A, 5119-48-2; withanolide, 40326-62-3; Neuroprotective Agents; Tyrosine 3-Monooxygenase; withaferin A; Withanolides

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Spectral, dielectric, mechanical and optical characteristics of LPDMCl single crystal for nonlinear optical applications

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Abstract
A potent semiorganic third order acentric crystal Poly[μ-chlorido-heptachlorido-μ3-L-proline-μ2-L-proline-tetramercury(II)] (LPDMCl) with the chemical formula [Hg4Cl8(C5H9NO2)2]n was crystallized by slow evaporation in water and thereby its second and third order optical nonlinearities are explored using the technique of SHG powder test of Kurtz-Perry and Z-scan single beam respectively. The grown crystalline material was analyzed by single crystal XRD, which discloses the acentric space group P1 of the material with the crystal system of triclinic. From XRD analysis, the obtained peaks were indexed correlated to the orientations of (hkl) plane thus displaying the crystalline purity and perfection. FTIR spectrum detailed the diverse vibrational modes, which signifies the functional groups in LPDMCl. Surface topology of the crystallized salts was accomplished by the examination of SEM. Mechanical, dielectric, linear and nonlinear optical investigation were performed to affirm LPDMCl as an aspiring candidate in establishing proficient nonlinear optical and optical power limiting device for practical applications. © 2020 Elsevier B.V.

Author Keywords
Activation energy; Laser damage threshold; LPDMCl; Nonlinear optics; X-ray diffraction; Z-scan technique

Index Keywords
Activation energy, Crystalline materials, Harmonic generation, Laser damage, Single crystals, X ray diffraction; Acentric space groups, Laser damage threshold, LPDMCl, Nonlinear optical applications, Optical characteristics, Optical power limiting, Third-order optical nonlinearities, Z-scan technique; Nonlinear optics

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Enhancement on the exchange coupling behavior of SrCo0.02Zr0.02Fe11.96O19/MFe2O4 (M = Co, Ni, Cu, Mn and Zn) as hard/soft magnetic nanocomposites
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Abstract
Hard/soft SrCo0.02Zr0.02Fe11.96O19/MFe2O4 (M = Ni, Co, Cu, Mn and Zn) nanocomposites have been fabricated efficiently via one-pot sol-gel combustion route. The influence of different type of spinel were examined by XRD (X-ray diffraction), SEM – TEM (scanning and transmission electron microscopies) systems and VSM (vibrating sample magnetometer). The XRD investigation of Hard/soft nanocomposites revealed the tailoring between hexaferrite and spinel ferrite phases. Magnetization measurements (M vs. H) were performed at room (T = 300 K) and low temperature (T = 10 K) and diverse magnetic parameters comprising Ms (saturation magnetization), Mr (remanence), coercivity (Hc), and so on were determined. Smooth M vs. H curves and single peaks in dM/dH vs. H plots were observed for various prepared nanocomposites. The Henkel plots and maximum energy products were also determined and analyzed. Various prepared hard/soft nanocomposites indicated relatively high values of diverse magnetic parameters. Diverse findings disclosed the incidence of exchange-coupling spring behavior among various soft and hard magnetic phases. Measurements of ZFC-FC magnetizations showed the existence of a peak temperature values, which are largely ascribed to competition between the motion of magnetic domain walls and thermal activations. It is revealed that one-pot sol-gel combustion route is valuable to attain strong exchange coupling among hard and soft nanoparticle phases grown near to each other. The obtained findings indicated that these nanocomposites are promising candidates for numerous practical applications. © 2019 Elsevier B.V.

Author Keywords
Exchange coupling; Hard-soft ferrites; Hexaferrites; One pot synthesis; Sol-gel auto-combustion; Spinel ferrites

Index Keywords
Combustion, Domain walls, Exchange coupling, Ferrite, Ferrites, Magnetic domains, Remanence, Saturation magnetization, Sol-gel process, Sol-gels, Temperature, Transmission electron microscopy, X ray diffraction; Hexa-ferrites, One-pot synthesis, Soft ferrite, Sol-gel auto-combustion, Spinel ferrites; Nanocomposites

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Hydrothermal synthesis and characterization studies of α-Fe2O3/MnO2 nanocomposites for energy storage supercapacitor application

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Abstract
In this present study, semiconductor magnetic α-Fe2O3/MnO2 nanocomposites (NCs) were prepared by a facile hydrothermal (HT) method. The crystallographic structure, morphology, chemical configuration and magnetic features were analysed by X-ray powder diffraction (XRD), high resolution scanning electron microscope (HR-SEM), energy dispersive X-ray analysis (EDX), transmission electron microscope (TEM), Fourier transform infrared spectroscopy (FT-IR), X-ray photoelectron spectroscopy (XPS) and vibrating sample magnetometer (VSM) analyses. The as-prepared NCs were used as an electrode in energy storing supercapacitor was systematically examined. The electrochemical deeds of α-Fe2O3/MnO2 NCs was analysed by cyclic voltammetry (C–V) and galvanostatic charge–discharge (GCD) tests. The CV analysis of the NCs electrode showed a distinctive pseudocapacitive behaviour in 1 M KOH solution. The NCs electrode reveals enhanced specific capacitance compared to plain α-Fe2O3 and MnO2 nanoparticles (NPs) and generates high specific capacitance of 216.35 Fg−1. Pseudocapacitor obtains of energy density 135.42 Wh kg−1 at power density of 6.399 kW kg−1, indicating the as-prepared α-Fe2O3/MnO2 NCs shows noteworthy high-energy, specific capacitance, power densities and long-standing cyclic stability with 89.2% of preliminary capacitance reserved at 1A g−1 after 10000 cycles in judgement with the pure α-Fe2O3 and MnO2 NPs electrode. The α-Fe2O3/MnO2 NCs electrode having noteworthy electrochemical characteristics performance renders promising applications in energy storing systems. © 2019 Elsevier Ltd and Techna Group S.r.l.

Author Keywords
Hydrothermal; Magnetic studies; Pseudocapacitance; Supercapacitor; X-ray photoelectron spectroscopy; α-Fe2O3/MnO2 NCs

Index Keywords
Capacitance, Chemical analysis, Cyclic voltammetry, Electric discharges, Electrochemical electrodes, Energy dispersive X ray analysis, Fourier transform infrared spectroscopy, Hematite, Hydrothermal synthesis, Magnetism, Manganese oxide, Nanocomposites, Photoelectrons, Photons, Potassium hydroxide, Scanning electron microscopy, Spectrum analysis, Supercapacitor, Transmission electron microscopy, X ray photoelectron spectroscopy, X ray powder diffraction; Electrochemical characteristics, Energy dispersive x-ray analysis (EDX), Fourier transform infra red (FTIR) spectroscopy, High-resolution scanning electron microscopes, Hydrothermal, Magnetic studies, Pseudocapacitance, Synthesis and characterizations; Semiconducting manganese compounds

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Thirumurugan, C.[a b] , Vadivel, P.[c] , Lalitha, A.[b] , Lakshmanan, S.[d]

Synthesis, characterization of novel quinoline-2-carboxamide based chalcone derivatives and their molecular docking, photochemical studies

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Abstract
Novel series of quinoline-2-carboxamide based chalcone derivatives (5a–g) have synthesized and characterized using 1H-NMR, 13C-NMR, Mass, and elemental analysis. In-silico molecular docking studies exhibited that synthesized compounds 5a and 5g are good binding energy (−8.46 kcal and −9.46 kcal) toward the essential requirements of targeted compounds for EGFR receptor-bearing quinazoline inhibitor (PDB ID: 1M17(Lapitinib)). UV-Vis and fluorescence spectroscopy measurements provided a significant effect on the absorption, emission cyclic voltammetry (CV), and highest occupied molecular orbital (HOMO). Lowest unoccupied molecular orbital (LUMO) values of compound 5g are also confirmed band along with intramolecular charge transfer character (D-π-A). The red shift maxima (510 nm) the emission spectra in various solvents with increasing solvent polarity. © 2020, © 2020 Taylor & Francis Group, LLC.

Author Keywords
Chalcone; DFT; EGFR-inhibitors; molecular docking; photochemical study

Index Keywords
antineoplastic agent, chalcone derivative, lapatinib, n [3 [3 (4 chlorophenyl)acryloyl]phenyl]quinoline 2 carboxamide, organic solvent, quinoline 2 carboxamide, unclassified drug; absorption, Article, carbon nuclear magnetic resonance, computer model, cyclic voltammetry, drug synthesis, elemental analysis, enzyme active site, hydrogen bond, molecular docking, photochemistry, proton nuclear magnetic resonance, spectrofluorometry, ultraviolet visible spectroscopy

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Antistressor effect of Costus speciosus on noise-induced changes in antioxidant level in the cerebral cortex of brain

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Abstract
Background: Plants have an inborn ability to biosynthesize an extensive range of enzymatic and non-enzymatic antioxidants and able to attenuate reactive oxygen species -induced oxidative damage. The present study aimed at analyzing the potential effect of Costus speciosus extract on the altered antioxidant level in subacute noise stress-induced alterations in the cerebral cortex of rats. Methodology: The rats were exposed to subacute noise stress, and the effect of ethanolic C. speciosus extract on enzymatic and non-enzymatic antioxidant parameters (such as superoxide dismutase [SOD], catalase [CAT], malondialdehyde [MDA], glutathione [GSH], and GSH peroxidase [GPx]) was studied. Results: Subacute noise stress significantly increased the activities of SOD and MDA levels while reduced the activities of CAT and GSH levels in cerebral cortex region. Treatment with CSE extract decreased the elevated activities of SOD and MDA levels and increased the activities of CAT, GPx, and GSH levels. Conclusion: The study concluded that the stress conditions may alter the cell redox equilibrium, thus influence the antioxidant response in brain cortex. The results proved that CSE was effective in producing significant antistress effects in rats due to its improvement in antioxidant levels. © 2020 JPR Solutions. All rights reserved.

Author Keywords
Antioxidant activity; Brain; Costus speciosus; Subacute stress

Index Keywords
alcohol, antioxidant, catalase, glutathione, glutathione peroxidase, malonaldehyde, plant extract, superoxide dismutase; acoustic stress, animal experiment, animal tissue, antioxidant activity, Article, brain cortex, cerebral cortical tissue, Cheilocostus speciosus, controlled study, enzyme activity, male, nonhuman, oxidation reduction state, rat

Chemicals/CAS
alcohol, 64-17-5; catalase, 9001-05-2; glutathione, 70-18-8; glutathione peroxidase, 9013-66-5; malonaldehyde, 542-78-9; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1

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Kuppusamy, M.[a] , Kamaldeen, D.[b] , Pitani, R.[c] , Amaldas, J.[d] , Ramasamy, P.[b] , Shanmugam, P.[a] , Vijayakumar, V.[a]

Effects of yoga breathing practice on heart rate variability in healthy adolescents: a randomized controlled trial
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Abstract
Background: This study was conducted among healthy adolescents to assess the effects of a yoga breathing practice (Bhramari pranayama, Bhr.P) towards cardiac autonomic function using heart rate variability (HRV) parameters. Methods: Of the 730 eligible subjects screened, 520 healthy adolescents who met the inclusion and exclusion criteria were randomly assigned to either yoga breathing group (n = 260) or control group (n = 260). The yoga breathing group practiced Bhr.P. five days a week for a duration of six months while the control group continued with their daily routine without any intervention. Outcome measures were time and frequency domain of HRV in both groups which were assessed before and after the intervention using Lead II ECG. Linear models were used in the analysis of short term HRV. Results: After 6 months of yoga breathing, the time domain parameters of short term HRV showed significant ($P < 0.05$) improvement towards the parasympathetic domain. Frequency domain parameters also showed the same direction of changes. In contrast, control group subjects showed a trend towards a sympathetic domain. Conclusion: The present study showed a positive shift in cardiac autonomic modulation towards parasympathetic predominance after 6 months of yoga breathing practice among apparently healthy adolescents. © 2020

Author Keywords
Adolescents; Autonomic function; Bhramari pranayama; Heart rate variability; Yoga

Index Keywords
adolescent, article, breathing, controlled study, electrocardiogram, female, heart rate variability, human, human experiment, major clinical study, male, outcome assessment, randomized controlled trial, yoga

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Duraivelu, V.[a] , Kamalakannan, U.[b] , Kumar, D.[c] , Dhathinamoorthy, E.[d]

An efficient incident recovery based information security model using fuzzy rough sets for green business environment

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Abstract
The objective of the work is to propose a fuzzy rough set based incident response plan with attack modeling and verification technique encompassing the information assurance in green business environment. Developed or gathered data about the current or past security incidents in business forms are to be recognized for conveying right security systems. The accuracy of the current data and the accentuation of the past data identified with security are officially used to foresee the truth of future data security occurrences in a business situation. The accentuation on different fragments of the data is investigated according to the fuzzy data in regards to the assaults and their effects. The fuzzy result and lament lattices desire and their relative weightages in different event responds action with business forms are quantitatively displayed to take a right choice with the proposed with Time Contiguity Anxious Logic (TCAL) tense validation. The hopeful green security system is distinguished when numerous business forms with various truth factors are teamed up. The intelligent sequent math with its methods is applied to implement the best option of information assurance and its security activity to defend any attack towards business environment. © 2020 Alpha Publishers. All rights reserved.

Author Keywords
Accentuation Security Event; Fuzzy rough set; Information Assurance; Semantic tense logic; Sequent calculus; Structured information

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Structural and optical properties of ZnO thin film prepared by sol-gel spin coating

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Abstract

Zinc oxide (ZnO) thin films were deposited on Si (1 0 0) and glass substrates by sol-gel spin coating technique. Zinc acetate dihydrate, monoethanolamine and isopropanol were used as the sources for precursor solution and the resulting gel was used for the preparation of ZnO thin films. The films were annealed at different temperatures (100 °C to 500 °C) and the effect of annealing on the structural and optical properties was investigated. X-ray diffraction (XRD) and UV-Vis spectroscopy were used for the analysis of the films. The XRD results indicated the polycrystalline hexagonal structure of the ZnO films with (0 0 2) orientation. The optical properties of the films were studied using UV-Vis spectrophotometer in the wavelength range of 190-1100 nm. The optical characterization of the ZnO thin films showed the high transmittance of ~90 % for the films annealed at 400 °C. The films showed the absorbance ~360-390 nm and bandgap values of 3.40-3.10 eV, depending on the annealing temperature of the films. © 2020 G Balakrishnan et al., published by Sciendo.

Author Keywords

optical properties; sol-gel; spin coating; X-ray diffraction; ZnO thin films

Index Keywords

Annealing, Film preparation, II-VI semiconductors, Metallic films, Optical properties, Oxide films, Sol-gel process, Sol-gels, Spin glass, Substrates, Thin films, Ultraviolet visible spectroscopy, X ray diffraction, Zinc coatings, Zinc oxide; Annealing temperatures, Hexagonal structures, Optical characterization, Sol-gel spin coating, Structural and optical properties, UV-Vis spectrophotometers, UV-vis spectroscopy, Zinc acetate dihydrate; Optical films

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A study on the impact of work life balance on the well being of employees at Quantum Software Solutions Pvt Ltd

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Abstract
Employee Work Life Balance (WLB) is a prime driver in the corporation that helps to achieve better productivity. It is a healthful blend of both employee's paintings life and personal life. There are many factors influencing work-life balance of an worker in the employer. The researchers have diagnosed some factors at the side of demographic variables to study and apprehend the paintings life stability. The goal is to examine the connection among Work Life Balance (WLB) and observe factors. To have a look at the affiliation between demographic variables of respondents and employee paintings-life balance; to have a look at the variant between the demographic factors and worker paintings-life stability; to take a look at the impact of person factors on worker paintings-life balance; to study the association among worker work-life balance and outcome variable viz., employee satisfaction and retention and to recognize the effect of employee work-life balance on worker satisfaction and retention as final results variable. © 2020 IAEME.

Author Keywords
Employees; Quantum Software Solutions; WLB; Work Life Balance

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Smart biofeedback expectorant system for improving the lung capacities
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Abstract
The Biofeedback Expectorant is a device which is designed for patients suffering from various lung disorders, associated with the production and secretion of excessive quantities of mucus within the airways and help to loosen the mucous so that it tends to be hacked from the lungs. Meanwhile, the mucous in the lungs becomes thick and difficult to wash out from the air routes. When this mucous remain in the air routes, it blocks airways and becomes hard to relax. The disease is likely to be conceivable if the mucous remains permanently in the air routes. When one breathes out through this device, it bounces the ball inside to it. This action produces signals around 15 Hz and forward the vibration via the air ways. This amalgamation of enhanced intensity and vibration AIDS the mucous in moving into the air ways where it remains. Some patients can't blow for a longer duration, therefore a feedback system is designed in such a way that the pressure is measured using a pressure sensor. If the value goes below the certain threshold limit the beep sound is heard and a light indication is provided so that we can find whether the patient should blow effectively. The Blowing time (how much time duration the patient is blowing) was measured and display in the LCD screen. The forced expiratory flow volume (FEV1) and Peak Expiratory Flow Rate (PEFR) was calculated that gives an idea about the status of the lungs. The Mann Whitney U Test was conducted with $\alpha = 0.05$ for the sampled data, the results show that the data is statistically significant. This device is small, portable, and easy to use with no side effects. © 2020 IAEME.

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Microstructure, optical and photocatalytic properties of MgO nanoparticles
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Abstract
The present work is focused on the synthesize of MgO nanoparticles using combustion method. The magnesium nitrate is used as a precursor with urea as a fuel. The precursor material is dissolved in 50 ml DI water along with the fuel and the solution is heated at 80 °C for 2 h. Then, the solution is transferred to crucible and kept it in the temperature of 500 °C. The as-synthesized MgO nanopowders are analyzed using X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), Field emission scanning electron microscopy (FESEM), photoluminescence (PL) and photocatalytic studies. The XRD results of MgO nanoparticles indicated the cubic structure with the crystallite size of 27 nm. The FESEM studies indicated the formation of MgO crystallites in spherical shape. In addition, MgO nanoparticles are porous and agglomerated. PL spectrum of MgO materials exhibit emission peaks, which indicates the occurrence of band to band transition with the bandgap of 2.9 eV. The photocatalytic degradation of methylene blue dye is evaluated using the as-prepared MgO nanoparticles under UV light. The photocatalytic studies indicate the 75% degradation efficiency of the catalyst after 120 min irradiation. Hence, the MgO Nanoparticles (NPs) can be used for the treatment of effluents from the dye industries. © 2020

Author Keywords
MgO nanoparticles; Photocatalytic; Photoluminescence; X-ray diffraction

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Dimensionality and superconducting parameters of YBa2Cu3O7−d/(WO3 NPs)x composites deduced from excess conductivity analysis
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Abstract
Superconducting composite products of type YBa2Cu3O7−d (noted Y-123) added with different contents (x wt.%) of tungsten oxide nanoparticles (WO3 NPs), x = 0.0–1.0 wt%, were produced via the standard solid-state reaction technique. Samples were investigated by X-ray diffraction (XRD), scanning electron microscope (SEM) and electrical resistivity measurements. XRD examination showed that the Y-123 orthorhombic structure is not altered by WO3 NPs additions. SEM observations indicated a reduction in the grains size with the increase of nanoparticles content. The investigation of the excess conductivity of different prepared composites was analyzed using Aslamazov-Larkin (AL) model. The investigated samples comprised of five distinct fluctuation regimes, namely short-wave (SWF), one-dimensional (1D), two-dimensional (2D), three-dimensional (3D), and critical (CR) fluctuations regimes. The coherence length along c-axis at zero-temperature (ξc(0)), lower and upper critical magnetic fields (Bc1 and Bc2), critical current density (Jc) and numerous other superconducting parameters were estimated with respect to WO3 NPs content. Compared to undoped Y-123 sample, it was found that an amount of x = 0.05 wt% of WO3 NPs is appropriate to improve the physical performances of Y-123, whereas with further increasing x, these performances were weakened. © 2020 Elsevier B.V.

Author Keywords
Critical current density; Critical magnetic fields; Excess conductivity; Tungsten oxide nanoparticles; YBa2Cu3O7-d superconductor

Index Keywords
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Investigations of lithium ion conducting polymer blend electrolytes using biodegradable cornstarch and PVP
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Abstract
Solid polymer electrolytes used in energy storage devices based on Cornstarch and Poly (vinyl Pyrrolidone) blend incorporated with lithium acetate was prepared using the solution casting method. XRD results confirmed that the amorphous nature of the as-prepared polymer electrolyte was increased by addition of salt. 80 wt % Cornstarch/20 wt % PVP/60 wt % lithium acetate added polymer blend system attains better amorphous nature than others. At ambient temperature, 60 wt % of lithium acetate added system has better bulk conductivity of 3.52 × 10−5Scm−1 over the frequency range of 42 Hz to 1 MHz using AC impedance spectroscopy studies. The dielectric analysis is confirmed that the higher conducting sample was having high dielectric constant and low relaxation time for enhancing ions dynamic behaviour. The conduction mechanism of the higher conducting polymer electrolyte is explained by small polaron hopping and overlapping large polaron tunnelling conduction mechanism. From the argand plot, it is confirmed that higher conducting sample has low relaxation time. © 2019 Elsevier B.V.

Author Keywords
AC impedance; Cornstarch/PVP/ CH3COOLi; CV; Polymer blend electrolyte; Solution casting method; Transference number

Index Keywords
Biodegradable polymers, Conducting polymers, Electric impedance, Lithium compounds, Polarons, Polymer blends, Polyvinyl acetates, Relaxation time, Solid electrolytes, Starch; Ac impedance spectroscopy, AC-impedance, Cornstarch/PVP/ CH3COOLi, High dielectric constants, Poly(vinyl pyrrolidone) blends, Solid polymer electrolytes, Solution-casting method, Transference number; Polyelectrolytes

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Ex vivo model for studying endothelial tip cells: Revisiting the classical aortic-ring assay
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Abstract
A drug undergoes several in silico, in vitro, ex vivo and in vivo assays before entering into the clinical trials. In 2014, it was reported that only 32% of drugs are likely to make it to Phase-3 trials, and overall, only one in 10 drugs makes it to the market. Therefore, enhancing the precision of pre-clinical trial models could reduce the number of failed clinical trials and eventually time and financial burden in health sciences. In order to attempt the above, in the present study, we have shown that aortic ex-plants isolated from different stages of chick embryo and different regions of the aorta (pulmonary and systemic) have differential sprouting potential and response to angiogenesis modulatory drugs. Aorta isolated from HH37 staged chick embryo showed 16% ($p < 0.001$) and 11% ($p < 0.001$) increase in the number of tip cells at 72 h of culture compared to that of HH35 and HH29 respectively. The ascending order of the number of tip cells was found as central (Gen II), proximal (Gen I) and distal (Gen III) in a virtual zonal segmentation of endothelial sprouting. The HH37 staged aortas displayed differential responses to pro- and anti-angiogenic drugs like Vascular endothelial growth factor (VEGF), nitric oxide donor (spNO), and bevacizumab (avastin), thalidomide respectively. The human placenta tissue-culture however evinced endothelial sprouting only on day 12, with a gradual decrease in the number of tip cells until 21 days. In summary, this study provides an avant-garde angiogenic model emphasized on tip cells that would enhance the precision to test next-generation angiogenic drugs. © 2019

Author Keywords
Chick aortic ring assay; Drug testing; Endothelium; Human placenta ex-plant; Sprouting angiogenesis; Tip cell

Index Keywords
bevacizumab, nitric oxide donor, thalidomide, vasculotropin, angiogenesis inhibitor, angiogenic factor; animal tissue, aortic ring (slice), Article, chick embryo, controlled study, embryo, embryo development, endothelium cell, endothelium tip cell, ex vivo study, explant, human, human tissue, nonhuman, placenta tissue, priority journal, pulmonary artery, sprouting angiogenesis, angiogenesis, animal, bioassay, cell motion, cell proliferation, comparative study, drug effect, embryology, endothelium cell, female, physiology, placenta, pregnancy, reproducibility, thoracic aorta, time factor, tissue culture technique, vascularization; Angiogenesis Inducing Agents, Angiogenesis Inhibitors, Animals, Aorta, Thoracic, Biological Assay, Cell Movement, Cell Proliferation, Chick Embryo, Endothelial Cells, Female, Humans, Neovascularization, Physiologic, Placenta, Pregnancy, Reproducibility of Results, Time Factors, Tissue Culture Techniques

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Response Surface Methodology Optimization of Mono-dispersed MgO Nanoparticles Fabricated by Ultrasonic-Assisted Sol–Gel Method for Outstanding Antimicrobial and Antibiofilm Activities

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Abstract

Magnesium oxide (MgO) nanoparticles are one of the highly significant compounds in construction. The novelty concentrated on using sol–gel technique coupled with ultrasonication for synthesis of MgO nanoparticles to prevent the agglomeration and its effect on the size was investigated. The synthesized samples were characterized by TGA, DSC, XRD, FTIR, SEM, EDX mapping, DLS, and HRTEM. Antimicrobial and antibiofilm activities of MgO nanoparticles were investigated against multidrug-resistant microbes causing-urinary tract infection (UTI). TGA, XRD, and FTIR characterization were used to identify the calcination temperature, characterization peaks, and functional groups of MgO nanoparticles, respectively. DLS technique confirmed the particle size distribution which found to be 21.04 nm. HRTEM and SEM/EDX mapping showed that MgO nanoparticles are pure, spherical and the average particle size is 19.2 nm. MgO nanoparticles showed a promising antimicrobial effect against all UTI-causing pathogens. It showed a prominent antimicrobial capability against Staphylococcus aureus, Escherichia coli and Candida albicans by 19.3 mm, 16.1 mm and 15.2 mm ZOI, respectively. Additionally, they showed improved biofilm inhibition as 95.65%, 84.23%, and 76.85% against C. albicans, E. coli and S. aureus, respectively. Therefore, due to these outstanding properties, this study could give insights for solving serious industrial, pharmaceutical and medical challenges throughout the utilization of new nanoparticle-based approach. © 2019, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords

Antibiofilm potential; Antimicrobial activity; MgO nanoparticles; Sol–gel synthesis; Ultrasound

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Influence of seasonal variation on incidence and population dynamics of whitefly (bemisia tabaci) on Brinjal
(2020) *Plant Cell Biotechnology and Molecular Biology*, 21 (1-2), pp. 28-32.

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Abstract
A field trial was carried out to study the influence of seasonal variation on the incidence of whitefly (Bemisia tabaci) on brinjal at Vallampadugai village during 2017 during the Rabi and Kharif seasons. Seasonal incidence of whitefly coincided with various vegetative stages and throughout the crop period. Correlation studies showed that temperature was positively correlated with the incidence of whiteflies, whereas rainfall and relative humidity were not-significant during January- April 2017 (First Season). During the second season, the temperature was positively correlated with whitefly numbers during the July-October 2017 period. Among all the meteorological factors, the maximum temperature played a significant role with (0.440) followed by minimum temperature (0.392). In the second season Brinjal crop significant positive correlation with temperature (0.378) and R.H (0.311) was recorded. In both seasons rainfall showed a significant negative relationship. However, whitefly incidence was lower during the first season (Rabi) compared to the second season (Khairf) due to variation in weather factors. © 2020 Society for Biology and Biotechnology. All rights reserved.

Author Keywords
Bemisia tabaci; Correlation; Population

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Geetharani, K.S.[a] , Vijayakumar, R.[b] , Shanmugasundaram, M.[c] , Selvaraj, J.[d]

Free radical scavenging potential of Argyreia nervosa leaf extract: An in vitro analysis
(2020) *Drug Invention Today*, 13 (2), pp. 247-251.

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Abstract
Background: Argyreia nervosa (AN) belongs to the family Convolvulaceae, used in Ayurvedic medicine, and has immense remedial values. Aim: The aim of the study was to evaluate the in vitro antioxidant activity of AN. Materials and Methods: AN ethanol extract prepared and examined for their antioxidant potential by 2,2-Diphenyl-1-picrylhydrazyl (DPPH), superoxide radical scavenging, DNA sugar damage, and ferric reducing antioxidant power methods. Results: The antioxidant activity of AN extract was found to be a high value at the concentration of 150 µg/ml compared to 50 and 100 µg/ml concentrations. DPPH free radical, nitric oxide, and superoxide anion radical scavenging assays showed strong antioxidant activities with an increase in the concentration of ethanol extracts of AN. Conclusion: The present in vitro study clearly shows that the ethanolic extract of AN has the potential free radical scavenging activity due to its antioxidant capacity and hence it can be used as one of the medicinal herbs against various diseases including against liver toxicity. © 2020 JPR Solutions. All rights reserved.

Author Keywords
2,2-Diphenyl-1-picrylhydrazyl; Antioxidants; Argyreia nervosa; Ferric reducing antioxidant power; Superoxide

Index Keywords
antioxidant, Argyreia nervosa extract, ascorbic acid, plant extract, quercetin, unclassified drug; antioxidant activity, Article, cell damage, controlled study, DNA damage, DPPH radical scavenging assay, ferric reducing antioxidant power assay, free radical scavenging assay, in vitro study, oxidative stress, plant leaf

Chemicals/CAS
ascorbic acid, 134-03-2, 15421-15-5, 50-81-7; quercetin, 117-39-5

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Elango, A.[a] , Punnagai, K.[b] , Chellathai, D.[c] , Elizebeth, A.A.[a]

An analysis of antiasthmatic preparations available in Indian market

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Abstract
Objective: To analyse various anti-asthmatic preparations available in the Indian market and to study their cost effectiveness and rationality of drug preparations. Materials and methods: Various formulations which is used for asthma mentioned in Current Index of Medical Specialities (CIMS) (2018) were noted down. Their rationality and irrational combination of drug preparations were recorded as per Drug Controller General of India (DCGI) (2018). Moreover they are classified into number of ingredients present in each preparation, type of dosage forms, different pharmacological groups to which they belong and cost analysis of the anti-asthmatic preparations. Results: Among 598 preparations which has been analysed, 360 (60%) were fixed dose combinations (FDC). Out of 360 FDC, 250(42%) preparations were of irrational formulations. Preparations were categorised into different pharmacological groups like expectorants (18.73%), antihistamines (17.22%), beta 2 adrenergic agonists (50.17%), mucolytics (20.57%), cromones (1%), methylxanthines (16.38%), corticosteroids (24.08%), antileukotrienes (23.91%), anticholinergics (3.85%).187 preparations were inhalants and 10 of the preparations were nasal formulations. Solid formulations (244) are more when compared to other formulations and liquid oral formulations are costlier. Conclusion: Many of the drugs which was considered as irrational by DCGI is still available in Indian market and it is widely used by the people. This indicates the poor governance in the pharmaceutical sector. Through proper awareness and education to the pharmacist, physician and patient this problem could be solved. Moreover it also leads to the wasteful expenditure and effectiveness of the drug is also questionable. © RJPT All right reserved.

Author Keywords
Anti-asthmatic medicines; Cost evaluation; Rationality analysis

Index Keywords
antiasthmatic agent, antihistaminic agent, beta adrenergic receptor stimulating agent, cholinergic receptor blocking agent, corticosteroid, expectorant agent, methylxanthine, mucolytic agent; Article, cost benefit analysis, cost effectiveness analysis, drug cost, drug formulation, health care cost, health care facility, health economics, health service, human, marketing

Chemicals/CAS
methylxanthine, 28109-92-4

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Denis, G.[a] , Krishnakumar, T.[b] , Karthikeyan, M.[c] , Sasipriya, S.[d]

Recruitment based on personality traits from digital footprints on social media by using machine learning language
(2020) *International Journal of Scientific and Technology Research*, 9 (2), pp. 951-955.

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Abstract
In this paper, we present a novel methodology for evaluating job applicants in online enrolment frameworks, utilizing AI calculations to take care of the candidate positioning issue. A use of our methodology is actualized as a model framework, whose usefulness is displayed and assessed in a true enlistment situation. The Internet gives immense chances to people to introduce themselves in various manners, from basic self-improvement to vindictive personality misrepresentation. We regularly depend on our Internet-based decisions of others to decide, for example, whom to associate with, date, or utilize. An assortment of methodologies has been as of late proposed to consequently derive clients' character from their client produced content in online networking. Methodologies vary as far as the AI calculations and the capabilities utilized, kind of used impression, and the web based life condition used to gather the information. In this article, we layout the systems basic human-and PC based character expectation and portray how future research could address ebb and flow confinements. We start by thinking about what character is and what "precise" truly implies. © 2020 IJSTR.

Author Keywords
Digital foot prints; Machine learning Language; Recruitment; Social Media

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Taj, S.M.[a] , Kumaravel, A.[b]

Intentions of online shoppers prediction by fuzzy petri nets construction
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Abstract
In this business field, the growth of online stores makes competition harder. Online stores need to have a website or application ready to calculate and classify consumer spending intentions, so customers will ultimately have an eye on things on the sites and applications to make purchases. Fuzzy Petri networks are dominant features as they cover the efficiency and inaccuracy management of sometimes the software field. Researchers use this tool to encode the processing results achieved. Data mining helps sell professionals to improve their consumer behavior understanding. This higher perceptive, in effect, helps them to concentrate on mercantilism campaigns with specific precision and match campaigns with shoppers and prospects, preferences, desires, and attitudes. Fuzzy Petri networks and classification mining methods are enforced data on intention online shopper victimization throughout this paper. © IJSTR 2020.

Author Keywords
Classifications; Data mining; High level fuzzy Petri nets; Online shoppers intention data; Search methods; Selected attributes
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Denis, L.[a b] , Krishnakumar, T.[c] , Karthikeyan, M.[d] , Sasipriya, S.[e]

A secured and tamper free authentication and verification of transactions over the network in cash logistics industry

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Abstract
Technology framework for secured and tamper free authentication mechanism of identity and verification of transactions over the network in cash logistics industry using IOT to avoid identity thefts and cash robberies during the storage, transportation, handling and dispensing of cash. This paper presents a comprehensive and a fundamentally new way to transact business. The whole process flow of the cash logistics with the security based authentication factors of and methods to control cyber security threats over the cash logistics network. Here in this paper I have utilized cryptographic security, decentralized agreement, and a mutual open record (with its appropriately controlled and permissioned perceive ability), Blockchain advancements which can significantly change the manner in which it sort out the monetary, social, political, and logical exercises. © 2020 IJSTR.

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Minimum 7 are mandatory; Separated by commas; Should closely reflect the topic and should optimally characterize the paper; Use about four or phrases in alphabetical order

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Denis, G.[a] , Krishnakumar, T.[b] , Karthikeyan, M.[c] , Sasipriya, S.[d]

Innovative and automatic execution of HR recruitment based on blockchain using general data protection regulation (GDPR)

(2020) *International Journal of Scientific and Technology Research*, 9 (2), pp. 78-81.

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Abstract
In present day period of information technology most association have understood that human resource is significant for their hierarchical advancement, anyway the recruiting system has grown quickly and come to the for-most degree of e-recruiting process however there is a risk of ERecruitment Frauds (ERF), counterfeit profiles, counterfeit resumes, counterfeit recognizable proof card, counterfeit visa, and phony meetings etc..By this impression the ineligible applicants are set in a decent association. So as to maintain a strategic distance from these predefined disadvantages, this paper presents the selecting procedure dependent on Block chain. This Block chain innovation which look at the first information of the up-and-comer and give exact outcome to the enrolling procedure by utilizing data mining, There are additionally numerous sites where recruiters can purchase a whole database of CVs that fit their hunt criteria. Candidate data has turned into the currency of the recruitment business. Generally, this is without the consent or even the learning of the candidates themselves. To prevent such procedures, the European Union (EU) has presented the General Data Protection Regulation (GDPR). By utilizing various devices and web search tools keeping Blockchain has primary zone of capacity, we can easily scrape the web for CVs and email addresses of potential candidates. The magnificence of Blockchain is that organizations can recover verified candidate data while keeping it unknown and holding fast to information protection guidelines. © 2020 IJSTR.

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Jenitha, G.[a] , Jayasimman, I.P.[a] , Kumaravel, A.[b]

Energy value of benzoxepine derivatives

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Abstract
In this article,Minimum Domination energy value and Minimum neighborhood energy value of Benzoxepine derivatives has studied. By using these derivatives are useful intermediates for the synthesis of many natural products and biologically active molecules. These molecules are an essential objective in modern organic synthesis. © IJSTR 2020

Author Keywords
Minimum Domination energy value; Minimum neighborhood energy value

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Understanding the role of the transcription factor sp1 in ovarian cancer: From theory to practice
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Abstract
Ovarian cancer (OC) is one of the deadliest cancers among women contributing to high risk of mortality, mainly owing to delayed detection. There is no specific biomarker for its detection in early stages. However, recent findings show that over-expression of specificity protein 1 (Sp1) is involved in many OC cases. The ubiquitous transcription of Sp1 apparently mediates the maintenance of normal and cancerous biological processes such as cell growth, differentiation, angiogenesis, apoptosis, cellular reprogramming and tumorigenesis. Sp1 exerts its effects on cellular genes containing putative GC–rich Sp1–binding site in their promoters. A better understanding of the mechanisms underlying Sp1 transcription factor (TF) regulation and functions in OC tumorigenesis could help identify novel prognostic markers, to target cancer stem cells (CSCs) by following cellular reprogramming and enable the development of novel therapies for future generations. In this review, we address the structure, function, and biology of Sp1 in normal and cancer cells, underpinning the involvement of Sp1 in OC tumorigenesis. In addition, we have highlighted the influence of Sp1 TF in cellular reprogramming of iPSCs and how it plays a role in controlling CSCs. This review highlights the drugs targeting Sp1 and their action on cancer cells. In conclusion, we predict that research in this direction will be highly beneficial for OC treatment, and chemotherapeutic drugs targeting Sp1 will emerge as a promising therapy for OC. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

Author Keywords
Cellular reprogramming; Ovarian cancer; Sp1; Therapeutics approach; Transcription factor

Index Keywords
transcription factor Sp1, Sp1 protein, human, transcription factor Sp1; angiogenesis, antiapoptotic activity, cancer stem cell, carcinogenesis, cell cycle, human, induced pluripotent stem cell, nonhuman, nuclear reprogramming, ovary cancer, protein function, protein structure, protein targeting, Review, animal, female, gene expression regulation, genetics, metabolism, molecular model, neovascularization (pathology), ovary tumor, pathology; Animals, Carcinogenesis, Cell Cycle, Cellular Reprogramming, Female, Gene Expression Regulation, Neoplastic, Humans, Models, Molecular, Neoplastic Stem Cells, Neovascularization, Pathologic, Ovarian Neoplasms, Sp1 Transcription Factor

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Synthesis and characterization analysis of unique organic crystal – Urea Glutaric acid, an optimistic candidate for optical device applications

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Abstract
Urea Glutaric acid (UGA), an organic compound was grown and its diverse characterizations were studied. XRD results confirmed the structure as monoclinic with the space group of C2/c. FTIR results confirmed the basic functional groups present in crystal was noticed. The optical properties have been studied by absorbance measurements in the wave length region from 200 nm to 800 nm. NLO (third order) properties were studied by Z- Scan method declares UGA, a successful material in nonlinear optics. The fluorescence spectrum indicates an electronic excitation at 481 nm and its thermal studies was done to determine the stability of the grown material under decomposition. Laser damage threshold was calculated to predict its resistance for high power laser radiation. The hardness and dielectric properties of UGA was explained from Vicker's micro hardness and dielectric analysis. Hence, the results from various characterizations confirmed that UGA is an enticing aspirant over device fabrication in nonlinear optics. © 2019 Elsevier B.V.

Author Keywords
Crystal growth; Dielectric studies; Hardness studies; Nonlinear optics; Organic compound; Urea glutaric acid

Index Keywords
Crystal growth, Dielectric properties, High power lasers, Laser damage, Metabolism, Microhardness, Nonlinear optics, Organic compounds, Urea; Absorbance measurements, Dielectric studies, Electronic excitation, Fluorescence spectra, Glutaric acid, Laser damage threshold, Synthesis and characterizations, Vicker's micro hardness; Optical properties

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Phytochemical screening, invitro antidiabetic activity of muntingia calabura leaves extract on alpha-amylase and alpha-glucosidase enzymes

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Abstract
Muntingia calabura is a medicinal plant broadly used in conventional therapeutic preparation of many pharmacological activities. In the present study, the Invitro antidiabetic property of Muntingia calabura leaves extracts was analyzed by using standard methods. An in vitro anti-diabetic study was done by inhibition of α-amylase and α-glucosidase enzymes. The phytochemical screening of Muntingia Calabura leaves revealed that the extract is rich in the secondary metabolites such as alkaloids, polyphenols and tannins. The in vitro antidiabetic capability of extracts such as Petroleum ether, Chloroform, Methanol and aqueous through α-amylase enzyme and alpha-glucosidase enzyme inhibition studies. The results of the present study concluded that the methanolic extract of Muntingia calabura exhibits 80% in α-amylase and 60% in alpha-glucosidase activity while compared to acarbose. The phytochemistry study portrays the antidiabetic activity of Muntingia calabura is due to the presence of polyphenols. © 2020, J. K. Welfare and Pharmascope Foundation. All rights reserved.

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Anti-diabetic; Anti-hyperglycemic; Muntingia calabura; Phytochemicals

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An approach to derive bone marrow mesenchymal stem cells with therapeutic significance
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Abstract
"Mesenchymal Stem cells (MSCs)" are distinct type of cells naturally present in the body that has the ability to separate into any cell type like bone, cartilage, muscle, nerve, tooth etc. There are numerous studies available to efficiently isolate culture, characterize and expand the bone marrow mesenchymal stem cells. Similar such method was utilized to isolate the MSCs from femoral and tibial bone of female wistar rats and the standardized method was used to culture and expand MSCs. The cultured cells were determined to be MSCs with their hallmark properties of spindle shape morphometry, cellular plasticity & cell adherence property. The cells after expansion were subjected to flow cytometry analysis for characterization. The BMSCs showed positive expression for CD90 & negative expression for CD34. In the present investigation, we obtained the BMSCs that would have potential clinical significance as it was performed in a GMP environment with all necessary requirements that could enable its therapeutic value. © 2020 International Journal of Research in Pharmaceutical Sciences. All rights reserved.

Author Keywords
Bone marrow stem cells; CD34; Cell adherence

Index Keywords
CD34 antigen, Thy 1 membrane glycoprotein; animal cell, Article, bone marrow derived mesenchymal stem cell, cell adhesion, cell culture, cell differentiation, cell expansion, cell isolation, cell plasticity, controlled study, endothelial progenitor cell, epithelization, fluorescence activated cell sorting, granulation tissue, humidity, laminar flow, mesenchymal stem cell, morphometry, nonhuman, rat, signal transduction, tissue engineering, wound healing

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Thermo-mechanical and morphological characterization of needle punched non-woven banana fiber reinforced polymer composites

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Abstract
The purpose of this study is to employ a novel technique for the fabrication of natural fiber reinforced polymer composites that could stand toe to toe with glass fiber composites in terms of thermo-mechanical properties without any chemical treatment. The reinforcement fibers were extracted from the pseudostem of the nendran banana plant. Later a non-woven fabric composite consisting of banana fibers reinforced with unsaturated polyester (UPE) matrix was fabricated using the needle punching technique. Composite specimens were subjected to tensile, flexural, hardness, quasi-static indentation (QSI) and dynamic mechanical analysis (DMA) test for evaluating mechanical properties. However, the optimal properties was achieved at 40 wt% fiber content with an increase in tensile and flexural strength of 36% and 33% for needle-punched banana fiber composites (NPBFC) compared with random banana fiber composites (RBFC) respectively. It was also evidenced from the load bearing capacity and hardness of NPBFC having 2420 N and 87 HRRW, proves its superiority over RBFC and comparable with RGFC. Further, the viscoelastic properties of UPE and NPBFC were analyzed. Subsequently, the characteristic bonds of cellulose were represented through infra-red spectroscopy and the crystallinity index was exposed through X-ray diffraction analysis. In addition, thermal analysis was done and the stability of the optimized NPBFC witnessed was up to 260 °C. Also, morphology-properties correlation was established. Finally, the experimental results were validated using theoretical models. This study concludes that the synthesized novel NPBFC endorses its potentiality as a probable reinforcement in industrial safety helmet, automotive door panel and light weight structural applications. © 2019 Elsevier Ltd

Author Keywords
banana fiber; Morphological properties; Needle-punch; Polymer composites; Thermo-mechanical properties

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Golden Renjith Nimal, R.J.[a] , Chenthil, M.[b] , Sangamaeswaran, R.[c] , Hariharan, R.[a] , Esakkimuthu, G.[d]

An investigation on microstructural evolution and mechanical properties of Zn coating as interlayer on Mg-Al alloys using diffusion bonding

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Abstract
Diffusion bonding is the joining of two or more similar or dissimilar pieces of metals combined under pressure at elevated temperatures for a specific time. During the period, atoms diffuse between the two metals across the interface. The energy needed for the atomic movement entirely dependable on the stress applied and temperature. This is also extensible to non-metals, ceramics and intermetallic Compounds (IMC's). The traditional method of fusion state welding processes have some disadvantages such as the production of less heat affected zone, distortion of the base metals etc. In the present investigation, 7075 Al and AZ80 Mg alloys combined together which the effects of holding time and holding temperature are related to diffusion and are being studied for mechanical and metallurgical properties. Henceforth, the morphologies were found by optical microscopy and SEM (Li et al., 2009) [1]. Zinc coated AZ 80 magnesium combination and AA 7075 aluminum amalgam were treated to receive the preliminaries of diffusion bonding for various process parameters (Pragatheswaran et al., 2019) [10]. A bonding temperature of 350 to 450°C, a bonding pressure of 2MPa to 25MPa and a holding season of 5min to 150min resulted in a dispersion between the zinc coated AZ80 Magnesium/AA7075 Aluminium alloys (Pragatheswaran et al., 2019) [10]. It can be noted that for the zinc coated samples the lower temperatures of 325°C resulted in non-bonded layer and similarly at lower pressure of 2MPa and lower time duration resulted in non-bonded layer whereas for non-coated and zinc coated layer of lower temperature resulted in better bonded nature. © 2020 Elsevier Ltd. All rights reserved.

Author Keywords
Diffusion bonding; FESEM; Interlayer; Lap shear; Ram tensile
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Guru Manikandan, K.[a] , Pannirselvam, K.[a] , Kenned, J.J.[a] , Kumar, S.C.[b]

Evolution of numerical model to identify the intersection of vibratory motion equations with discrete points in a mechanical system

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Abstract
Some mathematical functions which can't be solved analytically and the solution for these functions can be determined by the intersection of their graphical plots. Computer programmes represent these functions with discrete points which are not continuous in nature. Since the resolution of the discretization is limited, the graphs may intersect in the interval between two points. It is difficult to find the intersection value of these functions from the computer plotted graphs as the intersection points do not exist. In such cases, intersection points can be approximately found by eye ball method, or by increasing the number of discrete points. This paper discusses about a logical method to find the intersection points of two discretely plotted graphs with much better accuracy. Novelty of this work is the improvement in the accuracy and resolution of determination of intersection points between two discretised graphs without increasing the resolution of discretisation. Existing methods requires increasing the number of discretised points to improve the accuracy and resolution in the determination of intersection points. A problem related to simulation of vibratory induced motions is taken as an example. © 2020 Elsevier Ltd. All rights reserved.

Author Keywords
Discrete points; Eyeball method; Mathematical function; Resolution; Vibration

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Vaidehi[a] , Dhar, S.[a] , Jayakumar, A.[a] , Lavanya, R.[b] , Kumar, M.D.[a]

Techno-economic assessment of various motors for three-wheeler E-auto rickshaw: From Indian context
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Abstract
Three-wheeler auto-rickshaws form a major part of the public transportation sector in developing countries like India, as they provide cost-effective and convenient mobility. Switching to electric auto-rickshaws will significantly reduce emissions besides being cost-effective. Also in contrast to the gas powered vehicles, electric auto rickshaws for public transport aid a big aid to the national economy by benefitting the power grids, PSUs & customers. The central feature for an E-auto rickshaw besides batteries that replaces an IC engine is an electric motor. The rapid advancement of power electronics and respective control technology has created a room in which various types of electric motors can be used for Electric Vehicles (EV). For choosing a right motor for an electric vehicle, one has to primarily consider the performance, operating conditions, efficiency, relative costs and so on. For Electric vehicles like three wheel auto rickshaws covering short-range driving cycle, a low-weight, high power density, and affordable motor must be conceptualized in terms of their functionality and economic feasibility from the Indian context. The ultimate intent of this present research work is to identify the characteristics for a range of motors and to determine their attributes that are optimal suited for large-scale deployment of electric auto-rickshaws in the Indian transport scenario. © 2020 Elsevier Ltd. All rights reserved.

Author Keywords
BLDC motor; Drive cycle; Electric vehicles; Induction motors; Power-torque curve; Switched reluctance motor; Three-wheelers

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Magnetic nanoparticles for immobilization of enzyme and their applications - A review
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Abstract
Enzymes in industrialized catalysts have remarkable potentials as their fabrication is easy and every substrate has its distinct enzyme. Compared to organic materials, inorganic nanomaterials provide exclusive support to enzymes, as well as high resistance to microbial corrosion, better reusability and high enzyme stability. Due to the easy recovery of the product and substrate, the chosen enzyme immobilization and magnetic nanoparticles (MNPs) are the most universally known carriers of proteins / enzymes among the inorganic nano-materials. A more complicated overview of the applications and recent advances of cellulase (CL) enzyme immobilization on different functionalized MNPs was addressed in this article. In addition, in various fields such as enzyme reusability, superficial rescue method of CL, and the capable development of biotechnology method, an effort to exercise the future perspective of the research scope. © 2020, Advanced Scientific Research. All rights reserved.

Author Keywords
Applications; Immobilization of cellulase enzyme (CL); Magnetic nanoparticles

Index Keywords
3 aminopropyl triethoxy silane, alcohol, aminebicarbonate, beta fructofuranosidase, biodiesel, carboxymethylcellulose, cellulase, cellulose, chemical compound, chitosan, glutaraldehyde, graphene, graphene oxide, magnetic nanoparticle, n ethyl n 3 dimethylamino propyl carbodiimide hydrochloride, nanocomposite, nanogel, polyacrylic acid, polyethylene, unclassified drug, xylan endo 1,3 beta xylosidase; biocompatibility, biodegradability, biotransformation, Cannabis sativa, catalyst, chemical reaction, corrosion, cost effectiveness analysis, drug delivery system, drug solubility, electrospinning, enzyme activity, enzyme immobilization, enzyme stability, fermentation, hydrolysis, infrared spectroscopy, mass fragmentography, microbial corrosion, microemulsion, municipal solid waste, nonhuman, particle size, physical chemistry, Review, scanning electron microscopy, thermostability, X ray diffraction

Chemicals/CAS
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Documents

Balasubramanian, K.[a] , Rajeswari, N.[b] , Risheek Shankar, M.[a]

Analysing the combination and positioning of bio fibre and bio fibre woven mat in enhancing hybrid composite properties

(2020) *Materials Today: Proceedings*, 43, pp. 1226-1231.

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Abstract
Hybrid composite which is made up of bio fibre woven mat and fibre could be an eco friendly alternative for the conventional materials. In this work, two variants of hybrid composite materials which is a combination of Bamboo fibre woven mat, Aloe Vera fibre Woven mat, and Sisal fibre with epoxy as resin and another two sets of hybrid composites of Sisal fibre with Flax mat and Aloevera mat are prepared by hand laying method having the fibre mats in different positions. The prepared ASTM standard specimens are analysed to measure the unique changes in the features of 4 sets of hybrid composite materials in various combinations, the tests under tensile and flexural loads, water absorption and Hardness are carried out. Mechanical characteristics of the prepared test specimens are evaluated by conditioning the specimens in standard atmospheric condition. As a result, it is understood that to vary the characteristics and performance of hybrid composites, the proper identification and utilisation of bio fibre mats and its arrangement variation plays a vital role. © 2020 Elsevier Ltd.

Author Keywords
Hand layup method; Hybrid composite; Mechanical properties; Natural fibre; Woven Bio Mat

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Guru Manikandan, K.[a] , Pannirselvam, K.[a] , Kenned, J.J.[a] , Kumar, C.S.[b]

Investigations on suitability of MEMS based accelerometer for vibration measurements
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Abstract
Vibration measurement is essential for the study and testing of vibrating members, condition monitoring of industrial machines and control of vibration. Accelerometers are preferred for vibration measurement because it is compact size and the other two parameters velocity and displacement can be obtained by method of integration. Conventionally piezoelectric accelerometers are used for vibration measurements. Presently new generation of MEMS accelerometers are available in the market with numerous advantages like miniature in size, low cost, wireless transmission of signals. The purpose of this paper is to evaluate the MEMS based accelerometers and to guide the user to select a proper MEMS accelerometer for vibration measurement. The performance and suitability for vibration measurement of three MEMS based accelerometers, two commercially available and one MEMS Accelerometer present in a smart phone are compared with a conventional piezoelectric accelerometer taken as reference. © 2020 Elsevier Ltd. All rights reserved.

Author Keywords
Acceleration; MEMS; Piezoelectric; Vibration; Wireless

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Sasthankutty, L.[a] , Ramabadran, R.[b]

Stability evaluation of four phase high gain converter by small signal modeling
(2020) *Revue Roumaine des Sciences Techniques Serie Electrotechnique et Energetique*, 65 (1-2), pp. 75-80. Cited 2 times.

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Abstract
This paper presents the stability analysis of a high gain interleaved converter by small signal modeling. The proposed converter fuses the features of both interleaved boost converter and high gain converter. Considering the specifications of the parameters used and depending on state-space averaging technique, the transfer function is derived. The stability assessment of the proposed converter is analyzed using bode plot and root locus plot of the transfer function derived. The response of the converter is validated experimentally using hardware prototype model of 800 W. The investigation provides useful information in designing a perfect controller for line and load regulation. The simulation and experimental results prove the efficacy of the proposed converter. © 2020 Editura Academiei Romane. All rights reserved.

Author Keywords
High gain; Interleaved boost converter; Small signal modeling; Stability

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Documents

Selvam, A.S.[a] , Bupesh, G.[b] , Vasanth, S.[b] , Kumar, A.S.[c]

EFFECT OF YOGA THERAPY WITH VARMA THERAPY PRACTICES ON SYSTOLIC BLOOD PRESSURE AND DIASTOLIC BLOOD PRESSURE VARIABLES AMONG HYPERTENSIVE MIDDLE AGED MEN

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Abstract
The present random group experimental study was designed to find out the effect of yoga therapy with Varma therapy practices on systolic blood pressure and diastolic blood pressure variables among hypertensive middle aged men. It was hypothesized that there would be significant difference in yoga therapy with Varma therapy practices than the control group on systolic blood pressure and diastolic blood pressure variables among hypertensive middle aged men. To achieve the purpose of the study, thirty (30) hypertensive middle aged men residing in chennai age between 40 to 50 years were selected randomly two groups, namely experimental group and control group of fifteen (15) subjects each. Training period of this study was twelve weeks. Experimental group underwent yoga therapy with Varma therapy practices for twelve (12) weeks, six days a week for a maximum of one hour in the morning. The control group was kept in active rest. The pre test and post test were conducted before and after the training for all two groups. To analyses the data (ANCOVA) test was used to find out the significant difference between experimental group and the control group. The test of significance was fixed as 0.05 level of confidence. It was concluded that Yoga therapy with Varma therapy practices significantly decreased on systolic blood pressure and diastolic blood pressure than the Control group among hypertensive middle aged men. © 2020, Biochem. Cell. Arch. All Rights Reserved

Author Keywords
blood pressure; hypersensitive; Yoga therapy

Index Keywords
adult, analysis of covariance, article, controlled study, diastolic blood pressure, human, human experiment, male, middle aged, pretest posttest design, randomized controlled trial, systolic blood pressure, therapy effect, yoga

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Sivasekaran, K.[a] , Stanleay, P.[b] , Ashok, P.K.[c]

Mapping the Study and Awareness on Early Death Research: A scientometric Analysis
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Abstract
To measure the research impact on “Early Death”, literatures indexed in SCOPUS has been downloaded from 1999 to 2018 towards the implemented of a few scientometric techniques. Brief information about the pain of the “Early Death” has been given in the introduction along with the information related to the work done in this research. A few literatures related to the scientometric study have been reviewed. The data utilized for the research work was only for 20 years and from the SCOPUS database, alone. The methodology adopted for the research work was descriptive research. Relevant hypotheses are framed to test the variables. Regression test proved that the literatures published between 2009 and 2013 are fit to calculate the doubling time of the records. Among the type of literatures, “Articles” dominated the other typeof literatures involved in the publications. It was identified that the collaborative publications played dominant role over the single authorship. The degree of collaboration was 0.90. Top three positions towards the maximum productivity have been occupied by the USA authors. The fitness test of Lotka’s Law of Bibliometrics was conducted through Kolmogorov Smirnov Test. The author productivity of this research work does not fit Lotka’s Law of author productivity. The article is concluded with a request to the MHRD of the global countries to encourage the scientists to do many more research on “Early Death” to give more awareness to the society to make the human beings to live and lead a happy long life. © 2020, Library Philosophy and Practice (e-journal). All rights reserved

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Authorship Pattern; Doubling Time; Kolmogorov Smirnov Test; Lotka’s Law; Regression Test; Scientometric Analysis

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Photodynamic cancer therapy: role of Ag- and Au-based hybrid nano-photosensitizers
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Abstract
The utilization of photodynamic therapy (PDT) has been rapidly increasing due to its advantage as an effective treatment modality for cancer. The organic photosensitizers employed for PDT have some disadvantages, including high toxicity, non-selectivity toward tumors and poor absorption of light. The low light penetration into the tumor sites resulting from low wavelength of absorption and long-term skin photosensitivity. Hence, the attention toward non-toxic inorganic photosensitizers like noble metal nanoparticles (NPs) has been increasing nowadays. In bioscience, NPs are replacing organic dyes since they have photostability and non-toxicity. Generally, nanomaterials can easily form compounds with other substances as well as organic materials and the modified NPs surface enhances the chemical activity. Among the metal NPs, noble metals, especially gold and silver are attractive because of their size and shape-dependent unique optoelectronic properties. The coating of inorganic/organic materials on top of the noble metal makes the NPs bio-compatible and less toxic. Furthermore, Ag- and Au-based inorganic/organic complex NPs could offer a new possibility because of their unique structures. Meanwhile, the coating of inorganic/organic complex NPs protects the noble metals and stabilizes them against chemical corrosion and enhances the production of reactive oxygen species. Thus, in this review, we have highlighted the role of Ag- and Au-based inorganic/organic hybrid nano-photosensitizers in photodynamic therapy. Communicated by Ramaswamy H. Sarma. © 2020 Informa UK Limited, trading as Taylor & Francis Group.

Author Keywords
Ag hybrid nanoparticles; Au hybrid nanoparticles; Photodynamic therapy; photosensitizers

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Myristica fragrans seeds extract mitigate non-motor behavioural deficits and oxidative stress in Rotenone model of Parkinson's disease

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Abstract
Parkinson's disease (PD) is a multi-layered neurodegenerative ailment with cumulative loss of dopaminergic neurons over the limbic areas and nigro-striatal pathways. PD mainly affects the motor behavior of old aged population. Oxidative stress, mitochondrial dysfunction, accumulation of α-synuclein and neuro inflammation was the probable mechanism behind PD pathogenesis. In spite of various understandings, till now effective treatment is unfilled. In PD, both motor signs (tremor, rigidity, akinesia & postural imbalance) and non-motor (NM) symptoms (depression, anhedonia, autonomic dysfunction) were observed. NM deficits mainly affect the quality of life of PD patients. Rotenone and MPTP are the most widely used lipophilic neurotoxins (cross the blood brain barrier) for evaluating the neuro-protective potential of various compounds and drugs against PD. Nutmeg, an aromatic spice possess various pharmacological properties such as anti-diabetic, anti-epileptic, memory enhancer, aphrosidiac, anti-cancer. Rotenone was injected to male Wistar albino rats by intra-peritoneal route (2.5mg/kg daily) for 30days. In our previous study, we indicated that MFSE extract ameliorated motor, memory deficits in rotenone induced PD model. Current study focuses on Myristica fragrans seed (MFSE) extract against rotenone induced non-motor behavioural deficits and biochemical parameters. In PD NM models, forced swim test (FST) and sucrose intake test (SIT) were conducted to access the depressive behaviour, anhedonia. Oxidative stress were studied by biochemical parameters (lipid peroxidase TBARS, catalase, superoxide dismutase and glutathione peroxidase). MFSE extract (oral) treated groups displayed steady increase in climbing behaviour, low immobility time in FST and elevated percentage of sucrose intake in SIT. It might be due to its neuro-protective, anti-depressant properties. © 2020, Advanced Scientific Research. All rights reserved.

Author Keywords
Anti-depressant; Myristica fragrans; Neuroprotection; Nutmeg; Parkinson's disease; Rotenone

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Immunohistochemical evaluation of bone morphogenetic protein 3 in chronic periodontitis influenced by Type2 diabetes mellitus

(2020) *Drug Invention Today*, 14 (1), pp. 91-94.

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Abstract
Background: Periodontitis and Type 2 diabetes mellitus (T2DM) are chronic lifestyle disorders sharing a two-way relationship. Immunoexpression of bone morphogenetic protein 3 (BMP 3), an antagonist of osteogenesis, gives an insight into possible extent of alveolar bone loss in chronic periodontitis (CP) subjects with or without T2DM. Aim: This study aims to study the immunoexpression of BMP 3 in CP influenced by T2DM. Materials and Methods: This study evaluates the expression of BMP 3 immunohistochemically on gingival sections of CP subjects with or without T2DM. Results: The present study clearly indicates that BMP 3 levels are significantly elevated in gingival epithelium as well as inflammatory cells in subjects with CP t+T2DM when compared with CP subjects and healthy controls. Conclusion: T2DM influences the expression of BMP3 in subjects with CP, which could play a significant role in alveolar bone loss. © 2020 JPR Solutions. All rights reserved.

Author Keywords
Bone morphogenetic protein 3; Chronic periodontitis; Immunohistochemistry; Type 2 diabetes mellitus

Index Keywords
osteogenin; adult, aged, alveolar bone loss, Article, case control study, chronic periodontitis, controlled study, gingiva, human, human cell, human tissue, immunohistochemistry, inflammatory cell, intracellular space, middle aged, non insulin dependent diabetes mellitus, retrospective study, very elderly

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Late-Onset Peripheral T-Cell Lymphoma Not Otherwise Specified in a Liver Transplant Recipient: A Rare Subtype of Posttransplant Lymphoproliferative Disorder

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Abstract

Introduction: Posttransplant lymphoproliferative disorder (PTLD) is a rare complication seen in the period after liver transplant. The commonest subtype is B-cell PTLD which is usually associated with Epstein-Barr virus (EBV) infection. T-cell PTLD is rare and the association with EBV is again rarer. Case: Our patient, a 21-year-old young adult, presented to us with generalized lymphadenopathy, 5 years after liver transplantation. The biopsy of the lymph node was suggestive of peripheral T-cell lymphoma not otherwise specified, which was associated with EBV infection. The Positron emission tomography and computerised tomography (PET-CT) scan showed stage 3 disease. He was treated with standard cyclophosphamide, doxorubicin, etoposide, vincristine, and prednisolone chemotherapy and is currently in remission. Conclusion: Peripheral T-cell lymphoma not otherwise specified is a rare subtype of PTLD and its association with EBV is even more rare. A few patients can achieve complete remission with standard chemotherapy. © 2020 Indian National Association for Study of the Liver

Author Keywords

chemotherapy; Epstein-Barr virus; liver transplantation; peripheral T-cell lymphoma not otherwise specified; remission

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Jeyapragash, R.[a] , Srinivasan, V.[a] , Sathiyamurthy, S.[b]

Tensile, flexural and impact behaviors of particulate/calotropis gigantea stem fiber reinforced epoxy composites
(2020) *ARPN Journal of Engineering and Applied Sciences*, 15 (9), pp. 1049-1055.

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Abstract
Increasing demand for the development of alternative materials to plastics and depleting wood stock ushered into the development of new polymer composite materials. These polymer composites are either fiber reinforced or particles impregnated or hybrid of these two materials as well. The natural organic matter present in the reinforcement material contributed significant development in polymer composite's mechanical characteristics. The particulate and fiber reinforced composites was fabricated and tested independently. On comparison, the characteristics of epoxy composites reinforced with four different reinforcements including Chitosen, Red Mud, Rice husk particles and Calotropis Gigantea (CG) stem fiber were carried in the recent investigation. The improved value of characteristics and their respective composites were identified and suggested for industrial applications. © 2020 by the authors.

Author Keywords
Calotropis gigantea; Chitosen; Epoxy; Mechanical characteristics; Red mud; Rice husk

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Engine characteristics study on beef tallow biodiesel produced by ethanol based co-solvent transesterification
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Abstract
This present study looks at the engine characteristics of beef tallow biodiesel (tallow methyl ethyl ester) produced using methanol–ethanol-based co-solvent transesterification. Unblended samples of tallow methyl ethyl ester (TMEE), tallow methyl ester (TME) and tallow ethyl ester (TEE) were tested for their performance; combustion and emission characteristics in CI engine with ordinary diesel as reference fuel. From combustion characteristics, TMEE reported increased mean peak in-cylinder pressure (5.992 ± 1.34 MPa) and heat release rate (HRR) (61.52 ± 1.28 kJ/m3.deg) than TME on account of its higher cetane number and fuel bound oxygen content; however, TEE exhibited increased mean in-cylinder pressure (1.75%) and HRR (2.14%) than TMEE sample. Likewise, TEE exhibited superior fuel consumption (SFC) rate (on average, 2.67%) and brake thermal efficiency (BTE)(on average, 3.53%) than TMEE; while, TMEE displayed reduced SFC (on average, 11.43%) and increased BTE (on average, 12.46%) than TME in view of its increased calorific value contributed by TEEs in it. Besides, emission characteristics reported reduced CO emission level and exhaust HC concentrations (on average, 10% and 7.1%, respectively); along with slightly increased CO2 and NOX emissions (on average, 4.79% and 5.82%, respectively), in case of TMEE when compared to TME. Here, reduced emission characteristics of TEE, followed by TMEE were because of their high oxygen content and increased cetane number contributed by the ethyl esters available in them; which also signified the completeness of their combustion. © 2020 Taylor & Francis Group, LLC.

Author Keywords
cetane number; co-solvent transesterification; Engine characteristics; ethyl moiety; fuel bound oxygen; tallow methyl ethyl ester

Index Keywords
Biodiesel, Combustion, Engines, Esters, Ethanol, Oxygen, Transesterification; Brake thermal efficiency, Characteristics studies, Combustion characteristics, Emission characteristics, Heat Release Rate (HRR), In-cylinder pressures, Oxygen content, Peak in-cylinder pressures; Organic solvents

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Extraction, purification, and characterization of polysaccharides of araucaria heterophylla l and prosopis chilensis l and utilization of polysaccharides in nanocarrier synthesis

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Abstract
Background: Plant gums consist of polysaccharides which can be used in the preparation of nanocarriers and provide a wide application in pharmaceutical applications including as drug delivery agents and the matrices for drug release. The objectives of the study were to collect plant gums from Araucaria heterophylla L and Prosopis chilensis L and to extract and characterize their polysaccharides. Then to utilize these plant gum-derived polysaccharides for the formulation of nanocarriers to use for drug loading and to examine their purpose in drug delivery in vitro. Methods: Plant gum was collected, polysaccharide was extracted, purified, characterized using UV-Vis, FTIR, TGA and GCMS and subjected to various bioactive studies. The purified polysaccharide was used for making curcumin-loaded nanocarriers using STMP (sodium trimetaphosphate). Bioactivities were performed on the crude, purified and drug-loaded nanocarriers. These polysaccharide-based nanocarriers were characterized using UV-Vis spectrophotometer, FTIR, SEM, and AFM. Drug release kinetics were performed for the drug-loaded nanocarriers. Results: The presence of glucose, xylose and sucrose was studied from the UV-Vis and GCMS analysis. Purified polysaccharides of both the plants showed antioxidant activity and also antibacterial activity against Bacillus sp. Purified polysaccharides were used for nano-carrier synthesis, where the size and shape of the nanocarriers were studied using SEM analysis and AFM analysis. The size of the drug-loaded nanocarriers was found to be around 200 nm. The curcumin-loaded nanocarriers were releasing curcumin slow and steady. Conclusion: The extracted pure polysaccharide of A. heterophylla and P. chilensis acted as good antioxidants and showed antibacterial activity against Bacillus sp. These polysaccharides were fabricated into curcumin-loaded nanocarriers whose size was below 200 nm. Both the drug-loaded nanocarriers synthesized using A. heterophylla and P. chilensis showed antibacterial activity with a steady drug release profile. Hence, these natural exudates can serve as biodegradable nanocarriers in drug delivery. © 2020 Samrot et al.

Author Keywords
Araucaria heterophylla L.; Gum polysaccharide; Prosopis chilensis L

Index Keywords
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Multimodal brain image fusion using graph intelligence method

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Abstract

Image fusion plays a vital role in enhancing the quality of images in medical applications. It is known that CT images of brain shows the details of the bone structure and MRI images of brain shows the details of the soft tis-sue. The Objective of this research is to fuse CT (Computed Tomography) and MRI(Magnetic Resonance Imaging) of normal brain images and tumor affected brain images and to find out structural similarity(SSIM) of the fused image. Axial slice of normal brain and brain tumor images are taken for image fusion. Totally, 24 brain images has been taken out of which 6 pairs are normal brain images and another 6 pairs are tumor affected brain images. Techniques used are Graph-cut method for segmentation, Maximum method for fusion and Swarm Intelligence method for optimization. The proposed fusion method increases SSIM (Structural Similarity) when compared to conven-tional method of fusion. Tumor size in the fused image is also extracted and this fused image is helpful for doctors to analyse the post radio therapy patient or operated patient whether any tumor residues still exist. Also, this method minimises the number of pixels and increases the information contained in a single fused image. This technique aids the physician to analyse complemen-tary details in a single image. © International Journal of Research in Pharmaceutical Sciences.

Author Keywords

Brain; Graph; Image fusion; MRI-CT; Structural Similarity; Swarm Intelligence

Index Keywords

ant colony optimization, Article, brain tumor, cancer radiotherapy, computer assisted tomography, diffusion weighted imaging, honeybee, human, image analysis, image processing, image quality, image segmentation, imaging algorithm, ionizing radiation, mathematical model, neuroimaging, nuclear magnetic resonance imaging, particle swarm optimization, positron emission tomography, single photon emission computed tomography, swarm intelligence algorithm, tumor volume

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Interstitial pneumonia with autoimmune features

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Abstract
Interstitial lung disease (ILD) is an umbrella term for lung disease characterised by inflammation and fibrosis of the interstitium. ILD can be idiopathic or secondary to connective tissue disorders, drugs or environmental exposures. Before labelling it as idiopathic we have to rule out secondary causes. ILD is one of the most common extra-articular manifestations of connective tissue diseases (CTDs), causing significant morbidity and mortality. Patients with pre-existing CTD can develop ILD; some patients develop ILD against the background of either one or two clinical features of a CTD or isolated auto-antibody positivity. The current terminology for such an entity is interstitial pneumonia with autoimmune features (IPAF). The current criterion is based on three domains: clinical, serologic and morphologic. To satisfy the IPAF classification criteria, one needs to satisfy the mandatory criterion with one feature from two of the three domains. Classifying patients with this criterion helps in early initiation of immunosuppression and in monitoring them closely for development of features of a well defined CTD. There are a few limitations like the clinical domain being more skewed towards systemic sclerosis and inflammatory myositis, exclusion of antineutrophilic cytoplasmic antibody (ANCA) and cytoplasmic pattern in antinuclear antibody (ANA). There are no clear protocols for treatment of IPAF and most of the data has been extrapolated from the management of systemic sclerosis (SSc) ILD and idiopathic non-specific interstitial pneumonia (NSIP). Progressive disease in spite of treatment demands stronger immunosuppressive agents. Studies on the role of antifibrotics in IPAF are underway, with few small studies showing positive outcomes. There are conflicting reports on the survival and outcome of the IPAF cohort. Certain studies suggest that they have better survival compared with idiopathic pulmonary fibrosis (IPF) though other studies contradict this statement. © 2020, Royal College of Physicians of Edinburgh. All rights reserved.

Author Keywords
Connective tissue disorder; CTD–ILD; HRCT chest; Idiopathic pulmonary fibrosis; Interstitial lung disease; Interstitial pneumonia with autoimmune features

Index Keywords
antifibrotic agent, azathioprine, cyclophosphamide, Jo 1 antibody, mycophenolate mofetil, prednisolone, scl 70 antibody; adult, Article, autoimmune disease, case report, clinical article, clinical evaluation, clinical examination, clinical feature, computer assisted tomography, disease association, exertional dyspnea, female, human, immunosuppressive treatment, interstitial pneumonia, male, middle aged, prognosis, undifferentiated connective tissue disease, autoimmune disease, cohort analysis, complication, connective tissue disease, fibrosing alveolitis, interstitial lung disease, x-ray computed tomography; Autoimmune Diseases, Cohort Studies, Connective Tissue Diseases, Humans, Idiopathic Pulmonary Fibrosis, Lung Diseases, Interstitial, Tomography, X-Ray Computed

Chemicals/CAS
azathioprine, 446-86-6; cyclophosphamide, 50-18-0; mycophenolate mofetil, 116680-01-4, 128794-94-5; prednisolone, 50-24-8

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Orientin: A C-glycosyl flavonoid that mitigates colorectal cancer

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Abstract
Colorectal cancer (CRC) is one of the most frequent malignancies, causing human deaths in large numbers around the world. It can be prevented by using chemotherapeutic drugs; however, the available drugs have shown systemic toxicity and drug resistance, which makes the treatment a challenging issue. The use of flavonoid-rich sources may effectively reduce the risk of colorectal cancer. Orientin, a C-glycosyl flavonoid exists in diverse medicinal flora, such as Aspalathus linearis, Ocimum tenuiflorum, Passiflora, and Phyllostachys species, and it has been shown to have beneficiary effects in treating cancers, cardiovascular diseases, and neurodegenerative disorders. Recent preclinical validation studies on orientin have evidently shown its anti-carcinogenic effect against human colorectal adenocarcinoma cells and carcinogen-induced CRC albino Wistar rat models. Orientin reinstates the antioxidants to put forth their scavenging mechanism and limits the activation of phase 1 enzymes. Orientin induces mitochondrial intrinsic apoptosis in CRC cells, and thereby actively interrupt cell proliferation and inflammatory signaling pathways without disturbing the normal tissue. Research reports have reported the attenuating effects of orientin on aberrant crypt foci progression in cancer-bearing animal, and it results in a significant suppression of pre-neoplasia to malignant neoplasia transformation. Orientin also suppresses NF-κB and the associated inflammatory cytokines, and thereby ameliorates inducible nitric oxide synthase and cyclooxygenase-2 expression in 1, 2-dimethylhydrazine rat models. Thus, this chapter emphasizes the therapeutic effects of flavonoids with a special focus on orientin against CRC. Also, it summarizes our understandings about the molecular mechanisms behind orientin-mediated cancer prevention. © Springer Nature Singapore Pte Ltd. 2020.

Author Keywords
Apoptosis; Cell proliferation; Chemoprevention; Colorectal cancer; Orientin

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Diindolylmethane and Lupeol therapy halt tumor development on experimental urothelial carcinogenesis
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Abstract
Urinary bladder cancer would be a serious health issue among human individuals. Current treatments are not effective so there is to be an optional therapy should be introduced to halt the reoccurrence of cancer. Phytochemicals does not own any adverse effect in patients with cancer. Our research is to investigate that the Diindolylmethane (DIM) and Lupeol treatment eliminates urinary bladder cancer development by activating the apoptosis by its anti-inflammatory properties. The male albino wistar rats were equally separated into 6 groups. Each group possesses 10 rats. G-I: Control. G-II: N-butyl-N-(4-hydroxybutyl) nitrosamine (BBN) was administered orally for 8 weeks. After 8 weeks of BBN toxicity, Dimethylarsinic acid (DMA) was provided for 28 weeks in drinking water. G-III and G-IV: After BBN initiation, DMA was provided for 28 weeks in drinking water. Diindolylmethane and Lupeol were also administered orally for 28 weeks along with DMA. G-V and G-VI: Diindolylmethane alone and Lupeol alone were administered orally for 36 weeks. The experimental rats were euthanized at 36th week. The urinary bladder was macroscopically and microscopically analyzed in control and treated groups. Diindolylmethane and Lupeol therapy inhibited the tumor formation in the urinary bladder. Our study proved that both Diindolylmethane and Lupeol are being capable of targeting these signaling pathways which would make them potentially applicable to cancer chemoprevention and treatment. © 2020 Old City Publishing, Inc.

Author Keywords
Apoptosis; Diindolylmethane (DIM); N-butyl-N-(4-hydroxybutyl) nitrosamine (BBN); Urinary Bladder Cancer

Index Keywords
antineoplastic agent, cacodylic acid, diindolylmethane, drinking water, lupeol, n butyl n (4 hydroxybutyl)nitrosamine, unclassified drug; animal cell, animal tissue, antiinflammatory activity, apoptosis, Article, bladder, bladder cancer, bladder tissue, cancer prevention, carcinogenesis, chemoprophylaxis, controlled study, drug targeting, male, nonhuman, priority journal, rat, signal transduction, treatment duration, tumor growth

Chemicals/CAS
cacodylic acid, 124-65-2, 75-60-5; lupeol, 545-47-1; n butyl n (4 hydroxybutyl)nitrosamine, 3817-11-6

Manufacturers
TCI, Japan; Sigma Aldrich, United States

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Ilango, S.[a] , Saikumar, P.[b] , Sembulingam, K.[c] , Jayakumar, S.[d]

Antistressor effect of costus speciosus on noise induced immunological changes in rats
(2020) *International Journal of Research in Pharmaceutical Sciences*, 11 (3), pp. 2973-2978.

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Abstract
Costus speciosus is being widely used in Indian folk medicine for treating various disorders. Environmental noise pollution is supposed to be an important factor for many health problems and it causes immune abnormalities. In the present study immune-regulating potential of Costus speciosus extract was evaluated during acute and subacute noise stress conditions. Adult Wistar albino rats were exposed to acute noise stress and subacute noise stress and then the effect of ethanolic Costus speciosus rhizome extract on immunological parameters such as phagocytic index, avidity index, neutrophil adherence test and total leucocyte count were studied. Neutrophil adherence and total leukocyte counts were found decreased and the percentage of avidity and phagocytic index were significantly increased in the stressed group of rats. The result of statistical analysis showed that, the pre-treatment with Costus speciosus extract significantly altered favourably the levels of immunological parameters. Ethanolic extract of Costus speciosus rhizome have the potential to prevent noise stress induced changes in rodent immune system and has a strong immunomodulatory prospective applicable to clinical practices. © International Journal of Research in Pharmaceutical Sciences.

Author Keywords
Avidity index; Immunomodulatory; Neutrophil adherence; Phagocytic index; Total leukocyte count

Index Keywords
Costus speciosus extract, fluoxetine, plant extract, unclassified drug; acoustic stress, adult, animal experiment, animal model, Article, binding affinity, Cheilocostus speciosus, controlled study, leukocyte count, male, neutrophil, noise pollution, nonhuman, phagocytosis, rat, rhizome

Chemicals/CAS
fluoxetine, 54910-89-3, 56296-78-7, 59333-67-4

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Geetharani, K.S.[a] , Vijayakumar, R.[b] , Shanmugasundaram, M.[c] , Selvaraj, J.[d]

Argyreia nervosa reduces alcohol-induced altered levels of oxidative stress in the liver Wistar male albino rats
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Abstract
Background: Oxidative stress has been considered as a conjoint pathological mechanism, and it contributes to the initiation and progression of liver injury. A lot of risk factors, including alcohol, drugs, environmental pollutants, and irradiation, may induce oxidative stress in liver, which in turn results in severe liver diseases. Argyreia nervosa, a medicinal herb, has been shown to have a high value of antioxidant property; it is traditionally used in the treatment of gonorrhea, strangury, chronic ulcer, skin disease, bowel complaints, appetizer, pain killer, brain tonic, and aphrodisiac. Aim: The present study was designed to evaluate the effects of A. nervosa on oxidative stress makers and antioxidant enzymes in the liver of alcohol-induced liver of male rats. Materials and Methods: A. nervosa leaf extract oral doses (100 and 300 mg/kg body weight) were given once in a day for 8 weeks to ethanol-induced rats. At the end of the experimental period, liver tissues were dissected out and assessed for various parameters. Results: In alcohol-induced rats, the reactive oxygen species such as H2O2. Lipid peroxidation and hydroxyl radical levels were also found to be raised compared to control. Conversely, antioxidant enzymes such as superoxide dismutase, catalase, and glutathione peroxidase were found to be reduced. Oral administration of A. nervosa leaf ethanolic extract could effectively normalize the abnormal levels of these oxidative stress parameters and antioxidant enzymes altered by alcohol-induced liver toxicity. Conclusion: This preliminary study concludes that A. nervosa leaf extract has a potential hepatoprotective effect which can be used as a potential herbal medicine for the treatment of liver diseases. © 2020 JPR Solutions. All rights reserved.

Author Keywords
Alcohol toxicity; Antioxidant enzymes; Argyreia nervosa; Oxidative stress

Index Keywords
alcohol, Argyreia nervosa extract, catalase, glutathione peroxidase, hydrogen peroxide, hydroxyl radical, liver protective agent, plant extract, reactive oxygen metabolite, superoxide dismutase, unclassified drug; alcohol intoxication, animal experiment, animal model, animal tissue, antioxidant activity, Argyreia nervosa, Article, controlled study, Convolvulaceae, drug isolation, drug synthesis, lipid peroxidation, liver injury, liver protection, liver tissue, male, nonhuman, oxidative stress, plant leaf, rat

Chemicals/CAS
alcohol, 64-17-5; catalase, 9001-05-2; glutathione peroxidase, 9013-66-5; hydrogen peroxide, 7722-84-1; hydroxyl radical, 3352-57-6; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1

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Preliminary phytochemical and physiochemical screening of Argyreia nervosa and its therapeutic implications
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Abstract
Background: Argyreia nervosa commonly known as elephant creeper, woolly morning glory. (English) Vriddhadaru, and Samundrasok (Sanskrit) belongs to family Convolvulaceae, traditional plant claimed as more therapeutic value. Objective: The present study was carried out to highlight phytochemical screening of A. nervosa, and it was analyzed using various solvent such as ethanol, methanol, chloroform, N-hexane, aqueous, and hydroalcohol. Materials and Methods: Leaf and root of A. nervosa extracted with different solvents. Results: The phytochemical screening of various extracts of leaf and root of A. nervosa revealed the presence of alkaloids, carbohydrates, proteins, steroids, phenols, tannins, flavonoids, and saponins. The hydroalcoholic extract showed high extractive value when compared to aqueous and other solvents. Conclusion: The present study concludes that A. nervosa extract can be used as one of therapeutic potential drugs for the treatment of various diseases due to its antioxidant properties. © 2020 JPR Solutions. All rights reserved.

Author Keywords
Argyreia nervosa; Phytochemical screening; Therapeutic implication

Index Keywords
alcohol, alkaloid derivative, Argyreia nervosa extract, carbohydrate derivative, chloroform, flavonoid, hexane, methanol, phenol derivative, phytochemical, plant extract, protein derivative, saponin derivative, steroid, tannin derivative, unclassified drug; Argyreia nervosa, Article, Convolvulaceae, drug screening, moisture, physical chemistry, plant leaf, plant root

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alcohol, 64-17-5; chloroform, 67-66-3; hexane, 110-54-3; methanol, 67-56-1

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The gas chromatography-mass spectrometry study of one Ayurvedic medicine Ashtachurnam

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Abstract
Objective: The present deals with the gas chromatography-mass spectrometry (GC-MS) analysis of one Ayurvedic digestive formulation, Ashtachurnam. Materials and Methods: Ashtachurnam was procured from standard Ayurvedic vendor from Chennai and was subjected to GC-MS analysis following standard procedure. Results: Some important biomolecules such as cycloheximide, piperine, 1-heptatriacotanol.,beta.-sitosterol, Thymol, and n-decanoic acid with medicinal values were found in the GC-MS profile. Conclusion: The types of molecules present in the GC-MS indicate their overall medicinal role correlating to Ashtachurnam. © 2020 JPR Solutions. All rights reserved.

Author Keywords
1-Heptatriacotanol; Ashtachurnam; Beta.-Sitosterol; Cycloheximide; Gas chromatography-mass spectrometry; N-Decanoic acid; Piperine; Thymol

Index Keywords
(1 isocyanatoethyl)benzene, 1 (2 vinylphenyl)propan 1 one, 1 heptatriacotanol, 1 methylene 2b hydroxymethyl 3,3 dimethyl 4b (3 methylbut 2 enyl)cyclohexane, 1,1' (1,1,2,2 tetramethyl 1,2 ethanediyl)bis benzene, 1,2,3,4,4a,5,8,9,12,12 adecahydro 1,4 methanobenzocyclodecene, 11 acetoxy tetracyclo[5.3.1.1(2,6).0(4,9)]dodecane, 11 endo methyltetracyclo[5.4.0.0(2,6).0(4,10)]undec 8 ene, 4 amino 3,5 diethylphenol, 6 octadecenoic acid, ashtachurnam, ayurvedic drug, cyclohexanemethanol 4 ethenyl[alpha,alpha 4 trimethyl 3 (1 methylethenyl) [1 (1 alpha,3 alpha,4 beta)], cycloheximide, decahydro 1,1 dimethylnaphthalene, decanoic acid, digestive tract agent, drug metabolite, herbaceous agent, linoleic acid, methyl 4,7,10,13 hexadecatetraenoate, methyl ester 11,14 octadecadienoic acid, oleic acid, pentadecane, piperine, sitosterol, terpinene, thymol, trans 6 (4 tolyl) 2 methyl 2 heptenol, unclassified drug, unindexed drug; Article, Ayurveda, correlation coefficient, mass fragmentography, molecule, standard

Chemicals/CAS
cycloheximide, 642-81-9, 66-81-9; decanoic acid, 334-48-5, 3398-75-2; linoleic acid, 1509-85-9, 2197-37-7, 60-33-3, 822-17-3; oleic acid, 112-80-1, 115-06-0; piperine, 94-62-2; sitosterol, 19044-06-5, 83-46-5; terpinene, 8013-00-1; thymol, 89-83-8

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Image segmentation based on pixels using deep learning approach for brain images
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Abstract
The brain is widely used in many medical fields. Tumour pandemic drastically influences the health and well-being of the global population. In this proposed methodology, the deep learning approach is performed. The extracted image of the brain cannot be directly used for diagnosis. The captured image contains disturbances like noise, blurred image etc. To get a high-quality image from extracted panoramic. This approach is performed. To the extracted images, partitioning is performed to split up the images into samples. It helps for better recognition and classification. It shows the infected region of the brain accurately. Before performing partitioning, the extracted image has to be preprocessed to clear out the disturbances in the image. After partitioning, feature extraction is performed by using GLCM and finally, classification is performed between the trained and test set data to produce a highly accurate image. It is done by using CNN classifier. This processed image helps the dentist for good prediction. © 2020 EManuscript Technologies. All rights reserved.

Author Keywords
Convolutional neural network classifier (CNN); RLSMA Filter

Index Keywords
Article, brain tumor, classifier, cohort analysis, convolutional neural network, data analysis software, deep learning, diagnostic accuracy, early cancer diagnosis, feature extraction, feature selection, fuzzy c means clustering, hierarchical clustering, human, image processing, image segmentation, major clinical study, neuroimaging, nuclear magnetic resonance imaging, priority journal, segmentation algorithm, wellbeing

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Documents

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Investigation of hybrid locomotive robot for anti-personnel mine detection
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Abstract
Most of landmine detection robots proposed so far have been strongly restricted from locomotion inside the mine field because they cannot cross over the mine. So we have proposed a mine detection robot with hybrid locomotion, which can enter inside the minefield with low ground surface contact, which can cross over the mine instead of changing its path and scan landmines directly using Electro Magnetic Induction sensor. The hybrid locomotion proposed in the robot uses the frame walking technique and the conventional wheeled locomotion. The robot switches over the locomotion mechanism from wheeled to leg when mine is detected and vice versa with a lead screw mechanism. The leg locomotion is achieved by frame walking technique where the two frames translate with the help of lead screw mechanism. A purpose of adopting this combination is to evade anti-personnel landmines which are relatively smaller in comparison to their anti-tank landmine counterparts. The robot initially starts in wheeled mode and upon detection of metal, pulls in the frame walking algorithm. The robot also deploys an obstacle avoidance algorithm when working in wheel mode. © 2020. MechAero Foundation for Technical Research & Education Excellence.

Author Keywords
Anti-personnel landmines; Anti-tank landmine; Frame walking; Ground penetrating radar; Hybrid locomotion

Index Keywords
Bombs (ordnance), Explosives, Landmine detection, Lead screws, Personnel, Robots, Screws; Anti personnel mines, Anti-personnel landmines, Hybrid locomotion, Hybrid locomotives, Landmine detection robots, Locomotion mechanism, Mine detections, Obstacle avoidance algorithms; Body sensor networks

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Priya, N.[a] , Ponnavaikko, M.[b]

Keyword search with two-side verification in encrypted data using blockchain
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Abstract
The untrustable nature of the cloud server and the information protection of clients is important to scramble the information before redistributing the cloud. Main aim is to acknowledge the protected keyword search over encrypted data against noxious clients and malcioust cloud specialist organizations, we discover a traded off technique into the square chain into SSE the distributed storage utilized in accessible symmetric encryption plans (SSE) is given in a private way, which can't be viewed as a genuine cloud. Also, the cloud server verifies the data working on that open chain. We present a framework that influences blockchain innovation to furnish protected dispersed information stockpiling with keyword search administration. The System enables the customer to transfer there in scrambled structure disseminates the information substance to cloud hubs and guarantee information accessibility utilizing cryptographic methods we present a framework that influences blockchain innovation to furnish a safe appropriated information stockpiling with catchphrase search administration. Trustworthy keyword search verified the server-side verifiability which hide the authorized cloud servers from being encircled by vindictive information proprietors in the information storage stage. Moreover, the blockchain findings and hash applications are applied to the values to cost of keyword searching without presenting any intruder checking the client-side harmful. Our proposed security keyword checking and execution will prove this keyword search trustable and more secure and efficient for cloud computing applications. © 2020 IEEE.

Author Keywords
Blockchain; Cloudcomputing; Verifiability

Index Keywords
Blockchain, Cloud computing, Cryptography, Digital storage, Trusted computing; Cryptographic methods, Distributed storage, Encrypted data, Information accessibility, Information protection, Keyword search, Keyword searching, Symmetric encryption; Search engines

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In-vivo toxicological (acute) characterization of bio-synthesized silver nanoparticles in labeo rohita

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Abstract
This study extensively investigated to find out the in-vivo acute toxicity and lethal concentration (LC50) of biosynthesized Ag NPs in Labeo rohita (L. rohita). The haematological studies and antioxidative responses were considered in three tissues such as gill, liver and muscle of L. rohita. The results of this study showed that increasing the dose of Ag NPs led to bioaccumulation in the tissues. The haematological analysis showed considerable alterations in the Ag NPs-treated fish. The impact of histological changes induced by Ag NPs were confirmed by the damages in the tissues, primary lamella, blood vessels and formation of vacuolation in liver and muscle when compared with the control L. rohita. © 2020 Open Access House of Science and Technology. All rights reserved.

Author Keywords
Acute toxicity; Antioxidant; Haematological; Histopathology; Labeo rohita; Nanotoxicity; Silver nanoparticles

Index Keywords
acid phosphatase, alkaline phosphatase, antioxidant, catalase, glutathione reductase, glutathione transferase, Hibiscus sabdariffa extract, iditol dehydrogenase, silver nanoparticle, superoxide dismutase; acute toxicity, animal experiment, animal model, Article, bioaccumulation, biochemical analysis, biosynthesis, cell vacuole, controlled study, erythrocyte count, Fourier transform infrared spectroscopy, gill, hematocrit, hematological parameters, hemoglobin determination, Hibiscus sabdariffa, histopathology, in vivo study, India, kidney tissue, Labeo rohita, LC50, leukocyte count, liver tissue, mean corpuscular hemoglobin, mean corpuscular hemoglobin concentration, mean corpuscular volume, muscle tissue, nonhuman, photon correlation spectroscopy, plant leaf, protein analysis, scanning electron microscopy, ultraviolet visible spectroscopy, X ray diffraction

Chemicals/CAS
acid phosphatase, 9001-77-8, 9025-88-1; alkaline phosphatase, 9001-78-9; catalase, 9001-05-2; glutathione reductase, 9001-48-3; glutathione transferase, 50812-37-8; iditol dehydrogenase, 9028-21-1, 9032-74-0; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1

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Influence of fatty acid composition on process optimization and characteristics assessment of biodiesel produced from waste animal fat

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Abstract
This present study focus on the process optimization and characteristic assessment of waste animal fat (WAF) biodiesel based on the influence of fatty acids characterized in it. WAFs were rendered from leather fleshing (subcutaneous fat, 85.64%) and slaughterhouse (intramuscular fat, 8.46%) wastes using dry rendering technique, wherein the maximum renderable fat content was found to be 75.77% and 5.89%, respectively. Ethyl esters of oleic acid, palmitic acid, and stearic acid were characterized as dominant fatty acid esters (FAEs) in WAF biodiesel. Optimized transesterification on waste fats using ethanol and synthesized D-valine amido ethyl methyl imidazolium chloride ([D-Vaemim]Cl) as novel ionic liquid (IL) catalyst yielded 97.36% of biodiesel. High molar ratio (WAF to ethanol:6) and reaction temperature (75°C) were accounted by the long-chain fatty acids in triglyceride molecules and their higher degree of saturation, respectively, meanwhile, [D-Vaemim]Cl exhibited high conversion yield beyond 10% and was effective up to 10 cycles. Similarly, biodiesel properties were evaluated as per ASTM D6751 standards, were found to be in acceptable range, and were deeply influenced by carbon chain length and degree of unsaturation in FAE molecules. Also, the presence of long-chain saturated FAEs along with fuel bound oxygen induced superior combustion characteristics and controlled emission concentrations. However, slight reduction in engine performance was due to high viscosity and reduced calorific value of biodiesel which was reflected from its FAE molecules. © 2020, © 2020 Taylor & Francis Group, LLC.

Author Keywords
carbon chain length; cetane number; degree of unsaturation; fatty acid esters; fuel bound oxygen; Waste animal fat (WAF)

Index Keywords
Amino acids, Animals, Biodiesel, Chlorine compounds, Esters, Ethanol, Ionic liquids, Molar ratio, Molecules, Optimization, Process control, Synthetic fuels, Waste incineration; Combustion characteristics, Degree of saturations, Degree of unsaturations, Emission concentration, Fatty acid composition, Long chain fatty acid, Reaction temperature, Triglyceride molecules; Palmitic acid

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Srinivasan, G.R.[a] , Jambulingam, R.[b]

Theoretical prediction of thermo-physical properties of beef tallow based biodiesel
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Abstract
This present study deals with the theoretical prediction of thermo-physical properties of waste beef tallow biodiesel by means of developing mathematical correlations using fatty acid esters. Waste beef tallow was rendered from animal slaughter houses and tanneries' leather fleshing wastes; and was transesterified into biodiesel through base catalyzed ethanolysis. Ethyl palmitate (C16:0), ethyl oleate (C18:1) and ethyl stearate (C18:0) were identified as the dominant fatty acid ethyl esters (FAEs) in the tallow biodiesel, with their corresponding distribution as 37.36%, 25.17% and 14.78% respectively. Mathematical correlations were developed for predicting density, kinematic viscosity, cetane number and higher heating value using statistical regression by maintaining molecular weight (Mwt) and number of unsaturated bonds (NE) of FAEs as input variables. Overall, thermo-physical properties of the biodiesel were computed from the properties calculated using the correlations, mass fraction and mole fraction of characterized FAEs; and was compared with the experimental data determined according to ASTM D976 standards. Accordingly, the average absolute deviation (AAD) and average Absolute Percentage Error (AAPE) were calculated as 3.55, 0.815% for density; 0.12, 4.79% for kinematic viscosity; 2.14, 6.56% for cetane number and 0.23, 1.14% for higher heating value respectively. From these correlations, it showed that kinematic viscosity, cetane number and higher heating value increased with molecular weight of the FAEs but reduced with increase in unsaturation; in contrast, density of biodiesel increased with its unsaturation but decreased with increasing molecular weight. In conclusion, the predicted values of density, kinematic viscosity, cetane number and higher heating value were found to be in reasonable agreement with experimental values. © Faculty of Mechanical Engineering, Belgrade.

Author Keywords
Beef tallow biodiesel; Fatty acid ethyl esters; Molecular weight; Statistical regression; Unsaturated double bonds

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Jayaprakash, S.[a] , Ramani, R.[b] , Senthil Nayagam, V.[a] , Kavitha, M.[a] , Jesudoss, A.[c]

Dual-output dc-dc converter for rl and rle load

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Abstract
This paper has presented about single-input dual output DC-DC Converter. Low or medium voltage applications are connected as input side and the large voltage compounds are connected in output of this converter. Solar energy devices as connected to the input side output side less voltage and more voltage applications are connected. In this circuit, voltage stress and inductors sizes are minimized as follow has efficiency and power factor value are increased. In case of RL Load and motor load current and voltage are measured. The simulation and experimental results are presented and verified. © 2020, Institute of Advanced Scientific Research, Inc.. All rights reserved.

Author Keywords
Buck-Boost Converter; RL Load; RLE Load; Single-Stage

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Effect of chitosan, chitosan nanoparticle, anacyclus pyrethrum and cyperus rotundus in combating plasmid mediated resistance in periodontitis

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Abstract

Background: Chitosan, chitosan nanoparticle, ethanolic extracts of Anacyclus pyre-thrum root and Cyperus rotundus rhizome were evaluated against plasmid mediated multidrug resistance of Enterococcus faecalis, Staphylococcus aureus and Bacillus sp. isolated from unstimu-lated saliva of chronic periodontitis. The main aim of the current study centres the reduction of antibiotic consumption and the development of natural compounds to combat multidrug resistance. Methods: Identification of bacteria, antimicrobial susceptibility, plasmid stability and plasmid curing was carried out for the characterization of resistance plasmids. Results: E. faecalis showed 89% of sensitivity to chitosan nanoparticle, chitosan 81%, C. Rotun-dus 69% and A. pyrethrum 62% for S. aureus, with the MIC >100 µg/ml. In comparison with the antimicrobials tested, maximum resistance to tetracycline (89%) for E. faecalis, is followed by ampicillin (87%) and tetracycline (81%) for S. aureus. Meanwhile, chloramphenicol and tetracycline (80%) for Bacillus sp. The plasmid stability for E. faecalis (20%), S. aureus (<4%) and Bacillus sp. (16%). The order of stability corresponding to the broth media is LB > BHI > nutrient for E. faecalis, S. aureus but similar in LB and nutrient broth for bacillus sp. The maximum plasmid curing efficiency of chitosan for S. aureus (76%), Chitosan nanoparticle for E. faecalis (88%), A. pyrethrum for S. aureus (73%), C. rotundus for E. faecalis (87%). The order of plasmid curing efficiency is chitosan nanoparticle>C. rotundus>chitosan>A. pyrethrum. Conclusion: Chitosan, Chitosan nanoparticle, C. rotundus, and A. pyrethrum offered a greater potential in eliminating plasmid mediated resistance acquired by periodontal pathogens, thus address-ing this crisis in dentistry. 2020 Bentham Science Publishers.

Author Keywords

Anacyclus pyrethrum; Chitosan; Chitosan nanoparticle; Chronic periodontitis; Cyperus rotundus; Plasmid

Index Keywords

amoxicillin, Anacyclus pyrethrum extract, antibiotic agent, bacitracin, chitosan, chitosan nanoparticle, ciprofloxacin, clindamycin, cyclosporine, Cyperus rotundus extract, genomic DNA, gentamicin, metronidazole, nanoparticle, phenytoin, plant extract, quinolone derivative, tetracycline, unclassified drug, vancomycin; Anacyclus pyrethrum, antibacterial activity, antibiotic resistance, antibiotic sensitivity, Article, bacterial gene, bacterial growth, bacterium identification, bacterium isolate, biofilm, broth dilution, cell viability, Cyperus rotundus, data analysis, disk diffusion, DNA extraction, Enterococcus faecalis, Escherichia coli, gene mutation, human, infrared spectroscopy, minimum bactericidal concentration, minimum inhibitory concentration, nonhuman, periodontitis, plasmid, polymerase chain reaction, Pseudomonas aeruginosa, Staphylococcus aureus, ultraviolet visible spectrophotometry, zone of inhibition

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amoxicillin, 26787-78-0, 34642-77-8, 61336-70-7; bacitracin, 1405-87-4; chitosan, 9012-76-4; ciprofloxacin, 85721-33-1; clindamycin, 18323-44-9; cyclosporine, 59865-13-3, 63798-73-2, 79217-60-0; gentamicin, 1392-48-9, 1403-66-3, 1405-41-0; metronidazole, 39322-38-8, 443-48-1; phenytoin, 57-41-0, 630-93-3; tetracycline, 23843-90-5, 60-54-8, 64-75-5, 8021-86-1; vancomycin, 1404-90-6, 1404-93-9

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Assessment of the awareness of knowledge of dental records in forensic dentistry among undergraduate dental students

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Abstract

Aim & Objectives: To assess the awareness of patient's dental record maintenance among BDS students and to evaluate their knowledge regarding the potential use of their maintained records in forensic identification. Materials and Method: Data was collected by means of a self administered questionnaire consisting of 24 closed ended questions, addressed on the awareness about patient's dental record maintenance and its importance in forensic needs among 3rd, 4th year BDS students and interns of a private dental college. Results: 73.1% of the respondents were aware that dentists were legally bound to maintain records in India and 83.5% were aware that these could contribute towards forensic investigations. Most of the students were aware of how to maintain dental records in an institution. 67.4% of the study population felt the need to store records for a minimum of 5 years. 65-70% had knowledge regarding denture markers and role of implants in forensic identification. The most perceived barrier to good dental record keeping was lack of time according to most of the students. Conclusion: The survey revealed awareness on the importance of dental records in forensic identification among BDS students. Few areas showed inadequate knowledge, thus mandating an utmost need to train dental students in this field. Newer methods like denture marking and Aadhar number in corpoartion in prostheses should be given importance. © 2020, Indian Journal of Forensic Medicine and Toxicology. All rights reserved.

Author Keywords

Aadhar number; Dental records; Denture markers; Forensic Odontology; Undergraduate dental students

Index Keywords

Article, awareness, clinical assessment, dental student, descriptive research, forensic odontology, human, human experiment, knowledge, medical record, medicolegal aspect, normal human, qualitative research, structured questionnaire, undergraduate student

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Analysis of heat transfer characteristics with triangular cut twisted tape (TCTT) and circular cut twisted tape (CCTT) inserts

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Abstract
The paper represents the numerical investigation of heat transfer characteristics in a pipe provided with twisted tape inserts is analyzed. The heat transfer was analyzed in a swirling flow conditions using CFD simulation. A commercial CFD package was used for analyze twisted tape for circular tube fitted with triangular cut twisted tape and circular hole cut twisted tape inserts. The twisted tape system allows a significant increase of convective heat transfer coefficient by introducing the swirl flow motion. The swirl flow motion provides greater heat transfer rate extracted from the solid surface of the tube. The depth of cuts for triangular cut 5 mm and depth of hole cut 5 mm twisted tapes were used for simulation generation. In this paper CFD analysis was used for enhancement of heat transfer rate of fluid of laminar flow. The experimental investigation were conducted in double pipe heat exchanger and these value of plain twisted tape, triangular twisted tape and circular hole cit twisted tape were taken for used simulation analysis. The performance of heat transfer rate was enhanced 1.1-1.3 times compared that the plain twisted tape and circular cut twisted tape. The data obtained from the simulation correlations for triangular cut twisted tape and circular hole cut twisted tape; and these data were correlated with plain twisted tape. © 2019 Elsevier Ltd. All rights reserved.

Author Keywords
Circular cut twisted tape; Computational fluid dynamics; Heat transfer; Plain twisted tape; Triangular cut twisted tape

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Mechanical properties of natural fiber/particulate reinforced epoxy composites - A review of the literature
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Abstract
Natural fibers are one of the abundant resources that exist in nature. They are easily decomposable, bio degradable, renewable and cost efficient. It can be extorted from various plant & animal resources. They are used as reinforcement material in polymers for the growth of natural-fiber composites. The mechanical properties of epoxy resin, reinforced with various natural fiber materials/agricultural by product particles are compared in the present study. This review intends to provide basic and background information of the natural fibers and their composites to trigger new research activities and facilitate development of new variety polymer composites. © 2019 Elsevier Ltd. All rights reserved. Selection and peer-review under responsibility of the scientific committee of the International Conference on Materials Engineering and Characterization 2019.

Author Keywords
Agricultural residue; Epoxy; Mechanical properties; Natural fiber; Particulates

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GPS based armed cash logistics monitoring and surveillance with security
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Abstract
A Vehicle trailing system is employed for the trailing purpose most vibrantly this tracks the vehicle location however the damaging robberies, accidents etc… can't be indicated to the most server at correct the correct} time and conjointly proper security can't be attainable by victimization trailing system in vehicles particularly for money vans, In banking sector money van plays a crucial role therefore time period observance of money van's location is crucial for supplying suppliers not solely to confirm safe and timely delivery, however conjointly to spot the situation wherever it travels Our mounted GPS unit sends the vehicle's location info to the room. {the data|the info|the info} is then collated and processed on digital maps to get crucial information like location, observance of alarm systems, and emergency help. Then the Vehicles square measure equipped with police work cameras to capture any unforeseen activities. this can be essential to observe the money together with the activities of the keeper, motion within the money van. Vans square measure monitored 'LIVE' throughout the journey. during this paper, I actually have mentioned however the money supplying method is finished underneath police work and the way the GPS tracks the situation of the money van for security functions. © 2019 by Advance Scientific Research. This is an open-access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/)

Author Keywords
GPS based Armed; Security Functions; Surveillance

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Classification of Tweets Using Dictionary and Lexicon Based Approaches
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Abstract
Online social media is pervasive in nature. It allows people to use short text messages, images, audios and videos to express their opinions and sentiments about products, events and other people. For example, Twitter is an online social networking and news service where users post and interact with small and short messages, called "tweets". Therefore, nowadays social media become a potential source for business and celebrities to find people's sentiments and opinions about a particular event or product or themselves. Social media analysis is the process of gathering enormous amount of digital contents generated online from blogs sites and social media networks and examining them to find the insights. This paper focuses on discovering public opinions and sentiments he on the results of Indian election results declared recently. This Paper also deals Dictionary based Approach and Affective Lexicon based approaches which were used to find the public opinion about election results. © 2020, Springer Nature Switzerland AG.

Author Keywords
Opinion Mining (OM); Sentiment Analysis (SA); Sentiment Analyzer; Social media data

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Social aspects; Digital contents, Indian elections, Online social medias, Online social networkings, Potential sources, Short text messages, Social media analysis, Social media networks; Social networking (online)

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Quality of classification with LERS system in the data size context
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Abstract
Rough set theory is a simple and potential methodology in extracting and minimizing rules from decision tables. Its concepts are core, reduct and discovering knowledge in the form of rules. The decision rules explain the decision state to predict and support the new situation. Initially it was proposed as a useful tool for analysis of decision states. This approach produces a set of decision rules involves two types namely certain and possible rules based on approximation. The prediction may highly be affected if the data size varies in larger numbers. Application of Rough set theory towards this direction has not been considered yet. Hence the main objective of this paper is to study the influence of data size and the number of rules generated by rough set methods. The performance of these methods is presented through the metric like accuracy and quality of classification. The results obtained show the range of performance and first of its kind in current research trend. © 2018 King Saud University

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Almessiere, M.A.[a] , Slimani, Y.[a] , Gungunes, H.[b] , Nawaz, M.[c] , Al-Ahmari, F.S.[c] , Manikandan, A.[d] , Baykal, A.[c]

Investigation of the crystal/magnetic structure, magnetic and optical properties of SrYxNbxFe12-2xO19 (x ≤ 0.05) hexaferrites

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Abstract

Series of Sr hexaferrites (HFs) co-substituted with Nb3+ and Y3+ ions (SrYxNbxFe12-2xO19 (x ≤ 0.05) were prepared via sol-gel combustion method. In addition to their optical, low temperature, magnetic properties and hyperfine interactions were investigated in detail. X-ray diffraction (XRD) patterns were considered proving both the formation and pureness of products. Mossbauer analysis indicated that the hyperfine field on iron nuclei at all sites decrease with substitution of Y3+-Nb3+ ions into Sr-hexaferrite as a result of changing the magnetic Fe3+ (5 μ B) ions by nonmagnetic Y3+ and Nb3+ ions. This leads to decreasing of the magnetic super exchange interaction between the ions. Measurements of AC susceptibility and ZFC-FC magnetizations implemented in a range from room temperature (RT) down to around 2 K. The analysis of MFC-MZFC data proves the ferrimagnetic performance of different prepared HFs in the whole range of 2-325 K and a super-spin glass-like behavior was identified at minimal temperatures. The investigation of AC susceptibility revealed a weakening in the magnetic exchange interactions with the rise in the Nb3+ and Y3+ ions ratios. © 2020 IOP Publishing Ltd.

Index Keywords

Crystal structure, Crystals, Exchange interactions, Ferrite, Ions, Magnetic susceptibility, Optical properties, Sol-gels, Spin glass, Temperature; Ac susceptibility, Hyperfine interactions, Low temperatures, Magnetic and optical properties, Magnetic exchange interactions, Sol-gel combustion method, Spin-glass-like behaviors, Superexchange interaction; Magnetism

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A review on association rule mining with regression techniques for effective data mining
(2020) *International Journal of Control and Automation*, 13 (1), pp. 397-407.

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Abstract
A Wal-Mart salesman was trying to surge the sales data of the store by combining the commodities together and putting discounts on those products. The goods are clearly distinct thus he found that nurturing kids is exhausting. Data Mining, also known as KDD [1], to find irregularities, associations, arrangements, and tendencies to forecast consequences. Apriori algorithm is a standard process in data mining. It is utilized for mining recurrent sets of items and related association rubrics. It is formulated to work on a database comprising of a lot of transactions. It is very vital for operative Market Basket Investigation and this assistance the patrons in buying their substances with more effortlessness which escalates the sales of the markets. While finding goods to be associated together, it is imperative to have some association on which the commodities can be listed together. In this research work a hybrid method has been proposed to minimize association rules using optimization algorithm Differential Evolution with Apriori Algorithm. Firstly, Apriori algorithm is applied to generate frequent itemsets and association rules. Then, AMO is used to reduce the number of association rules with a new fitness function that incorporates frequent rules. It is observed from the experiments that, in comparison with the other relevant techniques, ARMAMO greatly reduce the computational time for frequent item set generation, memory for association rule generation, and the number of rules generated. Data mining is a process that uses a variety of data analysis tools to discover patterns and relationships in data that may be used to make valid predictions. Association rule is one of the popular techniques used for mining data for pattern discovery is the KDD. Rule mining is an important component of data mining. To find regularities/patterns in data, the most effective class is association rule mining. Mining has been used in many application domains. In this paper, an efficient mining based algorithm for rule generation is presented. © 2020 SERSC.

Author Keywords
Apriori Algorithm; Association Rules; Data Mining; Differential Evolution (DE); Genetic Algorithm; Optimization Algorithm

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Peter, M.[a] , Kavitha, S.F.[b]

A study on employee work life balance as an HR imperative

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Abstract
There is a growing awareness in today's workplaces that employees do not give up their lives just because they work. Work and life remain the two most important domains in the life of an employed individual. However, the challenge of balancing work and non-work demands is one of today's central concerns for both individuals and organisations. With the growing diversity of family structures represented in today?s workforce, particularly with the growing norm of dual-career families, the importance of managing an employee's work-life balance have increased markedly over the past 20 years. Employers are realising that the quality of an employee's personal and family life impacts work quality and that there are concrete business reasons to promote work and non-work integration. In this paper, we contend that assisting employees to achieve a work-life balance should become a critical part of HR policy and strategy if it is to truly get the best from the organisation's people without leaving them unsatisfied, burnt-out and unfulfilled. © IAEME Publication.

Author Keywords
Employee; Human resources; Organization; Work-life balance

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A study on fairness perceptions of work life balance initiatives

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Abstract
Employee Work Life Balance (WLB) is a major driver in the organization that helps to achieve higher productivity. It is a healthy blend of both employee's work life and personal life. There are many factors influencing work-life balance of an employee in the organization. The researchers have identified some factors along with demographic variables to study and understand the work life balance. To recognize the connection between high-quality of labor lifestyles and employees satisfaction. To apprehend the measures taken by means of the employer to beautify the standard of exertions lifetime of the workers in the business enterprise. To beautify the excellent of living of the workers. To make a nice attitude inside the minds of the workers. To increase the effectiveness of the organizations. The current study focuses the factors influencing the work life balance of employees and the results of the study will help the organization to enhance better work life balance towards higher level of productivity. © IAEME Publication.

Author Keywords
Employee; Employee Work Life Balance; Productivity

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Neuro-protective effect of ayurveda formulation, saraswatharishtam, on scopolamine induced memory impairment in animal model

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Abstract
Introduction: In the management of neurodegenerative and neuropsychiatric diseases, memory loss remains very challenging. Saraswatharishtam (SWRT) is an ayurvedic formulation prescribed for several neurological illnesses like acute anxiety, partial memory loss, slurred speech, neuro degenerative diseases like Parkinson's, Alzheimer's etc. Methods: Present study explores the possibilities of curative effects of SWRT on Scopolamine induced memory impairment and to compare the effects of commonly used drug piracetam. Adult Wistar Swiss albino mice were used for this experiment and divided into five different groups for the treatments of the drugs in various combinations. The first group was vehicle treated control while the second group was treated with scopolamine to induce memory impairment. The third group of animals were treated with Scopolamine where the mice were pretreated with standard neuroprotective drug Piracetam, while the fourth and fifth group of animals were treated with scopolamine and the animals were pretreated with SWRT at the doses of 200 and 400 mg/kg respectively to compare with the effect of Piracetam. Scopolamine was administered on day eight, only for 45 minutes in all the cases (Group I- Group V). Several neurobehavioral parameters were examined to confirm the neuroprotective effects of SWRT. Results: Saraswatharishtam significantly reversed the memory loss in mice model revealed from elevated plus maze, radial maze and rectangular maze experiments justifying its neuroprotective potential as observed in usually used synthetic Piracetam. SWRT was found to be nontoxic and very promising antioxidant recorded from acute and chronic toxicological studies. Conclusions: It is suggested that SWRT, could be used as safe and easily available Ayurveda medicine to treat neurological dysfunctions without any side effects. Further translational research is needed to explore its neuro-protective potential. © 2020 Phcogj.Com.

Author Keywords
Antioxidant; Ayurvedic medicine; Elevated Plus Maze; Neuroprotection; Piracetam; Saraswatharishtam; Scopolamine

Index Keywords
ayurvedic drug, neuroprotective agent, piracetam, saraswatharishtam, scopolamine, unclassified drug; acute toxicity, adult, animal experiment, animal model, Article, Ayurveda, chronic toxicity, controlled study, elevated plus maze test, locomotion, maze test, memory disorder, mouse, neuroprotection, nonhuman, radial arm maze test, rectangular maze test

Chemicals/CAS
piracetam, 7491-74-9; scopolamine, 138-12-5, 51-34-3, 55-16-3

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Abstract
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Author Keywords
Antioxidant; Ayurvedic medicine; Elevated Plus Maze; Neuroprotection; Piracetam; Saraswatharishtam; Scopolamine

Index Keywords
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Chemicals/CAS
piracetam, 7491-74-9; scopolamine, 138-12-5, 51-34-3, 55-16-3

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Abstract
AutomatedTeller Machine (ATM) is one broadly preferred choice for money withdrawal for consumers. Getting an ATM with required amount and section has constantly demonstrated to be an obstacle for consumers looking for money. One approach to counter this is to introduce progressively number of ATMs in region to guarantee the client's necessities are met. Anyway this demonstrates to be an overhead for bank utility as far as support and activity cost.Here in this paper we are involving IoT which can get noteworthy cost reserve funds in the board and tasks of ATMs. It is regularly observed ... By interfacing the sensors to a focal cloud-based revealing and the executives dashboard, banks can take preventive activities in time, inevitably sparing a great deal on vitality and upkeep costs. Modern money arranging, keen checking of ATM occurrences, and defense of the ATM impression, banks can cut their absolute expense of overseeing money by as much as 10 to 15 percent. The subsequent wave is re-appropriating. The objective is to accomplish critical cost decrease and improve money the executives tasks, with the scope covering branch, the values are compared with the database and the lock is allowed to open using a random One Time Password (OTP). © 2019 by Advance Scientific Research.

Author Keywords
Cutting Edge Futuristic; Global Cash Logistics; One Time Password (OTP)

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A study on new experimental induction of wound using metal surface contact in a rat model
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Abstract
Burns injury is a global issue; when burns left unmonitored, it may lead to sepsis & hypovolemia. It majorly contributing to the country's morbidity and mortality. Accidental burns are quite common throughout the world. The degree of burns differs variably, and to identify a possible therapeutic option, it is of great importance for the researchers and scientists. Achieving a uniform burn wound model is thus required to study the burns injury at different levels involving epidermis, dermis, and hypodermis. The goal of this study is to create a simple third-degree contact burn in Wistar albino rats. Third-degree contact burn wound was monitored on 7th, 14th, and 21st day for natural wound healing under gross and histopathological observation. Gross observation reported damaged skin to appear dry, leathery, and charred. Wound closure was observed to be delayed and incomplete on day 21. Histopathol-ogy revealed a wound healing process by hematoxylin and eosin method. This metal surface contact method revealed a simplified and cost-effective method for inducing a third degree of a wound in Wistar rats. The study is thus a milestone that could enable research progress in the area of wound healing. © 2020 J. K. Welfare and Pharmascope Foundation. All rights reserved.

Author Keywords
Burn injury; Metal plate contact; Wound healing

Index Keywords
animal experiment, animal model, animal tissue, Article, controlled study, edema, experimental burn, granulation tissue, histopathology, metal surface contact method, neutrophil, nonhuman, rat, tissue induction, wound assessment, wound closure, wound contraction, wound healing

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Sam Daniel Prabu, D.[a] , Lakshmanan, S.[b] , Thirumurugan, K.[a] , Ramalakshmi, N.[a] , Arul Antony, S.[a]

Synthesis, molecular docking, DFT study of novel N-benzyl-2-(3-cyano-4-isobutoxyphenyl)-4-methylthiazole-5-carboxamide derivatives and their antibacterial activity

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Abstract
A series of febuxostat based new chemical entities was synthesized using microwave method and characterized by NMR, mass and FT-IR spectral studies. Molecular docking of febuxostat amide nucleus substitution compounds 8c (-7.91kcal/mol), 8g (-7.94 kcal/mol) exhibiting high binding energy against ALK receptors. Theoretical investigation of MEPs, HOMO, LUMO and energy gap of HOMO-LUMO were calculated by B3LYP/6-31G method. Among the tested compounds, methoxy substituted compound 8g showed highest antibacterial activity against S. aereus and B. subtilis. © 2020 Chemical Publishing Co.. All rights reserved.

Author Keywords
Antibacterial activity; DFT study; Febuxostat amides; Microwave method

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Comparative study of effect of silver nitrate gel and differentiated dermal precursors (BMSCs) on third degree burn in wistar rats

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Abstract
Skin is an ectodermal derivative that maintains internal homeostasis of the body. Any damage to the skin like burn injury internal homeostasis is lost, resulting in delayed healing. The aim is to study the histoarchitecture comparative effect of silver nitrate gel, and BMSCs (DDP) on third-degree burns in Wistar rats. A burn wound of size 2.5 cm (length) x 2.5 cm (breadth) x 6 mm (depth) was created using a preheated metal plate on flanks of Wistar rat. Every burn wound was treated with silver nitrate gel (commercially available as silverex), bone marrow differentiated dermal precursors, and monitored for 1, 7, 14, 21 days until wound healing. Wound surface area was measured and compared among groups with histological and gross observations. The healing time was faster in bone marrow differentiated dermal precursors (DDP) group compared to control. Prolonged silver nitrate gel usage heals burn wound with no infection, but silver toxicity was noted. Wound contraction is slower but steady using bone marrow differentiated dermal precursors (DDP) cell when compared to the group treated with silver nitrate gel. The data from this study help use to use bone marrow differentiated dermal precursors (DDP) cells as an alternate and effective way to treat burn wounds. © 2020, International Journal of Research in Pharmaceutical Sciences. All rights reserved.

Author Keywords
Bone marrow differentiated dermal precursors (DDP); Burn; Silver nitrate gel

Index Keywords
gel, silver nitrate; animal experiment, animal model, animal tissue, Article, bone marrow culture, cell differentiation, controlled study, edema, epithelization, erythema, experimental burn, hematopoietic stem cell, histology, histopathology, nonhuman, rat, regenerative medicine, surface area, therapy effect, tissue engineering, wound closure, wound healing

Chemicals/CAS
silver nitrate, 7761-88-8

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Iot based architecture for banking cash logistics and ATM operations with sensors based networks
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Abstract
In the Internet of Things (IoT) vision, standard devices become adroit and self-administering. This vision is changing into a reality in view of advances in development, yet there are still challenges to address, especially in the security area e.g., information unwavering quality. Considering the anticipated development of the IoT in the coming years, it is important to give trust in this tremendous approaching data source. Blockchain has developed as a key innovation that will change the manner by which we share data. Building trust in passed on circumstances without the prerequisite for experts is a mechanical development that can change various endeavors, the IoT among them. Problematic headways, for exam ple, enormous information and distributed computing have been utilized by IoT to beat its confinements since its origination, and we think Blockchain will be one of the following ones. This paper centers around this relationship, explores difficulties in Blockchain IoT applications, and outlines the most huge work in order to analyze how Blockchain could be utilized in real money coordination. © 2020 IJSTR.

Author Keywords
ATM; Blockchain; Cash logistics; IoT; Sensor based networks

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Properties and green applications based review on highly efficient deep eutective solvents

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Abstract
DEEP eutectic solvents (Ionic liquids)(DESs), a new type of low cost and eco-friendly solvent, have fascinating rising interest in chemistry. To recapitulate the properties and significance of deep eutectic solvents (DESs), this review focus on characteristics of deep eutectic solvents, as well as their applications in electrochemistry, catalytic activity, biodegradability, bio-catalysis, as aromatic hydrocarbons, extraction and separation. The existing data and references are appraisal to go over the developments of DESs. © 2020 National Information and Documentation Center (NIDOC).

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Shortened treatment regimens versus the standard regimen for drug-sensitive pulmonary tuberculosis
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Abstract
Background: Tuberculosis causes more deaths than any other infectious disease worldwide, with pulmonary tuberculosis being the most common form. Standard first-line treatment for drug-sensitive pulmonary tuberculosis for six months comprises isoniazid, rifampicin, pyrazinamide, and ethambutol (HRZE) for two months, followed by HRE (in areas of high TB drug resistance) or HR, given over a four-month continuation phase. Many people do not complete this full course. Shortened treatment regimens that are equally effective and safe could improve treatment success. Objectives: To evaluate the efficacy and safety of shortened treatment regimens versus the standard six-month treatment regimen for individuals with drug-sensitive pulmonary tuberculosis. Search methods: We searched the following databases up to 10 July 2019: the Cochrane Infectious Diseases Group Specialized Register; the Central Register of Controlled Trials (CENTRAL), in the Cochrane Library; MEDLINE (PubMed); Embase; the Latin American Caribbean Health Sciences Literature (LILACS); Science Citation Index-Expanded; Indian Medlars Center; and the South Asian Database of Controlled Clinical Trials. We also searched the World Health Organization (WHO) International Clinical Trials Registry Platform, ClinicalTrials.gov, the Clinical Trials Unit of the International Union Against Tuberculosis and Lung Disease, the UK Medical Research Council Clinical Trials Unit, and the Clinical Trials Registry India for ongoing trials. We checked the reference lists of identified articles to find additional relevant studies. Selection criteria: We searched for randomized controlled trials (RCTs) or quasi-RCTs that compared shorter-duration regimens (less than six months) versus the standard six-month regimen for people of all ages, irrespective of HIV status, who were newly diagnosed with pulmonary tuberculosis by positive sputum culture or GeneXpert, and with presumed or proven drug-sensitive tuberculosis. The primary outcome of interest was relapse within two years of completion of anti-tuberculosis treatment (ATT). Data collection and analysis: Two review authors independently selected trials, extracted data, and assessed risk of bias for the included trials. For dichotomous outcomes, we used risk ratios (RRs) with 95% confidence intervals (CIs). When appropriate, we pooled data from the included trials in meta-analyses. We assessed the certainty of evidence using the GRADE approach. Main results: We included five randomized trials that compared fluoroquinolone-containing four-month ATT regimens versus standard six-month ATT regimens and recruited 5825 adults with newly diagnosed drug-sensitive pulmonary tuberculosis from 14 countries with high tuberculosis transmission in Asia, Africa, and Latin Ameria. Three were multi-country trials that included a total of 572 HIV-positive people. These trials excluded children, pregnant or lactating women, people with serious comorbid conditions, and those with diabetes mellitus. Four trials had multiple treatment arms. Moxifloxacin replaced ethambutol in standard four-month, daily or thrice-weekly ATT regimens in two trials; moxifloxacin replaced isoniazid in four-month ATT regimens in two trials, was given daily in one trial, and was given with rifapentine instead of rifampicin daily for two months and twice weekly for two months in one trial. Moxifloxacin was added to standard ATT drugs for three to four months in one ongoing trial that reported interim results. Gatifloxacin replaced ethambutol in standard ATT regimens given daily or thrice weekly for four months in two trials. Follow-up ranged from 12 months to 24 months after treatment completion for the majority of participants. Moxifloxacin-containing four-month ATT regimens. Moxifloxacin-containing four-month ATT regimens that replaced ethambutol or isoniazid probably increased the proportions who experienced relapse after successful treatment compared to standard ATT regimens (RR 3.56, 95% CI 2.37 to 5.37; 2265 participants, 3 trials; moderate-certainty evidence). For death from any cause, there was probably little or no difference between the two regimens (2760 participants, 3 trials; moderate-certainty evidence). Treatment failure was rare, and there was probably little or no difference in proportions with treatment failure between ATT regimens (2282 participants, 3 trials; moderate-certainty evidence). None of the participants given moxifloxacin-containing regimens developed resistance to rifampicin, and these regimens may not increase the risk of acquired resistance (2282 participants, 3 trials; low-certainty evidence). Severe adverse events were probably little or no different with moxifloxacin-containing four-month regimens that replaced ethambutol or isoniazid, and with three- to four-month regimens that augmented standard ATT with moxifloxacin, when compared to standard six-month

ATT regimens (3548 participants, 4 trials; moderate-certainty evidence). Gatifloxacin-containing four-month ATT regimens. Gatifloxacin-containing four-month ATT regimens that replaced ethambutol probably increased relapse compared to standard six-month ATT regimens in adults with drug-sensitive pulmonary tuberculosis (RR 2.11, 95% CI 1.56 to 2.84; 1633 participants, 2 trials; moderate-certainty evidence). The four-month regimen probably made little or no difference in death compared to the six-month regimen (1886 participants, 2 trials; moderate-certainty evidence). Treatment failure was uncommon and was probably little or no different between the four-month and six-month regimens (1657 participants, 2 trials; moderate-certainty evidence). Acquired resistance to isoniazid or rifampicin was not detected in those given the gatifloxacin-containing shortened ATT regimen, but we are uncertain whether acquired drug resistance is any different in the four- and six-month regimens (429 participants, 1 trial; very low-certainty evidence). Serious adverse events were probably no different with either regimen (1993 participants, 2 trials; moderate-certainty evidence). Authors' conclusions: Evidence to date does not support the use of shortened ATT regimens in adults with newly diagnosed drug-sensitive pulmonary tuberculosis. Four-month ATT regimens that replace ethambutol with moxifloxacin or gatifloxacin, or isoniazid with moxifloxacin, increase relapse substantially compared to standard six-month ATT regimens, although treatment success and serious adverse events are little or no different. The results of six large ongoing trials will help inform decisions on whether shortened ATT regimens can replace standard six-month ATT regimens. 9 December 2019. Up to date. All studies incorporated from most recent search. All eligible published studies found in the last search (10 Jul, 2019) were included. Copyright © 2019 The Authors. Cochrane Database of Systematic Reviews published by John Wiley & Sons, Ltd. on behalf of The Cochrane Collaboration.

Index Keywords
ethambutol, ethylenediamine derivative, gatifloxacin, isoniazid, moxifloxacin, nitroimidazole derivative, oxazolidinedione derivative, pyrazinamide, quinoline derivative, rifampicin, rifamycin, rifapentine, tuberculostatic agent; Africa, antibiotic resistance, antibiotic sensitivity, arthralgia, Asia, cardiotoxicity, data analysis, data base, data extraction, data synthesis, disease transmission, dizziness, drug efficacy, drug eruption, drug safety, drug withdrawal, follow up, gastrointestinal symptom, human, hyperglycemia, hypoglycemia, information processing, jaundice, lung tuberculosis, mortality, peripheral neuropathy, priority journal, QT prolongation, randomized controlled trial (topic), relapse, Review, risk assessment, seizure, South and Central America, sputum culture, systematic review, treatment duration, treatment outcome, clinical protocol, combination drug therapy, drug administration, drug combination, lung tuberculosis, meta analysis, procedures; Antitubercular Agents, Clinical Protocols, Drug Administration Schedule, Drug Combinations, Drug Therapy, Combination, Humans, Randomized Controlled Trials as Topic, Tuberculosis, Pulmonary

Chemicals/CAS
ethambutol, 10054-05-4, 1070-11-7, 3577-94-4, 74-55-5; gatifloxacin, 112811-59-3, 180200-66-2; isoniazid, 54-85-3, 62229-51-0, 65979-32-0; moxifloxacin, 151096-09-2; pyrazinamide, 98-96-4; rifampicin, 13292-46-1; rifamycin, 6998-60-3, 14897-39-3, 15105-92-7; rifapentine, 61379-65-5; Antitubercular Agents; Drug Combinations

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Colored Petri nets for prediction of student knowledge level
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Abstract
There is great demand for applying prediction tools in any domain of knowledge industry to measure the performance in advance. Here we adopt the possible investigations through data mining experiments with the appropriate dataset based on knowledge profile of UG University students. There are two main steps firstly to extract the highest relevant rules and secondly to construct concurrent execution model that is, colored Petri nets. The objective in this paper is to identify the best accurate rule set to construct the fuzzy Petri nets for specifying and implementing the same by Colored Petri nets. © 2019 Author(s).

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Emerging trends of IT industry policies for ensuring women employee retention

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Abstract
Today, behaviour of women employees has changed the environment of the private organization. Young women employees always ready to switch over whenever she dissatisfy with any reason in the job. Retention strategy is a powerful recruitment tool. Private organizational issues matters as lost knowledge and training time. HR managers should identify the needs of the women employee and then devises the retention strategies. As different individuals have different priorities does not fit one strategy. HR professionals face the vital challenge to retain talented women employees. Retention strategies are fall into four categories-job enrichment, salary, working conditions and education, addressing these issues this article demands a specialized approach that emerge new fangled women friendly policies which foster gender neutral workplace in developing retention strategies. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Retention strategies for female employees; Scope; Trends and policies

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adult, article, education, employee, female, gender, human, human experiment, male, manager, salary, work environment, workplace

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Role of oxidative stress in development of nephropathy in diabetic patients

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Abstract
Diabetes Nephropathy is a major microvascular complication of Diabetes Mellitus and the most common cause of End Stage Renal Disease (ESRD) worldwide. Hyperglycemia, a well recognized pathogentic factor of long term complications of Diabetes Mellitus, generates ROS. This attenuates antioxidative mechanisms through glycation of the scavenging enzymes. Excess amount of ROS modulate activation of protein kinaseC, mitogin activated protien kinares and various cytokines and transcription factors which eventually cause increased expression of extracellular matrix (ECM) genes with progression of fibrosis and end stage renal disease. Therefore, this study was carried out to investigate oxidant and antioxidant status in Diabetic patients for manifesting the progression to diabetic nephropathy. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Diabetic nephropathy; Extracellular matrix; Hyperglycemia; Oxidative stress; Reactive oxygem species

Index Keywords
alpha tocopherol, antioxidant, catalase, glutathione, glutathione peroxidase, glycosylated hemoglobin, hemoglobin A1c, hydrogen peroxide, malonaldehyde, reactive oxygen metabolite, superoxide dismutase; antioxidant activity, Article, blood sampling, controlled study, diabetes mellitus, diabetic nephropathy, end stage renal disease, enzymatic assay, enzyme activity, enzyme linked immunosorbent assay, extracellular matrix, female, fibrosis, glucose blood level, human, male, oxidative stress, protein expression, signal transduction, vitamin blood level

Chemicals/CAS
alpha tocopherol, 1406-18-4, 1406-70-8, 52225-20-4, 58-95-7, 59-02-9; catalase, 9001-05-2; glutathione, 70-18-8; glutathione peroxidase, 9013-66-5; glycosylated hemoglobin, 9062-63-9; hemoglobin A1c, 62572-11-6; hydrogen peroxide, 7722-84-1; malonaldehyde, 542-78-9; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1

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Effect of CPP ACP and nano hydroxyapatite incorporated GIC on remineralization of dentin

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Abstract
The objective of this invitro study was to investigate, whether the remineralization potential of conventional GIC in human dentin could be improved by combining with CPP-ACP and nano hydroxyapatite. Class I cavities were prepared in sound human extracted third molars and they were randomly assigned to 3 groups according to the restorative materials. Group I: Conventional GIC, Group II:Conventional GIC and CPP-ACPand Group III: Conventional GIC powder & Nano hydroxy apatite. The samples were subjected to remineralizationand demineralization cycles for period of 2 weeks. Energy dispersive X-ray analysis was used to evaluate the remineralization. The elemental compositions were analyzed using One way ANOVA, Post Hoc and Mann Whitney tests. The calcium and phosphate concentration were statistically significantly greater in Group III than Group I and II (P<0.05).Nanohydroxy apatite with GIC remineralized the demineralized dentin almost equal to normal dentin. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
DENTIN; GIC; HYDROXYAPATITE

Index Keywords
calcium phosphate, hydroxyapatite, midafotel; Article, comparative study, demineralization, dentin, elemental analysis, enamel, energy dispersive X ray spectroscopy, human, in vitro study, mouth cavity, third molar, tooth, tooth disease, tooth extraction

Chemicals/CAS
calcium phosphate, 10103-46-5, 13767-12-9, 14358-97-5, 7758-87-4; hydroxyapatite, 1306-06-5, 51198-94-8; midafotel, 117414-74-1

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Effect of addition of chitosan on properties of conventional glass ionomer cement—an in vitro study

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Abstract
Objective: To evaluate the effect of modifying the liquid component of conventional GIC with 10 v/v % and 50 v/v % Chitosan on fluoride release and flexural strength in comparison to conventional GIC. Method: The liquid component Conventional GIC was modified by adding 10 v/v % and 50 v/v % Chitosan. To evaluate fluoride release, 90 discs of 10*2mm were prepared, stored in 50ml distilled water for 1hr, 24hrs and 1 week and measured in DR-2000 spectrophotometer. To measure flexural strength, 30 samples of 10*2.5*2.5mm were prepared, loaded until fracture in Universal testing machine. Statistical Analysis: One-way analysis of variance and student Newman Keul test were used to analyze the data Results: The accumulated fluoride release at various time intervals were greater for 50 v/v% Chitosan modified GIC than the other groups. Mean Flexural strength of 10 v/v% Chitosan modified GIC was found to be statistically significant than the other groups. Conclusion: Chitosan enhances the Fluoride release and flexural strength properties of conventional GIC. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Chitosan; Flexural strength; Fluoride release; Glass ionomer cement; Spectrophotometer

Index Keywords
cement, chitosan, fuji ii gic, glass ionomer; analysis of variance, analytical parameters, anticariogenic activity, Article, chemical analysis, comparative study, drug synthesis, flexural strength, fluoride release, in vitro study, spectrophotometry

Chemicals/CAS
chitosan, 9012-76-4

Tradenames
fuji ii gic, GC, JapanDR-2000, Hach

Manufacturers
GC, JapanHach

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Begum, A.N.[a] , Brindha, G.[b]

Forcing gender issues and challenges affecting women employees to continue their career in it industry
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Abstract
Despite the major advancements women have made in becoming a significant part of the workforce, they are still facing important career development issues. Although many women achieve lower and middle management positions, they seem to hit the “glass ceiling” in many organizations and are denied the most senior levels of upper management. The reasons are multi-dimensional; some women lack the confidence to apply for senior positions; some lack the necessary education or training; and others find themselves excluded from the top positions because of systemic gender bias that exists in some companies. There are plenty of statistics tracking the percentage of women in the workforce, their qualifications and their salaries. But the data doesn’t show us the whole picture. It doesn’t assess how women feel, how they fare in their day-to-day business, the challenges they encounter. And that is why the research embarked on a global task, asking more than 9,500 women across the G20 to identify the top five issues faced at work especially in IT industry. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Career Advancement; Gender Discrimination; Issues and Challenges; Strategies to Overcome; Women Retention

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adult, article, career, education, employee, female, gender bias, human, human experiment, major clinical study, male, organization, salary, workforce

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Padmavathy, K.[a] , Krishnan, R.S.[b] , Padma, K.[c] , Sathyapriya, B.[d]

Nasal colonization of methicillin resistant Staphylococcus aureus and its plausibleassociation with infected foot ulcers in diabetic patients
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Abstract
Diabetic Foot ulceration is one of the major devastating complication of diabetes. Diabetic foot ulcers (DFUs) infected with multidrug resistant bacterial strains is often associated with prolonged hospital stay, increased treatment cost, significant morbidity and mortality. DFU infected with Methicillin Resistant Staphylococcus aureus (MRSA) if untreated may lead to amputation. Materials & Method: Type 2 diabetic Subjects (Mean age 56 years)(n=27) with infected foot ulcers were included in his study.After wound debridement, samples were taken from the base of the ulcer using sterile cotton swabs and nasal swabs were also collected from the study subjects and were processed as per standard Microbiological methods. Results: The overall isolation rate of S. aureus in DFU was 18.5%. Among the S. aureus isolates screened for MRSA, all the isolates from the DFU ulcers (n=4) and those isolated from the nares (n=3) of the diabetic subjects were found to be MRSA.Of note, 3 of the study subjects in whom MRSA was isolated from the DFU samples were found to harbour MRSA in their nares. Nevertheless, allthe isolateswere susceptible to linezolid, netillin, gentamicin and amikacin.No significant statistical difference was observed in the antimicrobial resistance percentage among the DFU and nasal isolates. Conclusion: Our study results imply that, screening for MRSA colonisation would better predict a patient's probability of MRSA infection and guide the clinicians in antimicrobial treatment decision making. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Diabetic foot; Methicillin; MRSA

Index Keywords
amikacin, cefalexin, cefoxitin, chloramphenicol, ciprofloxacin, cotrimoxazole, erythromycin, gentamicin, linezolid, netilmicin, ofloxacin, oxacillin, rifampicin, teicoplanin, tetracycline, vancomycin; adult, aged, antibiotic resistance, antibiotic sensitivity, Article, bacterial colonization, bacterium isolation, broth dilution, clinical article, controlled study, debridement, decision making, diabetic foot, diabetic patient, disk diffusion, female, hospitalization, human, male, methicillin resistant Staphylococcus aureus, MIC50, MIC90, minimum inhibitory concentration, nonhuman, nose smear

Chemicals/CAS
amikacin, 37517-28-5, 39831-55-5; cefalexin, 15686-71-2, 23325-78-2; cefoxitin, 33564-30-6, 35607-66-0; chloramphenicol, 134-90-7, 2787-09-9, 56-75-7; ciprofloxacin, 85721-33-1; cotrimoxazole, 8064-90-2; erythromycin, 114-07-8, 70536-18-4; gentamicin, 1392-48-9, 1403-66-3, 1405-41-0; linezolid, 165800-03-3; netilmicin, 56391-56-1, 56391-57-2; ofloxacin, 82419-36-1; oxacillin, 1173-88-2, 66-79-5, 7240-38-2; rifampicin, 13292-46-1; teicoplanin, 61036-62-2, 61036-64-4; tetracycline, 23843-90-5, 60-54-8, 64-75-5, 8021-86-1; vancomycin, 1404-90-6, 1404-93-9

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Immunomodulatory and mast cell stabilizing potential of ethanol extract of eleusinecoracana L.

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Abstract
Eleusinecoracanal (seed)(finger millet bran)is rich in dietary fibre (free of glutan) and micronutrients and has been extensively studied for its anti-diabetic, anti-tumorogenic, anti-diarrheal, anti-ulcerative, anti-oxidant and anti-microbial potential. However, the immuno-modulatory potential and mast cell membrane stabilizing ability of E. coracana L (Ragi seeds) needs to be evaluated. Hence, this study was designed to evaluate the ability of ethanol extract of E. coracana L. to potentiate immunomodulation and inhibit mast cell degranulation of human macrophages and mice peritoneal mast cells respectively. Ethanol extraction of E. coracana L (Ragi seeds) was performed by cold percolation method. Assessment of In vitro immunomodulatory activity was carried out using human PMN layer, Candida albicans and morphological criteria was adopted to calculate the phagocytic index. In vitroevaluation of inhibition of mast cell degranulation was determined using isolated mice peritoneal mast cells. In vitro evaluation of phagocytosis revealed that ethanol extract of E. corocana L. (seed) induced vacuolation of human macrophages. Nevertheless, E. corocana L (seed, ethanol extract) (25 mg/mL) was found to inhibit polysorbate 80 induced mast cell degranulation. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Eleusinecoracanal; Ethanol; Macrophages

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alcohol, eleusine coracana extract, plant extract, polysorbate 80, unclassified drug; animal cell, animal experiment, animal model, Article, biological activity, Candida albicans, cell vacuole, controlled study, cytotoxicity, finger millet, human, human cell, immunomodulation, macrophage, mast cell degranulation, mast cell stabilization, mouse, nonhuman, peritoneum mast cell, phagocyte index, phagocytosis, polymorphonuclear cell

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Tamilselvi, R.[a] , Rosaline, H.[b] , Porkodi, I.[c] , Veronica, A.[d] , Kandaswamy, D.[e]

An invitro comparison of dissolution of human pulp in sodium hypochlorite, ethanolic extract and digestive secretion of insectivorous plants

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Abstract
The tissue dissolution property of irrigating solutions is important for successful endodontic treatment. Sodium hypochlorite (NaOCl) is a well-known tissue dissolvent, but no data have been published on herbal alternative to NaOCl. The purpose of this study was to investigate the pulp tissue dissolution capacity of sodium hypochlorite, ethanolic extract of Drosera rotundifolia and digestive fluid of Nepenthes khasiana. Freshly extracted intact vital teeth, extracted for orthodontic and impaction reasons were collected and stored at – 20 ˚C. The pulp tissues were removed by splitting of the teeth when required. Method: The pulp tissues were randomly divided into 4 groups (n = 10), individual sample was weighed 7 mg each. The groups were as follows, Group I: 5% NaOCl, Group II: digestive fluid of Nepenthes khasiana, Group III: Drosera rotundifolia (ethanolic extract), Group IV: distilled water. The test solutions were added to tubes containing tissue samples, the tissues were removed from the test solutions at 5, 15, 20, 30 min, 1,2,3,4,5,6,7 hr blotted dry with the tissue paper and weighed using precision balance. Results: The results showed complete dissolution of pulp tissue in Group I at 20 minutes, Group II at 7 hr, Group III and IV showed no dissolution of pulp at the investigated time intervals. Conclusion: The digestive fluid of Nepenthes khasiana could be considered as an herbal alternative to NaOCl for pulp tissue dissolution as it completely dissolved the pulp tissue similar to 5% NaOCl, but at different time intervals. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Digestive; Insectivorous plants; Nepenthes; Sodium Hypochlorite; Tissue dissolution

Index Keywords
Drosera rotundifolia extract, ethanolic extract, hypochlorite sodium, Nepenthes khasiana extract, plant extract, unclassified drug; Article, body weight loss, carnivorous plant, comparative study, controlled study, dental pulp capping, digestive tract secretion, Drosera rotundifolia, human, human tissue, measurement precision, Nepenthes khasiana, pH measurement, posterior fossa, proximal surface

Chemicals/CAS
hypochlorite sodium, 7681-52-9

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Emerging trends of pharma industry policies for ensuring women retention
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Abstract
Today, behaviour of women employees has changed the environment of the private organization. Young women employees always ready to switch over whenever she dissatisfy with any reason in the job. Retention strategy is a powerful recruitment tool. Private organizational issues matters as lost knowledge and training time. HR managers should identify the needs of the women employee and then devises the retention strategies. As different individuals have different priorities does not fit one strategy. HR professionals face the vital challenge to retain talented women employees. Retention strategies are fall into four categories-job enrichment, salary, working conditions and education, addressing these issues this article demands a specialized approach that emerge new fangled women friendly policies which foster gender neutral workplace in developing retention strategies. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Retention strategies for female employees; Scope; Trends and policies

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adult, article, education, employee, female, gender, human, human experiment, male, manager, salary, work environment, workplace

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Primary Hyperoxaluria-Imaging of Renal Oxalosis
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Abstract
Primary Hyperoxaluria is a rare autosomal recessive hereditary disorder due to deficient alanine-glyoxylate aminotransferase enzyme with defective glyoxylate metabolism leading to excessive oxalate production and deposition into the tissues (oxalosis). Deposition of excessive calcium oxalates in nephrons leads to crystallization (nephrocalcinosis) which increases risk for end-stage renal disease. We are presenting a case of primary hyperoxaluria type I confirmed with genetic studies. © 2019 Elsevier Inc.

Index Keywords
alanine glyoxylate aminotransferase, creatinine, oxalic acid, Alanine-glyoxylate transaminase, aminotransferase, oxalic acid derivative; Article, blood level, case report, clinical article, computer assisted tomography, creatinine blood level, diagnostic imaging, echography, end stage renal disease, hemodialysis, human, infant, kidney calcification, kidney hypertrophy, kidney transplantation, liver transplantation, male, oxalosis 1, priority journal, blood, diagnostic imaging, genetics, image processing, kidney, kidney calcification, kidney failure, metabolism, mutation, oxalosis 1, procedures, prognosis, x-ray computed tomography; Humans, Hyperoxaluria, Primary, Image Processing, Computer-Assisted, Infant, Kidney, Kidney Transplantation, Liver Transplantation, Male, Mutation, Nephrocalcinosis, Oxalates, Prognosis, Renal Dialysis, Renal Insufficiency, Tomography, X-Ray Computed, Transaminases, Ultrasonography

Chemicals/CAS
alanine glyoxylate aminotransferase, 9015-67-2; creatinine, 19230-81-0, 60-27-5; oxalic acid, 144-62-7; aminotransferase, 9031-66-7; Alanine-glyoxylate transaminase; Oxalates; Transaminases

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Preparation and characterization of core-shell type Ag@SiO2 nanoparticles for photodynamic cancer therapy
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Abstract
With recent scientific developments, Photodynamic therapy (PDT) offers the promisie to become incorporated into the mainstream of cancer therapy. Noble metal based nano-PDT is increasing due to its advantages in the field of biomedicine. In this study, noble metal based Ag@SiO2 core-shell nanoparticles were synthesized and to confirm the core-shell structure they were characterized by UV–vis, XRD, FTIR, TEM, and EDX. Our data confirm that core-shell type Ag@SiO2 nanoparticles maintain its ability to kill cancer cells upon light irradiation. This shows that SiO2 shell may not only prevent aggregation but it also may enhance the photodynamic activity of Ag nanoparticles. © 2019 Elsevier B.V.

Author Keywords
Characterization; Core-shell nanoparticles; Photodynamic therapy; Photohemolysis; Stober's method

Index Keywords
nanoshell, silica nanoparticle, silicon dioxide, silver nanoparticle, metal nanoparticle, photosensitizing agent, silver; Article, cancer cell, cancer therapy, cell viability, controlled study, energy dispersive X ray spectroscopy, female, Fourier transform spectroscopy, HeLa cell line, human, human cell, irradiation, light, photodynamic therapy, priority journal, structure activity relation, synthesis, transmission electron microscopy, X ray diffraction, cell survival, chemistry, erythrocyte, in vitro study, neoplasm, photochemotherapy, synthesis, ultrastructure; Cell Survival, Erythrocytes, HeLa Cells, Humans, In Vitro Techniques, Metal Nanoparticles, Neoplasms, Photochemotherapy, Photosensitizing Agents, Silicon Dioxide, Silver

Chemicals/CAS
silicon dioxide, 10279-57-9, 14464-46-1, 14808-60-7, 15468-32-3, 60676-86-0, 7631-86-9; silver, 7440-22-4; Photosensitizing Agents; Silicon Dioxide; Silver

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Single pot synthesis, characterization of PPy@C composites modified electrode for the electrocatalytic determination of ascorbic acid in commercial fruit samples

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Abstract
Cellulose is the most common resource is present abundantly in most of the organism. Especially in hemp, which is one of the most renewable, sustainable and efficient resources for the protection of bio-based polymeric nanocomposites. Here, cellulose used as a template for surface modified synthesis of polypyrrole grafted cellulose (PPy@C) by in-situ oxidation polymerization with an oxidant ammonium peroxydisulfide (APS) at optimum condition. The structure, morphology, thermal stability, crystallinity and its catalytic properties were analyzed using various instrumental analyses. The objective of this work, PPy@C/GCE exhibit high sensitivity, good stability over the determination of ascorbic acid (AA) in commercial fruits real sample analysis. PPy@C/GCE modified electrode proposed good regression equation, the value of correlation coefficient and low detection limit at wide range of concentration 10–150 μM under optimal DPV condition. The real samples analysis of commercial fruit juices analyzed by PPy@C/GCE and it exhibits good recovery values. © 2019 Elsevier B.V.

Author Keywords
Ascorbic acid; Cellulose; Electrochemical investigations; Fruit samples; Hemp; Polymer Nanocomposites

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Ni0.4Cu0.2Zn0.4TbxFe2-xO4 nanospinel ferrites: Ultrasonic synthesis and physical properties
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Abstract
The Fe3+ ions were replace with Tb3+ ions as highly paramagnetic rare earth element within the structure of Ni0.4Cu0.2Zn0.4Fe2O4 nano-spinel ferrites (NSFs). The structural, magnetic, spectroscopic and optic properties have been studied in details. All products have been synthesized via ultrasonic approach via Qsonica ultrasonic homogenizer, frequency: 20 kHz and power: 70 W for 60 min. No annealing or calcination process was applied for any product. The microstructural analysis of products has been done via X-ray powder diffractometry (XRD) which presented the cubic spinel structure with nanosized distribution of all. The cubic morphology of all products were confirmed by both HR-TEM and FE-SEM. Optical band gap (Eg) values were assessed by applying %DR (percent diffuse reflectance) analysis and Kubelka-Munk theory. The Tauc schemes showed that Eg values are in a narrow range (1.87–1.98 eV). The quadrupole splitting, line width, hyperfine magnetic field, isomer shift values and cation distribution have been determined from 57Fe Mossbauer analysis. The magnetic properties of various nanoparticles have been obtained from VSM (vibration sample magnetometer) measurements at 10 and 300 K (RT). The magnetic results revealed superparamagnetic and soft ferromagnetic traits at 10 and 300 K, respectively. Ms (saturation magnetization) and Mr (remanence) initially increase with increasing Tb3+ substituting level up to x = 0.06 then diminish for further x values. Hc (coercivity) shows an opposite variation tendency of Ms and Mr. The observed magnetic traits are deeply discussed in relation with the structure, morphology, magnetic moments and cation distributions. © 2019 Elsevier B.V.

Author Keywords
Cation distribution; Magnetic nanomaterials; Magnetic properties; Optical properties; Rare earth substitution; Structure

Index Keywords
Copper compounds, Energy gap, Ferrites, Iron compounds, Magnetic moments, Magnetic properties, Morphology, Nanomagnetics, Nickel compounds, Optical properties, Positive ions, Rare earths, Remanence, Saturation magnetization, Structure (composition), Terbium compounds, Zinc compounds; Cation distributions, Cubic spinel structure, Hyperfine magnetic fields, Magnetic nanomaterials, Microstructural analysis, Rare-earth substitution, Vibration sample magnetometers, X-ray powder diffractometry; Structural properties;
copper, ferrite, iron, lanthanide, nanoparticle, nickel, terbium, zinc; Article, field emission scanning electron microscopy, magnetism, priority journal, synthesis, transmission electron microscopy, ultrasound, vibration, X ray powder diffraction

Chemicals/CAS
copper, 15158-11-9, 7440-50-8; ferrite, 11138-11-7, 12009-00-6, 1317-54-0; iron, 14093-02-8, 53858-86-9, 7439-89-6; nickel, 7440-02-0; terbium, 7440-27-9; zinc, 7440-66-6, 14378-32-6

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AC susceptibility, DC magnetization and superconducting properties of tungsten oxide nanowires added YBa2Cu3Oy

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Abstract
In this report, the impact of tungsten oxide nanowires (noted WO3-NWs) inclusion on the AC susceptibility, DC magnetization and superconducting properties of YBa2Cu3Oy (noted Y-123) was investigated. Non-added and WO3-NWs added to Y-123 samples were produced using solid-state reaction route. Prepared samples were characterized by using numerous techniques, such X-rays diffraction (XRD), scanning electron microscopy (SEM) along with energy-dispersive X-ray (EDX) spectroscopy, electrical resistivity, magnetization hysteresis loops, zero-field cooling and field-cooling (ZFC-FC) magnetizations and AC susceptibility measurements. The successful development of the orthorhombic Y-123 phase was confirmed via XRD and EDX analyses. SEM observations showed that the WO3-NWs provoke an enhancement of the connectivity among grains and reduces the porosity by entering between the grains and filling the voids among them. Measurements of electrical resistivity and ZFC-FC magnetizations verified the manifestation of superconductivity in various samples. The magnetization and intergranular critical current densities (Jcm and Jc,inter) were deduced from various magnetic measurements. Improvements of critical current densities (Jcm and Jc,inter) and flux pinning capability were found with the inclusion of NW-WO3 into Y-123 matrix. © 2019 Elsevier Ltd and Techna Group S.r.l.

Author Keywords
AC susceptibility; DC magnetization; Flux pinning; WO3 nanowires; YBa2Cu3Oy superconductor

Index Keywords
Barium compounds, Copper compounds, Flux pinning, Magnetic materials, Magnetic susceptibility, Magnetization, Nanowires, Oxides, Scanning electron microscopy, Solid state reactions, Textures, X ray diffraction, X rays; Ac susceptibility, Ac-susceptibility measurements, DC magnetization, Intergranular critical current density, Magnetization hysteresis-loop, Solid state reaction route, Superconducting properties, YBa2Cu3Oy; Tungsten compounds

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Flux pinning properties of YBCO added by WO3 nanoparticles

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Abstract
In this work, non-added and tungsten oxide nanoparticles (noted WO3-NPs) added to YBa2Cu3Oy (noted Y-123) samples were produced using solid-state reaction approach. The structure, morphology, electrical and magnetic properties were examined by the help of X-ray diffraction (XRD), scanning electron microscope (SEM) and physical properties measurement system (PPMS), respectively. XRD showed that the orthorhombic Y-123 phase was successfully formed. SEM investigations showed the existence of bright nano-entities embedded within the Y-123 matrix for added sample, which are not seen in the non-added one. The measurements of electrical resistivity verified the manifestation of superconductivity in various products. The intragranular and intergranular critical current densities were calculated from the measurements of DC magnetization and AC susceptibility. The strength of pinning centers in the prepared products was evaluated. The obtained findings reveal that WO3-NPs are powerful to improve the flux pinning capacity and superconducting properties of Y-123 material. © 2019 Elsevier B.V.

Author Keywords
Critical current density; Flux pinning; Structure; WO3 nanoparticles; YBa2Cu3Oy

Index Keywords
Barium compounds, Critical current density (superconductivity), Flux pinning, Magnetic susceptibility, Nanoparticles, Scanning electron microscopy, Solid state reactions, Structure (composition), Textures, Tungsten compounds, X ray diffraction, Yttrium barium copper oxides; Ac susceptibility, DC magnetization, Electrical and magnetic property, Intergranular critical current density, Physical-properties measurement systems, Pinning properties, Superconducting properties, YBa2Cu3Oy; Copper compounds

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Enriched physicochemical and blood-compatible properties of nanofibrous polyurethane patch engrafted with juniper oil and titanium dioxide for cardiac tissue engineering

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Abstract
The demand of biomaterials in cardiovascular application was increasing day by day and its utilization is restricted by its mechanical and biocompatible properties. This paper aims to design a novel polyurethane nanocomposite added with juniper and titanium dioxide (TiO2) through electrospinning process. Wettability analysis of the composite showed its improved hydrophobic nature and its fibers were of small in size compared to pure polyurethane. Tensile strength and thermal stability of the composite increased compared to the pure polymeric fibers. Atomic force microscopy denoted the increase in surface roughness of PU with the incorporation of juniper and titanium dioxide. Anti-thrombogenic properties of the developed composites were displayed through the delayed coagulation times. Above all, human dermal fibroblast cells were actively growing without toxic issues making the fabricated material as a widely undisputed choice in cardiac tissue applications. © 2019, © 2019 Taylor & Francis Group, LLC.

Author Keywords
biocompatibility; cardiac tissue applications; juniper/titanium dioxide; physico-chemical properties; Polyurethane

Index Keywords
Atomic force microscopy, Biocompatibility, Cell culture, Oxides, Physicochemical properties, Polyurethanes, Surface roughness, Tensile strength, Thermodynamic stability, TiO2 nanoparticles, Tissue, Titanium dioxide; Cardiac tissue engineering, Cardiac tissues, Cardiovascular applications, Electrospinning process, Human dermal fibroblasts, juniper/titanium dioxide, Polyurethane nanocomposites, Titanium dioxides (TiO2); Tissue engineering

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Preparation and characterization studies of La doped CuS nanospheres by microwave irradiation for high performance supercapacitors

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Abstract

Lanthanum (Rare earth metal) doped CuS (La@CuS) at different compositions (0%, 1%, 3% and 5% of La) are synthesized by encapsulation of sodium alginate biopolymer using microwave irradiation method. The prepared various compositions of La@CuS are examined by structural characterizations, particle size and identifications of elements from XRD, TEM and EDX spectrum. The surface morphological studies are conformed by SEM and TEM images. Optical properties and characteristics peak are confirmed with UV, FTIR and Raman spectroscopic tools. In addition to that the electrochemical performances are studied using Cyclic Voltammetry (CV), Galvanostatic charge and discharge (GCD) and electrochemical impedance spectroscopy (EIS) investigations. The specific capacitance is found to be 1329 F/g for 5% of La doped CuS nano spheres. © 2019 Elsevier B.V.

Author Keywords

Bio-polymer; Electrochemical studies; La@CuS nanospheres; Microwave irradiation; Supercapacitor; TEM

Index Keywords

Biopolymers, Cyclic voltammetry, Electric discharges, Electrochemical impedance spectroscopy, Fourier transform infrared spectroscopy, Irradiation, Lanthanum, Microwave irradiation, Nanospheres, Optical properties, Particle size, Rare earths, Sodium alginate, Supercapacitor, Thallium alloys, Transmission electron microscopy; Characterization studies, Electrochemical performance, Electrochemical studies, Galvanostatic charges, Morphological study, Rare earth metals, Specific capacitance, Structural characterization; Copper compounds

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CT guided radiofrequency ablation of osteoid osteoma

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Abstract
Aim: To evaluate the therapeutic efficacy of CT Guided Radio Frequency ablation of benign bone tumour-Osteoid osteoma. Materials and Method: 1. SStudy group: Patients who presented with typical history and were clinically diagnosed as Osteoid osteoma were subjected to radiological evaluation. The patients graded their pain at day and night on a visual analogue scale between Grade 0-No pain and Grade 10-Unbearable pain. We evaluated 16 patients of Osteoid osteoma in whom Radio Frequency Ablation (RFA) was performed between November 2015 and October 2016. The lesions were located in the femur (n = 10), tibia (n = 5) and fibula (n=1). 2. SStudy design: Prospective Interventional study 3. SMethod: MDCT guided RFA procedure was performed using a STAR med VIVA RF Generator and cooled tip probe standard technique under spinal anesthesia. Results: Significant pain relief was observed in 15 out of 16 patients on first week post-operative visual analog scale. Immediate complications included a case of minor thermal skin burns in 3 patients, which healed on its own. There were no delayed complications. The average follow-up period was 2-3 months. One patient (6.25%) had persistent pain even after one month, following ablation which was due to residual lesion. Complete pain relief was achieved after a second ablation in that case. Thus, our primary and secondary clinical success rates were 93.8% and 100%, respectively. Conclusion: RFA is a safe, quick, minimally invasive, and extremely effective method for the management of Osteoid osteomas. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Osteoid osteoma; Radio Frequency Ablation and Visual analog scale

Index Keywords
acetylsalicylic acid; adolescent, adult, Article, bleeding time, blood clotting time, burn, child, clinical article, clinical outcome, computer assisted tomography, female, femur, fibula, follow up, hemoglobin blood level, histopathology, human, human tissue, male, multidetector computed tomography, nuclear magnetic resonance imaging, osteoid osteoma, osteosclerosis, pain, pain assessment, prospective study, prothrombin time, radiofrequency ablation, skin biopsy, spinal anesthesia, visual analog scale, young adult

Chemicals/CAS
acetylsalicylic acid, 493-53-8, 50-78-2, 53663-74-4, 53664-49-6, 63781-77-1

Tradenames
STAR RF, Cook, South Korea; VIVA RF, Cook, South Korea

Manufacturers
Toshiba Medical Systems, Japan; Cook, South Korea

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Evaluation of urinary iodine and thyroid hormone in hypothyroidism of South Indian population

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Abstract

Aim and objective: The present study was conducted to assess the Urinary iodine excretion levels among hypothyroid patients based on Thyroid profile and to correlate the Urinary iodine excretion with various disorders associated with hypothyroidism. Method: The study group includes 50 control subjects and 100 clinically proven hypothyroidism patients. Histopathological investigations and thyroid scan were taken for all the patients. They were analyzed for Thyroid hormone profile and the Urinary iodine excretion level was determined by Ammonium persulfate method in spot urine sample. Results: Free T4, TSH and Urinary iodine concentration (UIC) were measured for both the control and study group (P = 0.00).The mean Free T4, TSH & UIC for control group was 1.71 ng/dl, 1.41μIU/ml & 150.28μg/L and the mean Free T4, TSH & UIC for test group was 0.85ng/dl, 48.38μIU/ml & 233.74μg/L respectively. A significant positive correlation between Free T4, TSH and UIC was found. Increased Urinary iodine excretion (UIE) was observed in patients with Papillary Carcinoma, Thyroiditis and Multinodular goiter. Conclusion: The findings of the present study reveals that increased excretion of urinary iodine reflects under utilization or impaired iodination by the thyroid gland. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords

Goitre; Hypothyroidism; Iodine deficiency disorders; Urinary iodine

Index Keywords

ammonium persulfate, iodine, thyroid hormone, thyrotropin, unclassified drug; adult, Article, blood sampling, clinical article, clinical evaluation, comparative study, controlled study, dietary intake, ectopic thyroid gland, enzyme linked immunosorbent assay, female, free thyroxine index, goiter, histopathology, human, human tissue, hypothyroidism, India, iodination, iodine deficiency, male, nodular goiter, papillary carcinoma, thyroid disease, thyroid gland, thyroid scintiscanning, thyroiditis, thyrotropin blood level, toxic goiter, toxicity, urinary iodine excretion, urine sampling

Chemicals/CAS

iodine, 7553-56-2; thyrotropin, 9002-71-5

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Hidradenoma—A case report

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Abstract
Hidradenoma refers to a benign adnexal tumor of apical sweat gland. It is often cutaneous, benign tumor of sweat glands. Other names of it are nodular hidradenoma, eccrine acrospiroma, and solid cystic hidradenoma. Lesions are commonly seen on the head, face, extremities and are rarely seen in oral cavity. Clinical appearance of hidradenoma is not specific, but can be diagnosed histopathologically, after complete removal of the lesion. Histopathologically, it has a striking resemblance to salivary gland pathology. A 75 Year old male patient reported with an extra oral swelling near the lip region. Clinical diagnosis was found to be different when compared to the histopathological diagnosis. Management includes wide local excision. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Hemangioma; Hidradenoma; Myoepithelial cells; Papilloma

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aged, Article, bleeding, case report, clinical article, face edema, hidradenoma, histopathology, human, human tissue, local excision, male, very elderly

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Emerging trends of pharma industry policies for ensuring women retention "new-fangled women friendly policies which foster gender neutral workplace"

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Abstract
Today, behaviour of women employees has changed the environment of the private organization. Young women employees always ready to switch over whenever she dissatisfy with any reason in the job. Retention strategy is a powerful recruitment tool. Private organizational issues matters as lost knowledge and training time. HR managers should identify the needs of the women employee and then devises the retention strategies. As different individuals have different priorities does not fit one strategy. HR professionals face the vital challenge to retain talented women employees. Retention strategies are fall into four categories-job enrichment, salary, working conditions and education, addressing these issues this article demands a specialized approach that emerge new fangled women friendly policies which foster gender neutral workplace in developing retention strategies. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Retention strategies for female employees; Scope; Trends and policies

Index Keywords
adult, article, education, employee, female, gender, human, human experiment, male, manager, salary, work environment, workplace

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Julius, A.[a] , Subbiah, U.[a] , Elango, S.[b]

Designing universal primer for the identification of erythromycin and tetracycline resistance genes in oral streptococci

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Abstract
Oral streptococci being the early colonizers of oral biofilm have a high impact on the health status of an individual. The resistance of streptococci to erythromycin and tetracycline possess a global threat in oral health by harboring the erm and tet resistant genes which are proved to be correlated with each other. Considering the high prevalence of erm and tet resistance in oral streptococci, identification of universal primers for these genes are necessary to characterize these genes. Our work has put forth a heuristic approach in designing universal primers to detect genetically diverse erm and tet resistant genes in streptococci. The erm and tet primers were validated to be universal among the streptococci group. The universal primers designed for erm and tet generetrieved 100% and 72.7% of sequence similarity of streptococcus deposited in NCBI gene repository. Identification of universal primers for the successful amplification of erm and tet genes of streptococci for the first time will minimize the usage of multiple primers to isolate resistant streptococci for rapid detection of antibiotic-resistant genes. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Antibiotic resistance; Erythromycin; Streptococcus; Tetracycline; Universal primers

Index Keywords
erythromycin, primer DNA, RNA 23S, tetracycline; antibiotic resistance, Article, bacterial gene, biofilm, controlled study, DNA base composition, DNA sequence, gene amplification, gene identification, gene sequence, melting point, mouth flora, mouth hygiene, nonhuman, prevalence, Saccharomyces carlsbergensis, sequence homology, Streptococcus, Streptococcus anginosus, Streptococcus gallolyticus

Chemicals/CAS
erythromycin, 114-07-8, 70536-18-4; tetracycline, 23843-90-5, 60-54-8, 64-75-5, 8021-86-1

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Subbiah, U.[a] , Venkata Subbiah, H.[a] , Ajith, A.[a] , Elango, S.[b]

Salivary secretory proteins-unveiling genetic polymorphism and diseases
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Abstract
Saliva, the “mirror of the body,” is an ideal non-invasive source of complex genetic information. The complexity of the salivary peptidome is mainly due to the high number of genetic polymorphisms. This review shows an association between the genetic polymorphisms of salivary secretory proteins and the endangerment of several diseases. Different secretory protein single nucleotide polymorphisms whose genetic positions are related to oral and other diseases are listed from SNPedia deposits and tracked using a variety of techniques. Besides being circulating salivary biomarkers, single nucleotide polymorphisms of salivary secretory proteins acts as a possible genetic susceptibility factor and aids in the early detection and prevention of various oral and systemic diseases including cancer and rare syndromes in a quick and noninvasive manner. This would pave the way for the development of array-based technologies using saliva sample for genetic analysis.
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Author Keywords
Oral diseases; Saliva; Secretary proteins; Single nucleotide polymorphism

Index Keywords
beta defensin 1, biological marker, calgranulin A, carbonate dehydratase IV, cystatin, histatin, interleukin 1beta, interleukin 37, lactoferrin, lipocalin 1, proline, saliva protein, secretory protein; allele, Article, burning mouth syndrome, dental caries, gene dosage, gene expression, gene frequency, gene mutation, genetic analysis, genetic association, genetic disorder, genetic polymorphism, genetic risk, genetic susceptibility, genetic variability, genotype, human, metabolic syndrome X, Papillon Lefevre syndrome, periodontitis, protein degradation, severe congenital neutropenia, single nucleotide polymorphism, Sjoegren syndrome

Chemicals/CAS
cystatin, 81989-95-9; lactoferrin, 55599-62-7; proline, 147-85-3, 7005-20-1

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Mitthra, S.[a] , Sangeetha, S.[a] , Shakila, R.[a] , Reddy, T.V.K.[b]

Applications of cone beam computed tomography in endodontics—A review
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Abstract
Cone Beam Computed Tomography (CBCT) specifically designed for imaging of the dento facial region is a true shift from 2D to 3D imaging. It produces high resolution 3D images in thin, thick or curved slices in axial, saggital and coronal planes. CBCT is a valuable tool for endodontic diagnosis and treatment planning as well as for assessing apical periodontitis, resorption, root fractures, root canal anatomy, perforations and the nature of the alveolar bone around the teeth. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Cone beam computed tomography; Endodontic applications; Endodontic diagnosis

Index Keywords
anatomy, Article, cone beam computed tomography, endodontics, human, panoramic radiography, perforation, periodontal pocket, periodontitis, tooth disease, tooth injury, tooth malformation, tooth root

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Abraham Subaraj, M.[a] , Bensam Raj, J.[b] , Malkiya Rasalin Prince, R.[c] , Glandevadhas, G.[d] , Christopher Ezhil Singh, S.[d]

Corrosion rate of al-si alloy reinforced with B4C nanoparticle prepared by powder metallurgy method using RSM
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Abstract
The current work aims to optimize the Al-Si alloy reinforced with B4C nanoparticles prepared through powder metallurgy technique. The sample was prepared with different weight percentage 0, 4 and 8; the size of the sample was 20 mm x 20mm and sintered in a furnace upto 500oC with argon gas and their by furnace cooled to room temperature. The samples were brushed to remove the slag present in it, and polished by emery paper. Then the samples were weighed in an electric balancing apparatus to measure the initial weight of the sample before dipping it into acid solution. The weight loss was measured to calibrate the corrosion rate of the samples for 9 days. Response surface methodology was designed for three factors at three levels with a response as corrosion rate. The Analysis of Variance (ANOVA) was used to identify the most influencing factor on corrosion rate. The normal probability plot, residual plot, and desirability plot demonstrates the influence of corrosion rate of the composites. © BEIESP.

Author Keywords
Al-Si; ANOVA; Boron Carbide; Powder Metallurgy

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Tribological behavior, mechanical properties and microstructure of Al-12Si-ZrC composite prepared by powder metallurgy
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Anandh, S.[a] , Vasuki, R.[a] , Al Baradie, R.[b]

Rupture prediction of abdominal aortic aneurysm using matlab, labVIEW and python in CT images

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Abstract
Abdominal Aortic Aneurysm (AAA) is a substantial enlargement of the aorta that weakens the blood vessel wall leads to atherosclerotic disease. Aneurysms are dangerous because when it rupture causing hemorrhage. This leads to insufficient blood flow from the aorta to the different organs of the human body. Based on the extracted features from the AAA and the demographic data of the patient, the clinical management team will decide the optimal treatment procedure. The screening of AAA is done by ultrasound scan to know the type of the aneurysm present. Diameter with 05.05 cm or more, it should be viewed seriously. The AAA images were segmented using connected components labeling technique. Early detection of aneurysm can be repaired with proper treatment so that it does not rupture. The CT images of AAA were read and denoisedto preserve the edges using image processing software. Based on the histogram of the filtered image the AAA area was identified and threshold the image to view clearly the dilated part. The area, major axis length, minor axis length of the AAA images were calculated to understand the flow dynamics and to predict the rupture of the AAA wall using MATLAB, LabVIEW and python program. © BEIESP.

Author Keywords
Abdominal aortic aneurysm; Hemorrhage; Histogram; Threshold

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Mohankumar, T.[a] , Rajan, K.[b] , Sivakumar, K.[a] , Gopal, V.[c]

Performance of heat transfer and friction factor of heat exchanger with Al2o3/water nano fluids

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Abstract
This paper summary of heat transfer characteristics and nano fluids mechanics by using single phase convection techniques. Gas having less thermal conductivity compare than the liquids having high thermal conductivity. The heat transfer enhancement improved by using nano fluids Al2O3 compared with base water. The heat transfer enhancement was analysed with plain tube and twisted tape inserts with nano fluids. The experimental investigation was analysed and reading was taken to improve the heat transfer and friction flow characteristics. The Reynolds number varies from different ranges with plain water and Nano fluids. The experimental record of nano fluid heat transfer value was increased with 2.89 percentage compare with the experimental record of plain water. The nano fluids has more concentration than the plain water. © BEIESP.

Author Keywords
Heat transfer; Nanofluids; Reyolds number; Twisted tape

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Lakshmikandhan, T.[a] , Hariharan, A.[b] , Sethuraman, K.[c] , Alagar, M.[b]

Development of functionalized SiO2–TiO2 reinforced cardanol and caprolactam modified diamine based polybenzoxazine nanocomposites for high performance applications

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Abstract
In the present work, three types of polybenzoxazines were synthesized using caprolactam-based diamine (CPA-NH2) and formaldehyde with different phenols, namely 4-fluorophenol, cardanol, and phenol, under appropriate experimental conditions. The molecular structure of the benzoxazine monomers was confirmed by FTIR, 1H, and 13C NMR spectroscopic techniques. Polybenzoxazines were obtained through ring-opening polymerization of benzoxazine monomers, and their formation was confirmed by FTIR spectroscopy. The elemental composition and morphological behavior of polybenzoxazines were characterized by SEM-EDAX and AFM techniques. The naturally occurring cardanol- and caprolactam-based diamine (CPA-NH2)-based benzoxazine was selected for detailed studies. The synthesized SiO2–TiO2 nanohybrid reinforcement was functionalized with 3-aminopropyltrimethoxysilane (3-APS) and reinforced with cardanol-based benzoxazine (CPBz) monomer. The resulted nanocomposites were studied for their corrosion protection behavior against mild steel surface along with thermomechanical (TGA and DMA) and morphological (SEM, XRD, and TEM) properties. The results obtained from electrochemical impedance analysis indicate that the 5 wt% of F–SiO2–TiO2 of reinforced CPBz exhibits an effective corrosion-resistant behavior toward surface of steel specimen than that of other samples. © 2019, American Coatings Association.

Author Keywords
Anticorrosion properties; Cardanol-based benzoxazine; Functionalized SiO2–TiO2; Glass transition temperature; Nanocomposites; Storage modulus; Thermomechanical properties

Index Keywords
Amines, Corrosion protection, Corrosion resistance, Elastic moduli, Electrochemical corrosion, Fourier transform infrared spectroscopy, Glass transition, Monomers, Nanocomposites, Phenols, Polymer blends, Reinforcement, Ring opening polymerization, Silica, Steel corrosion, Steel research, TiO2 nanoparticles, Titanium dioxide; 3-aminopropyl trimethoxysilane, Anti-corrosion property, Benzoxazine, Electrochemical impedance analysis, Experimental conditions, Functionalized, Spectroscopic technique, Thermomechanical properties; SiO2 nanoparticles

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Jeyabanu, K.[a] , Sundaramahalingam, K.[a] , Devendran, P.[a] , Manikandan, A.[b] , Nallamuthu, N.[a]

Effect of electrical conductivity studies for CuS nanofillers mixed magnesium ion based PVA-PVP blend polymer solid electrolyte

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Abstract

Nanostructured sodium alginate (Na Alg.) assisted CuS nanoparticles are synthesized by graceful microwave irradiation method. The prepared CuS nanofiller is mixed by means of magnesium ion conducting PVA:PVP blend electrolyte films with different compositions using solution casting method. All compositions are characterized to analyse its structural and thermal properties through X-ray Diffraction (XRD), Fourier Transform infrared (FTIR) and Thermo gravimetric and Differential Thermal analysis (TG/DTA) techniques. The electrical conductivity and dielectric properties are analyzed through electrical impedance measurements. Nanofillers mixed Mg:PVA:PVP blend polymer solid electrolyte exhibit maximum protonic conductivity of 1.847 × 10−3 Scm−1. Proton and magnesium ion based conducting solid electrolytes are more applicable for energy storage devices applications. © 2019 Elsevier B.V.

Author Keywords

CuS nanofiller; Mg:PVA:PVP; Mg+ blend electrolyte films; Microwave irradiation; Protonic conductivity

Index Keywords

Conductive films, Copper compounds, Dielectric properties, Differential thermal analysis, Electric conductivity, Electric impedance measurement, Fourier transform infrared spectroscopy, Irradiation, Magnesium castings, Magnesium compounds, Metal ions, Microwave irradiation, Polyelectrolytes, Potentiometric sensors, Sodium alginate, Synthesis (chemical); Electrical conductivity, Electrical impedance measurement, Electrolyte films, Fourier transform infrared, Nanofiller, Polymer solid electrolytes, Protonic conductivities, Solution-casting method; Solid electrolytes

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Bioinspired Zinc Oxide Nanoparticles Using Lycopersicon esculentum for Antimicrobial and Anticancer Applications

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Abstract
Lycopersicon esculentum leaf-extract was utilized in the synthesis of zinc-oxide nanoparticles (Le-ZnO-NPs) using zinc acetate as the precursor. The synthesized ZnO-NPs were attested by the detection of a notable absorption peak at 343 nm, appearing in UV–Vis spectra due to surface-plasmon-resonance. The XRD-spectrum recorded at 2θ values coincides with that of lattice planes. HR-TEM results revealed that Le-ZnO-NPs exhibited a crystalline structure with hexagonal wurtzite shape (10–50 nm size). The effectiveness of inhibition of the microbial biofilms of Proteus vulgaris, Enterococcus faecalis and Candida albicans was analyzed at a concentration of 100 µg ml−1. Moreover, Le-ZnO-NPs showed a significant range of anti-coagulant activity, in contrast to commercial anti-coagulant (heparin). Cytotoxicity studies showed that Le-ZnO-NPs (100 µg ml−1) are non-toxic to murine macrophage cells, but toxic to human cervical cancer (HeLa) cells. Indeed, a reduction in the viability of HeLa-cells and a notable variation in the apoptotic cell structure were apparent. © 2019, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
Antibiofilm; Anticoagulant; Clinical pathogens; Cytotoxicity; Lycopersicon esculentum; Zinc oxide nanoparticle

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Saraswatarishta reverses neuronal injury in brain tissues of scopolamine-induced rat model
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Abstract
Introduction: Neuroinflammation has been implicated in the pathogenesis or the progression of the variety of acute and chronic neurological and neurodegenerative disorders, including Alzheimer fs disease. The Saraswatarishta is an Ayurvedic medicine utilized in many health conditions such as anti.aging, to improve memory, immunity, and quality of semen and sperms to treat epilepsy and cosmetic use for skins. It is a liquid Ayurvedic medicine. Saraswatarishta contains 5%.10% of self.produced alcohol in it, which serves as a vehicle to deliver water. and alcohol-soluble active herbal components to the body. It is also called Sarasvatarishtam. The aim of this study was to find the possible neuroprotective role of Saraswatarishtam as a preventive Ayurveda and Siddha drug to hamper cholinergic dysfunctions and histopathological changes in scopolamine.treated rat model. Material and Methods: The compound Saraswatarishtam was obtained from standard Ayurvedic vendor at Chennai. Group 1-normal control animals received normal saline for 8 continuous days. Group 2 . positive control treated with scopolamine (0.4 mg/kg). Group 3-received 200 mg/kg of piracetam for 8 continuous days. Group 4 and Group 5 served as a test and received 200 mg/kg and 400 mg/kg of Saraswatarishtam, respectively, for 8 continuous days. On the 8th day, after 90 min of drug administration, Group 2, Group 3, Group 4 and Group 5, were treated with 0.4 mg/kg of scopolamine. Brain tissues were dissected out and analyzed for histopathological changes after sacrifice with high dose of halothane. Results: Administration of scopolamine produced marked focal gliosis with mononuclear infiltration. The hippocampal region showed neuronal degeneration with sclerosis. Piracetam treated group showed pyknotic nucleus in neurons of the cerebral cortex and mild edema. Low dose (200 mg/kg) treatment with Saraswatarishtam followed by scopolamine administration showed moderate histopathological changes such as mild infiltration of monocytes but normal neuronal architecture. High dose (400 mg/kg) treatment with Saraswatarishtam followed by scopolamine administration shows abnormal morphology of cerebrum, cerebellum, basal nuclei, and hippocampus. Discussion and Conclusion: The results of the present study suggested that Saraswatarishtam exhibits neuroprotective properties against scopolamine.induced neuronal damage. © 2020 Journal of the Anatomical Society of India.

Author Keywords
Albino mice; Ayurvedic; Neuroinflammation; Neuroprotective; Saraswatarishta

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Machine learning algorithms for power transformers technical state assessment

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Abstract
The paper addresses the problem of operated power transformers actual technical state identification by using existing technical diagnostics retrospective data. The initial data set was composed of results of transformer oil analysis, loading conditions, infrared snapshots and aggregated characteristics of the technical state of bushing, surge arrester and cooling system. Retrospective data of technical diagnostics was used. Technical state estimation process was divided on several steps and was performed by Python. First step was feature selection, where the features with low meaning in terms of the problem formulation are ejected. The second step is the processing of missing data to increase the dataset. KNN algorithm was used to restore missing values. The final step is learning transformer technical state classifier based on random forest tree approach. The results of power transformer state's classification demonstrated relatively high accuracy of identification.
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Author Keywords
classification; data filtration and recovery; machine learning; power transformer; technical state

Index Keywords
Classification (of information), Data handling, Decision trees, Learning systems, Machine learning, Oil filled transformers, Power transformers, Surge protection; Data filtration, k-NN algorithm, Loading condition, Missing values, Problem formulation, Surge arresters, Technical diagnostics, Technical state; Learning algorithms

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Energy efficient traffic protocol in wireless sensor networks using improved metaheuristic algorithm
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Abstract
This paper proposes an improved Ant Colony Optimization (iACO) algorithm with improved search patterns using Fractional Brownian Motion for improving the exploitation capability. To improve the global convergence and to increase the energy efficiency using proposed iACO, Fractional Brownian Motion is used. This maintains a proper balance between the exploitation and exploration abilities using this motion and this limits the hardware requirement of routing. Additionally, the energy efficiency of the clustering protocol using iACO algorithm inherits the capabilities of attaining the optimal cluster head (CH) selection and further improves the energy efficiency. The results obtained through the simulator proves that the proposed iACO protocol performs well than the other known protocols in terms of its throughput, packet delivery ratio, and energy consumption. © 2019, Advanced Scientific Research. All rights reserved.

Author Keywords
Ant Colony Optimization; Energy Efficiency; Improved Metaheuristic Algorithm; Wireless Sensor Networks

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algorithm, ant colony optimization, Article, binocular convergence, clustering algorithm, energy consumption, fractional brownian motion, high throughput screening, human, mathematical analysis, mathematical model, metaheuristics, packet delivery ratio, sleep disordered breathing, traffic protocol

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Prediction of Solar Power Generation Based on Random Forest Regressor Model

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Abstract
The paper addresses the problem of short-Term renewable energy forecasting. The stochastic nature of renewable energy sources affects the power system planning procedures, subsequently reducing the reliability and security of power supply for final customers. The authors propose a machine learning approach for effective day-Ahead forecasting using retrospective metering data and open source weather information provided by meteorological services. The paper addresses the problem of feature identification and appropriate error metrics. For the purpose of effective testing the user interface was created and tested on the real solar power plant situated in southern region of Russian Federation. The mean forecasting accuracy was obtained to be about 93%. © 2019 IEEE.

Author Keywords
error metrics; forecasting; machine learning; solar power plant; user interface

Index Keywords
Decision trees, Forecasting, Learning systems, Machine learning, Solar energy, Solar power generation, Solar power plants, Stochastic systems; Error metrics, Feature identification, Forecasting accuracy, Machine learning approaches, Power system planning, Renewable energy source, Russian federation, Weather information; User interfaces

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Antiinflammatory effect of proanthocyanidins in experimental periodontitis in rats
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Abstract
Background: Periodontal disease is one of the most prevalent oral diseases affecting the supporting tissues of the teeth, gingiva, periodontal ligament, cementum, and alveolar bone. Oxidative Stress plays an important role in the pathogenesis of periodontitis. Dietary supplementation of proanthocyanidin enhanced the host resistance as well as the inhibition of the biological and mechanical irritants involved in the onset of gingivitis and the progression of periodontal disease. Aim: The aim of the present study is to assess whether proanthocyanidins could exert protective as well as therapeutic effect on endotoxin induced experimental periodontitis in rats. Protective action of proanthocyanidins is investigated by assaying the free radicals, acute phase proteins, nonenzymatic antioxidants, in comparison with a standard antimicrobial agent 'tinidazole'. Materials and Methods: Experimental periodontitis was induced by injecting E.coli endotoxin. On the 10th day of endotoxin induction, the animals were divided into group,3and4 groups of 6 animals receiving 30mg proanthocyanidins (sc-sub cutaneously)/kg body weight for 30 days; and 20mg tinidazole (administered orally)/kg body weight for 30 days. After 30 days of treatment procedure, the animals were sacrificed blood was collected for Biochemical assay. Rat maxillae was dissected out for histo pathological evaluation. Results: Levels of free radicals, acute phase proteins and Nonenzymatic antioxidants were significantly increased in experimental periodontitis rats as compared to PC and tinidazole treated groups showed significant inhibition of reactive oxygen species and lipid peroxides (P< 0.001). Conclusion: Proanthocyanidin, has been shown to provide a significant anti-inflammatory effect on endotoxin (Escherichia coli) induced experimental periodontitis in rats and is a promising drug for treating periodontitis. © 2019, Research Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Acute phase proteins; Antioxidants; Experimental periodontitis; Free radicals; Proanthocyandins

Index Keywords
acute phase protein, alpha tocopherol, ascorbic acid, C reactive protein, catalase, ceruloplasmin, Escherichia coli endotoxin, fibrinogen, glutathione, lipid peroxide, myeloperoxidase, proanthocyanidin, reactive oxygen metabolite, tinidazole; animal experiment, animal model, animal tissue, antiinflammatory activity, Article, cell infiltration, controlled study, experimental periodontitis, gingival tissue, histopathology, hydrogen peroxide scavenging assay, immunoturbidimetry, inflammatory cell, male, nonhuman, rat

Chemicals/CAS
alpha tocopherol, 1406-18-4, 1406-70-8, 52225-20-4, 58-95-7, 59-02-9; ascorbic acid, 134-03-2, 15421-15-5, 50-81-7; C reactive protein, 9007-41-4; catalase, 9001-05-2; ceruloplasmin, 9031-37-2; fibrinogen, 9001-32-5; glutathione, 70-18-8; myeloperoxidase; proanthocyanidin, 18206-61-6; tinidazole, 19387-91-8

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Sensor data collection and its architecture with internet of things

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Abstract
Sensors are gadgets, which can screen temperature, moistness, weight, commotion levels, setting mindfulness, lighting condition and identify speed, position, and size of an Object. Sensor information are getting accumulated in gigantic amount thus they are overseen utilizing NOSQL. The information will be gathered in an IOT cloud stage where it will be additionally prepared with machine learning methods for prescient examination. What's more, eventually with the required answer for the business structure will be created. This paper explain the proposed system for IoT data collection with AWS (Amazon Web Service) cloud platform. Various system components like Kinesis stream, M2M platform, Notification service and secured IoT service layout. The complete BMS system architecture is detailed in this paper. © BEIESP.

Author Keywords
Business intelligence; Cloud; IoT (Internet of things); Machine learning; Sensors

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Experimental investigation of twisted tape insert in a double pipe heat exchanger using aluminium oxide nanofluid
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Abstract
This document reports on the experimental investigation of the features of the heat transfer performance of heat exchanging device with tape insert. The experimental investigation was carried out pipe a warped tape inserted with a proportion of 4.8. An experimental heat flow investigation analyzed using Al2O3 water-based Nanofluids was used in this work. The experiment was performed in a turbulent flow situation with a twisted tape of simple water and Nano liquids. Experimental data on plain water and nanofluid was drawn and these informations were used to correlate with plain water and nanofluid. Experimental data were generated with water and nano-fluid for Reynolds in the variety 110000–135460, Nu nanofluid based water. A heat flow features Al2O3 and simple stream were improved an augment Re. An experimental data nano fluid was increased by 2.89% compared to the experimental value of plain water. The findings of the inquiry indicate the performance improvement of the parameters of the heat exchanger, namely, the coefficient of heat flow augment by means of amount absorption of the nanoparticle compare with water. © TJPRC Pvt. Ltd.

Author Keywords
Aluminium Oxide & Friction Factor; Heat Transfer; Nanofluids; Twisted Tape

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Mickey mouse sign

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Suresh Kumar, C.[a] , Fotouhi, M.[b] , Saeedifar, M.[c d] , Arumugam, V.[e]

Acoustic emission based investigation on the effect of temperature and hybridization on drop weight impact and post-impact residual strength of hemp and basalt fibres reinforced polymer composite laminates

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Abstract

This paper investigates the effect of temperature and hybridization on the impact damage evolution and post-impact residual strength of hemp/epoxy, basalt/epoxy and their hybrid laminates, using mechanical and acoustic emission (AE) based analysis. To start with, the specimens were impacted by a drop weight impact tower machine at two temperatures of 30 °C and 65 °C and then they were subjected to a three-point bending test for the assessment of their residual strength, while online AE signals were recorded during the test. The mechanical behavior of the laminates was evaluated through measurement of the impact force and absorbed energy. AE response of the slope of cumulative rise angle (RA) was used for identification of the severity of the impact-induced damage in the laminates. In addition, the sentry function was computed on the basis of the correlation between the mechanical strain energy stored in the materials and the acoustic energy propagates by fracture events, enabled evaluation of the amount of impact-induced damage. These results showed the hybridized laminates having a better resistance to impact damage at the elevated temperature (65 °C) compared with the non-hybridized laminates, whereas, in the case of the ambient temperature (30 °C), basalt/epoxy laminates had a higher impact damage resistance than other configurations. This study reveals the capability of the proposed AE-based methods to investigate the effect of temperature and hybridization of composite laminates. © 2019 Elsevier Ltd

Author Keywords

Acoustic emission; Elevated temperature; Hybrid composites; Impact damage; Residual; Rise angle; Sentry function; Strength

Index Keywords

Acoustic emissions, Basalt, Damage detection, Drops, Hemp, Impact strength, Laminated composites, Paper laminates, Strain energy, Temperature; Elevated temperature, Hybrid composites, Impact damages, Residual, Rise angles, Strength; Acoustic emission testing

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Priyadharshini, E.[a] , Suresh, S.[b] , Gunasekaran, S.[c] , Srinivasan, S.[a] , Manikandan, A.[d]

Investigation on electrochemical performance of SnO2-Carbon nanocomposite as better anode material for lithium ion battery

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Abstract
The incorporation of Carbon in Tin Oxide (SnO2) nanocomposite (SnO2@C NCs) was synthesized successfully by hydrothermal method with sucrose and tin dichloride dihydrate (SnCl2.2H2O) as precursor materials and was sintered at different temperatures. The as prepared SnO2-Carbon nanocomposites were characterized by various techniques such as X-ray powder diffraction (XRD), Scanning electron microscopy (SEM) along with Energy dispersive X-ray (EDX), high resolution transmission electron microscopy (HR-TEM), Raman spectra, TGA and Electrochemical analyses. The controlled addition of Carbon in SnO2 to exhibit enhanced electrochemical property was also studied. It was demonstrated that the Carbon derived from sucrose assisted anode showed the high reversible capacity of about 581 mAhg-1 indicating that the possibility of further increment in Li storage property. The initial discharge capacities of the samples heat treated at 400 °C, 450 °C and 500 °C were 1424.79, 1061.71 and 531.28 mAh g-1, exhibiting an increasing trend in capacity with increasing the Carbon content. The columbic efficiency of SnO2@C NCs attains more than 95%. The electrodes show a long cycling ability and high charge and discharge capacity due to the presence of carbon. © 2019 Elsevier B.V.

Author Keywords
Anode materials; Carbon; Hydrothermal synthesis; Lithium ion battery; SnO2

Index Keywords
Anodes, Carbon, Chlorine compounds, Electric discharges, High resolution transmission electron microscopy, Hydrothermal synthesis, Nanocomposites, Scanning electron microscopy, Sugar (sucrose), Tin oxides, X ray powder diffraction, X rays; Anode material, Anode material for lithium ion batteries, Electrochemical analysis, Electrochemical performance, Energy dispersive x-ray, High reversible capacities, Initial discharge capacities, SnO2; Lithium-ion batteries

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Structural, magnetic and electrochemical characterizations of Bi2Mo2O9 nanoparticle for supercapacitor application

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Abstract
In this present work, bismuth molybdate (Bi2Mo2O9)nanoparticles (NPs)were prepared by microwave combustion method using urea as the fuel. The phase formation and purity of the product was identified by powder X-ray diffraction (XRD). Fourier transform-infrared (FT-IR)analysis was adopted to record the functional group of Bi2Mo2O9 NPs. The morphology, purity, size and elemental composition of the sample were confirmed by Scanning electron microscope (SEM), elemental mapping, energy dispersive X-ray (EDX)analysis and High-Resolution transmission electron microscope (HR-TEM)technique respectively. The UV–visible and photoluminescence (PL)spectra were used to examine optical and electronic behavior of the prepared sample at room temperature (RT). The chemical bonding of Bi2Mo2O9 NPs was studied by Raman spectroscopy. The magnetic properties of Bi2Mo2O9 NPs were examined by vibrating sample magnetometer (VSM)at RT. The particle size distribution was examined by X-ray Photoelectron spectroscopy (XPS). The Electrochemical (EC)properties of Bi2Mo2O9 NPs were investigated by Cyclic voltammetry (CV), Galvanostatic charge/discharge (GCD)and Electrochemical impedance spectral (EIS)studies. The specific capacitance (Cs)of prepared Bi2Mo2O9 NPs is 197 F/g at 0.4 A/g with excellent cycle stability of 94% specific capacitance after 1000 cycles. Hence, the results of electrochemical characteristics exhibits excellent performance and have potential application of electrode for energy storage systems. © 2019 Elsevier B.V.

Author Keywords
Bismuth molybdate; Combustion synthesis; Electrochemical; Magnetic nanoparticles; Super capacitor

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Experimental Analysis of Heat Transfer Characteristics of Heat Exchanger Using Nano Fluids
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Abstract
The experimental investigation of friction factor and heat transfer characteristics of double pipe heat exchanger using aluminum oxide water based nanofluid. In this present study the heat transfer from hot water to cold water of the double pipe heat exchanger for a plain tube was experimentally investigated. This investigation also to find the heat transfer coefficient, Nusselt number, and Reynolds number. The experimental value of plain tube with water and Al2O3 was obtained from the experimental work and these two statistical data were compared with the results. The results shows that the heat transfer rate enhancement of induced with the nanofluids water based flow has give more heat transfer compared to the plain water. The Reynolds numbers were varied in the range of 5000 to 18000. The data obtained from the experimental value were compared with CFD simulation analysis. The performance of heat transfer characteristics of aluminum oxide nanofluid was enhanced compared with smooth plain water used. The experimental value of the heat transfer and friction factor characteristics was well bonding with simulation value of CFD analysis. © Published under licence by IOP Publishing Ltd.

Author Keywords
computational fluid dynamics; Heat transfer; Nanofluid

Index Keywords
Alumina, Aluminum oxide, Computational fluid dynamics, Friction, Heat transfer, Heat transfer performance, Nanofluidics, Reynolds number; Double-pipe heat exchangers, Experimental analysis, Experimental investigations, Experimental values, Heat transfer and friction factors, Heat transfer characteristics, Heat transfer rate, Nanofluids; Heat exchangers

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Hepatorenal profile of diclofenac sodium in wistar rats
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Abstract
Introduction: Drug-induced liver injury possesses a major clinical problem and has become a leading cause of acute liver failure and transplantation. Overstressed liver compromises its detoxification role, which may expose it to a variety of diseases and disorders. Aim: The aim of the study was to investigate the adverse effects of different doses of diclofenac sodium on liver and renal tissues by biochemical and histopathological findings. Materials and Methods: Twenty four albino male rats weighing 180-200 g were divided equally into four groups. In control group, rats were administrated with physiological saline 2 ml/kg b. wt/intramuscularly. In experimental groups, rats were administrated with different doses of diclofenac sodium (50, 75, and 100 mg/kg b. wt/intramuscularly/7 days). Results: Diclofenac treated groups showed a significant ($P < 0.001$) increase in aspirate amino transferase, alanine amino transferase, alkaline phosphatase, and total bilirubin, urea, and creatinine; however, a significant decrease ($P < 0.001$) in total protein in all the three diclofenac treated groups and also all the diclofenac groups show a significant increase ($P < 0.001$) in malondialdehyde on both liver and kidney; however, there was a significant ($P < 0.001$) decrease in glutathione level on both liver and kidney homogenates. Histopathological alterations were also observed in both liver and kidneys. No significant changes observed in control groups. Conclusion: Administration of different dose of diclofenac sodium induces severe adverse effects in liver and kidney.
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Author Keywords
Creatinine; Diclofenac; Liver and kidney; Malondialdehyde; Urea

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alanine aminotransferase, alkaline phosphatase, aspartate aminotransferase, bilirubin, creatinine, diclofenac, glutathione, malonaldehyde, protein, sodium chloride, urea; alanine aminotransferase blood level, alkaline phosphatase blood level, animal cell, animal experiment, animal tissue, Article, aspartate aminotransferase blood level, bilirubin blood level, blood biochemistry, controlled study, creatinine blood level, histopathology, kidney homogenate, kidney tissue, liver cell, liver homogenate, liver tissue, male, nephrotoxicity, nonhuman, rat, toxic hepatitis, urea blood level, Wistar rat

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alanine aminotransferase, 9000-86-6, 9014-30-6; alkaline phosphatase, 9001-78-9; aspartate aminotransferase, 9000-97-9; bilirubin, 18422-02-1, 635-65-4; creatinine, 19230-81-0, 60-27-5; diclofenac, 15307-79-6, 15307-86-5; glutathione, 70-18-8; malonaldehyde, 542-78-9; protein, 67254-75-5; sodium chloride, 7647-14-5; urea, 57-13-6

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Alternatives to in vivo experiments – a pandect

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Abstract
The use of animals for research has increased with increase in advancement of Research & Development in science. Year after year millions of animals are used for carrying out experiments. Since long time it has been a debating issue about the pain, distress and death underwent by the animals during scientific experiments. Beyond ethical considerations to carry out animal experiments, requirement of skilled man power, protocol which are time consuming and high cost are other disadvantages faced. Thus, to overcome these difficulties various alternatives to animal testing have been utilised. Reduction, Refinement and Replacement is applied for use of animals in laboratory. Various alternative methods and organisms are used to overcome the ethical issues and difficulties faced with use of animal experiments. This review is focused to elaborate an insight towards the use of alternative methods and their advantages over animal experimentation such that we can minimize the use of animals in scientific experiments. © RJPT All right reserved.

Author Keywords
Alternative methods; Animal experiments; In silico; In vitro; In vivo

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Secure auditing and storage systems in cloud service

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Abstract
Cloud is the one of the booming technology this era; cloud technology provides various storage services for the user, which is helpful on large amount of data maintenance and management.dd in this paper, we identify the issues of integrity auditing and storage security systems on cloud. Specially, seeking to achieve both auditing and storage in cloud in secure way, we are proposing a secure system, namely secClodud+ and using the dynamic data operation with portioning method the data are stored in the server. The performance of data storage and retrieval is securely done in proposed model. Implementation of the model is based on Improved Adaptive Huffman Technique that enables the access to the user to process the secure and efficient way of data. So that this improved Adaptive Huffman technique implements to store the data with the minimized time consumption, space and computational cost. © BEIESP.

Author Keywords
Auditing; Cloud computing; SecCloud+; Security

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Abstract
Stock price prediction is always a most challenging task. Artificial Neural Network prediction clears the stock price prediction challenge by forming the training set. By using the past information as the network input, one can predict the expected output of the network. In order to predict the expected result as the accurate we add multi-layer perceptron to the knowledge set we formed from the past historical data available in the nifty NSE and Sensex BSE. This paper proves that proposing the learning knowledge set using multilayer neural network will predict the accurate closing price of future stock in stock market.
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Artificial Neural Network (ANN); Knowledge set; Multilayer neural perceptron network; Stock market

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Basketball tracking using mean shift algorithm
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Abstract
Video analysis plays a vital role in commercial application, sports and military systems. Various methods are presented in literature. Mean shift algorithm is presented in this paper for basket ball tracking because it is more efficient than other that is defined by histograms. The tracking is the important block in the detection and recognition of the basket ball. Different object tracking algorithms are investigated. The performance of tracking in two video sequences is performed and the method gives 91.3% precision for video sequence 1 and 93.6% for sequence 2. © BEIESP.

Author Keywords
Ball detection; Basketball detection; Frame difference; Histogram; Mean shift; Tracking; Video

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Patchaiammal, P.[a] , Thirumalaiselvi, R.[a b]

Genetic evolutionary learning fitness function (GELFF) for feature diagnosis to software fault prediction
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Abstract
Nowadays, proper feature selection f+orFault prediction is very perplexing task. Improper feature selection may lead to bad result. To avoid this, there is a need to find the aridity of software fault. This is achieved by finding the fitness of the evolutionaryAlgorithmic function. In this paper, we finalize the Genetic evolutionarynature of our Feature set with the help of Fitness Function. Feature Selection is the objective of the prediction model tocreate the underlying process of generalized data. The wide range of data like fault dataset, need the better objective function is obtained by feature selection, ranking, elimination and construction. In this paper, we focus on finding the fitness of the machine learning function which is used in the diagnostics of fault in the software for the better classification. © BEIESP.

Author Keywords
Chromosomes; Crossover; Fault diagnostics; Feature extraction; Feature Selection; Fitness function; Genetic evolutionary Learning Fitness Function (GELFF); Genetic evolutionary Programming (GEP); Machine Learning (ML); Mutations; Parents

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Mohankumar, T.[a] , Rajan, K.[b] , Naveenchandran, P.[a] , Sivakumar, K.[a]

Heat transfer characteristics of double pipe heat exchanger with plain twisted tape insert using titanium oxide
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Abstract
In an effort to improve efficiency of heat exchanging device by means of induced tape inserts using titanium oxide Nanofluids is provided. The experimental study evaluated the fluid flow and heat transfer features of the turbulent water-based Nanofluids with a concentration of 0.6 per cent. Titanium oxide of nanoparticles with a diameter of 25 nm was used in this job. The information showed that the nano-fluid heat flow coefficient was slightly greater with base water a comparable mass flow and comparable temperature. A heat flow coefficient nano fluid rises by means of augment flow rate and amount of Reynolds rises with an rise in the heat transfer coefficient. The experiment performed heat double pipe Data were produced with distinct mass flow rates for both water and nano liquids. The amount of Reynolds ranges from 110000 to 135460. The increase in heat transfer was boosted with an increase in the amount of Reynolds. The heat transfer rate was increased by 12 per cent of nano-liquids compared to simple water. © BEIESP.

Author Keywords
Friction factor; Heat transfer; Nanofluid; Titanium oxide

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Documents

Mitthra, S.[a] , Kannan, S.S.D.[b] , Anuradha, B.[c] , Hema, R.[d]

Stress among dental students in a private dental college

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Abstract

Stress is psychologically debilitating and can have a deleterious effect on the academic performance. Dentistry has been widely acknowledged as being associated with high levels of stress. To find out the perceived sources of stress among dental students. 75 students, (15 from each year of study). A closed ended ten item questionnaire was used. Statistical analysis was done using Kruskal Wallis and Wilcoxon Mann Whitney test. Final years had high perceived level of stress. Females had more stress than males. Educational institutions and bodies governing the curriculum should try to reform the dental curriculum, to make it less taxing. © 2019, Advanced Scientific Research. All rights reserved.

Author Keywords

Closed ended questionnaire; Dental education; Stress; Student's problems

Index Keywords

adult, article, curriculum, dental education, dental student, female, human, human experiment, major clinical study, male, rank sum test, stress, structured questionnaire

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Mohankumar, T.[a] , Rajan, K.[b] , Naveenchandran, P.[a] , Sivakumar, K.[a]

Heat transfer and friction factor characteristics of heat exchanger using aluminium oxide and titanium oxide
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Abstract
A heat flow and fluid flow investigation of double tube heat exchanger by means of warped tape insert under the mixing water based nano fluids. In this article Aluminium oxide and Titanium oxide was used to get better performance heat exchanging device. A different mass flow rate of fluids used to conduct the experiment and gathered various surface temperature for analyses the heat flow augmentation. A heat flow rate Nano fluids 10 to 12% was enhanced compare with the plain base water. A heat flow with liquid flow Aluminum oxide was enhanced with +8% compare with the plain base water. A heat transfer characteristics titanium oxide were augment with raise of Re and 12% was augmented compare with the plain water. However heat flow and liquid flow heat exchanging device was increasing with volume of Nano fluids increased and leading to friction factor. © BEIESP.

Author Keywords
Aluminium oxide; Factor; Heat flow rate; Nano fluid; Titanium oxide

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Kanagasabapathy, M.V.[a] [b] , Palraj, N.[c] , Srinivasagam, R.[d]

Poly - phenolic study of south- indian nutmeg (myristica fragrans) using GC-MS and FTIR
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Abstract
Myristica Fragrans (Nutmeg) is one of the most important spices. MF was well-known for its aroma and therapeutic action. In India, Myristica Fragrans (MF) was commonly said to be Jatiphal, Jathikai and Javitri. It belongs to the family myristaceae. Myristica fragrans was used in a lot of industrial applications such as liqueurs, soap production and cosmetics. MF was reported for its improving memory, aphrosidiac,antioxidant, anti- inflammatory, anticollagenolytic properties. In our study, in MF was found to possess 66.7% polyphenolic content. © 2019, Advanced Scientific Research. All rights reserved.

Author Keywords
FTIR; GC-MS; KBr potassium bromide; Myristica fragrans (MF); Theaflavin (TF)

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polyphenol derivative; Article, Fourier transform infrared spectroscopy, mass fragmentography, nutmeg, phytochemistry

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Bharthvajan, R.[a] , Fabiyola Kavitha, S.[b c]

Impact of training on employee productivity
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Abstract
The word training relates to the development of knowledge, abilities and skills resulting fro the learning of abilities and knowledge related to particular helpful abilities2. Training has its own characteristics and it's used to increase the productivity both in terms of quality and quantity. The article examines the effect of training on the productivity of employees. This manuscript provides an examination of the present proof of such a connection and provides suggestions for further inquiry. A comprehensive review of the literature in terms of study results from studies that attempted to assess and determine the level of the productivity of employees. In this manuscript explain the impact and effectiveness of training in dairy industry and findings would clearly explain the impact level of a training programs3. © BEIESP.

Author Keywords
Training and development; Training need analysis

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Abstract
The Current study is concerned with “a study on effectiveness of training and development in its solutions (chennai)” in this study where the effectiveness of the employee are measured and studied. In this study the where 110 employees are taken out of 195 employees using random sampling method. Where the set of questions are given to the employees to get there feedback about the changes after the training. The organization provides various kind of training to the employee. In this study we are testing the effectiveness of the employee after the training and development3. Where the 110 questions are distributed to employees and answers are collected for findings, suggestions and conclusions. The answers given by the respondents are analysed using chi-square and percentage method. After the finding where concluded that the objectives of this study and conclusions found in this study meets same point. Where the objective of this study is get satisfied. In this study we found that there is significant difference in employee than before. The training imparted meets the objectives like2.
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Author Keywords
Training and Development; Training Effectiveness

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Abstract
Training plays a good part in this competitive globe in the qualified and business format. Training is the cornerstone that suffices the need for job functioning smoothly and smoothly, which also helps to enhance the quality of employee working lives and organizational development. Development is a method that contributes to the organization's qualitative as well as quantitative advances, particularly at the managerial level, is less regarded with strong abilities and is more worried with understanding, values, attitudes and behaviors in relation to particular abilities. Development can therefore be described as an ongoing process, while training has particular fields and goals. Training involves positive growth in such organizational intentions in order to optimize the quality of the workers ' working lives. These kinds of training and growth programs assist improve staff behavior and attitude towards the job as well as enhance their morality. Training and growth programs for employees are therefore significant elements that need to be studied and concentrated on. This article focuses and analyzes the results of the literature on the significance of induction training and growth in Cavinkarepvt ltd and their relationship with the sustainability of the staff. ©BEIESP.

Author Keywords
Employee induction; Training; Training need analysis

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Orientin induces G0/G1 cell cycle arrest and mitochondria mediated intrinsic apoptosis in human colorectal carcinoma HT29 cells

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Abstract
Colorectal carcinoma is one of the utmost diagnosed cancer with a steep increase in mortality rate. The incidence has been increasing in developing countries like India due to a westernization life style. Flavonoids have been explored widely for its various pharmacological activity including antitumor activity. Orientin, an analogue of luteolin (citrus flavonoid) isolated from rooibos and tulsi leaves is also expected to deliver significant antitumor activity similar to that of luteolin. The present study anticipates exploring the antitumor activity of orientin against colorectal carcinoma cells (HT29). Orientin exhibited remarkable cytotoxicity and antiproliferative activity against HT29 cells, which is clearly evident from tetrazolium based cytotoxicity and lactate dehydrogenase release assays. Orientin induce G0/G1 cell cycle arrest and regulates cyclin and cyclin-dependent protein kinases in order to prevent the entry of the cell cycle to the S phase. Annexin V-FITC (V-Fluorescein Isothiocyanate) dual staining reveals the apoptotic induction ability of orientin. The Bcl-2 family proteins along with the inhibitor of apoptotic proteins were regulated and the tumor suppressor p-53 expression have been decreased. In conclusion, our results proposed that orientin could be a potent chemotherapeutic agent against colorectal cancer after ascertaining their molecular mechanisms. © 2019 by the authors. Licensee MDPI, Basel, Switzerland.

Author Keywords
Apoptosis; Bcl-2 family proteins; Cell cycle arrest; Colorectal cancer; Orientin

Index Keywords
caspase 3, caspase 9, cyclic nucleotide dependent protein kinase, cyclin dependent kinase 4, cytochrome c, lactate dehydrogenase, orientin, protein Bax, protein bcl 2, protein p53, reactive oxygen metabolite, antineoplastic agent, cyclin dependent kinase inhibitor 1A, cytochrome c, flavonoid, glucoside, nicotinamide adenine dinucleotide adenosine diphosphate ribosyltransferase, oligopeptide, orientin, protein bcl 2, reactive oxygen metabolite, SMAC peptide; antineoplastic activity, antiproliferative activity, apoptosis, apoptosis assay, Article, cell cycle arrest, cell cycle assay, cell cycle G0 phase, cell cycle G1 phase, cell cycle progression, cell cycle S phase, cell death, cell proliferation, cell viability assay, colorectal carcinoma, controlled study, cytotoxicity, cytotoxicity assay, down regulation, enzyme linked immunosorbent assay, flow cytometry, fluorescence microscopy, GI50, HT-29 cell line, human, human cell, microscopy, mitochondrion, morphology, MTT assay, oxidative stress, protein expression, protein phosphorylation, tumor suppressor gene, Western blotting, apoptosis, chemistry, colorectal tumor, DNA damage, drug effect, G1 phase cell cycle checkpoint, metabolism, mitochondrion, pathology; Antineoplastic Agents, Apoptosis, Colorectal Neoplasms, Cyclin-Dependent Kinase Inhibitor p21, Cytochromes c, DNA Damage, Flavonoids, G1 Phase Cell Cycle Checkpoints, Glucosides, HT29 Cells, Humans, Mitochondria, Oligopeptides, Poly(ADP-ribose) Polymerases, Proto-Oncogene Proteins c-bcl-2, Reactive Oxygen Species

Chemicals/CAS
caspase 3, 169592-56-7; caspase 9, 180189-96-2; cyclin dependent kinase 4, 147014-97-9; cytochrome c, 9007-43-6, 9064-84-0; lactate dehydrogenase, 9001-60-9; orientin, 28608-75-5; protein bcl 2, 219306-68-0; glucoside, 50986-29-3; nicotinamide adenine dinucleotide adenosine diphosphate ribosyltransferase, 58319-92-9; Antineoplastic Agents; Cyclin-Dependent Kinase Inhibitor p21; Cytochromes c; Flavonoids; Glucosides; Oligopeptides; orientin; Poly(ADP-ribose) Polymerases; Proto-Oncogene Proteins c-bcl-2; Reactive Oxygen Species; SMAC peptide

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Nikon, Japan; Becton-Dickinson, United States; Biorad, United States

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Abstract
Cerium oxide (CeO2) thin films were deposited on Pt (111)/Ti/SiO2/Si(100) substrates using pulsed laser deposition method at different temperatures such as, 300 K, 573 K and 873 K with 3 × 10−2 mbar oxygen partial pressure. The prepared films were systematically investigated using X-ray diffraction (XRD), atomic force microscopy (AFM), photoluminescence (PL) and electrical measurement system. XRD analysis clearly showed improved crystallinity of CeO2 films prepared at 573 and 873 K substrate temperatures. The AFM analysis indicated the uniform distribution of the nanocrystallites and dense structure with the roughness (RMS) of ~ 2.1–3.6 nm. The PL studies of the films showed a broad peak at ~ 366–368 nm, indicating the optical bandgap of 3.37–3.38 eV. The electrical property study showed minimum leakage current density of 2.0 × 10−7 A/cm2 at 873 K, which was measured at 100 kV and this value was much lower than that of the CeO2 film deposited at 300 K. The dielectric constants are increased and dielectric loss values decreased for the films with increasing substrate temperature. © 2019, Springer Science+Business Media, LLC, part of Springer Nature.

Index Keywords
Atomic force microscopy, Cerium oxide, Crystallinity, Dielectric losses, Dielectric properties of solids, Oxide films, Oxides, Pulsed laser deposition, Pulsed lasers, Substrates, Thin films, X ray diffraction; Cerium oxide thin films, Dense structures, Electrical measurement, Optical and dielectric properties, Oxygen partial pressure, Substrate temperature, Uniform distribution, XRD analysis; Film preparation

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Growth dynamics of CBD-assisted CuS nanostructured thin-film: optical, dielectric and novel switchable device applications

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Abstract
The microcrystal structure of copper sulfide (CuS) nano-structured ultra-thin film was prepared on glass substrate from aqueous ammonia solution and sodium hydroxide at 60 °C using a simple and cost-effective chemical bath deposition (CBD). The powder X-ray diffraction method was used to characterize the hexagonal structure of the prepared CuS thin-film. While, surface morphology and surface topology were investigated by scanning electron microscopy (SEM) and atomic force microscopy (AFM). The optical properties were investigated by using UV–visible absorption spectrum. The electronic properties including average energy gap (Penn gap), Fermi energy, electronic polarizability and valence electron plasma energy of CuS thin films were determined. Semiconductor characterization of CuS film was confirmed using temperature dependent conductivity analysis. To prove the positive photoconductivity of nano-structured CuS nano-structured thin film, photoconductivity measurements were performed. I–V characteristics result, and Hall Effect measurements were also evaluated. Our results showed that the prepared CuS nano-structured thin films have higher crystallinity, purity and higher content of copper (Cu: 89.6%) as confirmed by XRD and EDX elemental analysis, respectively. While, their optical band gap energy is about 2.2 eV. Polarization-dependent Raman investigations allowed sample identification by dominant peaks at 265 cm−1 and 474 cm−1, proving the formation of CuS. Moreover, stimulating energy was found to be 0.028 eV by employing DC conductivity measurements. The estimated surface roughness was about (115 nm) with an average thickness of about (16.3 nm) as obtained from AFM analysis. Finally, remarkable smooth multi-colored marble like textural patterns have been recorded confirming the novel switching as recorded by the polarizing optical microscopy. © 2019, Springer Science+Business Media, LLC, part of Springer Nature.

Index Keywords
Absorption spectroscopy, Ammonia, Atomic force microscopy, Chemical analysis, Copper compounds, Cost effectiveness, Crystallinity, Deposition, Electronic properties, Energy gap, Film growth, Film preparation, Morphology, Nanostructures, Optical properties, Photoconductivity, Polarization, Scanning electron microscopy, Sodium hydroxide, Substrates, Sulfur compounds, Surface morphology, Surface roughness, Ultrathin films; Aqueous ammonia solution, Chemical-bath deposition, Dc conductivity measurements, Electronic-polarizability, Polarizing optical microscopy, Semiconductor characterization, Temperature-dependent conductivity, Visible absorption spectra; Optical films

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Cervical Cancer Identification with Synthetic Minority Oversampling Technique and PCA Analysis using Random Forest Classifier

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Abstract
Cervical cancer is the fourth most communal malignant disease amongst women worldwide. In maximum circumstances, cervical cancer indications are not perceptible at its initial stages. There are a proportion of features that intensify the threat of emerging cervical cancer like human papilloma virus, sexual transmitted diseases, and smoking. Ascertaining those features and constructing a classification model to categorize, if the cases are cervical cancer or not is an existing challenging research. This learning intentions at using cervical cancer risk features to build classification model using Random Forest (RF) classification technique with the synthetic minority oversampling technique (SMOTE) and two feature reduction techniques recursive feature elimination and principle component analysis (PCA). Utmost medical data sets are frequently imbalanced since the number of patients is considerably fewer than the number of non-patients. For the imbalance of the used data set, SMOTE is cast-off to solve this problem. The data set comprises of 32 risk factors and four objective variables: Hinselmann, Schiller, Cytology and Biopsy. Accuracy, Sensitivity, Specificity, PPA and NPA of the four variables remains accurate after SMOTE when compared with values obtained before SMOTE. An RSOnto ontology has been created to visualize the progress in classification performance. © 2019, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
Cervical cancer; PCA; Random Forest; RFE; RSOnto; SMOTE

Index Keywords
Article, cancer classification, cancer diagnosis, cancer risk, cytology, diagnostic accuracy, principal component analysis, random forest, risk assessment, sensitivity and specificity, synthetic minority oversampling technique, tumor biopsy, uterine cervix cancer, age, algorithm, female, hormonal contraception, human, machine learning, principal component analysis, risk factor, sexual behavior, sexually transmitted disease, smoking, support vector machine, uterine cervix tumor; Age Factors, Algorithms, Female, Hormonal Contraception, Humans, Machine Learning, Principal Component Analysis, Risk Factors, Sensitivity and Specificity, Sexual Behavior, Sexually Transmitted Diseases, Smoking, Support Vector Machine, Uterine Cervical Neoplasms

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Biomimetic electrospun polyurethane matrix composites with tailor made properties for bone tissue engineering scaffolds

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Abstract
Bone tissue scaffolds require appropriate properties conducive for new tissue growth. In this study, we prepared a novel electrospun nanofiber scaffold using polyurethane (PU), rosemary (RM) oil and copper sulphate (CuSO4) respectively. The properties of the developed membranes were established through scanning electron microscopy (FESEM), atomic force microscopy (AFM), attenuated total reflectance Fourier-transform infrared spectroscopy (ATR-FTIR), thermal gravimetric analysis (TGA), contact angle and mechanical testing. Further, blood compatibility and cytocompatibility assay were carried out to evaluate their biological responses. The developed composites rendered appropriate surface morphology with tailor made wettability and roughness. Composites with engineered physicochemical properties improved the blood and cytocompatible properties which can be potentially exploited for bone tissue engineering applications. © 2019

Author Keywords
Biocompatibility; Bone tissue engineering; Physico-chemical properties; Polyurethane; RM/CuSO4

Index Keywords
Atomic force microscopy, Biocompatibility, Biomimetics, Blood, Bone, Contact angle, Copper compounds, Fourier transform infrared spectroscopy, Gravimetric analysis, Mechanical testing, Morphology, Physicochemical properties, Polyurethanes, Scanning electron microscopy, Sulfur compounds, Surface morphology, Thermogravimetric analysis, Tissue; Attenuated total reflectance fourier transform infrared spectroscopies (ATR FTIR), Biological response, Blood compatibility, Bone tissue engineering, Bone tissue scaffolds, Electrospun nanofibers, RM/CuSO4, Thermal gravimetric analyses (TGA); Scaffolds (biology)

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Excess conductivity and AC susceptibility studies of Y-123 superconductor added with TiO2 nano-wires
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Abstract
We have studied the impact of TiO2 nano-wires (NWs) used as additives on inter-granular and intra-granular coupling of YBa2Cu3O7-d (noted YBCO or Y-123) superconductor. Series of YBCO/(TiO2)x with 0 ≤ x ≤ 1 wt% were made by solid-state reaction process. The crystal structure, morphology, microstructure and chemical compositions were methodically investigated using X-ray diffraction (XRD), scanning electron (SEM) and transmission electron (TEM) microscopes along with EDX system. XRD showed the obtaining of single YBCO orthorhombic phase for all samples. SEM and TEM observations revealed the occurrence of NWs dispersed among grains inducing inhomegenties and intergrowth of defect regions on YBCO/(TiO2) composite. The excess conductivity of YBCO/(TiO2)x superconductors were examined from the resistivity against temperature results. The examination indicated that the addition of TiO2 NWs led to the change in dimensional in the electrical properties and enhancement of physical parameters. The 0.1 wt% TiO2 added sample showed a dominance of 3D fluctuation regime and higher critical current density Jc(0) among all samples. AC-susceptibility were done using physical properties measurement system (PPMS). The detailed analysis confirmed the strengthening of inter-granular coupling of YBCO with the addition of small amount of TiO2 NWs. The inter-granular current density (Jc,inter(0)) was shown to be the highest in 0.1 wt% added sample. © 2019 Elsevier B.V.

Author Keywords
AC susceptibility; Critical current density; Excess conductivity; TiO2 nano-wires; YBCO superconductor

Index Keywords
Additives, Barium compounds, Critical current density (superconductivity), Crystal structure, Current density, Magnetic susceptibility, Morphology, Nanowires, Solid state reactions, Superconducting materials, Titanium dioxide, Wire, X ray diffraction, Yttrium barium copper oxides; Ac susceptibility, Chemical compositions, Critical current density Jc, Excess conductivity, Physical-properties measurement systems, Solid-state reaction process, Transmission electron, YBCO superconductor; Copper compounds

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Beef subcutaneous fats

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Abstract
This paper deals with the feasibility study of biodiesel production from the tallow rendered from the subcutaneous wastes. The subcutaneous wastes were collected from leather tanneries and animal slaughter houses. The fat content was determined based on the proximate analysis of the collected wastes and various rendering techniques were employed to study the rendering effectiveness. Base catalysed single step transesterification was carried out for biodiesel production. The characterization and quantification of biodiesel was done with the help of FT-IR and GC-MS. Maximum fat content in subcutaneous wastes was found to be 92.84%. The dry rendering technique was found to be very effective than compared to the wet rendering technique and was found to be 18.04% greater than wet rendering technique. The most optimised transesterification parameters were found to be (i) molar ratio: 9.5, (ii) catalyst concentration: 3%, (iii) reaction temperature: 65°C and (iv) reaction time: 70 minutes. The confirmation of biodiesel was concluded from the high intensity peaks in the FT-IR spectra at 1740cm-1 and 1196cm-1 which corresponds to the C=O stretching and O-CH3 group. Ethyl Oleate, Ethyl Palmitate, Ethyl Stearate and Ethyl Myristate were identified as the dominant fatty acids with availability of 40.25%, 21.26%, 17.41% and 3.59% respectively. Based on the results, it can be concluded that possibility of producing biodiesel from subcutaneous wastes was high and can be a viable replacement as low cost feedstock from waste. © 2019 TJPRC Pvt. Ltd. All rights reserved.

Author Keywords
Beef Tallow; Ethanol Based Transesterification; Fatty Acid Esters; Leather Fleshing; Subcutaneous Wastes

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Design and Analysis of Parallel Flow Heat Exchanger with Baffles

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Abstract
Shell and tube heat exchanger is the most common type of heat exchanger, widely used in oil refinery and other large chemical process. The energy present in the exit stream of many energy conversion devices such as I. C engines, Gas turbines etc. goes as waste, if not utilized properly. For example, the heat energy stored in the engine coolant can be utilized in a better way by recovering the heat for heating purposes inside the cabin. It is comparatively economical than the existing heating arrangements, which employ conventional heating coils. So, the present work has been carried out with a view to predicting the performance of a shell and tube heat exchanger in the field of waste heat recovery application. The objective of this project is to design a shell and tube heat exchanger and study the flow and temperature field inside the shell and tubes using ANSYS Fluent R14.5. An attempt has been made to calculate the performance of the above heat exchanger with and without baffles for parallel flow configurations, and the results so obtained have been compared. © 2019 TJPRC Pvt. Ltd. All rights reserved.

Author Keywords
Flow Analysis; Shell and Tube Heat Exchanger; With and Without Baffles Design

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Experimental and finite element analysis on the mechanical performance of hybrid fiber reinforced epoxy composites

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Abstract
Fiber reinforced composites are the new age materials, which play a major role in the service sector and engineering field. These materials are tailor-made materials with a different volume fraction of resin and fibers, and the stacking sequence could be made unique for each application depends on the strength requirement. Therefore, whenever engineers try to use a new configuration the proposed laminate has to be tested for its mechanical performance. Nevertheless, experimental testing of each new laminates is a time consuming and expensive process. In this work, comparative study on the results of the mechanical performance of glass/kenaf and glass/aloe Vera fiber reinforced epoxy composite laminates obtained using both experimental testing and Finite element Analysis Method (ANSYS 16.2) is done to find the closeness between the results from the two methods. The laminates are prepared using vacuum assisted resin transfer molding method (VARTM), and the tensile and flexural tests are carried out based on ASTM standard. The comparison of the experimental and FEA method shows that the variation in results is only between 8 to 3%, in two types of laminates, proving that the Finite element method is equally effective, less time consuming and economical for composite analysis. © 2019 TJPRC Pvt. Ltd. All rights reserved.

Author Keywords
Experimental; FEA Method; Hybrid Fiber Reinforced Laminates; Mechanical Properties; VARTM

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Chandran, H.[a b] , Jayanthi, K.[a b] , Prabavathy, S.[a b] , Renuka, K.[a b] , Bhargavan, R.[c d]

Effectiveness of video assisted teaching on knowledge, attitude and practice among primary caregivers of children with Autism Spectrum Disorder

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Abstract
Purpose: Parents or primary caregivers of children with Autism Spectrum Disorder (ASD) have important role in early recognition of the disorder as well as in the management of the disorder. Knowledge, attitude and practice of primary caregivers towards children with ASD are important factors in promoting health and wellness of such children. The purpose of this paper is to evaluate the effectiveness of video-assisted teaching regarding care of children with ASD on knowledge, attitude and practice among primary caregivers. Design/methodology/approach: Quasi-experimental research design with one group pre-test post-test was adopted. A total of 60 primary caregivers were selected through stratified random sampling technique. Video-assisted teaching was given to 60 primary caregivers. Data collection was done before and after the video-assisted teaching programme using structured questionnaire which consists of 57 questions. Findings: The result of the study showed that the post-test level of knowledge attitude and practice among primary caregivers of children with ASD was significantly high ($p<0.0001$) when compared to pre-test level by using Wilcoxon Signed Rank Test. The study finding revealed that video-assisted teaching was effective in enhancing the knowledge, developing a positive attitude and good practice among primary caregivers regarding care of children with ASD. Social implications: Findings of this study will help mental health nurses, psychologists, intellectual disability nurses, teachers, public health, social workers, etc. to know the importance of video-assisted teaching programme regarding care of children with ASD and to motivate the primary caregivers to participate in such teaching programme. The community mental health nurse can plan video-assisted teaching programme in a community regarding care of children with ASD. Originality/value: Results of this study indicate that the video-assisted teaching is effective and helps the primary caregivers to enhance the knowledge, attitude and practice regarding care of children with ASD. So continuous awareness in primary health centre and community area is necessary to improve the knowledge, attitude and practice of primary caregivers. © 2019, Emerald Publishing Limited.

Author Keywords
attitude and practice; Autism Spectrum Disorder; Knowledge; Primary caregivers; Video-assisted teaching
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Synthesis of highly fluorescent carbon dots from Plectranthus amboinicus as a fluorescent sensor for Ag+ ion
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Abstract
Selective detection of metal ion is a major research interest in the field of sensors development for environmental safety. Herein, a facile, cost-effective and eco-friendly method is developed to synthesis carbon dots (CDs) from plant material (Plectranthus amboinicus) without any harmful chemicals. As-synthesized CDs exhibited bright blue emission under an excitation wavelength of 390 nm. The Fourier-transform infrared spectroscopy (FT-IR) and X-ray photoelectron spectroscopy (XPS) analysis confirmed the presence of functional groups with respective binding energies (hydroxyl and carboxyl groups) on the surface of CDs. The interaction between CDs and metal ions is examined by the influence of fluorescent intensity changes with respect to the quenching effect of CDs. When compared to the other metal ions, silver ion (Ag+) had an excellent fluorescent quenching of CDs. The fluorescence intensity of CD exhibited a good linear correlation efficiency for the detection of Ag+ ion from 0-30 nM (R2 =0.9905) with a detection limit of 10 nM. In addition, an excellent color change is observed (colorimetric analysis and visible eye observation) for silver ion reduction (from Ag+ into Ag0) compared with other metal ions (no specific color changes). This method is simple, sensitive and selective for colorimetric and fluorescence analysis of Ag+ in a water sample. © 2019 IOP Publishing Ltd.

Author Keywords
carbon dots; green synthesis; plant material; sensors; silver ion detection

Index Keywords
Binding energy, Carbon, Color, Colorimetric analysis, Colorimetry, Cost effectiveness, Fluorescence, Fourier transform infrared spectroscopy, Metal analysis, Metal ions, Quenching, Sensors, Silver, X ray photoelectron spectroscopy; Carbon dots, Excitation wavelength, Fluorescence intensities, Fluorescent intensity, Fourier transform infra red (FTIR) spectroscopy, Green synthesis, Plant material, Silver ions; Fluorescence quenching

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Electrochemical Investigations of Magnetic Co3O4 Nanoparticles as an Active Electrode for Supercapacitor Applications

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Abstract

This attempt reports on cobalt oxide (Co3O4) nanoparticles (NPs) prepared through the traditional chemical reflux method to examine the behavior of supercapacitor performance. The synthesized NPs were characterized using several analytical tools such as ultraviolet-visible spectroscopy (UV), Fourier-transform infrared spectroscopy (FTIR), X-ray diffraction (XRD) pattern, and scanning electron microscope (SEM) with energy dispersive X-ray spectroscopy (EDX). Moreover, the electrochemical performance was analyzed using galvanostatic charge and discharge studies (GCD), cyclic voltammetry (CV) studies as well as electrochemical impedance spectroscopy (EIS). The cubical phase of Co3O4 was identified from the XRD pattern and also the average crystalline size was measured by Scherrer's equation. FTIR confirmed the functional group of Co3O4 NPs. SEM images revealed the hexagonal-shaped nanoflakes-like morphology of the sample. From the elemental analysis, the formation of pure Co3O4 NPs by means of high purity and composition ratio of cobalt with oxygen was found. Vibrating sample magnetometer (VSM) plot scrutinized the magnetic performance of Co3O4 NPs. The Co3O4 NPs modified electrode has delivered maximum specific capacitance as 1413 Fg−1 at a current density of 1 Ag−1 which maintains tremendous cycling stability within the retention ratio of 98.4% after 1000 cycles. [Figure not available: see fulltext.] © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords

Co3O4 NPs; Pseudocapacitor; Reflux; SEM/EDX; Supercapacitor

Index Keywords

Cobalt compounds, Cyclic voltammetry, Electric discharges, Electrochemical electrodes, Electrochemical impedance spectroscopy, Energy dispersive spectroscopy, Nanomagnetics, Nanoparticles, Scanning electron microscopy, Supercapacitor, Ultraviolet visible spectroscopy, X ray diffraction; Average crystalline size, Electrochemical investigations, Electrochemical performance, Energy dispersive X ray spectroscopy, Reflux, SEM/EDX, Supercapacitor application, Vibrating sample magnetometer; Fourier transform infrared spectroscopy

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Plasma cell gingivitis- a case report

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Abstract
Plasma cell gingivitis (PCG) is a rare condition of the gingiva, characterized by infi ltration of plasma cells. Being a rare benign condition of the gingiva, PCG is characterized with erythematous and edematous gingivitis. The biologic phenomenon of the hypersensitive reaction appears to be chief etiology behind this occasionally presenting clinical entity. Plasma cell gingivitis has a close resemblance to discoid lupus, lichen planus, cicatricial pemphigoid or leukemia, and HIV gingivitis.It is known to present as a hypersensitive response to allergen, but sometimes it could present as a clinical entity with unknown etiology. This paper reports a 60 year old female patient with the complaint of bleeding and swelling of gingiva since 2 months. On detailed history, patient was first diagnosed as drug induced gingival enlargement and based on histopathological findings, a diagnosis of plasma cell gingivitis was made. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Gingival enlargement; Hypersenstivity; Plasma cell gingival enlargement; Plasma cell gingivitis

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amlodipine; aged, Article, biochemical analysis, blood cell count, case report, clinical article, female, fibroma, fibromuscular dysplasia, gingiva bleeding, gingivitis, histopathology, human, human tissue, mouth examination, mouth inflammation, mouth ulcer, oral surgery, panoramic radiography, submandibular gland

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Diagnosis and management of multiple external inflammatory root resorption of maxillary central incisor using cone beam computed tomography - a case report

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Abstract

Avulsion and replantation of the teeth following traumatic injury causes complication such as inflammatory and replacement resorption. This case report describes a traumatic injury to the permanent maxillary central incisor exhibited pulpal necrosis leading to periapical cyst with massive bone loss and extensive external inflammatory root resorption. Endodontic therapy and surgery was performed to salvage the tooth with poor prognosis. The multiple resorptive defects were debrided and restored with resin modified glass ionomer cement. The postoperative follow-up revealed improved healing. The prognosis of the tooth which was badly destructed due to external inflammatory resorption was greatly enhanced with appropriate treatment plan and ultimately increased the longevity of the tooth. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords

CBCT; External inflammatory resorption; RMGIC

Index Keywords

gutta percha; adult, Article, case report, clinical article, cone beam computed tomography, dentin sensitivity, external inflammatory root resorption, follow up, fracture healing, human, male, maxillary central incisor, mouth examination, osteolysis, periodontal pocket, periodontitis, radiography, tooth disease, tooth pain, young adult

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Tradenames

AH, Dentsply Maillefer, Switzerland; Endo access bur A0164, Dentsply Maillefer, Switzerland; GIC Fuji II, GC, Japan; gutta-percha, Dentsply Maillefer, Switzerland

Manufacturers

Dentsply Maillefer, Switzerland; GC, Japan

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Divine proportion of the height of the human body vs navel height
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Abstract
The golden ratio otherwise known as the Divine Proportion or Phi, is a mathematical ratio with special properties and aesthetic significance. An enormous number of things in the universe are engineered around the ratio, ranging from the human body to the ark of the covenant to snail shells to the orbits of the planets. The divine ratio and golden rectangles appear throughout the ancient architecture and art. The golden ratio is believed to be the most aesthetically pleasing and harmonious means of design. The Golden section, also known as Phi, is manifested in the structure of the human body. In the present study 50 normal subjects both male and female were randomly screened ranging 25 to 30 years in Chennai were selected. The total height of a subject from the plinth to the head end was measured using the height measuring scalewith off shoes and straight stature and then the navel height from plinth to umbilicus was also measured. The data collected was tabulated and the total height divided by the navel height was calculated. The ratio obtained was 1.621 which is close to 1.618… which is known as the golden ratio, golden proportion or divine proportion. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Aesthetic; Divine proportion; Measuring scale; Navel height; Plinth

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adult, anthropometric parameters, arithmetic, Article, body height, esthetics, female, human, male, mathematical phenomena, navel height, normal human, umbilicus

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The mechanical and morphological analysis of carbon fiber materials

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Abstract
The natural fibre composite has used in a many more automobile and structural application in industry. In the way we are used in a hybrid composite used for those applications. The natural and synthesis fibre are high strength and low weight ratio. It is also used for alternate material in Engineering Industry. In this work the hybrid composite Neem and twiste carbon are used. The carbon fibre more strength next to aramid fiber. And the mechanical properties are studied like tensile, flexural and impact testing corresponding fracture surface also studied. Finally, in this work concluded for engineering application. © TJPRC Pvt. Ltd.

Author Keywords
Aramid fiber; Tensile & flexural

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Cobalt nanoparticle as the antibacterial tool: In vitro

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Abstract

--In the present study carried out to investigate prophylactic activity of Cobalt nanoparticles towards isolated Escherichia coli (strain MTCC 723); the antimicrobial properties of Cobalt nanoparticles also determine by optimizing the concentration of Cobalt nanoparticles. A homogenized suspension was prepared by sonication Cobalt nanoparticles in water, and the infusion was prepared at concentrations of 5– 35µg/ml. The pathogenic strain of microbial species was cultured under anaerobic conditions. Equalized standard dilutions of the cultured bacteria were used for testing. Spectroscopic and diffusion tests were conducted to quantify the antimicrobial properties of Cobalt nanoparticles against the bacteria. Cobalt nanoparticles of 200 nm diameter with concentration of 35µg/ml showed completely lysis of Escherichia coli cell. The results showed Cobalt nanoparticles with concentration of 35 µg/ml significant higher activity against Escherichia coli. Optimized concentration of Cobalt nanoparticles kills the pathogenic Escherichia coli cells. ©BEIESP.

Author Keywords

Antimicrobial activity; Cobalt nanoparticle; Escherichia coli

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Abstract
A color mapping is a process by which we transfer the particular range of colors from source to the target image. This paper says about a novel method for medical images using pseudocolor by pre existence of color mapping. Conversion of grey scale image to color has no exact way or approach, direct way to colorize is tedious by which the entire range of colors can be changed, but in color mapping the conversion is done by converting the whole black and white image into color. This novel method presents black and white image to various colors. By the creation of color map that color map is applied for colorizing the medical grey scale images. This approach can be used for grey scale medical images irrespective of size and shape such that the intensity and aspect of the image can be improved. ©BEIESP.

Author Keywords
Color; Color mapping; Medical images; Pseudocoloring

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Senthil Kumar, K.[a] , Muthukumaravel, A.[b]

Bi-objective constraint and hybrid optimizer for the test case prioritization

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Abstract
Regression testing is performed to make conformity that any changes in software program do not disturb the existing characteristics of the software. As the software improves, the test case tends to grow in size that makes it very costly to be executed, and thus the test cases are needed to be prioritized to select the effective test cases for software testing. In this paper, a test case prioritization technique in regression testing is proposed using a novel optimization algorithm known as Taylor series-based Jaya Optimization Algorithm (Taylor-JOA), which is the integration of Taylor series in Jaya Optimization Algorithm (JOA). The optimal test cases are selected based on the fitness function, modelled depending on the constraints, namely fault detection and branch coverage. The experimentation of the proposed Taylor-JOA is performed with the consideration of the evaluation metrics, namely Average Percentage of Fault Detected (APFD) and the Average Percentage of Branch Coverage (APBC). The APFD and the APBC of the proposed Taylor-JOA is 0.995, and 0.9917, respectively, which is high as compared to the existing methods that show the effectiveness of the proposed Taylor-JOA in the task of test case prioritization. © BEIESP.

Author Keywords
Branch coverage; Constraints; Jaya optimization algorithm; Prioritization; Regression testing

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Three-phase symmetric cascading Z-source seven levels multilevel inverter excited by multi carrier sinusoidal pulse width modulation scheme

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Abstract

The Multilevel Z sources Inverter have been documented as attractive topologies used for elevated voltage adaptation. As the digit of levels improved, the synthesized set of steps output waveform have many ladder, imminent the preferred sine waveform but the major weakness of MLI be its amplitude of ac output voltage is imperfect to DC input sources voltage summing up. To conquer this drawback seven level cascading symmetric multilevel inverter based Z source inverter have been projected. This work focuses on different multi-carrier sinusoidal PWM scheme for the seven level three phase Z source symmetric cascading inverter. Performance parameters of seven level three phase Z source symmetric cascading inverter has been analyzed. A simulation circuit model of seven level three phase Z source symmetric cascading inverter urbanized using MATLAB/SIMULINK and its presentation have been urbanized. © BEIESP.

Author Keywords

Multi-level inverter; Root mean square; Symmetric multilevel inverter; Z source

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Biodegradable dendrimer functionalized carbon nanotube-hybrids for biomedical applications
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Abstract
In the present study, biodegradable poly(amidoamine) dendrimers (PAMAM G1/G2/G3) was covalently functionalized with carbon nanotubes (CNTs) and nanostructured hydroxyapatite was immobilized onto CNTs-PAMAM matrix through coordination bond between the –NH2 groups of dendrimer and Ca2+ of hydroxyapatite. The structural and morphological behaviors of the nanohybrids were established through spectroscopic and microscopic analyses. In vitro cytotoxicity and cell proliferation was assessed through osteoblast-like MG 63 cell line using 3–4, 5-dimethylthiazole-2-yl, 2,5-diphenyl tetrazolium bromide assay for 3 days. The more abundant of –NH2 group exist in PAMAM(G3) dendrimer attracts more number of HAp molecules onto their surface which exhibits enhanced activity in cell proliferations even at higher concentrations. © 2019, The Polymer Society, Taipei.

Author Keywords
Bone tissue engineering; Carbon nanotubes; Dendrimer; Hydroxyapatite; Nanohybrids

Index Keywords
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Abstract
Migraine is characterized by headache due to imbalance between excitation and inhibition of neurons disabling normal day to day activities. The excitations of neurons are done by excitatory neurotransmitter glutamate which plays the key role in creating any pathology related to neurons. This study was done to identify GluR1 a subunit of AMPA glutamate receptor in the cells of trigeminal ganglion after inducing migraine and compare it with control rats. The GluR1 subunits were localized in the cytoplasm of neurons, and these subunits were up-regulated following a migraine. The GluR1 was also localized in satellite glial cells and nerve fibers, indicating these subunits expressed in neurons and migrate during nociceptive sensitization. This GluR1 expression in the cells of trigeminal ganglion may be crucial in nociceptive sensitization leading to migraine and other painful conditions like trigeminal neuralgia. © International Journal of Research in Pharmaceutical Sciences.

Author Keywords
AMPA; Glutamate; Migraine; Sensory ganglion

Index Keywords
AMPA receptor, GluR1 subunit, glyceryl trinitrate, receptor subunit, unclassified drug; animal experiment, animal model, animal tissue, Article, brain tissue, comparative study, controlled study, headache, immunohistochemistry, migraine, nerve cell plasticity, nerve cell stimulation, nerve fiber, nociception, nonhuman, protein expression, protein localization, rat, satellite glial cell, trigeminus ganglion, upregulation

Chemicals/CAS
glyceryl trinitrate, 55-63-0, 80738-44-9

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Morphometric analysis of greater sciatic notch and its correlation to sexual dimorphisim in adult pelvic bones

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Abstract
To identify the sex determination of an unknown person from the skeleton remains the first and primary important step come across by the anatomical, forensic and archaeological experts. Many researchers have considered various morphometric parameters for sex determination using hip bone. The current study was carried out to identify the sex of hip bone using various dimensions of the greater sciatic notch. Adult hip bones of a known person were studied and evaluated. The hip bones were assessed using various parameters. The posterior segment, posterior angle and index II of a hip bone were found to be more helpful in sex determination. © International Journal of Research in Pharmaceutical Sciences.

Author Keywords
Archaeologist; Differentiation; Greater sciatic notch; Morphometric; Sexual dimorphism

Index Keywords
adult, article, human, pelvic girdle, sex difference

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Effects of riluzole on Nr2B subunits of NMDA receptors in rat migraine model

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Abstract
Migraine, a major public health problem, occurring due to the consequences of serial multi-pathophysiological changes in the trigeminal nerve ganglion leading to an imbalance in the excitation and inhibition. The glutamate is the major excitatory neurotransmitter in the central nervous system, causing excitotoxicity to the sensory neurons leading to sensitization and nociception. The present study was done to determine the effects of Riluzole on the Nr2B subunits of NMDA receptors after inducing a migraine. The rats were treated with Riluzole after inducing migraine with nitroglycerin 10mg/kg. The nitroglycerin treated rats showed intense staining for NR2B subunits, and there was a decrease in the expression after Riluzole treatment. This study concludes that the NR2B subunits are upregulated during migraine and Riluzole can be used to control those upregulations by its neuroprotectant property. © International Journal of Research in Pharmaceutical Sciences.

Author Keywords
Glutamate; Headache; Migraine; NMDA; Riluzole

Index Keywords
calcitonin gene related peptide, glutamate receptor, glutamate transporter, glutamic acid, glyceryl trinitrate, n methyl dextro aspartic acid receptor, n methyl dextro aspartic acid receptor 2B, neuropeptide, reactive oxygen metabolite, riluzole, sodium channel, substance P, voltage gated calcium channel; animal experiment, animal model, animal tissue, Article, calcium transport, controlled study, depolarization, face pain, glia
cell, immunohistochemistry, immunolocalization, male, migraine, neuropathic
pain, neuroprotection, nociception, nonhuman, postsynaptic inhibition, presynaptic inhibition, protein expression, rat, spinal ganglion, trigeminus ganglion, upregulation

Chemicals/CAS
calcitonin gene related peptide, 83652-28-2; glutamic acid, 11070-68-1, 138-15-8, 56-86-0, 6899-05-4; glyceryl trinitrate, 55-63-0, 80738-44-9; riluzole, 1744-22-5; substance P, 33507-63-0

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A review on the neuroprotective effect of nelumbo nucifera seed pod

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Abstract
Receptaculum Nelumbinis, the dried seed pod of Nelumbo nucifera, exhibited good efficacy for improving learning and memory abilities. Earlier, studies revealed that Receptaculum Nelumbinis can exert therapeutic effects in diverse disorders like heart failure, neoplasm via anti-oxidative, anti-inflammatory and anti-proliferative activities. In the central nervous system (CNS), Receptaculum Nelumbinis (RN) also has beneficial effects on various disorders, such as Alzheimer's disease (AD), depression, Parkinson's disease (PD), cerebral ischemia, epilepsy, and Huntington's disease (HD). RN also enhances memory and cognition ability of rodents in dissimilar pathological conditions, such as stress exposure, diabetes, aging and high-fat diet (HFD). The effect of noise stress on exploratory, locomotor, and anxiolytic activity in the open-field behavior (OFB) test and the effect of drug RN and active component quercetin, a flavonoid isolated from seedpod in overcoming these changes. Optimistically, getting a vibrant impression concerning the role of RN in the CNS, the present paper summarizes and discusses the pharmacological effects of RN as well as its possible mechanisms in CNS disorder prevention and or therapy. © International Journal of Research in Pharmaceutical Sciences.

Author Keywords
Memory enhancement; Neuroprotection; Quercitin; Receptaculum nelumbinis

Index Keywords
Nelumbo nucifera extract; acoustic stress, Alzheimer disease, antiinflammatory activity, antioxidant activity, antiproliferative activity, Article, brain ischemia, depression, diabetes mellitus, drug efficacy, epilepsy, heart failure, human, Huntington chorea, in vitro study, lipid diet, memory disorder, Nelumbo nucifera, neuroprotection, nonhuman, Parkinson disease, plant seed, pod, therapy effect, tranquilizing activity

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Changes in the Nitric Oxide System Contribute to Effect of Procyanidins Extracted from the Lotus Seedpod Ameliorating Memory Impairment in Cognitively Impaired Aged Rats
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Hepatoprotective effect of vitamin A and E on diclofenac-induced hepatotoxicity in male wistar albino rats
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Abstract
This study was done to show the changes in the liver following diclofenac treatment and to study the hepatoprotective effects of Vitamin E and A in diclofenac treated rats. Rats were divided into four groups of six rats each. Group-1: Control rats (n= 6), Group-2: Rats (n= 6) treated with diclofenac at dose of 50 mg/kg IM for 7 days, Group-3: Rats (n= 6) treated with Vitamin A at dose of 400 IU/kg orally followed by diclofenac at 50 mg/kg IM 2 h later for 7 days, and Group 4: Rats (n= 6) treated with Vitamin E at dose of 200 IU/kg orally followed by diclofenac at 50 mg/kg IM 2 h later for 7 days. Later it was analysed with standard bio markers, and it was histologically interpreted. The results showed that there was an rapid increase in the levels of liver function test in diclofenac-treated group, which was significantly decreased after pre-treatment with vitamin E than vitamin A. The liver acinus showed cen-triacinar necrosis of hepatocytes after 7 days of diclofenac treatment, which was prevented by administration of Vitamin E and A. Drug-induced liver injury possesses a major clinical problem and has become a leading cause of acute liver failure and transplantation. Although the exact mechanism by which diclofenac injuries in the liver is not understood, some studies explain the toxicity by affecting cytochrome P 450, leading to the production of active metabolites. Hepatoprotective effects of Vitamin E were better compared to Vitamin A following treatment with NSAIDS. Hence, it may be necessary to administer Vitamin E in patients treated with diclofenac. © 2019 Pharmascope Publications. All rights reserved.

Author Keywords
Diclofenac; Hepatotoxicity; Osteoarthritis; Vitamin A and Vitamin E

Index Keywords
alanine aminotransferase, alkaline phosphatase, alpha tocopherol, aspartate aminotransferase, bilirubin, catalase, electrolyte, glutathione, glutathione peroxidase, glutathione reductase, malonaldehyde, protein, retinol, superoxide dismutase, thiobarbituric acid reactive substance; animal experiment, animal model, animal tissue, antioxidant activity, Article, blood biochemistry, blood sampling, controlled study, experimental liver injury, histopathology, liver function test, liver protection, liver tissue, liver toxicity, male, nonhuman, rat

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alanine aminotransferase, 9000-86-6, 9014-30-6; alkaline phosphatase, 9001-78-9; alpha tocopherol, 1406-18-4, 1406-70-8, 52225-20-4, 58-95-7, 59-02-9; aspartate aminotransferase, 9000-97-9; bilirubin, 18422-02-1, 635-65-4; catalase, 9001-05-2; glutathione, 70-18-8; glutathione peroxidase, 9013-66-5; glutathione reductase, 9001-48-3; malonaldehyde, 542-78-9; protein, 67254-75-5; retinol, 68-26-8, 82445-97-4; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1

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Antioxidant effects of vitamin E on diclofenac-induced hepatotoxicity in male rats

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Abstract
Drug-induced liver injury possesses a major clinical problem and has become a leading cause of acute liver failure and transplantation. Overstressed liver compromises its detoxification role, which may expose it to a variety of diseases and disorders.The present study was to determine whether pre-administration of various doses of vitamin E would have a protective effect against diclofenac-induced hepatotoxicity in Wistar male rats. Twenty-four albino male rats weighing 180-200g were divided equally into four groups. In control group rats were administrated with physiological saline 2ml/kg b.wt /intramuscularly. Another group with 50mg/kg b.wt/ intramuscularly/seven days diclofenac was used for inducing toxicity. In experimental groups, rats were administrated with different doses of vitamin E along with diclofenac sodium [200 and 400 IU orally and 50mg/kg b.wt/ intramuscularly/seven days]. Showed that there was a rapid increase in the levels of liver function test in diclofenac-treated group, which was significantly decreased after pre-treatment with high dose than low dose of vitamin E. Although the exact mechanism by with diclofenac injuries liver is not understood, some studies explain the toxicity by affecting cytochrome P 450, leading to the production of active metabolites. Administration of different dose of diclofenac sodium induces severe adverse effects in the liver and kidney. © 2019 Pharmascope Publications. All rights reserved.

Author Keywords
Diclofenac; Malondialdehyde; Vitamin E and liver

Index Keywords
alanine aminotransferase, albumin, alkaline phosphatase, alpha tocopherol, aspartate aminotransferase, bilirubin, catalase, cytochrome P450, diclofenac, glutathione, isoniazid, ketamine, rifampicin; alanine aminotransferase blood level, alkaline phosphatase blood level, animal cell, animal tissue, antioxidant activity, Article, aspartate aminotransferase blood level, calorimetry, central vein, cervical spine dislocation, controlled study, enzyme activity, histopathology, lipid peroxidation, liver cell, liver function, liver function test, liver hilus, liver injury, liver parenchyma, liver protection, liver sinusoid, low drug dose, male, metabolite, nonhuman, rat, toxic hepatitis, vein puncture, venous congestion

Chemicals/CAS
alanine aminotransferase, 9000-86-6, 9014-30-6; alkaline phosphatase, 9001-78-9; alpha tocopherol, 1406-18-4, 1406-70-8, 52225-20-4, 58-95-7, 59-02-9; aspartate aminotransferase, 9000-97-9; bilirubin, 18422-02-1, 635-65-4; catalase, 9001-05-2; cytochrome P450, 9035-51-2; diclofenac, 15307-79-6, 15307-86-5; glutathione, 70-18-8; isoniazid, 54-85-3, 62229-51-0, 65979-32-0; ketamine, 1867-66-9, 6740-88-1, 81771-21-3; rifampicin, 13292-46-1

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Effect of TiO2 and nozzle geometry on diesel emissions fuelled with biodiesel blends

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Abstract
In this present study, the compression ignition engine was designed to run on CIME (Calophyllum inophyllum methyl ester) biodiesel with nanoparticles. The TiO2 nanoparticle is added to the biodiesel in the form of nanofluid at concentration levels of 100 ppm whereas ethanox is added at levels of 100, 200 and 500 ppm. The nanoparticle and the ethanox are dispersed by the ultrasonication process. The addition of nanofluid reduces the particulate emission like nitrogen oxide (NOx) at 100% load. The efficiency is better and emission is reduced owing to the influence of explosion of water molecules present in the biodiesel. We found ethanox to be a superlative nanofluid to reduce the emission of toxic gas at appreciable levels. We have witnessed a 20% reduction in emission of NOx and 10% reduction of other particulate emission. In addition, the exit geometry of exhaust is modified from a circular shape to an elliptical one and the consequence of the geometry is calculated. © 2017, © 2017 Informa UK Limited, trading as Taylor & Francis Group.

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Characterization of failure mechanism in glass, carbon and their hybrid composite laminates in epoxy resin by acoustic emission monitoring

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Abstract
Fibre reinforced plastic (FRP) composites are being widely utilized in various industries because of their superior mechanical properties. Besides their advantages, failure of these composites can occur either by an individual or an associated of various failure modes which are very difficult to distinguish and discriminate the damages. This paper focuses on solving this issue, by characterizing the various failure modes in glass, carbon and their hybrid composite laminates in epoxy resin under uni-axial tensile loading with acoustic emission (AE) monitoring. AE data recorded during the testing of a pure-resin specimen and the single-layer specimen were used to identify the matrix cracking and debonding, respectively, whereas delamination was predominant in a two-layer specimen. The fibre failure was obtained from the resin impregnated single fibre strand. The parametric studies using AE amplitude, duration, AE cumulative counts, AE cumulative energy, rise angle (RA) and peak frequency were used to describe the damage mechanism of the different stacking sequence of glass fibre reinforced plastic (GFRP), carbon fibre reinforced plastic (CFRP) and their hybrid composite laminates. The mechanical parameter and AE parameter was successfully correlated for discrimination of damage mechanism. The individual failure mode of glass, carbon and their hybrid composite laminates with the most critical damage mechanisms and the time-to-failure were investigated. © 2019, © 2019 Informa UK Limited, trading as Taylor & Francis Group.

Author Keywords
acoustic emission; carbon fiber; failure modes; Glass fiber; hybrid composite laminates

Index Keywords
Acoustic emission testing, Acoustic emissions, Carbon fiber reinforced plastics, Carbon fibers, Epoxy resins, Failure modes, Fiber reinforced plastics, Glass fibers, Laminated composites, Paper laminates, Plastic laminates, Reinforced plastics, Reinforcement; Acoustic emission monitoring, Carbon fibre reinforced plastic (CFRP), Cumulative energy, Fibre reinforced plastic (FRP), Hybrid composite laminate, Mechanical parameters, Single layer specimens, Two-layer specimen; Failure (mechanical)

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A study on thoracic splanchnic nerves: Anatomo-surgical appraisal
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Abstract
Introduction: The thoracic splanchnic nerves greater, lesser, and least are derived from medial branches of the lower seven thoracic sympathetic ganglia; they carry preganglionic fibers, pierce the diaphragmatic crura, and supply the abdominal viscera through coeliac and aorticorenal plexus. These splanchnic nerves carry pain conducting visceral afferent fibers from the upper abdominal organs, including the pancreas. The origin of the splanchnic nerves from different roots may have a significant role in clinical presentation of patients than the normal or absence of consecutive nerve roots. Material and Methods: The study was done on 26 formalin-fixed cadavers (52 sides) from the Chettinad Hospital and Research Institute, Chennai, and University College of Medical Sciences, Delhi. The endothoracic tissue and the parietal pleura in the paravertebral region were carefully removed from the 1st rib to 12th rib (costodiaphragmatic recess). The thoracic sympathetic chain and its medial branches were traced from its origin to medial arcuate ligament. Any variations in the origin, formation, and communication of the splanchnic nerves were noted and photographed. Results: The origins of splanchnic nerves were bilaterally asymmetrical in most of the cases. The greater splanchnic nerve (GSN) was always present, whereas lesser splanchnic nerve and least splanchnic nerve were found to be absent in 40% and 80% cases, respectively. The GSN showed great variability both in the level of its origin and in the pattern of its formation. In the present study, four different patterns of GSN origin were observed in addition to normal. Discussion and Conclusion: Significant differences were noted in the formation and communication between the thoracic splanchnic nerves. The patterns in the formation were not only different from cadaver to cadaver but also were bilaterally asymmetrical. © 2020 Journal of the Anatomical Society of India | Published by Wolters Kluwer - Medknow.

Author Keywords
Chronic abdominal pain; splanchnic nerves; splanchnicectomy; sympathectomy

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Application of clustering techniques on statistical features of EEG signals for seizure detection
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Abstract
Epileptic seizure is the most predominant brain disorder that has affected at least 1% of the world's population and higher numbers are affected in the underdeveloped countries. The best marker for diagnosis of seizure is to analyse the EEG signals. The statistical parameters of EEG signals vary when there is an occurrence of seizure. In this paper the statistical parameter interquatile range and Mean absolute deviation are taken as features and are classified using unsupervised learning algorithms (clustering techniques). K-Mean, K-Centers, Parzen Classifier, K- Nearest Neighbour, Gaussian mixture model, and Naive Bayes classifier are put to test to find out the best suited algorithm. Among the methods used K-Nearest Neighbour gives the maximum accuracy of 100%, sensitivity and specificity of 1 for the given data followed by Parzen classifier with 98.02% of accuracy, and has a sensitivity of 0.96, specificity of 1.The Naieve bayes classifier with 96.71% of accuracy is the fastest algorithm with 0.019 ms and hence can be used for real time applications. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Clustering; Eeg signals; Epileptic seizure; Statistical features; Unsupervised learning

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Article, Bayesian learning, clustering algorithm, diagnostic accuracy, diagnostic test accuracy study, electroencephalography, false positive result, human, learning algorithm, mathematical phenomena, seizure, sensitivity and specificity, statistical analysis

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Performance of machine learning for lane detection

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Abstract
With the approach of the self supervised cars, the significance and exactness of path discovery has accomplished principal significance in the field of perception and imaging. In this paper, we propose a calculation to accomplish path recognition on streets utilizing the real-time data accumulated by the camera and applying K-means clustering method to report data in a way reasonable to make a feasible guide. The proposed method utilizes the physical way of the data to group the data. Silhouette coefficient is utilized to decide the quantity of groups in which the data ought to be partitioned. Paths are added to get the right markings. We show the adequacy of, the proposed method utilizing real-time activity data to commotion, shadows, and light varieties in the caught street pictures, and its materialness to both stamped and unmarked streets. © BEIESP.

Author Keywords
Field of Perception; K-Means Clustering Method; Real-Time Data; Silhouette Coefficient

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Enhances the capacity of load adjusting by improved load balancing methodology in p2p network
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Abstract
To upgrades the limit of load modifying by working up a novel enhanced load adjusting philosophy in heterogeneous P2P network with suitable load assignment and load reallocation process. We moreover propose another new adjusting procedure called two load adjusting strategy for peer to peer networks to make the best load designation assurance when a novel partner arrives. The new load adjusting method is also prepared to achieve the load reallocation immovably through framework running time, if congested peer arrives. In load altering estimation, no virtual servers are used. Subsequently, preparing overhead is diminished in light of restrictive meta-data preservation. Besides load adjusting additionally centers around controlling the framework action. The idea behind model is to investigate the impact of peer heterogeneity and to adjust the load dissemination in P2P frameworks. ©BEIESP.

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Load adjusting; Peer to peer; TLBMP

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Effective ways of finding adverse drug reactions in pharmacovigilance
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Abstract
With many adverse effects happening on population due to medic al drugs, there is driving need to find these effects and reduce it. Hence researchers are working on FDA_AERS, a real time database to find the adverse effect present in drugs. This field has developed as pharmacovigilance and data mining algorithm helps in improving the accuracy of clinical analysis. In this paper, growth of Pharmacovigilance in India and a novel way to find adverse drug reaction is proposed. ©BEIESP.

Author Keywords
Adverse Events; Data mining; Pharmacovigilance

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Feature specific optimal random forest algorithm for enhancing classification accuracy
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Abstract
Creature an ensemble method, Random Forest create numerous DTs as base classifiers and invoke larger part voting to consolidate the results of the base trees. In this exploration work an endeavor is made to improve execution of Random Forest classifiers as far as correctness and time required for erudition and classification. we first present another variety of Optimal irregular Forest reliant on a direct classifier, by then build up a group classifier subject to the blend of a brisk neural Network (NN), vector-utilitarian association arrange and Optimal arbitrary Forests. Arbitrary Vector have a rich close structure game plan with incredibly short preparing time. The observational assessment and consequences of tests finished in this investigation work lead to reasonable learning and arrangement using RF. ©BEIESP.

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Improved frequent item-sets mining in pharmacovigilance

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Abstract
Mining frequent item-sets is an important concept that deals with fundamental and initial task of data mining. Apriori is the most popular and frequently used algorithm for finding frequent item-sets which is preferred over other algorithms like FP-growth due to its simplicity. For improving the time efficiency of Apriori algorithms, Jiemin Zheng introduced Bit-Apriori algorithm with the enhancement of support count and special equal support pruning with respect to Apriori algorithm. In this paper, a novel Bit-Apriori algorithm, that deletes infrequent items during trie2 and subsequent tries are proposed which can be used in pharmacovigilance to identify the adverse event. © BEIESP.

Author Keywords
Adverse events; Data mining; Pharmacovigilance

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A metaheuristic algorithm for VLSI floorplanning problem

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Abstract
Floorplanning plays an important role within the physical design method of very large Scale Integrated (VLSI) chips. It's a necessary design step to estimate the chip area before the optimized placement of digital blocks and their interconnections. Since VLSI floorplanning is an NP-hard problem, several improvement techniques were adopted to find optimal solution. In this paper, a hybrid algorithm which is genetic algorithm combined with music-inspired Harmony Search (HS) algorithm is employed for the fixed die outline constrained floorplanning, with the ultimate aim of reducing the full chip area. Initially, B*-tree is employed to come up with the first floorplan for the given rectangular hard modules and so Harmony Search algorithm is applied in any stages in genetic algorithm to get an optimum solution for the economical floorplan. The experimental results of the HGA algorithm are obtained for the MCNC benchmark circuits. ©BEIESP.

Author Keywords
Genetic algorithm (GA); Harmony Search algorithm (HAS); Hybrid Genetic algorithm (HGA); Slicing floorplan

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Abstract
The medical image processing is extensively used in several areas. In earlier detection and treatment of these diseases is very helpful to find out the abnormality issues in that image. Here there are number of methods available for diagnosis to detect the brain tumor of MRI image. This study deals with there are two main contributions are implemented in this filter method. (1)The extension of adaptive bilateral method to apply sub-bands of low frequency signal decomposed using wavelet transform. A wavelet threshold is combined with adaptive bilateral method to form an innovative structure in image de-noising method. It's very efficient to eliminate noise in original noisy images. (2) First detected block boundary and texture regions discontinuities to adapt or control the parameters of spatial and intensity in bilateral filter. The adaptive method can improve the restored image quality in this test result compared with standard bilateral filter. The proposed segmentation technique uses novel strip method and the image is split into number of strips 3, 4, 5 and 6. Using a hybrid Assured Convergence PSO (ACPSO) and Fuzzy C-Mean Clustering (FCM) was proposed method. The segmentation algorithm presented in this research gives 95% of accuracy rate to detect brain tumor when strip count is 5. In this research work presented a feature vector using a different statistical texture analysis of brain tumor from MRI image. The statistical feature texture is computed using GLCM (Gray Level Co-occurrence Matrices) of Brain Nodule structure. For this research work, the brain nodule segmented using strips method to implemented marker watershed image segmentation based on PSO (Particle Swarm Optimization) and Fuzzy C-means clustering (FCM). Furthermore, the four angles 0o, 45o, 90o and 135o are calculated the segmented brain image in GLCM. The four angular directions are calculated using texture features are correlation, energy, contrast and homogeneity. The accuracy rate of previous method was compared and proved the proposed method an Assured Convergence Particle Swarm Optimization (ACPSO)-Fuzzy C-Mean (FCM) and using SVM classification technique is suitable for the early detection of brain tumor. In proposed, a tumor extraction is improved in ASPSO-FCM and SVM classification with better accuracy rate of 95.31%. © Blue Eyes Intelligence Engineering & Sciences Publication.

Author Keywords
Bilateral; FCM; GLCM; PSO; SVM

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Devendranath Reddy, V.[a] , Fabiyola Kavitha, S.[b]

Apparel customer loyalty determination using retail servqual and store reputation - A SEM research
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Abstract
Customer loyalty is a buzzing word in this multifaceted business state of affairs. Deriving loyalty is not so effortless. Apparel sector is a trend oriented industry. Retail apparel sectors facing sturdy competition in the industry, however it remains healthy. The researcher wants to find out the responsible factors of apparel customer loyalty in Chennai city. Research gap The Researcher has validated the Dabholkar et al (2000) to derive the apparel customer loyalty as a outcome variable while store reputation serves as a mediating variable. Earlier studies concentrated on validating Retail service quality model on Apparel Customer Satisfaction. Methodology Selected Retail outlets were chosen and 276 samples was obtained using mall intercept method. Structural path was constructed by the researcher using Dabholkar et al (2000). Store Reputation is the mediating variable between loyalty and RSQL constructs. Findings The researcher found strong relation between Service quality constructs and loyalty while store reputation serves as a mediation variable. However store policy is having direct relationship with loyalty intention of the apparel customer. © BEIESP.

Author Keywords
Customer Loyalty; Retail Apparel; Retail Service Quality; Structural Equation Modeling

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Smart fast motion estimation processors

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Abstract
This Paper displays an adaptable and versatile movement estimation processor fit for supporting the handling prerequisites for top notch (HD) video utilizing the H.264 Advanced Video Codec, which is appropriate for FPGA execution. This paper dependent on General Purpose processor plan for movement estimation process. Quick movement estimation calculation with full pursuit calculation and precious stone hunt calculation. Where the two calculations have been executed in a solitary processor. So client can powerfully pick as per best execution. A client can choose the alternative of video quality at run time. In contrast to most past work, our center is enhanced to execute all current quick square coordinating calculations, to coordinate or surpass the between casing expectation execution of full-seek approaches at the HD goals generally being used today. Different tale movement estimation designs have been proposed all through the writing for dealing with the high data transfer capacity imperative nature of Video Broadcasting. A High precision full pursuit fixed square inquiry calculation is used to lessen the general transmission capacity and power prerequisite for transmitting live video arrangements. Despite the fact that full hunt guarantees high exactness, it tradeoffs its calculation time for precision. So the precision advantage is emphatically obscured by working velocity. To supplant the Full inquiry calculation another Modified Diamond seek calculation has been proposed with best precision and streamlined movement estimation length. Execution assessment of FBS Full hunt and Diamond look will be thought about for future investigation. © Blue Eyes Intelligence Engineering & Sciences Publication.

Author Keywords
Diamond search,fixed block search; FPGA; Full search; Motion estimation; Variable block search; Video codec

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Abstract
Recent video surveillance system provides a path to continuously monitor any place at any time. In addition IP based surveillance system helps to monitor the place remotely through wide area network. Here the system is designed such that the camera which captures the video act as the front end and the computer which helps as to view the details acts as the client of the system. The main aim of this paper is to increase the resolution of the video in the system and to reduce the transmission time of the IP based video surveillance system. In this system we use IP camera to capture the scene and a field programmable gate array (FPGA) is connected to the local server through the IP network.The FPGA used here is programmed to process the captured video and operates towards effective data transmission in IP network. The algorithms like connected component labeling, background modeling is analyzed along with High Efficiency Video Coding (HEVC) to enhance the quality of the video captured. In futureon updating the designed model Using WAP structure the cell phones can be used for the client side of the system.As expected due to the introduction of efficient video coding and IP networking the transmission time is highly reduced in our proposed system. © Blue Eyes Intelligence Engineering & Sciences Publication.

Author Keywords
FPGA; HEVC; Image enhancement; Video surveillance

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Gawade, J.[a] , Parthiban, L.[b]

An experimental technique on features extraction for product feedback using opinion mining
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Abstract
Now a days with increased use of social media, user reviews on any product plays a significant role. The existing opinion mining techniques operate only on single review corpus; it doesn't consider distribution of opinion features across different corpora. A new technique is proposed to extract opinion features from online reviews across two corpora, one a given review corpus and other is contrasting corpus. This discrepancy is evaluated using domain relevance. The first step is to find candidate opinion features in domain review corpus using syntactic dependence rules. This evaluate intrinsic domain relevance scores for each candidate on domain-dependent corpora and extrinsic domain relevance score on domain-independent corpora. A candidate features which are less generic and more domain specific are the final opinion features. This interval thresholding is called as the intrinsic and extrinsic domain relevance. ©BEIESP.

Author Keywords
Candidate feature; Corpus; Domain relevance; Opinion feature; Opinion mining; Syntactic rules

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Single patch antenna with multiple feed

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Abstract
In this article single patch antenna with multiple feed lines is presented. The antenna is tested with four ports each separated at 90 degrees. The ports separated at 180 degrees have the same effects and same polarisation. The S-parameter of port 1 and port 2 are same due to horizontal polarisation then port 2 and port 4 are same due to vertical polarisation. The Port 1 and Port 3 resonates at frequency of 2.092GHz and 4.563GHz. It covers applications of UMTS (1.885GHz-2.2 GHz) and C band (4 GHz – 8GHz). The Port 2 and Port 4 resonates at frequency of 1.66GHz and 5.155GHz. It covers applications of GPS (1.565GHz – 1.665GHz) and WLAN (5 GHz – 6 GHz). The return loss of the frequencies is less than10dB. The isolation among the ports are less than 15 dB. © BEIESP.

Author Keywords
Microstrip Antenna; Patch Antenna; Rectangular Patch and Multiple Feed Antenna

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Mohammad, H.[a] , Prabhu, K.[a] , Rao, M.R.K.[b] , Sundram, L.[c] , Dinakar, S.[d] , Sathish Kumar, M.[e] , Vijayalakshmi, N.[b]

The gas chromatography-mass spectrometry study of one ayurvedic pain relieving oil "Mahamasha Thailam"
(2019) *Drug Invention Today*, 12 (7), pp. 1524-1527. Cited 14 times.

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Abstract
Objective: The aim of the study is to understand the efficacy of Ayurvedic medicine by subjecting it to gas chromatography-mass spectrometry (GC-MS) analysis. This knowledge could help in finding the molecules that are of medicinal importance. Materials and Methods: Mahamasha Thailam was bought from a Standard Ayurvedic vendor at Chennai and subjected to GC-MS analysis by standard procedures. Results: The GC-MS results indicated the presence of some important molecules such as n-Hexadecanoic acid, n-Decanoic acid, 2,6-Difluoro-3-methylbenzoic acid, 2,3-dichlorophenyl ester, propane, and 2-methoxy-2-methyl-, which have medicinal roles supporting the pain reliving role of Mahamasha Thailam. Conclusions: GC-MS results indicated that the medicinal roles of some of the important molecules augur well with the activity of Mahamasha thailam. The roles of some other molecules such as 1-Heptanol, 2,4-diethyl-, Cis-3-ethyl-endo-tricyclo[5.2.1.0(2.6)]decane, 3-Octyne, 2,2,7-trimethyl-, 1,3-Benzodioxole, 5,5′-(tetrahydro-1H,3H-furo[3,4-c]furan-1,4-diyl)bis-, [1S-(1.alpha.,3a.alpha.,4.beta.,6a.alpha.)]-, and 1,3-Dioxolane-2-methanol are not reported yet. © 2019 JPR Solutions. All rights reserved.

Author Keywords
2,3-dichlorophenyl ester; 2,6-Difluoro-3-methylbenzoic acid; 2-methoxy-2-methyl-; Ayurvedic; Gas chromatography-mass spectrometry; Mahamasha Thailam; N- Decanoic acid; N-Hexadecanoic acid; Propane

Index Keywords
2 methoxy 2 methyl, 2,3 dichlorophenyl ester, 2,6 difluoro 3 methylbenzoic acid, analgesic agent, ayurvedic drug, mahamasha thailam oil, n decanoic acid, n hexadecanoic acid, propane, unclassified drug; Article, drug efficacy, mass fragmentography

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Association of myo1h gene polymorphism in mandibular retrognathism in south indian dravidian population
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Abstract
Recently Myosin 1H gene has been implicated in mandibular retrognathism. But the quantitative influence of Myosin 1H polymorphism on mandibular retrognathism is yet unexplored. This study was conducted to understand the role of Myosin 1H single nucleotide polymorphisms in mandibular retrognathism using South Indian Dravidian population as samples. Lateral cephalograms were obtained from retrognathic and normal individuals and related to genotype to study the power of association between them. Definite influence of gene make up is seen on muscle growth and in turn mandibular retrognathism but quantitative association could not be determined due to possible over shadowing influence of cybernetics. In future studies considering gene- environment interactions should be investigated to estimate the overall risk of a large sample size to clarify the association of MYO1H gene in causing true mandibular retrognathism. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Gene association; Mandibular retrognathism; MYO1H gene

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myosin subfragment 1; adolescent, adult, agar gel electrophoresis, Article, cephalometry, controlled study, DNA extraction, DNA polymorphism, Dravidian people, female, gene, gene sequence, genetic association, genetic variability, genotype, human, India, major clinical study, male, mandible, muscle growth, MYO1H gene, restriction fragment length polymorphism, retrognathia, single nucleotide polymorphism

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Amudhan, A.[a] , Punitha, V.C.[b] , Manigandan, T.[a] , Sarumathi, T.[a] , Krishna Prasanth, B.[c]

Non-syndromic, non-familial hyperdontia of both maxillary and mandibular region-a case report
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Abstract
Hyperdontia had been reported with certain syndromes but hyperdontia in a non-syndromic individual are not commonly found and reported. The etiology of non-syndromic hyperdontia was not clearly known. This paper reports a case with multiple supernumerary and Supplementary teeth presents bilaterally. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Non-syndromic hyperdontia; Supernumerary teeth; Supplementary teeth

Index Keywords
adult, Article, bilateral non syndromic hyperdontia, case report, clinical article, cone beam computed tomography, familial hyperdontia, follow up, human, male, mandible, molar tooth, periodontal examination, permanent tooth, tooth disease, young adult

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An efficient feature specific neural network for multi class classification

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Abstract
There has been global resurgence of interest in herbal drugs in the recent past. Though herbal medicines are effective in the treatment of various ailments very often these drugs are unscientifically exploited or improperly used. Therefore, these herbal drugs deserve detailed studies in the light of modern medicine. In spite of synthetic drugs, herbal drugs have their place in therapy. Their effectiveness, low-cost and comparative freedom from serious toxic effects makes these medicines not only popular but also an acceptable mode of treating diseases even in modern times. Medicinal plants are those plants that are used in treating and preventing specific and human has been using herbs for generations around the world, due to charm needed to cure the disease, many people have come to the conclusion that even chemical drugs their answers may already be sick of these medications may be harmful for health them in the future. Still, the use of plants as a source of medicine is very much important for human beings. Identify medicinal and how to use them is so important. © 2019, Blue Eyes Intelligence Engineering and Sciences Publication. All rights reserved.

Author Keywords
Degeneration; Drugs; Macromolecules; Toxicity

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Comparison of marginal discrepency between simulated crowns cast with imported and indigenous alloy-an in vitro analysis

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Abstract
Various factors are responsible for the success of a Ni-Cr prosthesis. Marginal fit or Integrity is one. The close adaptation of the margin of the prosthesis with the finish line of preparation leads to good Marginal Integrity This study compares the marginal integrity between an imported Ni-Cr alloy and an indigenous Ni-Cr alloy. There is no significant difference in mean values of vertical marginal opening between Indigenously and Imported alloy at “As-cast-fit” stage. The mean value of vertical marginal openings of both alloys after opaque, Body-enamel and Glaze firings are comparable (No significant difference). © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Marginal fit; Marginal integrity; Metal ceramic restoration

Index Keywords
chromium, dental alloy, nickel; Article, comparative study, dental casting, dental marginal adaptation, enamel, in vitro study, prosthodontics, statistical analysis

Chemicals/CAS
chromium, 16065-83-1, 7440-47-3, 14092-98-9; nickel, 7440-02-0

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Effect of rice processing towards lower rapidly available glucose (RAG) favors Idli, a South Indian fermented food suitable for diabetic patients

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Abstract
The Asian food pattern primarily embraces rice and rice-based products, which mainly comprise 90% starch. Amongthese various food products, Idli is mostly prepared through fermentation. It has high palatability, and the rapid and highly digestible nature of the food product results in a higher post-glucose level in diabetic patients. A heat-treated Idli rice sample was prepared by roasting parboiled rice at the temperature range of 155 to 165°C for 65 to 75 s. Idli/rice-based Dokala made from heat-treated rice is better when compared to untreated rice in terms of its microbiological profile and physiochemical properties. The proximate composition of heat-treated parboiled rice Idli/Rice Dokala showed slightly higher values than the untreated parboiled rice Idli/Rice Dokala, which reveals that it has marginally higher nutritive value. Determination of the Rapidly Available Glucose (RAG) and Slowly Available Glucose (SAG) values, SEM analysis, resistant starch analysis, microbial assay, and in vivo studies were performed to determine the glycemic index (GI) and glycemic load in normal and diabetic persons. Sensory analysis also proved that heat-treated Idli/Rice Dokala is superior to untreated based on the color, flavor, appearance, taste, and texture. © 2019 by the authors. Licensee MDPI, Basel, Switzerland.

Author Keywords
Glucose level; Glycemic index; Heat treatment; Idli/Dokala—Indian food product; RAG; Rice; SAG

Index Keywords
amylase, amylopectin, carbohydrate, fat, fructose, glucan 1,4 alpha glucosidase, glucose, insulin, starch, triacylglycerol, biological marker; body weight, cardiovascular disease, cholesterol blood level, diabetes mellitus, fermentation, fermented product, food intake, food processing, glucose blood level, glucose metabolism, glycemic index, glycemic load, human, hyperglycemia, hyperinsulinemia, incidence, insulin sensitivity, intestine flora, metabolic parameters, non insulin dependent diabetes mellitus, nutritional value, obesity, protein degradation, rapidly available glucose, Review, rice, sensory analysis, slowly available glucose, transmission electron microscopy, blood, diabetes mellitus, diabetic diet, food control, food handling, glycemic index, metabolism, microbiology, Oryza; Biomarkers, Blood Glucose, Diabetes Mellitus, Diet, Diabetic, Fermentation, Fermented Foods and Beverages, Food Handling, Food Microbiology, Glycemic Index, Glycemic Load, Humans, Oryza

Chemicals/CAS
amylase, 9000-90-2, 9000-92-4, 9001-19-8; amylopectin, 9037-22-3; fructose, 30237-26-4, 57-48-7, 7660-25-5, 77907-44-9; glucan 1,4 alpha glucosidase, 9032-08-0; glucose, 50-99-7, 84778-64-3; insulin, 9004-10-8; starch, 9005-25-8, 9005-84-9; Biomarkers; Blood Glucose

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An efficient routing protocol based on polar tracing function for underwater wireless sensor networks for mobility health monitoring system application

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Abstract

In recent times, Underwater Wireless Sensor Networks (UWSNs) have involved various applications in oceanographic data collection, pollution revealing, environmental monitoring, offshore exploration, disaster prevention, military surveillance, etc. nevertheless the unique characterization of UWSNs are designed for the grid division on geographical system with polar tracing function to attain the shortest- path and minimizing the energy consumption for end – to – end transmission. In this paper, we proposed a Grid Division Polar Tracing (GDPT) routing protocol function using greedy algorithm for reducing the energy consumption by incorporating into cubic grids and polar tracing functions. The NS2 simulation results proved that the optimal distance of the found path, packet delivery ratio, network lifetime, energy consumption and propagation delay are the performance metrics in the routing protocols. In proposed case used for application of underwater sensor based health monitoring system for wireless in under water environment. © 2019, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords

Network lifetime; Residual energy, health monitoring; Routing; Underwater Wireless Sensor Networks

Index Keywords

algorithm, Article, depth based routing, ecosystem monitoring, energy consumption, feedback system, focused beam routing, mathematical parameters, vector based forwarding, devices, environmental monitoring, immersion, sea, wireless communication; Algorithms, Environmental Monitoring, Immersion, Oceans and Seas, Wireless Technology

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Jac Fredo, A.R.[a] , Abilash, R.S.[b] , Femi, R.[c] , Mythili, A.[d] , Kumar, C.S.[e]

Classification of damages in composite images using Zernike moments and support vector machines
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Abstract
In this work, the strength of the composite material is tested and the damages are classified using supervised method. The image is obtained from the front and rear sides of the composite material after applying 5 mm, 6 mm and 7 mm impingement. Initially, the images are filtered using anisotropic diffusion filter. Global and local damages in the structures are segmented using Fuzzy C-Means (FCM) clustering method. Geometrical features and Zernike Moments (ZM) are calculated from the delineated regions. The performance of the features is tested using Support Vector Machine classifier. Results show that the FCM with three and four cluster centres is able to segment the global and local damages respectively. The global damages due to different impinges are classified better compared to the local damages. The global damages in the rear side are able to classify better compared to the front side in both geometrical and ZM features. In the case of local damages, the rear side is able to classify better in 5 mm–6 mm and front side in 6 mm–7 mm. It is concluded that the features obtained from the ZM gives better accuracy in both global and local damages compared to the geometrical features. The image based analysis carried out on this work is able to classify the impairment in composite materials; this framework can be used in the industrial applications for the quantification of damages. © 2018 Elsevier Ltd

Author Keywords
Composite materials; Digital images; Fuzzy C-Means; Global and local damages; Support vector machines

Index Keywords
Cluster analysis, Composite materials, Fuzzy systems, Geometry, Image classification, Support vector machines; Anisotropic diffusion filters, Digital image, Fuzzy C mean, Fuzzy C means clustering, Geometrical features, Image-based analysis, Local damage, Support vector machine classifiers; Feature extraction

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Prime cordial labeling of HnK2 graph
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Abstract
Here in this paper, we prove that for n ≥ 3, the graphs HnK2, P(r.(HnK2)), C(r.(HnK2)) and S(r. (HnK2)) admits Prime Cordial Labeling. © 2019 Author(s).

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Square difference labeling of H - Graphs
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Abstract
The Hn graph (n ≥ 3), P(r, Hn),C(r, Hn), S(r, Hn), HnK1, corona of Hn graph with K2, Duplicating of all edges of Hn graph and the path union of r copies of HnK2 are Square difference graph. © 2019 Author(s).

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Arthy, J.[a] , Manimekalai, K.[b] , Ramanathan, K.[c]

Cube difference labeling of some special graphs
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Abstract
In this paper we prove the cube difference labeling of some special graphs such as arrow graphs (Ant), Double arrow graphs (DAnt), Pyramid Pyn, Hanging pyramid (HPyn), H-graph, Hn Pm, Hṅ K1,m̄ and Duplication of all edges of Hn are cube difference graphs. © 2019 Author(s).

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Documents

Ravichandran, A.T.[a] , Srinivas, J.[a b] , Manikandan, A.[c] , Baykal, A.[d]

Enhanced Magneto-optical and Antibacterial Studies of Bi1−xMgxFeO3 (0.0 ≤ x ≤ 0.15)) Nanoparticles
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Abstract
Mg-doped BiFeO3 (Bi1−xMgxFeO3 (0.00 ≤ x ≤ 0.15)) nanoparticles (NPs) have been successfully prepared by simple solution combustion method using urea as fuel. The obtained product was sintered at 550 °C for 2 h to get pure-phase formation. The as-prepared samples were characterized by powder X-ray diffraction (XRD), Fourier transform infrared (FT-IR), field emission scanning electron microscopy (FE-SEM), energy-dispersive X-ray spectroscopy (EDX), transmission electron microscope (TEM), ultraviolet–visible (UV-Vis) absorption, photoluminescence (PL) spectra, and vibrating sample magnetometer (VSM) analysis. Powder XRD study revealed that all products exhibit rhombohedral structure with pure-phase formation. The average crystallite size of the samples decreased from 56.25 to 46.15 nm with increasing the concentration of Mg (x = 0.00, 0.05, 0.10, and 0.15). Surface morphology of the samples were analyzed by FE-SEM and TEM micrograph techniques, and the grain distribution was not quite homogeneous and observed agglomeration of the particles, which is mainly due to the magnetic interaction among them. EDX analysis confirmed the presence of Bi, Fe, O, and Mg elements without any form of impurity peak in all products. PL spectra shows a high intense peak at 464 nm, which is attributed to blue emission. The saturation magnetization is enhanced with increasing Mg doping level at RT. Antibacterial activity of Bi1−xMgxFeO3 NPs was found to be enhanced with increase in Mg doping concentration as it causes a reduction in the grain size of the samples. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
Antibacterial activity; BiFeO3; Combustion route; Magnetic nanomaterials; Optical property; PL study

Index Keywords
Bismuth compounds, Combustion, Crystallite size, Enamels, Energy dispersive spectroscopy, Field emission microscopes, Iron compounds, Magnesium, Magnetic materials, Nanoparticles, Optical properties, Saturation magnetization, Scanning electron microscopy, Transmission electron microscopy, Urea, X ray diffraction; Anti-bacterial activity, BiFeO3, Energy dispersive X ray spectroscopy, Field emission scanning electron microscopy, Magnetic nanomaterials, Photoluminescence spectrum, PL study, Vibrating sample magnetometer; Magnesium compounds

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Gawade, J.[a b] , Parthiban, L.[a b]

An experimental analysis on opinion mining feature identification for product analysis
(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (8 SpecialIssue 3), pp. 82-86.

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Abstract
Opinion feature mining is also known as aspect mining used to take out users opinions, and attitudes towards a specific product, services and their characteristics. he most of the existing approaches to opinion feature extraction on mining patterns is only by using a single review corpus. his paper presents the new method to discover the opinion features from online reviews by taking out the difference in opinion feature statistics across two different corpora, one domain specific corpus and another is domain independent corpus (i.e. the contrasting corpus). Domain relevance is the measure which is used to capture the disparity. he domain relevance characterizes the relevant term from the text collection. Firstly, the sentences are extracted from the reviews. hen the POS agger is applied to separate out the nouns, noun phrases and adjectives. Next the candidate features are extracted by applying the syntactic rules designed for Standard English. For every candidate feature,the Intrinsic Domain Relevance (IDR) and Extrinsic Domain Relevance (EDR) scores are calculated by using Domain dependent and domain independent corpus respectively. a he interval threshold approach, called as IEDR Criteria is applied to confirm the final Opinion Feature in which the candidate feature having IDR score greater than IDR threshold, and EDR scores less than EDR threshold is checked . © BEIESP.

Author Keywords
Domain relevance; Opinion Feature; Opinion mining; Part-of-speech tagging

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Kavitha, P.[a] , Prabakaran, S.[b]

A novel hybrid segmentation method with particle swarm optimization and fuzzy c-mean based on partitioning the image for detecting lung cancer

(2019) *International Journal of Engineering and Advanced Technology*, 8 (5), pp. 1223-1227. Cited 203 times.

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Abstract
Recently, the medical image processing is extensively used in several areas. In earlier detection and treatment of these diseases is very helpful to find out the abnormality issues in that image. Here there are number of methods available for segmentation to detect the lung nodule of computer tomography (CT) image. The main result of this paper, the earlier detection of lung nodules using Pre-processing techniques of top-hat transform, median and adaptive bilateral filter was compared both filtering methods and proved the adaptive bilateral filter is suitable method for CT images. The proposed segmentation technique uses novel strip method and the image is split into number of strips 3, 4, 5 and 6. A marker-watershed method based on PSO and Fuzzy C-mean Clustering method was proposed method. Firstly, the input image was reduced noise reduction and smoothing and the filter image is using strips method and then the image is segmented by marker watershed method. Secondly, the enhanced PSO technique was used to locate the better accurate value of the clustering centers of Fuzzy C-mean Clustering. Final stage, with the accurate value of centers and the enhanced target function and the small region of the segmented object was clustered by Fuzzy C-mean. In segmentation algorithm presented in this paper gives 95% of accuracy rate to detect lung nodules when strip count is 5. ©BEIESP.

Author Keywords
Fuzzy C-mean; GLCM; Index Terms: Adaptive bilateral; Marker Watershed; PSO; SVM

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Kavitha, P.[a] , Prabakaran, S.[b]

Designing a feature vector for statistical texture analysis of brain tumor

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Abstract
This paper presented a feature vector using a different statistical texture analysis of brain tumor from MRI image. The statistical feature texture is computed using GLCM (Gray Level Co-occurrence Matrices) of Brain Nodule structure. For this paper, the brain nodule segmented using strips method to implemented marker watershed image segmentation based on PSO (Particle Swarm Optimization) and Fuzzy C-means clustering (FCM). Furthermore, the four angles 0o, 45o, 90o and 135o are calculated the segmented brain image in GLCM. The four angular directions are calculated using texture features are correlation, energy, contrast and homogeneity. The texture analysis is performed a different types of images using past years. So the algorithm proposed statistical texture features are calculated for iterative image segmentation. These results show that MRI image can be implemented in a system of brain cancer detection. © BEIESP.

Author Keywords
GLCM; MRI image; Texture features

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Peter, M.[a] , Fabiyola Kavitha, S.[b] , Santhosh, S.[a] , Jayarajan, C.K.[a]

Dynamic approach to improve the work life balance of IT employees
(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (8 S), pp. 613-615.

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Abstract
Work-life balance is a broad concept including proper prioritizing between "work" (career and ambition) on one hand and "life" (Health, pleasure, leisure, family and spiritual development) on the other. This initiative was aimed at encouraging employers to adopt flexible working arrangements such as job sharing, flexi-time, compressed hours and others, to help their employees to achieve a better balance between the demands of paid employment and those arising from their private life. © BEIESP.

Author Keywords
Stress; Work efficiency; Work life balance; Working hours

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Kastro, G.G.[a] , Wiselin, M.C.J.[b]

Design and analysis of stub loaded resonator

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Abstract
Microwave filters are an important component in front end receiver of microwave communication system. They are used for passing frequency components within a particular pass band and to reject the interfering signal outside of that operating frequency band. Their functionality also includes to reject the unwanted product from the output of the mixers and amplifiers, and to set the IF bandwidth of the IF receiver. Important parameters include cutoff frequency, insertion loss, out of the band attenuation rate measured in dB per decade of the frequency. Filters with sharper cutoff frequency provide more rejection for out of the band signals. Insertion loss, measured in dB, is the amount of attenuation seen by signal through the pass band of the filter. Size requirement for most of the Personal Communication Systems require filters to be compact in size and wideband. This work presents design of Microwave filters in Global System for Mobile and Wireless Local Area Network Bands. Afterwards, a detailed analysis for designing filters with these requirements in presented. First, a Conventional T Shape Bandpass Filter is presented. Consequently, A Modification in T Shape MicrostripBandpass Filter is presented with considerable size reduction. © BEIESP.

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Kavitha, P.[a] , Prabakaran, S.[b]

Adaptive bilateral filter for multi-resolution in brain tumor recognition

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Abstract
At present, the medical image processing is an important and development field. The various diagnosis of disease is CT, MRI and PET scanned image. These technologies are found to detect small defects in the human body. The main result of this paper, the earlier detection of brain tumor using Pre-processing techniques of median, bilateral and adaptive bilateral method was compared both filtering methods and proved the adaptive bilateral method is suitable method for MRI images. In Proposed, there are three main contributions are implemented in this filter method. (1)The extension of adaptive bilateral method to apply sub-bands of low frequency signal decomposed using wavelet transform. A wavelet threshold is combined with adaptive bilateral method to form an innovative structure in image de-noising method. It's very efficient to eliminate noise in original noisy images. (2) First detected block boundary and texture regions discontinuities to adapt or control the parameters of spatial and intensity in bilateral filter. The adaptive method can improve the restored image quality in this test result compared with standard bilateral filter. (3)The improvements of fast bilateral method using the combination of Gaussian filter. I proposed the various image resolution of adaptive bilateral method was proved better results. © BEIESP.

Author Keywords
Bilateral; Image de-noising; Median; MRI image; Wavelet thresholding

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Sasikumar, D.[a] , Saravanakumar, S.[b]

Encryption schemes & security issues in cloud computing
(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (8), pp. 2413-2415.

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Abstract
Cloud computing (CC) is the most recent innovation in the advanced globe. CC is the current innovation in the meadow of conveyed computing. The reception of innovation is developing step by step since it encourages the clients to use the checks during utilizing mutual puddle of assets with no the establishment of every product. Since CC accumulates the information and it's dispersed assets in the earth, security has turned into the primary obstruction what is obstructing the organization of cloud situations. There is few clients' utilized cloud to accumulate their own information, so information stockpiling security is necessary on the capacity medium. The real worry of cloud condition is security amid transfer the information on cloud server. Yet, security is the basic inhibitor that is looked by CC and it utilizes CC progressively troublesome. To take care of these issues, few encryption calculations which give security to the information put away on cloud. In this research work, an exertion is completed to analyze the security issues and also encryption calculations that give security to the cloud information. © BEIESP.

Author Keywords
Cloud computing; Issues in security and encryption schemes; Models of deployment

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Almessiere, M.A.[a b] , Slimani, Y.[a] , Güngüneş, H.[c] , Ali, S.[d] , Manikandan, A.[e] , Ercan, I.[a] , Baykal, A.[f] , Trukhanov, A.V.[g h i]

Magnetic attributes of NiFe2O4 nanoparticles: Influence of dysprosium ions (Dy3+) substitution

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Abstract
This paper reports the influence of dysprosium ion (Dy3+) substitution on the structural and magnetic properties of NiDyxFe2-xO4 (0.0 ≤ x ≤ 0.1) nanoparticles (NPs) prepared using a hydrothermal method. The structure and morphology of the as-synthesized NPs were characterized via X-ray diffraction (XRD), scanning and transmission electron microscope (SEM, and TEM) analyses.57Fe Mössbauer spectra were recorded to determine the Dy3+ content dependent variation in the line width, isomer shift, quadrupole splitting, and hyperfine magnetic fields. Furthermore, the magnetic properties of the prepared NPs were also investigated by zero-field cooled (ZFC) and field cooled (FC) magnetizations and AC susceptibility measurements. The MZFC (T) results showed a blocking temperature (TB). Below TB, the products behave as ferromagnetic (FM) and act superparamagnetic (SPM) above TB. The MFC (T) curves indicated the existence of super-spin glass (SSG) behavior below Ts (spin-glass freezing temperature). The AC susceptibility measurements confirmed the existence of the two transition temperatures (i.e., TB and Ts). Numerous models, e.g., Neel–Arrhenius (N–A), Vogel–Fulcher (V–F), and critical slowing down (CSD), were used to investigate the dynamics of the systems. It was found that the Dy substitution enhanced the magnetic interactions. © 2019, MDPI AG. All rights reserved.

Author Keywords
AC susceptibility; Magnetization; Microstructure; NiFe2O4; Spinel ferrites; Structure

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Meenakshi, C.M.[a] , Krishnamoorthy, A.[b]

The mechanical characterization of mono and hybrid fiber reinforced composites using experimental and finite element analysis methods

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Abstract
Fiber reinforced composites plays a major role in service sector and engineering field. This creates interest for the researchers towards natural fibers as reinforcement which is already a highly used reinforcement material in many of the non-structural applications. These materials are tailor-made materials with a different volume fraction of resin and fibers and the stacking sequence could be made unique for each application depends on the strength requirement. Therefore, whenever engineers try to use a new configuration the proposed laminate has to be tested for its mechanical performance, experimental testing of each new laminates is a time consuming and expensive process. This work is aimed at the comparison of mechanical performances of natural fiber, glass fiber and hybrid fibers reinforced with polyester resin. The laminates are prepared with flax and glass and also glass/flax hybrid fibers, their mechanical properties like tensile strength and flexural strength are experimentally tested and also analytically achieved using Finite element Analysis Method (ANSYS 16.2). All the tests are carried out on standard ASTM sized samples. The comparison shows analytical results are better than the experimental results and there is a deviation of 0.5 to 25% in the results between the two methods of testing. © TJPRC Pvt. Ltd.

Author Keywords
Experimental & FEA method; Fiber reinforced laminates; Mechanical properties

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Golden Renjith Nimal, R.J.[a] , Sivakumar, M.[b] , Esakkimuthu, G.[c]

An investigation on mechanical properties and microstructure of mg/al alloys using zn interlayer during diffusion bonding

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Abstract
The general prerequisites of a part in the mechanical, automobile and aviation have given many testing conditions. New materials can be found and manufactured to some valuable segments. This work is directed to get a better understanding and portrayal of the dispersion holding of comparative and different metals. This work goes for building up a basic strategy to get diffusion bonding joints at generally not ease. In diffusion bonding, two metal surfaces are united into contact at expanded temperatures under strain for a specific timeframe. It also aimed to obtain optimum parameters for diffusion bonding of zinc coating over aluminium alloy plate and magnesium alloy. These two metals are jointed inside the die after finishing surface treatment. Then the die is kept inside the diffusion bonding machine by varying the time, temperature, pressure by means of load. Diffusion bonding equipment is fabricated and verified with experiments so that it is capable of rendering accurate diffusion bonding joints with facilities to measure parameters and to investigate the super plastic diffusion bonding joints with interlayer. This method is devised to study the mechanical and metallurgical characteristics of the joint. © TJPRC Pvt. Ltd.

Author Keywords
Aluminium; Diffusion Bonding; Magnesium; Optical Microscope; SEM

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Manavalan, S.[a] , Balakrishnan, G.[b] , Ramasubramaniam, S.[c]

An effect of cobalt oxide nano additive with biodiesel blends using cidi diesel engine

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Abstract
Major research is focused on fuel consumption and emission reduction in the past years. There is growing interest on alternative fuels due to volatile fossil fuel price and depletion. Utilization of transition metal additive in nanocrystalline form helps the combustion in molecular level and also reduces emissions and fuel consumption values. To forms a stable nano fluid metal oxide additive is added to biodiesel and ultrasonicated. The single cylinder, air cooled, and constant speed kirloskar engine is chosen for experimental study. The performance studies indicated the increase in thermal efficiency of 1% because the better mixing resulting secondary atomization and disruption of primary droplet containing additive and burns completely. Nearly 60% emission reduction was observed for 100% biodiesel at full load. © TJPRC Pvt. Ltd.

Author Keywords
Alternative energy; Biodiesel; Engine characteristics; Jatropha Oil; Nanoparticle

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Photodynamic activity and DNA binding studies of Pd@SiO 2 core-shell nanoparticles in vitro
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Abstract
Metal-semiconductor core-shell type Pd@SiO 2 nanoparticles (NPs) were successfully synthesized by Stober's method and the product was characterized by UV–vis, XRD, FT-IR, SEM, HR-TEM and EDX techniques. In vitro Photodynamic activity and DNA binding studies of Pd@SiO 2 core shell nanoparticles were studied. Cell viability of the core-shell nanoparticles against HeLa cell line was screened by MTT assay after exposing at different light doses. The outcome of the present study indicates that the core-shell Pd@SiO 2 NPs are highly stable and exhibited strong photodynamic efficiency under LED light illumination in HeLa cells. The results indicated that SiO 2 supported on the surface of Pd NPs not only prevented the aggregation in addition exhibited remarkable photodynamic activity. © 2019 Elsevier B.V.

Author Keywords
Core-shell nanoparticles; DNA binding; HeLa cells; Pd@SiO 2; Photodynamic therapy

Index Keywords
palladium nanoparticle, silica nanoparticle, DNA, metal nanoparticle, photosensitizing agent, protein binding; absorption spectroscopy, animal cell, Article, cell viability, controlled study, DNA binding, energy dispersive X ray spectroscopy, female, Fourier transform infrared spectroscopy, HeLa cell line, high resolution transmission electron microscopy, human, human cell, illumination, in vitro study, nonhuman, photodynamic therapy, priority journal, scanning electron microscopy, Vero cell line, X ray diffraction, cell survival, chemistry, drug effect, metabolism, photochemotherapy, procedures, surface property; Cell Survival, DNA, HeLa Cells, Humans, In Vitro Techniques, Metal Nanoparticles, Photochemotherapy, Photosensitizing Agents, Protein Binding, Surface Properties

Chemicals/CAS
DNA, 9007-49-2; DNA; Photosensitizing Agents

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Investigation of the effects of Tm 3+ on the structural, microstructural, optical, and magnetic properties of Sr hexaferrites

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Abstract

SrTm x Fe 12−x O 4 (0.00 ≤ x ≤ 0.10) hexaferrites (HFs) are produced successfully using a sol–gel approach. The structural, optical, and magnetic properties are investigated. The hexagonal phase is confirmed for all the products. The magnetization is measured with respect to the applied magnetic field, M(H). The magnetic parameters including saturation magnetization M s , remanence M r , squareness ratio (SQR = M r /M s), coercivity H c , and magnetic moment n B are deduced at room (300 K; RT) and low (10 K) temperatures. It is shown that the ferrimagnetic nature and Tm 3+ substitutions lead to decreases in the magnetization and coercivity magnitudes. The results on magnetic properties are investigated extensively with respect to the structural and microstructural properties. The SQR values indicate the formation of a single magnetic domain for the x = 0.0 sample and a multi-magnetic domain structure for the Tm 3+ -substituted Sr HFs (x ≥ 0.02). The obtained H c values suggest that the produced HFs are promising candidates for potential magnetic recording applications. © 2019 The Authors

Author Keywords

Cation distribution; Hexaferrites; Magnetic properties; Mossbauer study; Optical study; Tm substitution

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Characterization of global and local damages in composite images using geometrical and Fourier-hu moment-based shape descriptors

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Abstract

In this work, damages in composite materials are characterized using geometrical and Fourier-Hu shape descriptors. Digital images are acquired from the front and rear sides of composite materials after 5-, 6-, and 7-mm indentations. An anisotropic diffusion filter is used to remove the noise and to smooth the digital images. The global and local damages in the composite materials are segmented using K-Means (KM) clustering. Geometrical features and Fourier-Hu-based moments are calculated from the extracted regions. The global and local damages due to different indentations are classified using random forest (RF). Results show that the KM is able to segment the global and local damages with cluster centers three and four, respectively. The Fourier-Hu moment suggested that the damage dimension is high in the rear side compared with the front side. The Hu moment performed better compared with using geometrical features to characterize the damages. RF with both geometrical and Fourier-Hu moments performed better than the individual features. The image-based analysis performed in this study concludes effective characterization of damages; this framework can be applied in the nondestructive evaluation of composite materials. Copyright © 2019 by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959

Author Keywords

Composite materials; Digital images; Fourier-Hu moments; Geometrical features; Global and local damages; Random forest

Index Keywords

Composite materials, Decision trees, Fourier transforms, Glass ceramics, K-means clustering, Nondestructive examination; Digital image, Geometrical features, Hu moments, Local damage, Random forests; Geometry

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Mixing characteristics of elliptical throat sonic jets from orifice and nozzle

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Abstract
Aerodynamic mixing characteristics of the elliptical throat of the convergent divergent nozzle with an identical circular exit of aspect ratio 3 were studied computationally and experimentally. To determine the aerodynamic characteristics during mixing, the pressure distribution and pressure profiles were calibrated along the major and minor axes. The pressure variation in the orifice and nozzle shows that the energy decay in the nozzle dissipates faster than the jet from the orifice. Moreover, we visualised the pressure oscillation of the nozzle and orifices is closer to each other. In addition to that, we have also seen that the energy decay of both jets is approximately close to one another. The mixing promoting capability decreases as the area of the elliptical throat and the pressure gradient of the nozzle decrease. The computational results are evaluated with experimental values. The jet bifurcation is captured using StarCCM+. © 2017, © 2017 Informa UK Limited, trading as Taylor & Francis Group.

Author Keywords
Core length; jet; nozzle; supersonic jet

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Aspect ratio, Jets, Mixing, Nozzles, Orifices; Aerodynamic characteristics, Computational results, Convergent-divergent nozzle, Core length, Mixing characteristics, Pressure oscillation, Pressure variations, Supersonic jets; Supersonic aerodynamics

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Layer-by-layer preparation and characterization of recyclable nanocomposite (CoxNi1−xFe2O4; X = 0.9/SiO2/TiO2)

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Abstract
Titanium dioxide (TiO2) nanocomposites have been extensively employed in many fundamental optoelectronic and photocatalytic applications due to their outstanding optical, electronic and chemical properties. In the present work, we introduce a simple layer-by-layer approach to design a magnetic TiO2 nanocomposite that could be easily recycled using an external magnetic field without affecting its quantum efficiency. The crystallinity, size, surface area, stability, morphology, purity and other optical, thermal and magnetic properties of the composite have been investigated. Surface topology, thickness and thermal conduction were also demonstrated by AC conductivity measurements at a specific temperature (55 °C). Our results revealed that the prepared composite has a semi-spherical concentric shape with an average size of about (123.4 nm), surface area of (46.13 m2/g) and zeta potential of (− 24.3 mV) as confirmed by HRTEM, surface area analyzer and zeta potential measurements. TGA and DSC analysis recorded the thermal stability of the composite up to (500 °C) while a band gap of about (3.35 eV) has been calculated. VSM analysis showed that the composite has good magnetic properties. Atomic force microscopy recorded a surface roughness of the composite of about (125 nm) while the average thickness was approximately (10.3 nm). Significant responses of the capacitance–voltage profiles in the employed Preisach model, have been also recorded. © 2019, Springer Science+Business Media, LLC, part of Springer Nature.

Index Keywords
Atomic force microscopy, Capacitance, Crystallinity, Energy gap, Magnetic properties, Magnetism, Morphology, Nanocomposites, Photocatalytic activity, Surface roughness, Thermodynamic stability, Titanium dioxide, Zeta potential; External magnetic field, Layer-by-layer approaches, Photocatalytic application, Surface area analyzers, Surface topology, Thermal conduction, Titanium dioxides (TiO2), Zeta potential measurements; TiO2 nanoparticles
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Enhanced magnetic property and antibacterial biomedical activity of Ce 3+ doped CuFe 2 O 4 spinel nanoparticles synthesized by sol-gel method

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Abstract
In the present study, spinel copper ferrite (CuFe 2 O 4) nanoparticles (NPs) doped with different concentrations of rare earth element (REE) Cerium (Ce 3+) ions were synthesized by the simple sol-gel combustion technique. REE Ce 3+ ions were successfully doped into the spinel lattice of CuFe 2 O 4 NPs without any distortion. It was analyzed that the influence of Ce 3+ ions on structure, surface morphology, magnetic behavior and antibacterial activities using different instrumental techniques such as powder XRD, SEM, EDX, TEM, SAED and VSM, etc. Powder XRD results and SEM images along with EDX techniques confirmed the spinel phase formation of pure and Ce 3+ doped CuFe 2 O 4 NPs with spherical shaped morphology without any other secondary phase impurity. It also was further confirmed by TEM and SAED analysis. The magnetic behavior of the Ce 3+ doped CuFe 2 O 4 NPs was recorded using the VSM technique at room temperature (RT). The magnetic characterizations have been altered by the addition of Ce 3+ ions in the CoFe 2 O 4 lattice. The antibacterial properties of Ce 3+ doped CuFe 2 O 4 NPs was found to be enhanced with increase in Ce 3+ concentrations as it cause a reduction in the grain size. © 2019 Elsevier B.V.

Author Keywords
Antibacterial biomedical activity; Magnetic nanoparticles; Powder XRD; Sol-gel combustion; Spinel CuFe 2 O 4

Index Keywords
Cobalt compounds, Combustion, Copper alloys, Copper compounds, Ferrite, Ions, Iron compounds, Magnetic materials, Nanomagnetics, Nanometals, Nanoparticles, Rare earths, Sol-gel process, Sol-gels, Synthesis (chemical), X ray diffraction; Biomedical activity, CuFe2O4, Magnetic nano-particles, Powder XRD, Sol-gel combustion; Cerium compounds

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Tailoring the dielectric properties of KDP crystals by shock waves for microelectronic and optoelectronic applications

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Abstract

In the present research article, authors report on tailoring the dielectric properties of potassium dihydrogen phosphate (KDP) crystals using supersonic shock waves that is proposed and demonstrated. The present experimentation involves an investigation of loading single pulse of shock waves with different Mach numbers such as 1.7, 1.9, 2.2, 2.4 and 2.5 on KDP crystals using shock tube. The crystalline nature and dielectric behavior of pre and post shock loaded KDP crystals are evaluated by PXRD and impedance analyzer techniques, respectively. Interestingly, shock wave loaded test materials show low dielectric constant compared to pre shock test crystal. Moreover, Mach 1.9 shock wave loaded test crystal shows the lowest dielectric constant compared to other Mach numbers and it is due to the reduction of lattice polarization and domain orientation changes. The experimental results clearly show that the test crystal can be a potential material for microelectronic and optoelectronic applications because it acquires low dielectric constant on shock exposure. © 2019 IOP Publishing Ltd.

Author Keywords

KDPcrystal; low dielectric constant; Mach number; microelectronic applications; shock tube

Index Keywords

Aerodynamics, Crystal orientation, Dielectric properties, Mach number, Microelectronics, Potassium compounds, Shock tubes; Dielectric behavior, KDPcrystal, Lattice polarization, Low dielectric constants, Microelectronic applications, Optoelectronic applications, Potassium dihydrogen phosphate crystals, Potential materials; Dielectric materials

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Efficacy of neck stabilization and postural correction exercise on pain, posture, disability, respiratory dysfuntions and mental status in desk job workers – A randomised controlled double blinded study

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Abstract

Objective: The study aims to analyse and compare the efficacy of neck stabilization exercise and postural correction exercise over conventional exercises on pain, disability, posture, Respiratory dysfunction in desk job workers with neck pain. Background of The Study: Neck pain is a common disorder mainly caused by awkward posture, tightness in both the neck and upper back muscles and prolonged sitting while using computers, twisting and bending of the trunk. Rounded shoulder is a condition characterized by protracted shoulder girdle from its normal. Imbalance between agonist and antagonist results in muscle imbalance affecting the cervical curvature resulting in pain. Materials and Methods: Once the study is approved by Institutional Review Board Ref no: IV C – 018 / PHYSIO / IRB /2017-2018 50 samples were selected from 60 volunteers based on the inclusion criteria. The study was conducted is the outpatient department of physiotherapy & took nearly 3months (Jan 2018 – May 2018) to complete the study.. Group A received Neck Stabilization exercise and postural correction exercise with deep breathing exercise. Group B received stretch and strengthening exercise with deep breathing exercise. Pre and post-test measured with NDI-Neck disability index, CSBQ-Cervical Spine Bournemouth Questionnaire, SEBQ-Self-Evaluation Breathing Questionnaire, DST-Double square test. Result: On comparing Pre-test and Post-test within Group A and Group B on Double Square Test(Right and Left), Neck Disability Index, Cervical Spine Bournemouth Questionnaire, Self-Evaluation of Breathing Questionnaire shows significant decrease in the post test Mean values but Group A which has the Lower Mean value is more effective than Group B at P ≤ 0.001. © RJPT All right reserved.

Author Keywords

Abnormal posture; Neck pain; Rounder shoulders; Stabilization and postural correction exercise; Upper cross syndrome

Index Keywords

abnormal posture, Article, body position, breathing exercise, Cervical Spine Bournemouth Questionnaire, comparative study, desk job worker, Double square test, exercise, functional status assessment, human, kinesiotherapy, mental health, Neck Disability Index, neck pain, neck stabilization exercise, postural correction exercise, respiratory tract disease, Self Evaluation Breathing Questionnaire, strengthening exercise, worker

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Prevalence and Predicators Of Musculoskeletal Disorders In Desk Job Workers
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Hepatoprotective effect of nigella sativa seed extract against isoniazid and rifampacin induced hepatotoxicity
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Abstract
Background: Current century with advanced medical care still holds Tuberculosis as a prevalent condition around the world. The context to default is the adverse effects faced by patients taking anti-tubercular drugs. The most perilous among the adverse effect is hepatotoxicity and can be ameliorated by the effect of Nigella Sativa seeds. Objectives: To study the hepatoprotective role of Nigella Sativa seed extract against Isoniazid and Rifampicin induced hepatotoxicity. Materials & Method: The animals were divided into three groups with six animals in each group. Group I served as normal control, Group II served as positive control and received Isoniazid and Rifampicin for 10days. Group III received Isoniazid and Rifampicin with Nigella Sativa seed extract 900mg/kg was given for 10days. Blood samples where sent for AST, ALP, ALT analysis and the liver tissue for histopathology studies. Results: Table 2 showed decrease in AST, APL,and ALT values in group III when compared with group II. Histopathology showed reduced hepatotoxic changes in group III when compared with group II. Conclusion: The hepatoprotective property of Nigella Sativa seed extract will be a new path for safer and effective Tubercular therapy in developed and developing countries. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Hepatoprotective; Isoniazid; Nigella Sativa seed; Rifampicin; Tuberculosis

Index Keywords
alanine aminotransferase, alkaline phosphatase, aspartate aminotransferase, isoniazid, Nigella sativa extract, rifampicin; animal experiment, animal model, animal tissue, Article, black cumin, controlled study, drug effect, histopathology, liver cell, liver parenchyma, liver protection, liver tissue, liver toxicity, lymphocytic infiltration, nonhuman, steatosis, venous congestion

Chemicals/CAS
alanine aminotransferase, 9000-86-6, 9014-30-6; alkaline phosphatase, 9001-78-9; aspartate aminotransferase, 9000-97-9; isoniazid, 54-85-3, 62229-51-0, 65979-32-0; rifampicin, 13292-46-1

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Consumer expectation in the performance of premium motorcycles with reference to Chennai City
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Abstract
The study was undertaken to find out the expectation level of premium motorcycle consumers with regard to the engine performance and design of the motorcycle which are the most prime factors to buy a high priced and high cubic centimeter motorcycle. © Blue Eyes Intelligence Engineering & Sciences Publication.

Author Keywords
Expectations; Factors; Preferences; Premium motorcycles

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Over edge detection evolution and challenges on pattern recognition
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Abstract
Pattern recognition places an important role in partitioning the higher than mentioned issues. Pattern recognition analysis is complete provided that it acknowledges distorted document, which is deficient within the present analysis works. In all image pattern recognition, process, analysis and PC vision techniques Edge detection plays major role. In recent past pattern recognition directly deals pc vision systems, orientation and intensity info concerning edges as primary input for more process to document identification. This review provides a summary of the literature on the sting detection ways for pattern recognition. © BEIESP.

Author Keywords
Character Recognition; Edge Detection; Image processing; Pattern Recognition

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Enhanced social media metrics analyzer using twitter corpus as an example
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Abstract
Social media is the collection of online communications channels dedicated to community-based input, interaction, content-sharing and collaboration. Websites and mobile applications dedicated to forums, microblogging, social networking, social bookmarking, social curation, and wikis are most popular and different types of social media. Social media become an essential part of human life. In business, social media is used to market products, promote brands, and connect to current customers and foster new business.Online social media is ubiquitous in nature. It allows people to use short text messages to express their opinions and sentiments about products, events and other people. For example, Twitter is an online news and social networking service where users post and interact with short messages, called "tweets". Therefore, nowadays social media become a potential source for business to find people's sentiments and opinions about a particular event or product. Social media analytics is the practice of gathering huge amount of digital data generated online from blogs and social media websites and analyzing them to find the insights and make business decisions. This paper focuses on development of enhanced social media metrics analyser using various latest methods and algorithms with the help of R language and R tool. © BEIESP.

Author Keywords
Metrics analyser; Opinion Mining(OM); Sentiment Analysis (SA); Social media data; Twitter

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Malicious node identification using quantitative intrusion detection techniques in MANET
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Abstract
Due to rapid proliferation of WSN, the application of wireless devices or nodes and usage of mobile computing devices changed the shape of network security. One of the field which need the most security is Mobile Ad hoc Network (MANET). The term ad hoc itself ensures that there is no central entity in order to govern the nodes. The issue of security is a critical problem when implementing mobile ad hoc networks (MANETs) is widely acknowledged. The traditional method of firewall and encryption is not sufficient to protect the network. Therefore an intrusion detection system must be added to the mobile ad hoc network. One of the different kinds of misbehavior a node may exhibit is selfishness. A indiscipline or selfish or node wants to protect own resources when using the services of others and consuming their resources. Malicious nodes that disobey the standard, degrades the performance of well-behaved nodes significantly. One way of preventing selfishness in a MANET is a detection and exclusion mechanism. In this paper, we de-scribe different method for detecting indiscipline or malicious nodes in mobile ad hoc network. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
Intrusion; Malicious nodes; MANET; Proliferation

Index Keywords
Computer system firewalls, Cryptography, Intrusion detection, Mobile security, Network security; Critical problems, Intrusion, Intrusion Detection Systems, Malicious nodes, MANET, Mobile ad-hoc network (MANETs), Mobile computing devices, Proliferation; Mobile ad hoc networks

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Memory enhancing effect of nelumbo nucifera seedpod extract and its active component quercetin in noise stress-exposed rats

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Abstract

Stress is an unavoidable phenomenon which disturbs the physiological homeostasis. Noise is the highest encountered stressor that affects the wellbeing of mankind. Hippocampus, a region of the brain crucial for memory is highly influenced by stress and thereby deteriorates memory. Male albino Wistar rats of 11-12 weeks were used in this study. Nelumbo nucifera (NNE) 400 mg/kg body weight (BW) and its active principle Quercetin (QRCT) (40 mg/kg bw) were administered orally to the animals 10 days before noise stress exposure of (100dB 4h/d). Ability to retain information by Learning and spatial memory was assessed using eight-arm radial maze apparatus. It was observed that after noise stress exposure errors in working, reference memory and time period to move into all baited arms were increased; however, the drug pre-treated animals showed a decrease in all the above parameters. The observations in the present work have proved that NNE and QRCT groups were effective in ameliorating the noise stress-induced changes, but the active component quercetin group had a higher protective impact on the changes. © 2018 Pharmascope Publications. All rights reserved.

Author Keywords

Corticosterone; Nelumbo nucifera; Noise stress; Quercetin; Spatial memory

Index Keywords

Nelumbo nucifera extract, quercetin; acoustic stress, animal experiment, animal model, Article, auditory stimulation, cognition, controlled study, hippocampus, male, memory, Nelumbo nucifera, nonhuman, radial arm maze test, rat, reference memory, spatial memory, working memory

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Improvement of flux pinning ability by tungsten oxide nanoparticles added in YBa 2 Cu 3 O y superconductor
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Abstract
In this study, series of superconductor-tungsten oxide (WO 3) nanoparticles composites, YBa 2 Cu 3 O 7-δ /(WO 3) x , were produced via the solid-state reaction process. The structural, morphological, chemical compositions, electrical and magnetic properties were investigated using X-ray diffraction (XRD), scanning electron microscope (SEM) along with EDX system and physical properties measurement system (PPMS), respectively. The XRD, SEM and EDX analyses showed the successful formation of the Y-123 orthorhombic phase. The electrical resistivity measurements proved the occurrence of superconductivity in different samples. The magnetic results showed an improvement of critical current density (J c) and pinning ability in WO 3 nanoparticles added Y-123 products. The dominant pinning mechanisms and the strength of pinning centers in various sintered products were examined and discussed. The measurements of zero-field-cooled (ZFC) and field-cooled (FC) magnetization versus temperature (M-T) indicated an increase in the magnitude of diamagnetic signal with the addition of WO 3 nanoparticles in the Y-123 superconductor. © 2018 Elsevier Ltd and Techna Group S.r.l.

Author Keywords
Critical current density; Flux pinning; Structure; WO 3 nanoparticles; YBa 2 Cu 3 O y superconductor

Index Keywords
Barium compounds, Copper compounds, Critical current density (superconductivity), Flux pinning, Nanomagnetics, Nanoparticles, Oxides, Scanning electron microscopy, Solid state reactions, Structure (composition), X ray diffraction, Yttrium barium copper oxides; Chemical compositions, Diamagnetic signals, Electrical and magnetic property, Electrical resistivity measurements, Orthorhombic phase, Physical-properties measurement systems, Solid-state reaction process, YBa2Cu3Oy; Tungsten compounds

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Structural, morphological, enhanced magnetic properties and antibacterial bio-medical activity of rare earth element (REE) cerium (Ce3+) doped CoFe2O4 nanoparticles

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Abstract
In this present study, we made an attempt for the different concentration of rare earth element (REE) Cerium (Ce3+) doped cobalt ferrite (CoFe2O4) nanoparticles (NPs) were prepared by the simple sol-gel combustion technique. Cerium was successfully substituted into the spinel lattice without any distortion. It was analyzed the effect of Ce3+ ions doping on structural, morphological, magnetic properties and antibacterial activities using the various instrument techniques. Powder XRD and SEM along with EDX studies confirmed the pure phase formation Ce3+ doped CoFe2O4 NPs and spherical shaped agglomerated nanoparticles morphology without any other impurity. The well resolved broad peaks in the XRD pattern clearly indicated the nanosized, single phased, cubic spinal nature of these samples. There was a substantial decrease in the crystallite size on doping with Ce3+. A more in-depth morphological study was facilitated using the TEM and SAED analysis. TEM investigation revealed random shaped, sharp edged nanoparticles with a normally facetted morphology. The presence of distinctive diffractions spots on the SAED pattern indicated the formation of nanoparticles that are highly crystalline in nature. The magnetic response of the Ce3+ doped CoFe2O4 NPs was recorded at room temperature (RT) using the VSM technique. The magnetic properties have been seen to be altered by the addition of Ce3+ in the CoFe2O4 matrix. The decrease in the saturation magnetization (Ms, emu/g) with the increase in Ce3+ content rendered the synthesized sample applicable in field of antenna construction. This change will be also suitable for reducing the size of the antenna. The antibacterial activity of Ce3+ doped CoFe2O4 nanoparticles was found to be enhanced with increase in Ce3+ doping level as it cause a reduction in the grain size. © 2018 Elsevier B.V.

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CoCexFe2- xO4; Magnetic nanoparticles; SEM/TEM; Sol-gel combustion; Spinel

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Microstructural, Optical, and Magnetic Properties of Vanadium-Substituted Nickel Spinel Nanoferrites
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Abstract
The current study investigates the impact of vanadium substitution on the structural, magnetic, and optical properties of NiFe2−xVxO4 (x ≤ 0.3) nanoparticles (NPs) produced by the cost-effective sol-gel route. The as-prepared spinel ceramic powders were examined by X-ray diffraction (XRD), UV-visible diffuse reflectance spectroscopy (DRS), Fourier transform infrared (FT-IR) spectroscopy, scanning electron microscopy (SEM), and vibrating sample magnetometry (VSM). The functional groups, spinel phase, and crystal structure were confirmed by XRD and FT-IR, respectively. The crystallites size decreased from 45.24 to 36.56 nm as the doping process increases. The plots of Tauc were drawn to determine optical band gap magnitudes of 1.291, 1.302, and 1.312 eV for x = 0.0, 0.2, and 0.3, respectively. The estimated saturation magnetization is maximum for pristine NiFe2O4 NPs and decreases to minimum for NiFe1.7V0.3O4 NPs. The σ-H hysteresis loops have finite coercivity (between 125 and 169 Oe) and retentivity (between 9.36 and 14.04 emu/g) values. The calculated σr/σs ratios are lower than 0.500, assigning the uniaxial anisotropy for NiFe2−xVxO4. The effective anisotropy constants (Keff) are in the range of 0.824 × 105 and 1.303 × 105 Erg/g. The magnetocrystalline anisotropy field (Ha) values are around 5.0 kOe. The characteristics of hysteresis (σ-H) curves and the order of magnetic data reveal the soft ferrimagnetic feature of as-prepared nanoparticle samples. From Mossbauer analysis, the variations in hyperfine magnetic field, quadrupole splitting, line width, and isomer shift have been evaluated. The distribution of cations showed that the octahedral B sites are occupied by all the ions of V3+. Mossbauer spectra are composed of four Zeeman sextets and one doublet. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
Cation distribution; Magnetic properties; Mossbauer spectroscopy; Nickel ferrites; Optical properties; Vanadium substitution

Index Keywords
Cost effectiveness, Crystal structure, Energy gap, Fourier transform infrared spectroscopy, Hysteresis, Iron compounds, Magnetic materials, Magnetic properties, Magnetocrystalline anisotropy, Mossbauer spectroscopy, Nanomagnetics, Nanoparticles, Nickel, Nickel compounds, Positive ions, Powders, Saturation magnetization, Scanning electron microscopy, Sol-gel process, Sol-gels, Vanadium, X ray diffraction; Cation distributions, Effective anisotropy constant, Fourier transform infra red (FTIR) spectroscopy, Hyperfine magnetic fields, Nickel ferrite, UV-visible diffuse reflectance spectroscopy, Vanadium substitution, Vibrating sample magnetometry; Optical properties

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Photoluminescence studies on nanocomposite graphene decorated with tantalum oxide
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Abstract
Graphene–tantalum oxide (Ta 2 O 5) hybrid material is synthesized using a simple hydrothermal method to elucidate its optical properties. The prepared sample is characterized by X-ray diffraction, scanning electron microscope (SEM), high-resolution–transmission electron microscope (HR-TEM), thermo-gravimetric and differential thermal analysis (TG-DTA), Fourier transform–Raman spectra, and photoluminescence (PL) studies. SEM and HR-TEM analysis revealed that the Ta 2 O 5 particles are embedded on the surface of thin sheets of well-defined graphene structure. Thermogravimetric analysis has provided substantial evidence for the thermal stability of the material with minimal percentage of weight loss at 700°C. Further, the excitation of the nanocomposite at a wavelength of 280 nm leading to emission spectra at 567 nm using PL studies, which clearly indicates the emission of light, occurs in the visible green region. © 2019 Optical Society of America.

Index Keywords
Differential thermal analysis, Emission spectroscopy, Graphene, Hybrid materials, Nanocomposites, Optical properties, Photoluminescence, Scanning electron microscopy, Thermodynamic stability, Thermogravimetric analysis, Transmission electron microscopy; Emission spectrums, Green regions, High resolution, Hydrothermal methods, TEM analysis, Thermo-gravimetric, Thin sheet, Weight loss; Tantalum oxides

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The potential of biomimetic nanofibrous electrospun scaffold comprising dual component for bone tissue engineering

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Abstract

Oils play a putative choice for alleviating various symptoms associated with bone-related disorders. In this present study, polyurethane (PU) scaffold encompassing with Mahua oil (MO) and propolis (PP) were developed using the electrospinning technique. Morphological analysis showed the reduction in the diameter of the electrospun scaffold with blending of MO and MO/PP into the PU matrix. The strong interactions between PU, MO, and PP were evident through the infrared spectrum and thermal analysis. The wettability results showed the hydrophobic nature in electrospun PU/MO scaffold and hydrophilic behavior in electrospun PU/MO/PP scaffold. Mechanical testing indicated the enhancement in the strength of the PU due to the addition of MO and PP. Moreover, the fabricated scaffolds exhibited nontoxicity, low hemoglobin release and improved blood clotting time as evident in the coagulation studies. The cell proliferation studies showed the enhanced fibroblast cell adhesion in the developed nanocomposites than the pristine PU. Hence, the fabricated PU scaffolds blended with MO and PP having desirable properties can serve as a valuable candidate for bone tissue repair. © 2019, © 2019 Taylor & Francis Group, LLC.

Author Keywords

cell adhesion; Mahua oil/propolis; Polyurethane; roughness; tensile strength

Index Keywords

Biomimetics, Blending, Bone, Cell adhesion, Cell culture, Cell proliferation, Mechanical testing, Polyurethanes, Surface roughness, Tensile strength, Thermoanalysis, Tissue; Bone tissue engineering, Bone-related disorders, Electrospinning techniques, Electrospun scaffolds, Hydrophobic nature, Mahua oil, Morphological analysis, Strong interaction; Scaffolds (biology)

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A rare adverse drug reaction of imatinib mesylate

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corticosteroid, imatinib; adult, adverse drug reaction, blood examination, body weight loss, bone marrow cell, cancer therapy, case report, chronic myeloid leukemia, clinical article, cytogenetics, dactylitis, drug withdrawal, female, fluorescence in situ hybridization, human, Letter, leukocyte count, limb swelling, middle aged, myeloid progenitor cell, outpatient department, Philadelphia 1 chromosome, physical examination, postmenopause, priority journal, splenomegaly, upper abdominal pain

Chemicals/CAS
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Antihyperglycemic, antidyslipidemic and antifibrotic effect of EGCG in STZ - high fat diet induced DCM rats
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Abstract
This study shows the potential effect of EGCG in DCM induced rats by exerting anti- hyperglycemic, anti-hyperlipidemic and anti-fibrotic effects. Hence EGCG a natural occurring compound have important clinical implications in terms of prevention and progression of diabetic cardiomyopathy. © RJPT All right reserved.

Author Keywords
Anti-fibrotic; Anti-hyperglycemic; Anti-hyperlipidemic; DCM - diabetic cardiomyopathy; Egcg - epigallocatechin gallate

Index Keywords
antidiabetic agent, antifibrotic agent, antilipemic agent, epigallocatechin gallate, glucose, hemoglobin A1c, high density lipoprotein, low density lipoprotein, triacylglycerol, very low density lipoprotein; animal experiment, animal model, animal tissue, antidiabetic activity, antifibrotic activity, Article, body weight change, cardiac muscle, cholesterol blood level, comparative study, controlled study, diabetic cardiomyopathy, drug mechanism, endocardium, experimental rat, fasting, glucose blood level, heart protection, high fat diet induced diabetic cardiomyopathy, histopathology, lipid diet, nonhuman, prophylaxis, rat

Chemicals/CAS
epigallocatechin gallate, 989-51-5; glucose, 50-99-7, 84778-64-3; hemoglobin A1c, 62572-11-6

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In vitro antioxidant efficacy of Biophytum sensitivum extracts

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Abstract
Occurrence of free radicals causes oxidative damages in the tissues of man while antioxidants block the assault of the free radicals reducing the risk of diseases. The aim of the present study is to investigate the antioxidant activities of the ethanol, chloroform, petroleum ether and aqueous extracts of Biophytum sensitivum. The ethanolic extracts of B. sensitivum exhibited the highest antioxidant activity (52%) than that of the chloroform (40%), aqeuous (24%) and Petroleum ether (21%) extracts. All the extracts of B. sensitivum exhibited a significant antioxidant activity against DPPH free radicals. The hydroxyl radical activity ranged from 23% to 63%. The ethanolic extract of B. sensitivum indicated the highest antioxidant capacity (63%) against hydroxyl free radical which showed almost a higher antioxidant activity than that of the ascorbic acid which is a known positive control. The overall nitrous oxide scavenging ranged from 26 %to 46% activity among the extracts of B. sensitivum. Similarly the ethanolic extract of B. sensitivum indicated 46% activity while chloroform extract showed (38%) scavenging activity against NO- free radical. The ABTS activity of B. sensitivum extracts ranged from 27% to 51%. Amid the ethanolic concentrates of B. sensitivum, 51% of ABTS indicated free radical scavenging activity, which was superior to that of the standard antioxidant ascorbic acid action. © 2019 Connect Journal.

Author Keywords
Antioxidant activity; Biophytum sensitivium; DPPH assay; NO assay; Reactive oxygen species

Index Keywords
alpha tocopherol, antioxidant, Biophytum sensitivum extract, catalase, chloroform, flavonoid, hydroxyl radical, molybdenum, nitric oxide, petroleum ether, phosphomolybdenum, plant extract, reactive oxygen metabolite, trolox C, unclassified drug, uric acid; ABTS radical scavenging assay, antioxidant activity, Article, Biophytum sensitivum, controlled study, DPPH radical scavenging assay, drug efficacy, free radical scavenging assay, hydroxyl radical scavenging assay, medicinal plant, nitric oxide scavenging assay, nonhuman, oxidative stress, oxygen radical absorbance capacity, phytochemistry

Chemicals/CAS
alpha tocopherol, 1406-18-4, 1406-70-8, 52225-20-4, 58-95-7, 59-02-9; catalase, 9001-05-2; chloroform, 67-66-3; hydroxyl radical, 3352-57-6; molybdenum, 7439-98-7; nitric oxide, 10102-43-9; petroleum ether, 8032-32-4; trolox C, 56305-04-5; uric acid, 69-93-2

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Ravichandran[a] , Mohanta, K.[b] , Nalini, C.[c]

An optimized feature regularization in boosted decision tree

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Abstract
We put forward a tree regularization, which empowers numerous tree models to do feature collection effectively. The type thought of the regularization system be to punish choosing another feature intended for split when its gain is like the features utilized in past splits. This paper utilized standard data set as unique discrete test data, and the entropy and information gain of each trait of the data was determined to actualize the classification of data. Boosted DT are between the most prominent learning systems being used nowadays. Likewise, this paper accomplished an optimized structure of the decision tree, which is streamlined for improving the efficiency of the algorithm on the reason of guaranteeing low error rate which was at a similar dimension as other classification algorithms. © BEIESP.

Author Keywords
Boosting; Decision Tree; Feature optimization; Regularization

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Balambica, V.[a] , Deepak, V.[a] , Visweswara Reddy, S.[a] , Udaykumar Reddy, S.[a] , Phani Kumar Reddy, S.[a] , Rajasekhar, P.[b]

Static analysis of spur gear for varying correction factors and module

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Abstract
The aim of the paper is to find the deflection induced in a spur gear for different correction factors and different modules applied during working conditions. Firstly a standard gear is to be designed for the materials cast iron and sintered steel. The dimensions of the standard gear were determined for various modules using which the modeling was carried out using pro-E modeling software. Similarly the dimensions of the profile corrected gear were also determined for various correction factors. All models were exported to software hyper mesh where the models are meshed properly up to a high degree of accuracy. Then the meshed part is exported to another software ANSYS where analysis part was carried out to get the results. A comparison was carried out theoretically and analytically for cast iron gears are studied for various modules and various correction factors with which we conclude for the optimum method to reduce deflection in gears. © BEIESP.

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Meenakshi, C.M.[a] , Krishnamoorthy, A.[b] , Abishek, A.[a] , Fehath Basha, S.[a] , George Vinser, A.[a] , Hari Haran, G.[a]

Study on failure morphology and water absorption behavior of natural fiber reinforced hybrid composite laminate
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Abstract
The natural fiber reinforced composites are now gaining more importance in research and development as a new potential material for industrial and commercial applications. However the strength of the material mainly depends on the bonding strength between the resin and the fiber. This work aimed to determine and compare the bonding strength of different types of natural fiber reinforced epoxy composite. Hybrid fiber reinforce composites are prepared with glass , kenaf and aloe vera fiber and their tensile tested sample's failure morphology and their water absorption behavior are studied .Tensile test Specimens are cut from the fabricated laminate and tested according to the ASTM D638 standards. The failure analysis is done using scanning electron microscope (SEM).From the result we understood that the fiber pull out is more in aloevera/glass hybrid composite and better bonding between the resin and the fibers is shown in Kenaf /glass hybrid composite. The water retardation of kenaf fiber composite is also better than aloevera fiber composites. © BEIESP.

Author Keywords
Hybrid composites; SEM Analysis; Water absorption behaviour

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Meenakshi, C.M.[a] , Krishnamoorthy, A.[b] , Kumar, P.[a] , Srivastav, N.K.[a] , Kumar, R.[a] , Pradhan, S.[a]

Comparison of heat deflection behaviour of alkali treated and untreated hybrid fiber reinforced composites
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Abstract
Natural Fiber reinforced composites finds place in many applications as they have the advantages of being light, strong, cheap and more environmental friendly. This study aimed to determine the effect of alkali treatment on natural fiber and its impact on the heat deflection behaviour of the natural and glass fiber reinforced hybrid composites ,in this work two type of hybrid composite are made with glass, sisal and flax fiber ,the hybrid fiber reinforced composite laminates were fabricated by hand lay-up method. Specimens are cut from the fabricated laminates and their heat deflection behaviour was tested according to ASTM D648 standard. From the result it is understood that the alkaline treatment has improved the heat withstanding capacity of sisal/glass hybrid composite by 20C in average and don't have much effect on flax /glass hybrid composite. © BEIESP.

Author Keywords
Alkali Treatment; Heat Deflection Behaviour; Hybrid composites

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Design and completion of asymmetric single phase 27 level cascaded mli for various pwm scheme

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Abstract
Multilevel inverter is most fashionable due to bargain switching losses, short costs, minimum harmonic distortion and hug voltage capacity while compared with conventional PWM converters. A latest family of multilevel inverters that has decreased number of separated input DC sources had emerged named as asymmetric multilevel inverter. In this work, theories and use of a variety of PWM modulation schemes for twenty seven level asymmetric multilevel inverters are tested. The relative case study is offered to authenticate the tested modulation scheme through harmonic spectrum analysis, magnitude of output voltage, Total harmonic distortion (THD), and distortion factor (DF). The demonstration of chosen single phase trinary DC source multilevel inverter is established through MATLAB-SIMULINK based simulation. Finally then the experimental result shows that APOD PWM offers AC output with relatively low harmonic distortion. It's also realized that COPWM strategy is originate to perform superior since it delivers relatively higher fundamental RMS AC output voltage. © BEIESP.

Author Keywords
And Distortion Factor; Cascaded multilevel inverter; Multi carriers; Single phase multilevel inverter; Sixty Degree PWM; Twenty seven levels

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Brain image segmentation for multi-resolution using neural network and categorization of human brain images
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Abstract
The Brain image segmentation for Multiresolution is utilized by means of neural network for categorization of human brain images. It is recognized that the image is skilled by weights which is distributed to the image for the extraction of the improved image of very low resolution to very high resolution. As this process, it is guaranteed the differentiability and continuity of the inaccuracy function. The Bilateral filtering smoothes brain images by preserving edges, by resources of a non-linear grouping of close by brain image values. This coalesce gray levels or colours based on together their geometric proximity and prefers in close proximity to values to distant values in both range and domain. The bilateral –neural projection process is proposed to work out the problems related with the unique one, when it is practically applied to single image, the original innovative neural projection algorithm can diminish the inaccuracy efficiently under certain critical conditions. Then, the design of bilateral filtering is engaged to guide the neural-projection process and to categorize the human brain images. The brain image edge information is incorporated to stay away from crosswise edge projection that the inaccuracy effect can be isolated and categorise the brain Image. © BEIESP.

Author Keywords
Feature extraction; Image processing; MRI; Segmentation

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Frizilin, R.[a] , Muthukumaravel, A.[b]

Comparative analysis of liver segmentation using K-means, fuzzy C-means and spatial Fcm using mumford shah approach

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Abstract
In medical environment, liver segmentation plays ansignificant role by helping physicians to find the location of affected region of the liver from the normal part. Automatic extraction which is recognized as segmentation by computer processing may diminish the burden as well as time consuming. To overcome the burden of identification of definite organ segmentation technique is used. In general liver analysis have done through CT scan or MRI scan whereas the image of MRI scan is utilized for the complete process which is more convenient than other scanning while diagnosing. This does not create harmful to human body due to no practice of radiation. As the initial stage, image segmentation has been done through spatial fuzzy clustering which can control level of its parameter to set advancement as a result in the fuzzy clustering. In this advanced technique, mumford shah technique is used to improve the robustness with less time consumption. This study has motivated on both less time extraction and also the accuracy. So, in order to attain spatial fuzzy clustering is proposed and also compared with the existing clustering algorithm such as K-means, Fuzzy C-Mean (FCM) to evaluate the performance efficiency in time extraction using clustering outcomes. © BEIESP.

Author Keywords
Fuzzy C-Means Clustering; K-Means Clustering (KMC); Liver segmentation; Spatial Fuzzy Clustering (SFCM)

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Stock prediction scrutiny using artificial neural network
(2019) *International Journal of Recent Technology and Engineering*, 7 (6), pp. 105-108.

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Abstract
This paper is based on the survey of neural networks in predicting stocks price in the market. The stock market prediction helps in identifying the investment decision before investing on different companies. Neural networks offer the capability to determine the outlines in the market prediction. Common stock market details and artificial neural network techniques are discussed. The study reports how neural networks leave behind the current techniques. The imminent ways for relating neural networks to the stock markets are discussed by forming survey table. Finally, future directions for applying the artificial neural networkto the stock markets are discussed. © BEIESP.

Author Keywords
Artificial Neural Network (ANN); Convolutional Neural Networks (CNN); Predictions; Recurrent Neural Networks (RNN); Stock market

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Software fault prediction exploration using machine learning techniques
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Abstract
Fault prediction is one of the major activity of quality assurance. Fault prediction plays a significant role in the reduction of software cost and time. Even though, there are so many prediction techniques that are available in software engineering there is a need for stable software fault prediction methodology. In this research work, four types of Machine Learning techniques such as supervised, unsupervised, semi-supervised, and reinforcement learning are discussed. According to the study, to predict the fault, a fusion of classification and reduction Machine Learning technique is necessary. This report also introduces hypothesis set for fault prediction taxonomy. © BEIESP.

Author Keywords
Hypothesis; Machine Learning (ML); Reinforcement learning; Semi-Supervised learning; Software development methodologies; Supervised learning; Unsupervised learning

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Multi-state models for the time to event post-transplantation cancer data: A competing risks approach
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Abstract
In clinical research studies complex end points are most common. Especially in studies on diseased patients undergo therapy, a relapse can occur, or patients can die after relapse or without former relapse (death). Sometimes, endpoints can be reasonably combined in a composite endpoint, as relapse and death combined into disease-free survival (DFS). In this case, standard survival techniques, as Kaplan–Meier estimation of the DFS probability, can be applied. Often, interest focuses on endpoints for which competing risks are present; a competing risks model plays a special case of a multistate model. A more complex multistate model is required when the effects of events occurring in the course of the study on further disease progress. Another endpoint of interest is time to experience multiple episodes; the multistate model used for analysis must be adapted for this event structure.The aim of this report is to explain use and interpretation of both non proportional hazard Cox (non PH) and proportional hazard Cox (PH)type multistate models for the suitability of assessing different covariate effects in situations of multiple endpoints and also different baseline hazard assumptions in a comparison manner for the European Group for Blood and Marrow Transplantation (EBMT) competing risks data. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Competing risks; Multi-state models; R,mstate; Survival analysis

Index Keywords
adult, Article, bone marrow transplantation, cell transplantation, disease free survival, female, human, major clinical study, male, mathematical analysis, mathematical model, multi state model, organ donor, risk assessment, survival analysis

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Phytochemical, in vitro antioxidant and in vivo safety evaluation of leaf extracts of Tragia plukenetii
(2019) *Pharmacognosy Journal*, 11 (2), pp. 338-345. Cited 11 times.

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Abstract
To investigate the phytochemical properties, in vitro antioxidant and in vivo safety profile of leaf extracts of Tragia plukenetii (TP). Methods: TP leaves were obtained from the south part of India (Guntur District, Andhra Pradesh) and it was extracted with different solvents (Benzene Extract (BE), Chloroform Extract (CE) and methanolic extract (ME)). These TP extracts were analyzed for the in vitro antioxidant activity by DPPH reducing power, β-carotene-linoleic acid complex and iron chelation assays followed by in vivo acute oral and dermal toxicities using Swiss mice and Wistar rats respectively. Results: The present study results revealed ME exhibited an effective and powerful antioxidant activity when compared to a standard antioxidant, Butylated hydroxytoluene (BHT). ME was found to be effective in DPPH, β-carotene-linoleic acid complex and iron chelation assays respectively. In vivo acute oral toxicity study revealed that mice treated with up to 5000 mg/kg of BE, CE and ME did not show any signs of toxicity. Furthermore, similarly, acute dermal toxicity study demonstrated that BE, CE and ME did not exhibit any signs of dermal toxicity up to 1000 mg/kg in rats. Conclusion: TP extracts possess an excellent antioxidant activity with a devoid of any signs of acute oral and dermal toxicities. © 2019 Phcog.Net.

Author Keywords
Dermal toxicity; DPPH assay; Iron chelation; Oral toxicity; Tragia plukenetii; β-carotene-linoleic acid complex

Index Keywords
amino acid derivative, antioxidant, benzene, beta carotene, butylcresol, carbohydrate derivative, chloroform, ferrous ion, glycoside, linoleic acid, methanol, phytochemical, plant extract, saponin derivative, steroid, tannin derivative, Tragia plukenetii extract, unclassified drug; animal experiment, animal model, animal tissue, antioxidant activity, Article, chelation, chemical composition, controlled study, DPPH radical scavenging assay, drug safety, histopathology, in vitro study, in vivo study, iron chelation, male, mouse, nonhuman, oxidative stress, plant leaf, rat, skin toxicity

Chemicals/CAS
benzene, 71-43-2; beta carotene, 7235-40-7; butylcresol, 128-37-0, 30587-81-6; chloroform, 67-66-3; ferrous ion, 15438-31-0; linoleic acid, 1509-85-9, 2197-37-7, 60-33-3, 822-17-3; methanol, 67-56-1

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Bright band sign
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Octagonal Nantenna for Space Research Applications
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Abstract
An octagonal nantenna has been proposed in this paper. The antenna is of 8x14x0.324 mm3 dimension and operates at 101.71 GHz frequency finding W-Band applications. The proposed nantenna gives a gain of 6.155dB and efficiency 98.6%. The antenna uses Rogers RT5880 substrate with copper platings on both sides. The terahertz response of the antenna makes it to use in space research applications. © 2019 IEEE.

Author Keywords
Microstrip; Nantenna; Terahertz; W-band

Index Keywords
Nanostructures, Space research; 3-dimension, GHz frequencies, Microstripes, Research applications, Tera Hertz, Terahertz response, W bands; Nanoantennas

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The GC MS study of one ayurvedic medicine, Aragwadharishtam

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Abstract
Aragwadharishtam is an Ayurvedic preparation used mainly to detoxify the body. Its main use is in the cure of skin diseases, ulcers and piles. The present study deals with the GC MS analysis of Aragwadharishtam to know the presence of phytochemicals present in this medicine. The GC MS profile indicated the presence of some very important molecules such as Phnylethyl alcohol, Ethyl hydrogen succinate, Butanedioic acid diethyl ester, 4-Ethyl-2-hydroxycyclopent-2-en-1-one, Eugenol, Ethyl gallate, 1,2,3- Benzenetriol, Benzeethanol,4-hydroxy-, Hexadecanoic acid, 2-hydroxy -1-(hydroxymethyl) ethyl ester and Octadecanoic acid, 2,3-hydroxypropyl ester etc. These molecules have a number of important medicinal roles which could substantiate their participation towards the medicinal activity of Aragwadharishtam as a detoxifying formula as claimed by Ayurveda. However, further work in this direction is warranted to prove the medicinal efficacy of the medicine. © RJPT All right reserved.

Author Keywords
4-ethyl-2-hydroxycyclopent-2-en-1-one; Aragwdharishtam; Ayurvedic; Butanedioic acid diethyl ester; Ethyl hydrogen succinate; Eugenol; GC MS; Phnylethyl alcohol

Index Keywords
2 hydroxy 1 (hydroxymethyl)ethyl ester, 2,3 hydroxypropyl ester, 4 ethyl 2 hydroxycyclopent 2 en 1 one, 4(1h) pyrimidinone 6 methyl, ayurvedic drug, benzeethanol,4 hydroxy, butanedioic acid diethyl ester, ethyl gallate, ethyl hydrogen succinate, eugenol, palmitic acid, phnylethyl alcohol, pyrogallol, stearic acid, unclassified drug; Article, Ayurveda, black pepper, cardamom, Cassia fistula, clove, drug detoxification, Embelia ribes, Embelica officinale, Ipomea turpenthum, Ipomoea, mass fragmentography, molecular weight, retention time, Syzigium aromaticum, Terminalia chebula

Chemicals/CAS
eugenol, 97-53-0; palmitic acid, 57-10-3; pyrogallol, 87-66-1; stearic acid, 57-11-4, 646-29-7

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Foretell: Forecasting environmental data through enhanced lstm and l1 regularization

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Abstract
Big data analytics progressively takes over the universe, and the prediction tends to take advantage of Big data analytics to yield the incredible results. The deep learning algorithms procure higher priority than the machine learning in the prediction systems. The traditional weather prediction exploits the observations of prevailing atmospheric conditions that accumulate simultaneously either from the trained observers or the numerical prediction model. However, the weather forecasting is an arduous task due to the dynamic and uncertainty of data. The proposed system plans to use the neural network for weather forecasting to overcome these shortcomings. Recently, the Long-Short Term Memory (LSTM) network based weather forecasting has gained popularity in machine learning. It significantly reflects the superior ability to model the temporal data sequences along with the long-term dependency through the memory blocks. However, on account of memory blocks along with the loop structure leads to over fitting issues. In order to tackle this issue, this work presents FORcasting Environmental data Through Enhanced LSTM and L1 regularization (FORETELL) that extends the existing LSTM model with the two methods such as optimal neuron selection method and the regularization method. The optimal neuron selection method constitutes the FORETELL system, as it can learn the complex data sequences without longer period and overfit of data. Instead of processing the entire vast feature of the data sequence, the regularization method captures the potential features to avert the overfitting constraint that ensures the noise-free system with more excellent performance. Conclusively, the FORETELL is evaluated using the weather dataset to demonstrate the superior performance than the existing Sequence to Sequence Weather Forecasting (SSWF) method. © BEIESP.

Author Keywords
Big data; Deep learning; LSTM; Neural network; Overfitting; Prediction

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Emerging trends of IT industry policies for ensuring women employee retention: New-fangled women friendly policies which foster gender neutral workplace

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Abstract
Today, behaviour of women employees has changed the environment of the private organization. Young women employees always ready to switch over whenever she dissatisfy with any reason in the job. Retention strategy is a powerful recruitment tool. Private organizational issues matters as lost knowledge and training time. HR managers should identify the needs of the women employee and then devises the retention strategies. As different individuals have different priorities does not fit one strategy. HR professionals face the vital challenge to retain talented women employees. Retention strategies are fall into four categories-job enrichment, salary, working conditions and education, addressing these issues this article demands a specialized approach that emerge new fangled women friendly policies which foster gender neutral workplace in developing retention strategies. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Retention strategies for female employees; Scope; Trends and policies

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adult, article, education, employee, female, gender, human, human experiment, male, manager, salary, work environment, workplace

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Forcing gender issues and challenges affecting women employees to continue their career in IT industry

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Abstract
Despite the major advancements women have made in becoming a significant part of the workforce, they are still facing important career development issues. Although many women achieve lower and middle management positions, they seem to hit the “glass ceiling” in many organizations and are denied the most senior levels of upper management. The reasons are multi-dimensional; some women lack the confidence to apply for senior positions; some lack the necessary education or training; and others find themselves excluded from the top positions because of systemic gender bias that exists in some companies. There are plenty of statistics tracking the percentage of women in the workforce, their qualifications and their salaries. But the data doesn’t show us the whole picture. It doesn’t assess how women feel, how they fare in their day-to-day business, the challenges they encounter. And that is why the research embarked on a global task, asking more than 9,500 women across the G20 to identify the top five issues faced at work especially in IT industry. © 2019, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Career advancement; Gender discrimination; Issues and challenges; Strategies to overcome; Women retention

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adult, article, career, education, employee, female, gender bias, human, human experiment, major clinical study, male, organization, salary, statistics, workforce

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A feedback loop between microRNA 155 (miR-155), programmed cell death 4, and activation protein 1 modulates the expression of miR-155 and tumorigenesis in tongue cancer

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Abstract
MicroRNA 155 (miR-155) is an oncomir, generated as a noncoding RNA from the BIC gene whose promoter activity is mainly controlled via activation protein 1 (AP-1) and NF-B transcription factors. We found that the expression levels of miR-155 and programmed cell death 4 (Pdcd4) exhibit inverse relationships in tongue cancer cells (SAS and AWL) and tumor tissues compared to their relationships in normal FBM cells and normal tongue tissues, respectively. In silico and in vitro studies with the 3= untranslated region (UTR) of Pdcd4 via luciferase reporter assays, quantitative PCR (qPCR), and Western blotting showed that miR-155 directly targets Pdcd4 mRNA and blocks its expression. Ectopic expression of Pdcd4 or knockdown of miR-155 in tongue cancer cells predominantly reduces AP-1-dependent transcriptional activity of the BIC promoter and decreases miR-155 expression. In this study, we demonstrate that miR-155 expression is modulated by a feedback loop between Pdcd4, AP-1, and miR-155 which results in enhanced expression of miR-155 with a consequent progression of tongue tumorigenesis. Further, miR-155 knockdown increases apoptosis, arrests the cell cycle, regresses tumor size in xenograft nude mice, and reduces cell viability and colony formation in soft-agar and clonogenic assays. Thus, the restoration of Pdcd4 levels by the use of molecular manipulation such as using a miR-155 sponge has an essential role in the therapeutic intervention of cancers, including tongue cancer. Copyright © 2019 American Society for Microbiology. All Rights Reserved.

Author Keywords
AP-1; Apoptosis; BIC; MiR-155; MiR-155 sponge; NF-B; Pdcd4; Tumor xenografts

Index Keywords
messenger RNA, microRNA 155, programmed cell death 4, transcription factor AP 1, tumor suppressor protein, unclassified drug, apoptosis regulatory protein, messenger RNA, microRNA, MIRN155 microRNA, human, Mirn155 microRNA, mouse, PDCD4 protein, human, RNA binding protein, transcription factor AP 1; 3' untranslated region, animal cell, animal experiment, animal model, animal tissue, apoptosis, Article, cancer size, cancer tissue, carcinogenesis, cell cycle arrest, cell viability, clinical article, colony formation, controlled study, ectopic expression, feedback system, female, G2 phase cell cycle checkpoint, gene expression regulation, gene knockdown, human, human cell, human tissue, in vitro study, M phase cell cycle checkpoint, molecular pathology, mouse, mRNA expression level, nonhuman, polymerase chain reaction, priority journal, promoter region, quantitative analysis, SAS cell line, tongue cancer, transcription regulation, untranslated region, animal, Bagg albino mouse, biosynthesis, cell motion, cell proliferation, cell survival, cell transformation, drug screening, genetics, HEK293 cell line, metabolism, nude mouse, pathology, physiological feedback, physiology, tongue tumor, tumor cell line; 3' Untranslated Regions, Animals, Apoptosis, Apoptosis Regulatory Proteins, Carcinogenesis, Cell Line, Tumor, Cell Movement, Cell Proliferation, Cell Survival, Cell Transformation, Neoplastic, Feedback, Physiological, Female, HEK293 Cells, Humans, Mice, Mice, Inbred BALB C, Mice, Nude, MicroRNAs, RNA, Messenger, RNA-Binding Proteins, Tongue Neoplasms, Transcription Factor AP-1, Xenograft Model Antitumor Assays

Chemicals/CAS
3' Untranslated Regions; Apoptosis Regulatory Proteins; MicroRNAs; MIRN155 microRNA, human; Mirn155 microRNA, mouse; PDCD4 protein, human; RNA, Messenger; RNA-Binding Proteins; Transcription Factor AP-1

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Feasibility and Safety of Split-Liver Transplantation in a Nascent Framework of Deceased Donation

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Abstract
Split-liver transplantation (SLT) is a valuable option for optimizing the use of good-quality deceased donor grafts. It is not routinely reported outside the West because of limited deceased donor numbers, technical and organizational constraints, lack of experience, and a predominant living donor liver transplantation (LDLT) practice. At our center, 20% of the liver transplantations (LTs) are from deceased donors. We report our experience of SLT and compare outcomes with pediatric and adult LDLT recipients. A prospectively maintained database of all LT recipients between September 2009 and March 2017 was analyzed. Each pediatric SLT recipient was matched to 2 pediatric LDLT recipients for age, weight, urgency, and year of transplant. Each adult SLT recipient was similarly matched to 2 adult LDLT recipients for age, Model for End-Stage Liver Disease score, and year of transplant. Intraoperative and postoperative parameters, including recovery time, morbidity (biliary and vascular complications, Clavien grade >IIIA complications), and mortality were compared. In total, 40 SLTs were performed after splitting 20 deceased donor livers (in situ, n = 11; hybrid split, n = 3; and ex vivo, n = 6). Recipients included 22 children and 18 adults. There were 18 livers that were split conventionally (extended right lobe and left lateral segment [LLS]), and 2 were right lobe–left lobe SLTs. Also, 3 LLS grafts were used as auxiliary grafts for metabolic liver disease. Perioperative mortality in SLT recipients occurred in 3 patients (2 children and 1 adult). Incidence of vascular, biliary, and Clavien grade >IIIA complications were similar between matched adult and pediatric SLT and LDLT groups. In conclusion, SLT is an effective technique with outcomes comparable to living donor grafts for adult and pediatric recipients. Using SLT techniques at centers with limited deceased donors optimizes the use of good-quality whole grafts and reduces the gap between organ demand and availability. Copyright © 2018 by the American Association for the Study of Liver Diseases.

Index Keywords
mycophenolate mofetil, steroid, tacrolimus; acute graft rejection, acute kidney failure, acute liver failure, adult, Article, bile duct atresia, biliary tract disease, child, cholestasis, citrullinemia, Crigler Najjar syndrome, deceased donor, female, graft recipient, graft versus host reaction, human, immunosuppressive treatment, intestine obstruction, intrahepatic cholestasis, liver disease, liver donor, liver transplantation, living donor, major clinical study, male, Model For End Stage Liver Disease Score, morbidity, neurological complication, patient safety, percutaneous drainage, postoperative hemorrhage, priority journal, prospective study, renal replacement therapy, reoperation, split liver transplantation, vascular disease, adolescent, adverse event, allograft, end stage liver disease, feasibility study, infant, Kaplan Meier method, liver transplantation, middle aged, mortality, postoperative complication, preschool child, procedures, severity of illness index, survival rate, transplantation, treatment outcome, young adult; Adolescent, Adult, Allografts, Child, Child, Preschool, End Stage Liver Disease, Feasibility Studies, Female, Humans, Infant, Kaplan-Meier Estimate, Liver Transplantation, Male, Middle Aged, Postoperative Complications, Prospective Studies, Severity of Illness Index, Survival Rate, Tissue and Organ Harvesting, Tissue and Organ Procurement, Treatment Outcome, Young Adult

Chemicals/CAS
mycophenolate mofetil, 116680-01-4, 128794-94-5; tacrolimus, 104987-11-3

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Mössbauer Studies and Magnetic Properties of Cubic CuFe 2 O 4 Nanoparticles

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Abstract

This study reports the preparation and characterization of nanocrystalline spinel powder of cubic copper ferrite nanoparticles (NPs) which have been fabricated via a cost-effective citrate sol–gel approach. The structural and morphological properties of the nanoparticles are analyzed by X-ray diffraction (XRD), Fourier transform spectroscopy (FT-IR), and scanning electron microscopy (SEM) whereas magnetic properties and Mössbauer analysis were performed using vibrating sample magnetometer (VSM) and Mössbauer spectra, respectively, and were characterized in detail. The empirical aim of this study is to perceive the transition phase of CuFe 2 O 4 as cubic symmetry which was confirmed by SEM images, and a couple of studies reported on the cubic structure of copper ferrite and discussed the magnetic properties. However, the present study gives the detailed information of the formation of cubic structure and magnetic behavior of the CuFe 2 O 4 cubic structure. X-ray diffraction measurements of resulting NPs show that the grain size of the particles is about 42.08 nm while SEM analysis showed that the particles have cubic nanostructured shapes with non-homogeneous sizes in around 80–100 nm. From 57 Fe, Mössbauer parameters consist of one superparamagnetic doublet and superposition of four sextets. VSM result shows the enhanced superparamagnetic nature of the CuFe 2 O 4 NPs. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords

Cation distribution; Cubic structure; CuFe 2 O 4 NPs; Mössbauer study; Superparamagnetism

Index Keywords

Copper, Copper alloys, Copper compounds, Cost effectiveness, Ferrite, Magnetic materials, Magnetic properties, Nanocrystals, Nanomagnetics, Nanoparticles, Particle size analysis, Scanning electron microscopy, Sols, Structural properties, Superparamagnetism; Cation distributions, Cubic structure, CuFe2O4, Fourier transform spectroscopy, Mossbauer, Structural and morphological properties, Vibrating sample magnetometer, X-ray diffraction measurements; Iron compounds

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Abstract
Welfare helps in protecting the self-esteem and inspiration of the personnel so as to keep the staffs for extended period. The welfare processes need not be in financial terms only but in any kind/forms. © BEIESP.

Author Keywords
Job satisfaction; Loyalty; Productivity; Quality of work life

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Documents

Peter, M.[a] , Kavitha, S.[b]

Research on the impact of work life balance on employee performance among middle level managers in it industry
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Abstract
Employee Work Life Balance (WLB) is a major driver in the organization that helps to achieve higher productivity. It is a healthy blend of both employee's work life and personal life. There are many factors influencing work-life balance of an employee in the organization. Work life balance is now increasingly becoming the focal point of study by HRM experts and by managing teams of corporate. It is about effectively managing the balance between paid work and other activities like spending time with family, taking part in sport and recreation, undertaking further study. Earlier Companies attract and retain candidates by just providing effective training or Job security. But many employees in 21st century see 'Work life balance policies'- as a critical factor for selecting the companies. As employee conclusions are quite logic that it is easier to find a new job than finding a new spouse or a family. © BEIESP.

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Akila, V.[a] , Sheela, T.[b]

Secure Data Aggregation to Preserve Data and Key Privacy in Wireless Sensor Networks with Multiple Sinks
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Abstract
Reliable and trustful data aggregation is an important to be addressed in Wireless Sensor Networks (WSNs). In this paper, we proposed a new technique to protect key and data in data aggregation called Secure Data Aggregation to Preserve Data and Key Privacy in Wireless Sensor Networks with Multiple Sinks (SAPDKP). The multiple sinks concepts used in this method consume less energy in the computational and communicational overhead. The security issues such as data confidentiality, data integrity, data freshness and data authentication are preserved in this technique. It uses very simple technique to perform aggregation and encryption. The multiple sink nodes perform analysis to identify the distrustful group and retransmission of data takes place for that group. Our simulation result proved that implementation of SAPDKP decreases the communication overhead and energy consumption compared with existing work. The multiple sinks concept increases the reliability of data and also reduces the number of data transmission in the network. © 2019 IEEE.

Author Keywords
Data Aggregation; Data Confidentiality; Data Privacy; Wireless Sensor Networks

Index Keywords
Cryptography, Data privacy, Energy utilization, Network security; Communication overheads, Data aggregation, Data authentication, Data confidentiality, Retransmissions, Secure data aggregations, Security issues, Wireless sensor network (WSNs); Wireless sensor networks

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Mohammad, H.[a] , Prabhu, K.[b] , Rao, M.R.K.[c] , Sundaram, R.L.[d] , Shil, S.[c] , Vijayalakshmi, N.[c]

The GC MS study of one ayurvedic medicine, khadirarishtam

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Abstract
The present study of GC MS analysis of one Ayurvedic formulation, Khadirarishtam, was undertaken to know the types of biomolecules present in it. This medicine is used to treat chronic skin ailments. The GC MS profile of Khadirarishtam indicated the presence of some important biomolecules such as Eucalyptol, Phnylethyl alcohol, Ethyl hydrogen succinate,.alpha.-Terpineol, 5-Hydroxymethylfurfural, Acetic acid, chloro-,3-phenylpropyl ester, Eugenol, Benzeethanol,4-hydroxy-, Propanoic acid, anhydride, Benzoic acid, 4-hydroxy-, Disulphide, methyl (methylthio)phenylmethyl, Hexadecnoic acid, 2-hydroxy-1-(hydroxymethyl) ethyl ester, Octadecanoic acid and 2,3-dihydropropyl ester etc. These biomolecules have been reported to have the medicinal properties which represent those of Khadirarishtam. Further study to establish the molecular mechanism of these compounds is warranted. © RJPT All right reserved.

Author Keywords
5-hydroxymethylfurfural; Alpha.-terpineol; Ayurvedic; Ethyl hydrogen succinate; Eucalyptol; GC MS; Khadirarishtam; Phnylethyl alcohol

Index Keywords
2 hydroxy 1 (hydroxymethyl) ethyl ester, 2,3 dihydropropyl ester, 4 hydroxy disulphide, 5 hydroxymethylfurfural, acetic acid, acid anhydride, benzoic acid, chloro ,3 phenylpropyl ester, cineole, ester, ethyl hydrogen, eugenol, herbaceous agent, hexadecnoic acid, methyl (methylthio)phenylmethyl, phnylethyl alcohol, propionic acid, stearic acid, succinic acid, terpineol, unclassified drug; Article, Ayurveda, drug activity, mass fragmentography, molecular mechanics, nonhuman, phytochemistry, skin disease

Chemicals/CAS
5 hydroxymethylfurfural, 67-47-0; acetic acid, 127-08-2, 127-09-3, 64-19-7, 71-50-1; benzoic acid, 532-32-1, 582-25-2, 65-85-0, 766-76-7; cineole, 470-82-6, 55962-72-6; eugenol, 97-53-0; propionic acid, 72-03-7, 79-09-4; stearic acid, 57-11-4, 646-29-7; succinic acid, 110-15-6; terpineol, 8000-41-7, 98-55-5

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The GC MS study of one ayurvedic medicine, vasakadyaristam

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Abstract
The present study deals with the GC MS analysis of one Ayurvedic prepaation, Vasakadyarishtam, which is a mucolytic medicine used for the treatment of cough, cold, chest congestion asthma and related diseases like bronchitis, inflammation and hemoptysis. The most important constituent of this medicine is Vasaka or Adhatoda vesika plant, which is known for its anti-cough and cold usage in Ayurveda. This study was to understand the main biomolecules present in this medicine by GC MS analysis. The results indicted the presence of some important molecules such as Eucalyptol, Phenylethyl alcohol, Camphor, Ethyl hydrogen succinate, Succinic acid, cyclobutyl ethyl ester, 3-Cyclohexen-1-ol,4-methyl-(1-methylethyl)-(R)-,. alpha.-Terineol, 5- Hydroxymethyl furfural, p-Anisic acid,4-nitrophenyl ester, 2-Propen-1-0l,3-phenyl, Benzeneethanol, 4-hydroxy- Propiophenone, 2'-(trimethylsioxy)-, Hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester and Octadecanoic acid and 2,3 -dyhydroxypropyl ester. These molecules are known for their various medicinal properties which indicate their roles in this formulation. © RJPT All right reserved.

Author Keywords
Adhatoda vesika; Alpha.-terineol; Camphor; Ethyl hydrogen succinate; Eucalyptol; Phenylethyl alcohol; Vasakadyarishtam

Index Keywords
(4 methoxyphenyl)(2 nitrocyclohexyl)methanol, 2 propen 1 ol 3 phenyl, 3 cyclohexen 1 ol 4 methyl (1 methylethyl), 5 hydroxymethylfurfural, alpha terineol, ayurvedic drug, benzeneethanol 4 hydroxy, camphor, cineole, ethyl hydrogen succinate, hexadecanoic acid 2 hydroxy 12 hydroxy 1 yl ester, octadecanoic acid 2,3 dyhydroxypropyl ester, para anisic acid 4 nitrophenyl ester, phenethyl alcohol, propiophenone 2' (trimethylsioxy), succinic acid cyclobutyl ethyl ester, unclassified drug; Article, Ayurveda, mass fragmentography

Chemicals/CAS
5 hydroxymethylfurfural, 67-47-0; camphor, 464-49-3, 76-22-2, 8008-51-3; cineole, 470-82-6, 55962-72-6; phenethyl alcohol, 60-12-8

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Opinion mining of product features with customer
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Abstract
With the fast growth in e-commerce, surveys for famous products on the web have grown rapidly. Although these reviews are significant in making decisions, it is difficult to read all reviews. Automation of emotion mining method was the well-known answer to the dilemma. Although there are algorithms for emotion mining, an algorithm with evolving accuracy is needed. An algorithm which extracts product traits from surveys based on traits frequency and generates a view on item traits is developed and tested on downloaded buyer review. The sentences were tagged, sentiment words were extracted and view orientations were identified using the semantic orientation of notion terms. The precision values for traits extraction and both precision and recall values for view orientation recognition were significantly improved by the proposed algorithm.
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Author Keywords
Customer reviews; Opinion mining; Sentiment analysis; Sentiment classification

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An improved location based routing protocol for WSN using novel location proximity algorithm
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Abstract
The main characteristics of Wireless Sensor Network (WSN) include its: dynamic changing topology, multihop connections between the nodes and an effective dynamic routing protocol. These concerns are addressed in current research and it aims to improve the effective utilization of nodes in WSN. To improve the location search information of next hop, a novel Location Proximity (LP) search algorithm is used. Hence, proposed system addresses the concerns related to high energy consumption in WSN network characteristics under balanced and unbalanced network condition. The simulation results proved that proposed method fits well to changes in network than conventional algorithms. Also, the proposed method adopts well to dynamic change in network that results in increased throughput (23%) with improved lifetime (10%)and reduced energy consumption (reduced to 78%). © BEIESP.

Author Keywords
Energy efficiency; Increased throughput; Location based routing; Wireless sensor network

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Gwet kappa reliability factor-based selfish node detection technique for ensuring reliable data delivery in mobile adhoc networks

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Abstract
The degree of packet dissemination among the mobile nodes of the network depends on the reliability of each individual mobile node attributed towards the benefits of the other interacting nodes in forwarding activity. However, the selfish intent of selfish nodes in the network reduces the performance in terms of packet forwarding rate. Thus, the influence of selfish intent in the network need to be minimized to the maximum level by introducing a predominant isolation process. In this paper, a Gwet Kappa Reliability Factor-based Selfish Node Detection Technique (GKRF-SNDT) scheme is proposed for superior detection of selfish nodes in the network. This proposed GKRF-SNDT scheme inherently derives the advantages of Gwet Kappa Reliability Factor for quantifying the degree of trust possessed by each mobile nodes interacting in the network. The experimental investigations of the proposed GKRF-SNDT scheme confirmed a superior throughput rate of 18% with reduced energy consumptions of 21% compared to the existing selfish intent isolation approaches. Copyright © 2019 American Scientific Publishers All rights reserved

Author Keywords
Detection Rate; EA-GKRF; GKRF-SNDT; Packet Drop; Throughput

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Pattern based matrix insertion deletion system for efficient bio molecular computing system
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Abstract
The problem of bio molecular computing has been well studied and there are number of approaches discussed for the detection of false gene sequences. However, they suffer to achieve higher performance in the detection of false sequences. To improve the performance of detection of fake molecular patterns, an pattern based approach is discussed in this paper. As of the biomolecular strings a set of patterns, the method first identifies the list of sequences available and based on the set of patterns being maintained, the method identifies the list of patterns present in the gene sequence. Based on the sequences, the method identifies the incomplete and fake sequences and performs insertion and deletion using matrix operations. The method maintains number of patterns for the matrix insertion and deletion operation. For each pattern available, the method compute the bio molecular sequence weight. Finally a single sequence has been selected and based on the selected pattern, the method performs insertion and deletion operation. The proposed method produces efficient results on the detection as well as correction. Copyright © 2019 American Scientific Publishers All rights reserved

Author Keywords
Bio Molecular Computing; DNA; Gene Sequence; Matrix Insertion Deletion; Pattern Based Approach; RNA

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Sasikumar, D.[a] , Saravanakumar, S.[b]

Cozy and safety developments up to date in high overall performance computing the use of cloud computing
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Abstract
High performance computing (HPC) is a part of period that focuses on joining the power of figuring devices. HPC created because of increment sought after of handling pace. At some phase in pervious innovation HIPC applications have constantly required huge no of PCs interconnected in a network together with group. Groups are hard to set up and keep both in fact and monetarily. It will turn out to be less confounded to introduce hip bundles inside the cloud without stressing over the expenses related with it additionally convey ensures at the phenomenal of contributions (Qos). It enables ordinary's question wind up more quick witted and intelligent. The goal of the utilization of cloud principally based HIPC is to address quicker handling of immense measure of data and higher throughputs for all multiplicities of certainties and information. Cloud in HPC decreases the expense of framework and programming program and numerous others. It manages entire guarantee to the data to get right of passage to autonomously and sufficiently. Issues in cloud concur with jail issues, confidentiality, Authenticity, Authorization and well being. © 2019 American Scientific Publishers

Author Keywords
Big Data; Big Data Distribution; BitTorrent; Cloud Storage; Flash Crowd; Large-Scale Data Transfer; P2P Overlay; Provisioning

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Bates distribution inspired trust factor-based selfish node detection technique in mobile adhoc networks
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Abstract
The trustworthiness of the mobile nodes is considered as the predominant parameter for ensuring significant data dissemination in the ad hoc network. However, the selfishness activity of the mobile nodes minimizes the trust of the mobile nodes by dropping a considerable number of data packets in the network. The significant dropping of data packets by the selfish node introduces huge data overhead with increased latency and energy consumptions by increasing the number of retransmissions. In this paper, a Bates Distribution Inspired Trust Factor-based Selfish Node Detection Technique (BDITF-SNDT) is proposed for predominant detection of selfish behavior by investigating multiple levels of factors that contribute towards effective selfishness detection. This proposed BDITF-SNDT approach is also potent in enhancing the detection rate of selfishness through the multi-perspective analysis of each monitored mobile nodes' forwarding characteristics towards the benefits of the other interacting mobile nodes. The simulation experiments and results of the proposed BDITF-SNDT approach is determined to be enhanced on an average by 16% and 14% superior to the compared selfish node isolation approaches existing in the literature. Copyright © 2019 American Scientific Publishers.

Author Keywords
BDITF-SNDT; Mean Packet Deviation; Overhead; Standard Deviation; Variance

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Analysis of safety communication in a highway environment

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Abstract
This paper proposes an idea to develop security applications in vehicular ad hoc network (VANET) need upon propagation the security based messages. A self-arranging MAC protocol is proposed for high-collisions situations. The protocol permits vehicles to sort with others in a collision warning way before information transmission. Vehicles in the waiting line will get to the channel by time-division multiple accesses (TDMA) based channel access. A queue determine the accessing the channels on queue based channel access to on one node access from all nodes. Distinction with completely random access, the slot of queue select access the channel needs on completion time of self-sorting operation. In this paper queue achieve self sorting process mainly determined identify and avoid the collisions with another list areas during they self sorting operations. This simulation results output main purpose for highways securities show the proposed methodologies can considerable decrease the packet loss and delay in collision warning system in highway collisions situations. © 2019 American Scientific Publishers.

Author Keywords
DMMAC; Intelligent Transport System; TDMA; Throughput; VANET

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Sasikumar, D.[a] , Saravanakumar, S.[b]

A Demo of a platform as-a-provider for internet of factors packages provisioning in hybrid cloud/fog environment
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Abstract
This demo will show the important thing capabilities of a Platform as-a-provider (PaaS) we've proposed in a research paper widely wide-spread for presentation at IEEE LANMAN 2016 conference. The proposed PaaS allows IoT packages provisioning in hybrid cloud/fog environments. Two desires are assigned to the demo. On the one hand, we will highlight how IoT programs may be provisioned in such environments. However, we will display concretely the benefits those hybrid environments have over conventional cloud environments. The provisioning in these hybrid environments permits latency discount and processing performance enhancement. Certainly, a good way to lessen latency, the programs can have a number of its additives strolling in cloud and interacting with the other additives going for walks within the fog, toward IoT devices. Copyright © 2019 American Scientific Publishers All rights reserved,

Author Keywords
Cloud Computing; Fog Computing; IoT; Latency; PaaS

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Thivakaran, T.K.[a] , Sasikumar, D.[b]

Enhanced biometric based automated teller machine authenticate security system using low power microcontroller
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Abstract
Information and communication technology achieved mass improvement on ATMs cyber-security but there is a strong need to strengthen all parts of operation. ATM skimmers are card readers that collect the data from magnetic card stripe that is attached to the real payment terminals; especially criminals can create cloned cards to steal money from the bank account. After these also we think that ATM is the safest place. But, nowadays in ATM, robbery happens easily by damaging the system for money. In this paper we bring an idea about biometric based system to enhance security. There is signal processing which alerts the police and gives information to bank. © 2019 American Scientific Publishers All rights reserved

Author Keywords
ATM; Fingerprint-based authentication; Security; Verification; Voice-based authentication

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Raziya Banu, M.[a b] , Ibrahim, M.[c] , Prabhu, K.[a] , Rajasankar, S.[d]

Ameliorative effect of withaferin a on ageing-mediated impairment in the dopamine system and its associated behavior of wistar albino rat

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Abstract
Withaferin A (WA) was evaluated for its neuro-protective efficacy on ageing induced striatal dopamine (DA) and behavioural changes in aged rats. Wistar albino rats were divided into group I - young (3 months), Group II - aged (24 months), Group III - aged rats supplemented with WA (50 mg/kg b.w once in a day for 30 days) and Group IV - young rats supplemented with WA (50 mg/kg b.w). The HPLC assay revealed significant decline in the levels of DA and homovanillic acid (HVA) in substantia nigra (SN) and striatum (ST) of aged rat. A marked decline in motor activity of aged rat was observed through open field, beam walking and grid walking motor experiments. These results indicate that ageing reduces nigro-striatal activity as well as nigro-striatal DA levels. Interestingly, the administration of WA (50 mg\kg b.w) resulted in a substantial resurge of DA and HVA in SN and ST and a significant reversal of motor impairment in aged rats. This study is the first report that evidently determines the neuro-protective efficacy of WA on dopaminergic system of SN and ST in aged rats. © 2018 S. Karger AG, Basel.

Author Keywords
Ageing; Dopamine; Striatum; Substantia nigra; Withaferin-A

Index Keywords
dopamine, homovanillic acid, withaferin A, dopamine, homovanillic acid, neuroprotective agent, withaferin A, withanolide; aging, animal behavior, animal experiment, animal model, animal tissue, Article, behavior disorder, controlled study, corpus striatum, disease association, dopamine brain level, dopaminergic system, drug efficacy, grid test, high performance liquid chromatography, inclined beam walking test, male, motor activity, motor dysfunction, neuroprotection, nigroneostriatal system, nonhuman, open field test, priority journal, rat, substantia nigra, age, animal, animal behavior, comparative study, dopaminergic nerve cell, drug effect, metabolism, pathophysiology, psychology, Wistar rat; Age Factors, Aging, Animals, Behavior, Animal, Corpus Striatum, Dopamine, Dopaminergic Neurons, Homovanillic Acid, Male, Motor Activity, Neuroprotective Agents, Rats, Wistar, Substantia Nigra, Withanolides

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Abstract
The addition of nanosized entities into the superconducting matrix is a practical way for increasing the performance of host YBa2Cu3O7-d (noted Y-123) compound. In this study, series of Y-123 samples with WO3 nanowires (noted NW-WO3) as additives were produced via the solid-state reaction method. The structural, morphological, chemical compositions, electrical and magnetic properties were thoroughly investigated using X-ray diffraction (XRD), scanning electron microscope (SEM) along with EDX system and physical properties measurement system (PPMS), respectively. The critical current density (Jc) and flux pinning force density (Fp) were extracted from the measurements of magnetization. The XRD, SEM and EDX analyses showed the successful formation of the Y-123 orthorhombic phase. The electrical resistivity measurements proved the occurrence of superconductivity in these samples. The magnetic results showed higher critical current densities and flux pinning ability in NW-WO3 added Y-123 products. The dominant pinning mechanisms and the strength of pinning centers in various sintered products were examined and discussed. © 2018 Elsevier Ltd and Techna Group S.r.l.

Author Keywords
Critical current density; Flux pinning; Structure; WO3 nanowires; YBa2Cu3Oy superconductor

Index Keywords
Barium compounds, Copper compounds, Critical current density (superconductivity), Critical currents, Current density, Nanowires, Scanning electron microscopy, Solid state reactions, Structure (composition), Tungsten compounds, X ray diffraction, Yttrium barium copper oxides; Chemical compositions, Electrical and magnetic property, Electrical resistivity measurements, Flux pinning force, Physical-properties measurement systems, Solid state reaction method, Superconducting matrix, YBa2Cu3Oy; Flux pinning

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Soft, Self-Assembly Liquid Crystalline Nanocomposite for Superior Switching

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Abstract

Abstract: Liquid crystal (LC) has long been a feature in Materials Science and Nanotechnology, have recently been extended into the appealing domain of complex hybrid materials. The crystalline structural effects of alkoxy chain lengths and the mesogen properties of hydrogen-bonded (n-OBASA) complexes (n = 5,6,7) have been investigated in recent studies. The LC-based hybrid nanocomposite materials–obtained by the homogeneous dispersion of zinc oxide nanowires (ZnO NWs) as a dopant into hydrogen-bonded liquid-crystalline compounds—seem to be particularly promising in this article. Optimizing the geometry of surface stabilizing electro-optic, LC cell reveals the typical intermolecular hydrogen bond (H-bond) formation. Here, we explore molecular-colloidal hybrid composite matrix formed from LCs and dilute dispersions of orientation-ordered ZnO NWs, for eventual potential application in smart switchable display devices. In addition, we investigated the structural, dielectric and optical properties of the nanocomposite, and electro-optical studies which were performed by exploiting the potential during the conditions before the opening of spectrum acquisition. Our novel findings confirm that the electric field induces a charge transfer of the LC molecules to the nanomaterial, which acts as a trap for ionic charges. This effect may be utilized to achieve superior switching operation that is electro-optically tunable. Such dynamic novel switching could be harnessed in smart LCD technology and pave the way towards innovative display modulation techniques. Graphical abstract: [Figure not available: see fulltext.]. © 2018, The Korean Institute of Metals and Materials.

Author Keywords

Hybrid nanocomposite; Liquid crystal; Switchable device; ZnO nanowires

Index Keywords

Abstracting, Charge transfer, Complexation, Dispersions, Electric fields, Hydrogen bonds, II-VI semiconductors, Liquid crystal displays, Liquid crystals, Molecular orientation, Nanocomposites, Nanowires, Optical properties, Self assembly, Zinc oxide; Dielectric and optical properties, Electro-optical studies, Homogeneous dispersions, Hybrid nanocomposites, Hydrogen bonded liquids, Intermolecular hydrogen bonds, Switchable, ZnO nanowires; Hybrid materials

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Electrical properties of lithium bromide poly ethylene oxide / poly vinyl pyrrolidone polymer blend elctrolyte
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Abstract
The development of Lithium batteries has gained more attention nowadays. polyethylene oxide (PEO)/Polyvinyl pyrrolidone (PVP) based Solid polymer electrolytes (SPEs) was prepared with lithium bromide by solution casting technique. From the X-ray diffraction studies, the amorphous nature of the polymer blend with the inclusion of LiBr had been studied. FT-IR study was used to find the presence of functional groups and the complex formation between the bonding of polymers. The maximum ionic conductivity was found to be 1.59 × 10−6 S/cm for PEO (30 wt %)/PVP (70 wt %)/Lithium bromide (4 wt %) at 303 K within the frequency range of 42 Hz - 1 MHz. The dielectric response of the SPE systems was studied at the temperature range of 303–363 K. An important factor of ion conduction is the relaxation behavior of polymer chains which was clarified by the dielectric properties of the SPE systems. Further, the capability of the polymer to dissolve salt was determined by the dielectric constant (ε). At lower frequencies, the higher dielectric permittivity was attained due to deposit of ionic charges. The ionic movement enhances the dielectric loss and dielectric permittivity. The conductivity relaxation process and the ion hopping mechanism have been explained by using the Electric modulus analysis. © 2018 Elsevier B.V.

Author Keywords
FTIR; Ionic conductivity; PEO/PVP; Polymer blend electrolyte; XRD

Index Keywords
Bromine compounds, Dielectric losses, Ethylene, Ionic conductivity, Lithium batteries, Lithium bromide, Permittivity, Polyethylene oxides, Polymer blends, Solid electrolytes; Conductivity relaxation, Dielectric permittivities, FTIR, Polyethylene oxide (PEO), Relaxation behaviors, Solid polymer electrolytes, Solution-casting technique, X-ray diffraction studies; Polyelectrolytes

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Stereochemical investigation of N-formyl-2,7-diphenyl-1,4-diazepan-5-ones by NMR spectroscopy and single crystal X-ray diffraction studies

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Abstract
A series of N-formyl-2,7-diphenyl-1,4-diazepan-5-ones 11–15 are synthesized in significant yields (86–92%) from their corresponding 2,7-diphenyl-1,4-diazepan-5-ones 6–10 using acetic-formic anhydride. Synthesized compounds 11–15 are characterised by their analytical and spectral (IR, Mass, 1D & 2D NMR) data. All the N–formyl compounds 11–15 show doubling of NMR signals due to the existence of syn and anti rotamers at RT which are unambiguously assigned by HETCOR spectra and ASIS method. The preferred conformation has been arrived by considering the chemical shifts, coupling constants, dihedral angles and destabilizing strain factors. The N-formyl-2,7-diphenyl-1,4-diazepan-5-ones 11–15 are best accommodated in a coplanar orientation of formyl function and flattened boat conformation of the ring where the phenyl groups are occupying pseudo-axial orientations in solution state. Further, dynamic NMR study is carried out for 14 from 28 °C to 116 °C and the calculated average energy barrier is 84.4 kJ mol−1. The single crystal X-ray diffraction study on N-formyl-2,7-diphenyl-1,4-diazepan-5-one 13 shows that the molecule adopts distorted boat conformation with coplanar orientation of formyl group. © 2018 Elsevier B.V.

Author Keywords
1D & 2D NMR; Dynamic NMR; Flattened boat; N-Formyl-2,7-diphenyl-1,4-diazepan-5-ones; Single crystal; syn and anti rotamers

Index Keywords
Boats, Conformations, Dihedral angle, Nuclear magnetic resonance spectroscopy, Single crystals, X ray diffraction; 2-D NMR, Axial orientations, Boat conformations, Coupling constants, Dynamic NMR, Rotamers, Single-crystal X-ray diffraction studies, Strain factors; Crystal orientation

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Irusapparajan, G.[a] , Periyaazhagar, D.[b] , Prabaharan, N.[c] , Rini Ann Jerin, A.[d]

Experimental verification of trinary DC source cascaded h-bridge multilevel inverter using unipolar pulse width modulation

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Abstract
Multilevel inverters (MLIs) are an imperative solution for high power and high voltage applications. The MLIs can be classified into two categories such as symmetric and asymmetric. The asymmetric type MLIs has large number of output voltage steps with less number of input DC voltage sources and switching devices. In this paper, a single phase asymmetric (trinary sequence DC source) Cascaded H-Bridge MLI has been developed using unipolar PWM control schemes. The topology can produce 27-level output voltage with the help of 12 switches and 3 DC sources. It has been examined with a diverse combination of multicarrier unipolar PWM control. The PWM control includes Phase Disposition (PDPWM), Alternative Opposition Disposition (APODPWM), Carrier overlapping (COPWM), and Variable Frequency (VFPWM). The harmonic content of output voltage for each technique has been observed with different modulation indices. The demonstration of proposed topology for generating 27-level output voltage has been tested through simulation in MATLAB-SIMULINK and verified with laboratory-based experimental setup. From the results, it is evident that the APODPWM offers quality output voltage with relatively low harmonic distortion. Also, it has been observed that COPWM performance is superior since it delivers relatively higher fundamental RMS output voltage. © 2019 The Author(s).

Author Keywords
Asymmetric multilevel inverter; Cascaded multilevel inverter; Single phase trinary DC source; Unipolar PWM

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Green synthesis, characterization of yttrium oxide, stannous oxide, yttrium doped tin oxide and tin doped yttrium oxide nanoparticles and their biological activities

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Abstract
Yttrium doped tin oxide and Tin doped yttrium oxide nanoparticles were prepared by using Solanum nigrum plant extract. The obtained nanoparticles were confirmed by XRD and SEM. The antimicrobial activities of green synthesized nanoparticles were studied by using Bacillus subtilis. Yttrium doped tin oxide and Tin doped yttrium oxide nanoparticles show better antimicrobial activity than yttrium oxide and tin oxide. © 2019 Elsevier Ltd.

Author Keywords
Antimicrobial activity; Bacillus subtilis; SnO2nanoparticles; Solanum nigrum; Yttrium oxide

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Arulnangai, R.[a] , Mohamed Sihabudeen, M.[a] , Vivekanand, P.A.[b] , Kamaraj, P.[c]

Influence of physico chemical parameters on potability of ground water in ariyalur area of Tamil Nadu, India
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Abstract
Ground water samples were collected from different areas in Ariyalur District, Tamil Nadu. Twelve groundwater samples were collected and analysed for physico - chemical parameters such as pH, Electrical Conductivity, Total Dissolved Solids, Calcium, Magnesium, Total Hardness, Bicarbonate, Chloride, Nitrate and Sulphate in order to understand the different geochemical processes affecting the groundwater quality. The analytical data were compared with WHO standards. Water quality index is used to predict the water quality. The analytical results indicate that the majority of groundwater samples are found to be unsuitable for drinking purpose. © 2019 Elsevier Ltd.

Author Keywords
Ariyalur district; Groundwater; Physico - chemical parameters; Total dissolved solids; Water quality index

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Enhanced catalytic activity of new di-site onium salt in the kinetics of a-Tolunitrile monoalkylation
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Abstract
In this study, we investigate in detail the catalytic efficiency of 1,4-bis-(ethylmethyleneammounium chloride)-2,5- dimethoxy benzene, BEMACDB (multi-site phase transfer catalyst) by observing the pseudo-first order kinetics of mono-alkylation of a-Tolunitrile (ATN). The formation of product was monitored by GC. The comparative study of catalytic efficiency of the new catalysts with single-site salts reveals higher catalytic activity for new catalysts under varying experimental conditions ([BEMACDB], [Base], [ATN], Stirring Speed and Temperature). By understanding the kinetics of mono-alkyaltion, we further establish the experimental parameters that influence reaction conditions. With the support of kinetic data we establish the suitable mechanism for monoalklation of ATN. The catalyst shows consistent catalytic activity in the C-alkylation of ATN in different experimental conditions. © 2019 Elsevier Ltd.

Author Keywords
Kinetics; Onium-salts; Phase transfer catalysts; Rate constant; Substrate

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Low cost synthesis of ZnO nanoparticles and evaluation of their photocatalytic activity
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Abstract
A series of ZnO nanoparticles were synthesized by a biosynthesis method. The as-obtained products were characterized with powder X-ray diffraction (XRD), scanning electron microscopy (SEM), Fourier transform infrared spectroscopy (FTIR), Photoluminescence (PL) and Raman spectra. The ZnO nanoparticle exhibited superior photocatalytic activities for indigo carmine degradation under visible light irradiation. In addition, the photocatalyst exhibits high stability and reusability. © 2019 Elsevier Ltd.

Author Keywords
Biosynthesis; Indigo carmine; Nanopartcles; Photocatalyst; ZnO

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Synthesis, characterization and evaluation of biosynthesized Cerium oxide nanoparticle for its anticancer activity on breast cancer cell (MCF 7)

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Abstract
Biosynthesis of metal oxide nanoparticles using plant attracted great interest recently, due to its eco friendliness. Therefore, in the present study involves the synthesis of cerium oxide nanoparticle by using Brophyllamdaigremontianum plant ethanolic extract. The obtained powder was subsequently calcinated at 600 °C. Synthesized cerium oxide nanoparticles was confirmed by X-ray diffraction, Scanning electron microscopy, High resolution transmission electron microscopy, UV visible spectroscopy, Fourier transform infrared spectroscopy and Brunauer Emmett-teller (BET) measurement. To evaluate the anticancer activity of the spherical structured CeO2-Nps, it was tested towards the normal (L6) and breast cancer cell (MCF 7). It was found that Biosynthesized CeO2-Nps showed better cytotoxicity against cancerous MCF 7 cell line compared to normal L6 cell line due to its smaller size and high surface area. © 2019 Elsevier Ltd.

Author Keywords
Biosynthesis; Breast cancer cell; Cerium oxide nanoparticle; Cytotoxicity; Plant ethanolic extract

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The inhibitive effect of cloxacillin on mild steel corrosion in 2 N Sulphuric acid medium
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Abstract
Corrosion behaviour of mild steel in 2 N Sulphuric acid with Cloxacillin as corrosion inhibitor has been studied by using weight loss, Potentiodynamic polarization, Electrochemical impedance spectroscopy, Hydrogen permeation and diffuse reflectance spectroscopic studies. All these techniques reveal that inhibition efficiency increases with the increase in the concentration of inhibitor. Scanning electron microscopy (SEM) was carried out to characterize the surface morphology of the metal. Polarization studies indicated that inhibitor behaved as cathodic inhibitor. Diffuse reflectance spectroscopy confirmed the adsorption of inhibitor on the mild steel surface obeying Langmuir adsorption isotherm. A chemoffice 3D simulation technique was used to run the quantum mechanical analysis and established correlations between different types of descriptors and measured corrosion inhibition efficiency for inhibitor. The quantum chemical analysis substantiates the inhibition efficiencies of the compound determined by electrochemical methods. © 2019 Elsevier Ltd.

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Adsorption isotherm; Cloxacillin; Corrosion inhibition; Mild steel; Quantum chemical studies

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Abstract
The day-to-day increasing costs of petrol and diesel and to control the air pollution makes an impact to do a scientometric analysis on the research ouput on “Electric Car”. Therefore, the research publications indexed in Web of Science for 28 years have been downloaded from 1991 to 2018 for the analysis. The research reveals that a total of 2424 publications is published during the above-mentioned year. The regression test proves that the deviation among the data is low and has possibility to calculate the doubling time on the basis the last 14 years. The doubling time proves that the growth of publications increased from year after year. Journal articles played a dominant role among other type of publications. The language “English” played prominent role than the other language publications on “Electric Car”. Tang T.Q. published 15 publications and ranked first among the other authors. The Lotka’s Law does not fit the author productivity of the publications published on “Electric Car”. Eventhough, the research publications are increasing from year after year, the number of publications published in the past is not up to remarkable. At the same time, only a very few countries have been implemented the “Electric Car” throughout the world. It is therefore, suggested that the funding agencies, sponsoring bodies and global research and development ministries to encourage the researchers to do many more research on “Electric Car”, to enhance the control of air pollution by means of reducing the consumption of Petrol and Diesel, which will also support the cost control for better economy of the global countries. © 2019, Library Philosophy and Practice. All Rigths Reserved.

Author Keywords
Bradford’s Law; Doubling Time; Electric Car; Lotka’s Law; Regression; Scientometric

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Analysis of mechanical properties of natural fibre composites by experimental with FEA
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Abstract
The domain of Biomaterials has provided a vast scope for research and development and this work is one such effort to develop a Bio Hybrid Composite that is bio degradable and hence eco-friendly with enhanced mechanical properties as well. The present investigation is on fabrication and evaluation of mechanical properties of Bio Hybrid Composite with different natural fibres-flax fibre woven mat, Aloe Vera fibre woven mat, and sisal fibre that are used as reinforcing lamination materials bonded with epoxy resin. This hybrid composite is prepared by the hand lay-up process and the experimental tests for tension, flexural, impact, and hardness are carried out in accordance with ASTM standards. The prepared composite material is also analysed by Finite Element Analysis Method (ANSYS 16.2) and the obtained analytical results are compared with real time experimental values. © 2019 Elsevier Ltd.

Author Keywords
Experimental analysis; Finite element analysis; Material properties; Mechanical properties; Natural fibres

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Influence of sequential positioning of fibre mats in enhancing the properties of natural fibre mat hybrid composite
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Abstract
Natural fibers along with reinforced plastic material gain a positive approach for the development of green composites to meet the demands which prevail in contemporary life. In this work, natural fiber, sisal and natural mats made of flax and aloe vera are used to produce the composite materials by hand laying method as the natural FRP composites are lightweight, strong and biodegradable and have the potential to be used in various automotive, furniture and architectural applications. This paper deals with the study of woven flax, aloe vera and sisal fibre and with the choosen fibre, sisal and mats, flax & aloe vera, two different specimens are prepared using epoxy resin as binder and by varying the positioning of fibre mats. The testing of mechanical properties of the fabricated hybrid composite is done to identify the high strength hybrid bio composite material and the influence of positioning of fibre mats. © 2019 Elsevier Ltd.

Author Keywords
Aloe Vera Fibre; Bio hybrid composites; Hand Lay Method; Mechanical properties; Natural fibers and mat; Sisal Fibre

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Antioxidant studies of one herbal formulation, Kutajarishtam

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Abstract
The present study measures the three antioxidant assays, namely, ABTS, DPPH and FRAP by standard protocols for one ayurvedic medicine, which is used to treat diseases like to treat weak digestion, vomiting, diarrhoea, indigestion, dysentery, irritable bowel syndrome etc. The IC50 value for ABTS radical scavenging effect of Kutajarishtam was found to < 0.156 µg/ml and the standard drug, Ascorbic acid was 208.87 µg/ml. The IC50 value for DPPH radical scavenging assay of Kutajarishtam was found to be 1.968 µg/ml and the standard drug, Ascorbic acid was 8.158 µg/ml. The concentration of standard, ascorbic acid was taken as 5, 10, 20, 40, 80, 160 and 320 µg/ml while concentration of sample, Kutajarishtam was taken as 0.156, 0.3125, 0.625, 1.25 and 2.5 µg/ml. This variation in concentration was undertaken to have a clear understanding of its antioxidant property. The results indicate very good antioxidant activities of Kutajarishtam and this could be one of its important medicinal mechanisms. © Copyright International Knowledge Press. All rights reserved.

Author Keywords
ABTS; Antioxidant; DPPH; FRAP; Kutajarishtam

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The gas chromatography–mass spectrometry study of one medicinal plant, Aristolochia indica

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Abstract
Objective: Verification of the herbal plants by latest scientific tools toward understanding the molecular mechanism underlying their medicinal role is the need of the hour. Methods: Gas chromatography–mass spectrometry study of water extracts of the leaves of one herbal plant, Aristolochia indica was undertaken by standard procedures and its medicinal activity was verified with the biomolecules present in it. Results: The presence of some important biomolecules such as 2-propenoic acid, ethenyl ester, oxalic acid, cyclobutyl ethyl ester, phosphoric acid, 2-chloroethenyl dimethyl ester, pentanoic acid, 2-methylcyclohexyl ester, cis-, butylphosphonic acid, butyl cyclohexylmethyl ester, octadecanoic acid, 2,3-dihydroxypropyl ester, acetic acid, cesium salt and 2-Fluoro-6-trifluoromethylbenzoic acid, 4-nitrophenyl ester, and some others indicate represents the medicinal roles of this plant as is reported ethnopharmacologically. Conclusions: The results and discussion above clearly indicate that the various molecules present in A. indica leaf extracts do have medicinal roles ascribed to it and further work in this regard is on. © 1994 Rockefeller University Press. All rights reserved.

Author Keywords
2; 2-chloroethenyl dimethyl ester; 2-methylcyclohexyl ester; 2-Propenoic acid; 3-dihydroxypropyl ester; Acetic acid; Aristolochia indica; Butyl cyclohexylmethyl ester; Butylphosphonic acid; Cis-; Cyclobutyl ethyl ester; Ethenyl ester; Gas chromatography–mass spectrometry; Octadecanoic acid; Oxalic acid; Pentanoic acid; Phosphoric acid

Index Keywords
2 chloroethenyl dimethyl ester, 2 fluoro 6 trifluoromethylbenzoic acid, 2 methylcyclohexyl ester, 2,3 dihydroxypropyl ester, 4 nitrophenyl ester, acetic acid, acrylic acid, antiinflammatory agent, antipruritic agent, Aristolochia indica extract, butyl cyclohexylmethyl ester, butylphosphonic acid, cesium salt, cyclobutyl ethyl ester, ethenyl ester, oxalic acid, phosphoric acid, plant extract, plant medicinal product, stearic acid, unclassified drug, valeric acid; Aristolochia indica, Article, drug potency, mass fragmentography, molecular weight, nonhuman, plant leaf

Chemicals/CAS
acetic acid, 127-08-2, 127-09-3, 64-19-7, 71-50-1; acrylic acid, 10344-93-1, 79-10-7; oxalic acid, 144-62-7; phosphoric acid, 7664-38-2; stearic acid, 57-11-4, 646-29-7; valeric acid, 10023-74-2, 109-52-4

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The gas chromatography–mass spectrometry study of one medicinal plant, Dodonaea viscosa var. Angustifolia
(2019) *Drug Invention Today*, 12 (8), pp. 1657-1661.

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Abstract
Objective: The scientific validation of ethnopharmacologically important herbal plants by latest techniques is necessary to understand their medicinal efficacy. Methods: Gas chromatography–mass spectrometry study of one herbal plant, Dodonaea viscosa var. angustifolia was undertaken by standard procedures and its medicinal activity was verified with the biomolecules present in it. Results: The presence of some important biomolecules such as catechol, N-benzyl-2-phenethylamine, acetic acid, 4-oxocyclohexyl ester, 4-amino-3-mercapto-1,2,4-triazole, 1,1'-methylene-bis(di-2-propenylamine), inositol, alanine, N-methyl-N-methoxycarbonyl-, hexyl ester, 1,3-dioxolane, 2-methyl-2-pentyl-, cyclohexane, 1-methyl-3-(1-methylethenyl)-, cis-, phthalic acid, di(2,3-dimethylphenyl) ester, heptafluorobutyric acid, 2-naphthyl ester, and 2-fluoro-6-trifluoromethylbenzoic acid, 4-nitrophenyl ester has biochemical properties which represent the ethnomedicinal roles of this plant. Conclusions: The presence of these biomolecules having medicinal properties supports the validity of the medicinal roles of D. viscosa var. angustifolia. © 2019 JPR Solutions. All rights reserved.

Author Keywords
1,1'-methylene-bis(di-2-propenylamine); 4-amino-3-mercapto-1,2,4-triazole; 4-oxocyclohexylester; Aceticacid; Catechol; Dodonaea viscosa var. angustifolia; Gas chromatography–mass spectrometry; Inositol; N-benzyl-2-phenethylamine

Index Keywords
1 methyl 3 (1 methylethenyl), 1,1' methylene bis(di 2 propenylamine), 2 chloropropionamide, 2 fluoro 6 trifluoromethylbenzoic acid, 2 methyl 2 pentyl, 2 naphthyl ester, 3 pentanone, 4 acetoxy 3 methoxystyrene, 4 amino 3 mercapto 1,2,4 triazole, 4 nitrophenyl ester, 4 oxocyclohexyl ester, acetic acid, acetic acid, 4 oxocyclohexyl ester, acetic acid, cesium salt, acetic acid, rubidium salt, alanine, benzamide, 2 fluoro n (2 fluorobenzoyl) n allyl, carbamic acid, monoammonium salt, catechol, cyclohexane, di(2,3 dimethylphenyl)ester, heptafluorobutyric acid, hexane, 3,3 dimethylhexane, inositol, n benzyl 2 phenethylamine, n methyl n methoxycarbonyl, phthalic acid, phthalic acid, di (2,3 dimethylphenyl)ester, plant extract, propane, 1 (chloromethoxy) 2 methylpropane, unclassified drug; Article, biochemical analysis, Dodonaea viscosa, Dodonaea viscosa var. angustifolia, mass fragmentography, plant leaf

Chemicals/CAS
acetic acid, 127-08-2, 127-09-3, 64-19-7, 71-50-1; alanine, 56-41-7, 6898-94-8; catechol, 120-80-9; cyclohexane, 110-82-7; inositol, 55608-27-0, 6917-35-7, 87-89-8; phthalic acid, 88-99-3

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The gas chromatography-mass spectrometry study of Moringa oleifera seeds
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Abstract
Objective: There is an urgent need to substantiate scientifically the roles of contemporary and native medicinal practices. This exercise will open up a new class of drugs which could be cheap, easily affordable, and with less or no side effects. Moringa oleifera or drumstick is known to a wonder herbal plant and most of its parts are used to cure various ailments. The present study deals with the gas chromatography-mass spectrometry (GC-MS) analysis of M. oleifera seeds and to understand the molecules present therein. Methods: GC-MS was performed on the water extract of the dried seeds of the plant by standard procedures. Results: Some important biomolecules such as 2,5-dimethyl-4-hydroxy-3(2H)-furanone, p-cresol, l-Norvaline, N-ethoxycarbonyl-, nonyl ester, Pentanoic acid, 2-hydroxy-, ethyl ester, 1H-1,2,4-Triazole-1-carboxamide, 5-acetylamino-3-amino-, Ethyl 2-hydroxybenzyl sulfone, beta-l-Arabinopyranoside, methyl, tetradecanoic acid, 10,13-dimethyl-, methyl ester, cyclohexane, 1-isopropyl-1-methyl-, decanoic acid, 2-methyl-, 2-Methylthiolane, S,S-dioxide, 4-Methyl-2,4-bis(4'-trimethylsilyloxyphenyl)pentene-, 2,4(1H,3H)-Pyrimidinedione, 6-iodo-5-methyl-, 2-Fluoro-6-trifluoromethylbenzoic acid, and 4-nitrophenyl ester have medicinal roles comparable with the various medicinal activities of Moringa seed water extract. Conclusion: It is concluded that the Moringa seed is a potential candidate for drug designing for many diseases. © 2020 SOLEN s.r.o.. All rights reserved.

Author Keywords
1H-1; 2; 2; 2-hydroxy-; 4-Triazole-1-carboxamide; 5-Dimethyl-4-hydroxy-3(2H)-furanone; Drug design; Ethyl ester; Gas chromatography-mass spectrometry; L-Norvaline; Moringa oleifera; N-ethoxycarbonyl-; Nonyl ester; P-cresol; Pentanoic acid

Index Keywords
1,2 dibromoethane, 1,3 dioxolane 2 methanol, 1h 1,2,4 triazole 1 carboxamide, 2 fluoro 6 trifluoromethylbenzoic acid, 2 methylthiolane, 2 pyrrolidinone, 2,5 dimethyl 4 hydroxy 3(2h) furanone, 4 methyl 2,4 bis(4' trimethylsilyloxyphenyl)pentene, 4 nitrophenyl ester, acetone, beta levo arabinopyranoside, cyclohexane derivative, decanoic acid, decanoic acid derivative, ethyl 2 hydroxybenzyl sulfone, Moringa oleifera extract, myristic acid derivative, norpipanone, norvaline, para cresol, phenol, phosphorus, propane, pyrazine derivative, resorcinol, silane derivative, sulfurous acid, unclassified drug, uracil, valeric acid; Article, chemical composition, mass fragmentography, Moringa oleifera, plant seed

Chemicals/CAS
1,2 dibromoethane, 106-93-4; 2 pyrrolidinone, 616-45-5; acetone, 67-64-1; decanoic acid, 334-48-5, 3398-75-2; norvaline, 6600-40-4; para cresol, 106-44-5; phenol, 108-95-2, 3229-70-7; phosphorus, 7723-14-0; propane, 74-98-6; resorcinol, 108-46-3; sulfurous acid, 7782-99-2; uracil, 66-22-8; valeric acid, 10023-74-2, 109-52-4

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Global ATM reconciliation error codes mapping for all OEM manufacturers with common codes for rectification and reconciliation

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Abstract
The Automated Teller Machine has transformed into an imperative bit of our general public. Utilizing the ATM anyway can frequently be a baffling encounter because of inclined glitches that happens in the machine. ATM makers have exhibited a few diverse mistake codes which starting at yet have not increased standard acknowledgment. This paper examines the different error codes thrown by various ATM machines produced by different manufacturers can be given a common code for very similar malfunctions made by the machine. Thereby to justify these common codes could gain world wide acceptance with the usage of the machines. © 2019 IAEME Publication.

Author Keywords
ATM; Automated teller machine; OEM

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Ravisekar, R.[a] , Srinivasan, K.[b]

Optimal reactive power dispatch with series and shunt facts devices using sine cosine algorithm

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Abstract
Management of reactive power resources is essential for the secure and stable functioning of power systems in the standpoint of voltage stability. The principal aim of optimal reactive power dispatch (ORPD) is to detect the settings of control variables such as the voltage rating of generators, reactive power injection of VAR compensators and tap ratios of the tap setting transformers in order to decrease the grid congestion with one or more objective of minimizing the active power loss for a fixed economic power schedule while meeting a given lot of constraints. In this paper, Flexible AC Transmission System (FACTS) controllers named as Unified Power Flow Controller (UPFC) is added with conventional ORPD problem for active power loss minimization with voltage profile improvement. Also, this paper demonstrates the application of sine cosine algorithm (SCA) to discover the optimal solution of ORPD (with UPFC) of power system with different test systems (IEEE 57-bus and IEEE 118-bus) with distinct cases such as minimization of active power losses and improvement of voltage profile. Simulation results show the high quality and accuracy of the proposed algorithm, and considering the quality of the solution obtained, the proposed algorithm appears to be efficient and robust to solve the ORPD problem comparing with existing literatures. © 2019 IAEME Publication.

Author Keywords
Active power loss reduction; Ant lion optimizer; FACTS devices; Improvement of voltage profile; Optimal reactive power dispatch; Sine cosine algorithm; Whale optimization algorithm

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Denis, G.[a] , Krishna Kumar, T.[b] , Sasipriya, S.[c] , Karthikeyan[d]

Linkedin talent insights for social hiring in HR recruitment using data mining techniques using social, mobility, analytics, cloud (SMAC) architecture

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Abstract
LinkedIn Talent Insights will enable enrollment specialists to look by aptitudes, area, and even school, social enlisting (otherwise called social procuring and web based life enlistment) is utilizing electronic life stages, for instance, Twitter and LinkedIn to expose occupations, find capacity, and talk with potential chooses about association culture. It is compelling for discovering latent applicants. This paper presents the Future trends in recruitment with SMAC - social, versatile, examination and cloud technology on one incorporated stack, where each capacity empowers another to augment their impact. This is the new endeavor IT model conveying an association that is increasingly connective, shared, continuous and profitable. The model is anticipated to improve business aggressiveness. The cooperative energy of all these four advancements develops advancement with low overheads and high reach. SMAC, is making another period where the conventional strategies are being supplanted by the cutting edge ones. So as to remain refreshed with current innovation and drive income through the computerized eco-space, SMAC is picking up stimulus making new position openings, reforming how trade happens and changing how rivalry influences the market. © 2019 IAEME Publication.

Author Keywords
Analytics; Data mining; HR recruitment; Linkedin; SMAC; Social hiring

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Denis, L.[a] , Krishna Kumar, T.[b] , Karthikeyan[c] , Sasipriya, S.[d]

Offline mobile based OTP technology for enterprise IOT enabled architecture in banking cash logistics & atm operations

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Abstract
The Internet has been in presence for more than 40 years now and the expression "Internet of Things" (IoT) has been being used since huge scale appropriation of RFID started 10 years back. IoT empowers things to convey about themselves and their condition with different things and PCs and enable them to take an interest in business procedures and regular day to day existences of individuals. Many financial frameworks have fulfilled the 2FA necessities by sending a One Time Password (OTP), something had, through a SMS to the client's telephone gadget. Unfortunately, universal roaming and SMS expenses and delays put restrictions on this system reliability. It gives a stage to correspondence between objects where items can compose and oversee themselves. By analyzing current technology research and by investigating future application situations for the Internet of Things, this paper will feature out its potentially huge advantages in the cash logistics and ATM operations. © 2019 IAEME Publication.

Author Keywords
ATM; Automated teller machine; IoT; OEM; OTP

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Sudha, J.[a] , Julius, A.[b] , Jimson, S.[c] , Padmavathy, K.[d]

Inverse correlation of serum lactate dehydrogenase and haemoglobin levels in patients with oral submucous fibrosis

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Abstract
Serum lactate dehydrogenase (LDH) is a marker of cellular necrosis and is elevated in oral potentially malignant disorders, Oral Submucous Fibrosis (OSMF). Serum LDH levels have been used as a valuable biochemical marker in diagnosis of OSMF. To evaluate and compare the levels of serum LDH and haemoglobin in OSMF with normal healthy individuals. Two mL of venous blood was collected by under aseptic conditions and serum was separated from the normal healthy control subjects (Group 1, n= 22) and the OSMF (clinically and histopathologically confirmed cases) patients (Group 2, n= 22). Quantitative estimation of serum LDH and haemoglobin was performed. Significant rise was observed in the serum LDH levels (518.14 ± 48.62 IU/L) while the mean Hb levels (11.3 ± 1.14) were decreased in patients with OSMF in comparison with normal healthy individuals (LDH: 189.77 ± 28.30 IU/L, Hb: 12.94± 0.98 gm%) (P value < 0.0001, < 0.0001). Serum LDH and Hb estimation would serve as a valuable biochemical marker in the diagnosis of OSMF. © 2019

Author Keywords
Haemoglobin; Lactate dehydrogenase; Oral Sub-Mucous Fibrosis

Index Keywords
biochemical marker, lactate dehydrogenase, lactic acid, oxidoreductase; adult, aged, Article, biopsy, buccal mucosa, burning sensation, calorimetry, controlled study, hemoglobin blood level, histopathology, human, human tissue, lactate dehydrogenase blood level, mouth disease, necrosis, venous blood

Chemicals/CAS
lactate dehydrogenase, 9001-60-9; lactic acid, 113-21-3, 50-21-5; oxidoreductase, 9035-73-8, 9035-82-9, 9037-80-3, 9055-15-6

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Asymmetric single phase impedance source cascaded multilevel inverter by using variable frequency pulse width modulation

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Abstract
In this research, asymmetric single phase impedance source (Z-source) cascading Multilevel Inverter, Nine level inverter configuration with a unequal DC sources are presented. The optional configuration is extended by asymmetric single phase impedance source (Z-source) cascading multilevel inverter with unequal DC sources. These papers recommend variable frequency pulse with modulation scheme as a switching method. In this variable frequency PWM, stepped modulating system is used as variable frequency pulse width modulation. This topology concession decreased harmonics content present in the ac output voltage and better root mean square (RMS) value of the ac output voltages related with the stepped pulse width modulation. The simulation model of recommended configuration is carry out by using MATLAB/SIMULINK. © 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved.

Author Keywords
Asymmetric configuration; Impedance Source Multilevel Inverter; Stepped modulation; Total Harmonic distortion; Variable Frequency Pulse Width Modulation

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Localization of GluR1 subunits of α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid receptors in rat migraine model

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Abstract
Introduction: Migraine is characterized by headache due to imbalance between excitation and inhibition of neurons disabling normal day-to-day activities. The excitations of neurons are done by excitatory neurotransmitter glutamate which plays a key role in creating any pathology related to neurons. Materials and Methods: This study was done to identify GluR1 a subunit of α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) glutamate receptor in the cells of trigeminal ganglion after inducing migraine and compare it with control rats. Results and Discussion: The GluR1 subunits were localized in the cytoplasm of neurons and these subunits were upregulated following migraine. The GluR1 was also localized in satellite glial cells and nerve fibers indicating these subunits expressed in neurons and migrate during nociceptive sensitization. This GluR1 expression in the cells of trigeminal ganglion may be crucial in nociceptive sensitization, leading to migraine and other painful conditions like trigeminal neuralgia. Conclusions: This study concludes that the GluR1of AMPA receptors are up-regulated following migraine which are involved in crucial mechanism inducing migraine. © 2019 JPR Solutions. All rights reserved.

Author Keywords
Glutamate; Migraine; Sensory ganglion; α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid

Index Keywords
alpha amino 3 hydroxy 5 methyl 4 isoxazolepropionic acid, glutamate receptor, glutamate receptor 1; animal cell, animal experiment, animal model, animal tissue, Article, controlled study, male, migraine, nerve fiber, nociceptive stimulation, nonhuman, protein expression, protein localization, rat, satellite glial cell, trigeminus ganglion, upregulation

Chemicals/CAS
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Herbals and green synthesized nanoparticles in dentistry
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Abstract
The use of herbal medicine for the control of oral/dental diseases and daily care has been practiced since ancient times. Now the new breakthrough is the development of herbal medicine-incorporated nanoparticle formulations in dentistry, as the plant-mediated biogenic metal nanoparticles can overcome the drawbacks of herbal drugs. Green synthesis of metal nanoparticles like silver, copper, and gold nanoparticles facilitated by various medicinal plant extracts has been found to be successful in the treatment of many oral/dental diseases, in fact it is more effective than conventional materials. These are also used in daily dental care products, like toothpaste and mouthwash. Yet, the knowledge regarding the safety of nanomaterials is insufficient, which compels more research. Nanoparticles incorporated with a combination of various plant extracts would address many issues, including drug resistance. © 2019 Elsevier Inc. All rights reserved.

Author Keywords
Dental care; Green synthesized nanoparticle; Herbal medicine; Oral health

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Abstract
This work reports the potential of novel non-edible seed oil of Lepidium perfoliatum Linn. (LSO) for accessing its potential to synthesize biodiesel using zirconium-modified montmorillonite clay catalyst. The newly synthesized zirconium-modified clay catalyst (ZrO-Mmt) was characterized using by X-ray Powder Diffraction (XRD), Scanning Electron Microscopy (SEM), Energy-dispersive X-ray Spectroscopy (EDX), and Fourier transfer Infrared spectroscopy (FT-IR) spectroscopy. Response surface methodology (RSM) was used to optimize the Lepidium biodiesel (LBD) yield. Maximum biodiesel yield (88%) achieved under optimized reaction conditions were 1:15 oil: methanol, 3.5% catalyst amount at135°C for 4h respectively. Different techniques like FTIR, GC/MS, 1H-NMR, and 13C-NMR were used for characterizing LBD. Additionally, major fuel properties of LBD for instance kinematic viscosity (4.10 mm2/s), density (0.8212kg/L), cloud point (−8 °C), flash point (74°C), and pour point (−9°C) agree well with the international biodiesel standards. Overall, Lepidium perfoliatum Linn. seed oil and ZrO-Mmt clay catalysts appear to be cheap, stable, and highly active contenders for the biodiesel industry. © 2019, © 2019 Taylor & Francis Group, LLC.

Author Keywords
biodiesel; Lepidium perfoliatumLinn; montmorillonite; non-edible; transesterification

Index Keywords
Biodiesel, Clay minerals, Driers (materials), Energy dispersive spectroscopy, Fourier transform infrared spectroscopy, Oils and fats, Scanning electron microscopy, Transesterification, X ray powder diffraction, Zirconium; Biodiesel industry, Energy dispersive X ray spectroscopy, Fourier transfers, Lepidium perfoliatumLinn, Modified montmorillonite, non-edible, Optimized reaction conditions, Response surface methodology; Catalysts

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Anti-inflammatory effect of withaferin A on dopaminergic neuron of aged rat
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Abstract
Objective: The objective of the present study is to evaluate the effect of Withaferin A (WA) on aging induced inflammation in the dopaminergic system of the rat brain. Materials and Methods: Wistar albino rats were divided into Group I - young (3 months), Group II - aged (24 months), Group III - aged rat supplemented with WA (50 mg/kg body weight [b. w.] once in a day for 30 days), and Group IV - young rat supplemented with WA (50 mg/kg b. w). Results: The estimation of nitrate and nitrite (NOx) levels revealed significantly increased levels in the aged animal when compared to young. The estimation of superoxide (O2-) showed significantly increased in the midbrain and striatum of aged rat when compared to young. The estimation of pro- and antiinflammatory cytokines presented significantly increased levels in aged midbrain and striatum when compared to young. The apoptotic study also revealed increased apoptotic nuclear morphology in substantia nigra and striatum of aged rat when compared to young. Interestingly, the WA administration significantly reversed the NOx, O2- levels. Conclusion: The present data clearly demonstrate that the WA potentially repress the aging mediated oxidative stress and inflammation in the dopaminergic neuron, thereby it prevents aging induced neurodegeneration of dopaminergic neurons. © 2019 Deuton-X Ltd. All rights reserved.

Author Keywords
Ageing; Dopamine; Striatum; Substantia nigra; Withaferin-A

Index Keywords
nitrate, nitrite, superoxide, withaferin A; age, aged, aging, animal cell, animal experiment, animal model, animal tissue, antiinflammatory activity, apoptosis, Article, cell nucleus, cell structure, controlled study, corpus striatum, dopaminergic nerve cell, male, mesencephalon, nervous system inflammation, nonhuman, rat, substantia nigra

Chemicals/CAS
nitrate, 14797-55-8; nitrite, 14797-65-0; superoxide, 11062-77-4; withaferin A, 5119-48-2

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Banu, M.R.[a b] , Ibrahim, M.[c] , Prabu, K.[a] , Rajasankar, S.[d]

Neuroprotective efficacy of withaferin a on aging mediated oxidative stress in striatum and Substantia nigra of wistar albino rat

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Abstract
Background: The oxidative stress plays a crucial role in aging mediated patho-biology of neuro-degeneration and its associated behavioral impairment. The purpose of this study is to evaluate the efficacy of Withaferin-A (WA) on aging induced oxidative stress in striatum (ST) and substantia nigra (SN) of aged rat brain. Materials and Methods: Animals were randomly separated into group I - young (3 months), group II - aged (24 months), group III - aged rat supplemented with WA (50mg/kg b.w once in a day for 30 days), and group IV - young rat supplemented with WA (50mg/kg b.w). After 30 days, through cervical dislocation, animals were sacrificed and the striatum and substantia nigra (mid brain) were dissected out from brain. Brain tissues were subjected to the estimation of enzymic antioxidants, levels of free radical production and apoptotic analyses (active caspase-3 and DAPI staining). Results: The data demonstrated reduced motor activity ($p<0.001$), increased Reactive oxygen species (ROS) ($p<0.001$), reduced enzymic antioxidant defense system ($p<0.001$), increased active caspase-3 activity ($p<0.001$) and increased apoptotic nuclear morphology ($p<0.001$) in aged ST and SN compared to young, which was significantly reversed by the supplementation of WA. Conclusion: The evidence from the present data emphasizes that WA bears beneficial property in the protection of striatal and nigral neuron from aging mediated oxidative stress and its associated apoptosis. © 2019 Deuton-X Ltd. All rights reserved.

Author Keywords
Aging; Corpus striatum; Oxidative stress; Substantia nigra; Withaferin-A

Index Keywords
caspase 3, glutathione peroxidase, glutathione reductase, glutathione transferase, reactive oxygen metabolite, superoxide dismutase, withaferin A; aged, aging, albino rat, animal experiment, animal tissue, apoptosis, Article, brain tissue, cervical spine dislocation, corpus striatum, drug efficacy, enzyme activity, juvenile animal, lipid peroxidation, male, mesencephalon, motor activity, motor performance, muscle strength, neuroprotection, nonhuman, oxidative stress, rat, retention time, substantia nigra

Chemicals/CAS
caspase 3, 169592-56-7; glutathione peroxidase, 9013-66-5; glutathione reductase, 9001-48-3; glutathione transferase, 50812-37-8; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1; withaferin A, 5119-48-2

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Gas chromatography–mass spectrometry analysis of one ayurvedic medicine, Kutajarishtam

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Abstract
Introduction: The present work deals with the gas chromatography–mass spectrometry (GC-MS) analysis of Kutajarishtam which is used in the treatment of diarrhea, dysentery, irritable bowel syndrome, Crohn's disease, hemorrhoids, etc. Materials and Methods: Kutajarishtam was bought from a standard Ayurvedic vendor at Chennai and subjected to GC-MS analysis by standard procedures. The medicinal roles of the biomolecules indicated in the GC-MS profile were screened for their various medicinal roles using Dr. Duke's Phytochemical and ethnobotanical data and other data. Results: GC-MS profile of Kutajarishtam indicated the presence of important biomolecules such aso-Acetyl-L-serine, 4H-Pyran-4-one, 2,3-dihydro-3,5-dihydroxy-6-methyl-, 2-Furanethanol.,beta.-ethoxy-, Acetic acid, 1-(2-hydroxy-1-methyl-ethyl)-3-methoxymethoxy-2-methyl-propyl ester and Cyclohexan-1,4,5-triol-3-one-1-carboxylic acid which have medicinal roles which correlated well with that of Kutajarishtam. Conclusions: It is concluded that Kutajarishtam, which is an important Ayurvedic medicine, contains some very important molecules showing its efficacy. Further research is required for a better understanding of the medicinal roles of this medicine. © 2019 JPR Solutions. All rights reserved.

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1-(2-hydroxy-1-methyl-ethyl)-3-methoxymethoxy-2-methyl-propyl ester and Cyclohexan-1,4,5-triol-3-one-1-carboxylic acid; 2,3-dihydro-3; 2-Furanethanol; 4H-Pyran-4-one; 5-dihydroxy-6-methyl-; Acetic acid; Beta.-ethoxy-; Gas chromatography–mass spectrometry; Kutajaristam; O-Acetyl-L-serine

Index Keywords
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Tradenames
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Author Keywords
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Chemicals/CAS
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Prospective liver shielding activity of marine red algae on aflatoxin-induced toxicity in rats
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Abstract
Aim: The aqueous extract of Hypnea musciformis (red algae) was evaluated for hepatoprotective activity against aflatoxin-induced hepatotoxicity in male albino rats. Materials and Methods: The liver enzyme markers such as serum glutamic-oxaloacetate transaminase, serum glutamic-pyruvate transaminase, alkaline phosphatase and non-enzymatic marker Glutathione were assessed. Further the biochemical parameters such as urea, creatinine, albumin, total bilirubin and histopathology of control and treated were evaluated for the liver protecting activity of Hypnea musciformis against aflatoxin-induced liver damage. Results: Acute toxicity studies revealed that the LD50 value is more than the dose of 5 g/kg body weight. There is an increase in liver parameters such as SGOT (423.54 ± 5.31 U/L), SGPT (590.72 ± 6.20 U/L), ALP (428.16 ± 4.12 mU/L) and total bilirubin (4.33 ± 0.28 μmol/L). The elevated levels of liver enzymes and glutathione were significantly brought down to near normal values in Hypnea musciformis with aflatoxin treated groups. Conclusion: The aflatoxin-induced cellular damage was reduced and rejuvenated through the enzymatic and biochemical parameters by Hypnea musciformis extract. This mechanism was due to the presence of active biometabolites such as polyphenols and flavonoids in the red algal extract may interfere with the free radical formation which may conclude to hepatoprotective efficacy. © 2019 JPR Solutions. All rights reserved.

Author Keywords
Aflatoxin; Hepatic histology; Hepatoprotective activity; Hypnea musciformis; Liver enzymes

Index Keywords
aflatoxin, alanine aminotransferase, albumin, algal extract, alkaline phosphatase, aspartate aminotransferase, bilirubin, creatinine, glutathione, Hypnea musciformis extract, liver protective agent, unclassified drug, urea; alanine aminotransferase blood level, albumin blood level, alkaline phosphatase blood level, animal experiment, animal model, animal tissue, Article, aspartate aminotransferase blood level, bilirubin blood level, controlled study, creatinine blood level, drug potency, histopathology, Hypnea musciformis, LD50, liver injury, liver protection, liver toxicity, male, nonhuman, prospective study, rat, urea blood level

Chemicals/CAS
aflatoxin, 1402-68-2; alanine aminotransferase, 9000-86-6, 9014-30-6; alkaline phosphatase, 9001-78-9; aspartate aminotransferase, 9000-97-9; bilirubin, 18422-02-1, 635-65-4; creatinine, 19230-81-0, 60-27-5; glutathione, 70-18-8; urea, 57-13-6

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Gas chromatography/mass spectrometry analysis of one Ayurvedic skin oil, Eladi Kera Thailam

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Abstract
Introduction: This study aims to know the types of biomolecules present in Eladi Kera Thailam and to correlate their possible medicinal roles supporting Eladi Kera Thailam's role as medicine. Methods: Eladi Kera Thailam was bought from a standard Ayurvedic vendor at Chennai and subjected to gas chromatography/mass spectrometry (GC/MS) analysis by standard procedures. The medicinal roles of the biomolecules indicated in the GC/MS profile were screened for their various medicinal roles using Dr. Duke's phytochemical and ethnobotanical data and other data. Results: The presence of some important biomolecules such as dodecanoic acid, 2,3-dihydroxypropyl ester, dodecanoic acid, 2-hydroxy-1-(hydroxymethyl) ethyl ester, octadecanoic acid, 2,3-dihydroxypropyl ester, and dodecanoic acid, 1,2,3-propanetriyl ester does have medicinal roles which contribute to Eladi Kera Thailam as a medicine for skin ailments. Conclusions: The GC/MS profile indicated the presence of some important biomolecules which have medicinal properties contributing to the role of Eladi Kera Thailam as a skin cure medicine. The study is a step in the direction of understanding the molecular mechanism of contemporary and alternative medicines. © 2019 Journal of Global Pharma Technology. All rights reserved.

Author Keywords
1,2,3-propanetriyl ester; 2,3-dihydroxypropyl ester; 2,3-dihydroxypropyl ester and dodecanoic acid; 2-hydroxy-1-(hydroxymethyl) ethyl ester; Dodecanoic acid; Eladi Kera Thailam; Gas chromatography/mass spectrometry; Octadecanoic acid

Index Keywords
2 hydroxy 1 (hydroxymethyl) ethyl ester, 2,3 dihydroxypropyl ester, 5 hydroxytryptophan, ayurvedic drug, dermatological agent, eladi kera thailam, herbaceous agent, lauric acid, levodopa, stearic acid, testosterone 17beta dehydrogenase, unclassified drug, unspecific monooxygenase; alternative medicine, antiallergic activity, antiinflammatory activity, Article, decarboxylation, drug screening, food contamination, immune system, mass fragmentography, nonhuman

Chemicals/CAS
5 hydroxytryptophan, 4350-09-8, 56-69-9; lauric acid, 115-05-9, 143-07-7; levodopa, 59-92-7; stearic acid, 57-11-4, 646-29-7; testosterone 17beta dehydrogenase, 9028-62-0; unspecific monooxygenase, 9012-80-0, 9037-52-9, 9038-14-6

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Gas chromatography-mass spectrometry analysis of one ayurvedic oil, Ksheerabala Thailam

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Abstract
Introduction: The present work deals with the gas chromatography-mass spectrometry (GC-MS) analysis of Ksheerabala Thailam which is an Ayurvedic oil used for the treatment of Vata disorders such as neuromuscular pains, sciatica, spondylitis, paralysis, myalgia, for nerve regeneration, cataract, earache, and headache. Materials and Methods: Ksheerabala Thailam was bought from a standard Ayurvedic vendor at Chennai and subjected to GC-MS analysis by standard procedures. The medicinal roles of the biomolecules indicated in the GC-MS profile were screened for their various medicinal roles using Dr. Duke's phytochemical and ethnobotanical data and other data. Results: GC-MS profile of the Ksheerabala Thailam indicated the presence of important biomolecules such as n-Hexadecanoic acid, 15-Hydroxypentadecanoic acid, Hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester, (3-Fluorophenyl)carbamic acid, 2-isopropyl-5-methylphenyl ester, Hexadecanoic acid, 1-(hydroxymethyl)-1,2-ethanediyl ester, Hexadecanoic acid, 2-(octadecyloxy)ethyl ester,.gamma.-Tocopherol, and .gamma.-Sitosterol; these molecules do have medicinal roles which relate to that of Ksheerabala Thailam. Conclusions: It is concluded that Ksheerabala Thailam, which is an important Ayurvedic medicine, does contain some very important molecules showing its efficacy. Further research is required for a better understanding of the medicinal roles of Ksheerabala Thailam. © 2019 JPR Solutions. All rights reserved.

Author Keywords
(3-Fluorophenyl)carbamic acid; 1-(hydroxymethyl)-1,2-ethanediyl ester; 15-Hydroxypentadecanoic acid; 2-(octadecyloxy)ethyl ester; 2-hydroxy-1-(hydroxymethyl)ethyl ester; 2-Isopropyl-5-methylphenyl ester.,gamma.-Tocopherol and .gamma.-Sitosterol; Gas chromatography-mass spectrometry; Hexadecanoic acid; Hexadecanoic acid; Hexadecanoic acid; Ksheerabala thailam; n-Hexadecanoic acid

Index Keywords
(13,14 epoxy)tetradec 11 en 1 ol acetate, (3 fluorophenyl)carbamic acid, 1 (hydroxymethyl) 1,2 ethanediyl ester, 1 heptatriacotanol, 1 monolinoleoylglycerol trimethylsilyl ether, 1,3,12 nonadecatriene 5,14 diol, 15 hydroxypentadecanoic acid, 2 (octadecyloxy)ethyl ester, 2 hydroxy 1 (hydroxymethyl)ethyl ester, 2 isopropyl 5 methylphenyl ester, 26 nor 5 cholesten 3beta ol 25 one, 7 methyltetradecen 1 ol acetate, 9,12 octadecadienoic acid 15 hydroxypentadecanoic acid, 9,12 octadecadienoyl chloride, ayurvedic drug, campesterol, ergost 5 en 3 ol acetate, gamma sitosterol, gamma tocopherol, linoleic acid, n hexadecanoic acid, oil, palmitic acid, phytochemical, stigmasta 5,22 dien 3 ol acetate, stigmasterol, unclassified drug; Article, Ayurveda, mass fragmentography

Chemicals/CAS
campesterol, 474-62-4; gamma tocopherol, 7616-22-0; linoleic acid, 1509-85-9, 2197-37-7, 60-33-3, 822-17-3; palmitic acid, 57-10-3; stigmasterol, 83-48-7

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Gas chromatography–mass spectrometry analysis of one ayurvedic oil, anu thailam

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Abstract
Objective: Anuthailam, an Ayurvedic oil used for the treatment of diseases related to the brain, nose, sinus, eyes, head, neck, shoulders, and arms. Anuthailam is subjected to Gas chromatography–mass spectrometry (GC-MS) analysis to understand the molecules present therein. Materials and Methods: Anuthailam was bought from a standard Ayurvedic vendor at Chennai and subjected to GC-MS analysis by the standard procedures. The medicinal roles of the biomolecules indicated in the GC-MS profile were screened for their various medicinal roles using Dr. Duke's Phytochemical and ethno-botanical data and other data. Results: GC-MS profile of the Anuthailam indicated the presence of important biomolecules such as 15-Hydroxypentadecanoic acid, hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester, trans-13-Octadecenoic acid, 9-Octadecenoic acid (Z)-, 2-hydroxy-1-(hydroxymethyl)ethyl ester, 1-Heptatriacotanol.,gamma.-Tocopherol, (3-Fluorophenyl)carbamic acid, 2-isopropyl-5-methylphenyl ester, Stigmasterol, Hexadecanoic acid, 1-(hydroxymethyl)-1,2-ethanediyl ester, etc. Conclusions: It is concluded that Anuthailam, does have a scientific efficacy toward its claimed role as a medicine in Ayurveda. Further research is required for a better understanding of the medicinal roles of Anuthailam. © 2019 Journal of Global Pharma Technology. All rights reserved.

Author Keywords
1-(hydroxymethyl)-1; 1-Heptatriacotanol; 15-Hydroxypentadecanoic acid; 2-ethanediyl ester; 2-hydroxy-1-(hydroxymethyl)ethyl ester; AnuThailam; Gamma –Tocopherol; Gas chromatography–mass spectrometry; Hexadecanoic acid Hexadecanoic acid Stigmasterol trans-13-Octadecenoic acid

Index Keywords
(3 fluorophenyl)carbamic acid, 1 (hydroxymethyl) 1,2 ethanediyl ester, 1 heptatriacotanol, 15 hydroxypentadecanoic acid, 2 hydroxy 1 (hydroxymethyl)ethyl ester, 2 isopropyl 5 methylphenyl ester, 9 octadecenoic acid, anuthailam, ayurvedic drug, ester, gamma tocopherol, oil, palmitic acid, stigmasterol, trans 13 octadecenoic acid, unclassified drug; allergic rhinitis, Article, chronic sinusitis, convalescence, drug mechanism, dry eye, mass fragmentography, molecule, retention time, standard

Chemicals/CAS
gamma tocopherol, 7616-22-0; palmitic acid, 57-10-3; stigmasterol, 83-48-7

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Abstract
Introduction: The present work deals with the gas chromatography (GC)-mass spectrometry (MS) analysis of Drakshadi Kashayam, which is used in the treatment of Panduroga (anemia), jaundice, and diseases caused due to imbalance in Pitta (bile) consistency. Methods: Drakshadi Kashayam was bought from a standard Ayurvedic vendor at Chennai and subjected to GC-MS analysis by standard procedures. The medicinal roles of the biomolecules indicated in the GC-MS profile were screened for their various medicinal roles using Dr. Duke's phytochemical and ethnobotanical data and other data. Results: GC-MS profile of Drakshadi Kashayam indicated the presence of important biomolecules such as carbonic acid, pentyl phenyl ester, bisphenol C, histamine, N-benzoyl-2-cyano-, o-Methoxy-.alpha.-phenethylamine, benzenethanamine, 3,4-dimethoxy-.alpha.-methyl-, cis-Z-.alpha.-Bisabolene epoxide, and 1,3-Dimethoxy-5-(1-methyl-heptyl)-benzene which have medicinal roles supporting the efficacy of Drakshadi Kashayam as a liver tonic. Conclusions: It is concluded that Drakshadi Kashayam, which is an important Ayurvedic medicine, does contain some very important molecules showing its efficacy. Further research is required for a better understanding of the medicinal roles of this medicine. © 2019 JPR Solutions. All rights reserved.

Author Keywords
3,4-dimethoxy-.alpha.-methyl-; Benzenethanamine; Bisphenol C; Carbonic acid; Drakshadi Kashayam; Gas chromatography-mass spectrometry; Histamine; N-benzoyl-2-cyano-; o-Methoxy-.alpha.-phenethylamine; Pentyl phenyl ester

Index Keywords
1,3 dimethoxy 5 (1 methyl heptyl) benzene, 3 methoxy alpha phenethylamine, alpha bisabolene epoxide, ayurvedic drug, benzenethanamine, bisphenol C, carbonic acid, carbonic acid pentyl phenyl ester, drakshadi kashayam, glycerol, heptanediamide n,n' di benzoyloxyheptanediamide, histamine, hydrocoumarin, phytochemical, pterin derivative, pyrogallol, unclassified drug; Article, Ayurveda, ethnobotany, mass fragmentography, molecule, phytochemistry

Chemicals/CAS
carbonic acid, 3812-32-6, 463-79-6; glycerol, 56-81-5; histamine, 51-45-6, 56-92-8, 93443-21-1; pterin derivative, 948-60-7; pyrogallol, 87-66-1

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Class C power amplifier using GaN hemt transistor

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Abstract
Power Amplifiers are inherent part of a transmitting chain which required boosting the signal to overcome channel losses between transmitter and receiver. Power amplifiers are the prime consumers of the power in a transmitter hence during design stage designers need to look for the efficiency which is the figure of merit to know how efficiently DC power can be converted to RF power which is known as PAE (Power Added Efficiency). Also notice that efficiency translates either into lower operation costs e.g. Cellular Base Station or longer battery life e.g. Wireless handheld device such as Mobile Phone. Power Amplifier linearity is another important aspect of PA design so as to preserve the input and output power relationship to maintain the signal integrity. The design of PA often requires trade-off between linearity and efficiency. © 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved.

Author Keywords
GaN hemt transistor; Power added efficiency (PAE); Power amplifier

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Shanmugam, H.[a] , Panneerselvam, N.[b] , Lawrence, A.A.[c]

Adverse drug reactions of cardiovascular drugs in intensive cardiac care unit in a tertiary care hospital: A prospective study

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Abstract
Cardiovascular diseases are prevalent in developing countries like India. Patients with cardiovascular diseases are prescribed multiple drugs, hence polypharmacy may attribute to higher incidence of adverse drug reactions in these patients. To monitor and to analyze the pattern of occurrence of adverse drug reactions reported with cardiovascular drugs in intensive cardiac care unit of a tertiary care hospital, Chennai. This was a prospective surveillance study carried out for a period of 6 months. Analysis of various adverse drug reactions reported were done using various assessment scales. Descriptive statistics was used and values were expressed in numbers and percentage. During the study period, 282 adverse reactions were reported from 389 patients that includes 232 males and 157 females. The average age of the patients included in this study was 58.1± 16.8 years. The most common ADRs observed were electrolyte imbalance (14.89%), headache (13.12%) and gastritis (12.41%). Assessment using WHO Causality assessment scale revealed 60.28% were possible, 18.43% probable, 12.76% certain and 8.51% unlikely. According to Schumock and Thornton scale 65.9% of ADRs were preventable and 34% non preventable. Analysis with Hartwig and Seigel's scale 62.05% of ADRs were moderate in severity, 27.95% mild and 10.99% severe. Drugs attributing to highest ADRs were Digoxin and Furosemide. The common ADRs due to cardiovascular drugs can be reduced by improving the prescription pattern. Intense monitoring and reporting of ADRs could help in minimizing the preventable ADRs, among the health care professionals. © 2019 Oriental Scientific Publishing Company. All rights reserved.

Author Keywords
Adverse drug reaction; Cardiovascular drugs; Causality; Preventability; Severity

Index Keywords
acetylsalicylic acid, amiodarone, captopril, cardiovascular agent, carvedilol, digoxin, enalapril, furosemide, heparin, metoprolol, nifedipine, nitric acid derivative, streptokinase, verapamil; adolescent, adult, adverse drug reaction, aged, Article, atrial fibrillation, atrioventricular block, cardiomyopathy, congestive heart failure, coughing, disease severity, dyspnea, electrolyte disturbance, epigastric pain, female, headache, heart arrhythmia, heart palpitation, heart ventricle fibrillation, heart ventricle tachycardia, hematuria, human, intensive care unit, ischemic heart disease, major clinical study, male, middle aged, nausea, observational study, pericardial disease, prescription, prospective study, tertiary care center, vomiting, weakness

Chemicals/CAS
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Impact of La3+ and Y3+ ion substitutions on structural, magnetic and microwave properties of Ni0.3Cu0.3Zn0.4Fe2O4 nanospinel ferrites synthesized: Via sonochemical route

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Abstract
In the current study, Ni0.4Cu0.2Zn0.4LaxYxFe2-xO4 (x = 0.00 - 0.10) nanospinel ferrites (NSFs) were fabricated via an ultrasonic irradiation route. The creation of single phase of spinel nanoferrites (NSFs) was investigated by X-ray powder diffractometry (XRD) and selected area diffraction pattern (SAED). The cubic morphology of all samples was confirmed by scanning and transmission electron microscopies (SEM and TEM) respectively. The UV-Vis investigations provided the direct optical energy band gap values in a narrow photon energy interval of 1.87-1.92 eV. The 57Fe Mössbauer spectroscopy analysis explained that the hyperfine magnetic fields of Octahedral (Oh) and Tetrahedral (Td) sites decreased with substitution. The paramagnetic properties of NPs decrease with increase of content of doped ions. Investigations of magnetic properties reveal a superparamagnetic nature at 300 K and soft ferromagnetic trait at 10 K. The Ms (saturation magnetization) and Mr (remanence) decrease and the Hc (coercivity) increases slightly with La3+ and Y3+ substitution. The observed magnetic traits are deeply discussed in relation with the morphology, structure, magnetic moments and cation distributions. The microwave characterization of the prepared NSFs showed that, dissipation (i.e., absorption) of incoming microwave energy occurs at a single frequency, for each sample, lying between 7 and 10.5 GHz. The reflection losses (RL) at these frequencies range from -30 to -40 dB and the mechanism of which is explained in the framework of dipolar relaxation and spin rotation. The best microwave properties were obtained with a LaY concentration of x = 0.08 having an RL of -40 dB @ 10.5 GHz and an absorption bandwidth of 8.4 GHz @ -10 dB. With these high values of RL and absorbing bandwidth, LaY doped NiCuZn NSF products would be promising candidates for radar absorbing materials in the X-band. © The Royal Society of Chemistry 2019.

Index Keywords
Bandwidth, Binary alloys, Energy gap, Ferrites, Iron compounds, Magnetic moments, Microwaves, Morphology, Radar absorbing materials, Remanence, Saturation magnetization, Transmission electron microscopy; Hyperfine magnetic fields, Microwave characterization, Optical energy band gap, Paramagnetic properties, Scanning and transmission electron microscopy, Selected area diffraction patterns, Ultrasound irradiation, X-ray powder diffractometry; Nickel silver

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Mathematical model-based ontology for human papillomavirus in India

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Abstract
Cervical cancer is a life threatening disease contracting women population in great numbers. It is the fifth most common cancer having high impact on human mortality. The second most common cancer prevalent among women worldwide is cervical cancer. Cervical cancer is due to sexually transmitted virus known as human papillomavirus (HPV). In this paper a mathematical model and ontological representation of this model HPVMath ontology has been formulated to expose the viability of HPV which leads to cervical cancer in women. Mathematical models translate data in to trials which gives deep insights about women population: not suspected for HPV, suspected for HPV, with HPV without cervical cancer, with HPV with cervical cancer. These trials from short-term findings can lead to long-term health outcomes. In addition HPVMath ontology representation formalises a common view for HPV prevalence which can in turn assist medical practitioners and generate awareness among common men. This paper explores and defines the circumstances of HPV in to an ethical focus in an age characterisation by the worldwide environmental threats. © 2019 Inderscience Enterprises Ltd.

Author Keywords
Cervical cancer; HPV; Human papillomavirus; Mathematical model; Ontology

Index Keywords
Artificial life, Diseases, Mathematical models, Ontology, Population statistics; Cervical cancers, Environmental threats, Health outcomes, Human mortality, Human papillomavirus, Medical practitioner, Ontological representation, Ontology representations; Oncogenic viruses; Article, human, India, mathematical model, nonhuman, ontology, Wart virus

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Nano in micro - The role of nanobrush in dentistry
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Abstract
Nanotechnology or nanoscience refers to a field of applied science whose theme is the control of matter on an atomic or molecular scale. In general, nanotechnology deals with structures 100 nm or smaller and involves developing materials or devices within that size. Nanotechnology entered dentistry with the advancements in diagnostics, material sciences (mainly composites and bonding agents), preventive dentistry, and dental surgical procedures. A new standard innovation in endodontics is the use of nanobrush for cleaning the root canals along with irrigating solutions. This article is a review that highlights the significance of nanobrush in dentistry. © 2019 JPR Solutions. All rights reserved.

Author Keywords
Den brush; Endodontic irrigation; Nanobrush; Nanodentistry; Nanotechnology

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cleaning, controlled study, endodontics, nanotechnology, preventive dentistry, review, surgical technique, tooth root canal

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Nanodentistry: New buzz in dentistry

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Effect of Argyreia nervosa on liver function markers in alcohol-induced male albino rats
(2019) *Drug Invention Today*, 11 (9), pp. 2265-2269. Cited 1 time.

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Abstract
Background: Uncontrolled alcohol consumption is a global health-care problem accounting for 3 million deaths in 2018. Chronic alcohol intake causes damage nearly every organ in the body. Argyreia nervosa belongs to the family Convolvulaceae is also known as elephant creeper or woolly morning glory. Conventionally, the plant has been used medicinally for its broad range of clinical effects such as antiviral, antibacterial, antifungal, and anti-inflammatory properties. Aim: The present study was designed to evaluate the possible effect of A. nervosa on liver function markers of alcohol-induced liver in male albino rats. Materials and Methods: A. nervosa leaf extract oral doses (100 and 300 mg/kg body weight) were given once in a day for 8 weeks to ethanol-induced rats. At the end of the experimental period, blood was collected sera from control and experimental animals. Liver function markers and lipid were assessed. Results: Ethanol-induced rats showed a significant increase in the serum levels (aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase, and gamma-glutamyl transferase) when compared with control animals. Serum lipid markers such as triglycerides, total cholesterol, low-density lipoprotein cholesterol (LDL-C), and very LDL-C were also found to be significantly increased in ethanol-induced rats. Conversely, serum high-density lipoprotein cholesterol was decreased in ethanol and sucrose-fed rats. Treatment with A. nervosa leaf extract normalized the altered levels of liver function markers and lipid parameters. The 300 mg dose of A. nervosa showed the maximum protective effect compared to 100 mg dose. Conclusion: Our data indicate the hepatotoxicity induced by chronic alcohol exposure and shows the ability of A. nervosa extract (100 and 300 mg/kg of body weight) to eliminate this toxicity. Hence, A. nervosa may be used as one of the potential medicinal plants for the protection of the liver from alcohol-induced toxicity. © 2019 JPR Solutions. All rights reserved.

Author Keywords
Argyreia nervosa; Ethanol toxicity; Lipid profile; Liver function markers; Sucrose

Index Keywords
Agyreia nervosa extract, alanine aminotransferase, alcohol, alkaline phosphatase, aspartate aminotransferase, gamma glutamyltransferase, high density lipoprotein cholesterol, low density lipoprotein cholesterol, plant extract, sucrose, triacylglycerol, unclassified drug, very low density lipoprotein; Agyreia nervosa, alanine aminotransferase blood level, albino rat, alcohol intoxication, alcohol liver disease, alkaline phosphatase blood level, animal experiment, animal model, Article, aspartate aminotransferase blood level, blood sampling, cholesterol blood level, controlled study, Convolvulaceae, drug dose comparison, gamma glutamyl transferase blood level, liver function, liver protection, liver toxicity, male, nonhuman, plant leaf, rat, treatment duration, triacylglycerol blood level

Chemicals/CAS
alanine aminotransferase, 9000-86-6, 9014-30-6; alcohol, 64-17-5; alkaline phosphatase, 9001-78-9; aspartate aminotransferase, 9000-97-9; gamma glutamyltransferase, 85876-02-4; sucrose, 122880-25-5, 57-50-1

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An adaptive low power coding scheme for the NoC

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Abstract
Low power system design is important for system-on-chip design where communication takes place at higher data rate to realise the system functionality. Low power coding reduces energy by reducing self-switching activity or coupling switching activity. But under typical network-on-chip (NOC) system, we require a low power coding scheme to handle different kinds of data traffic from different IP core at different instant and different places in system-on-chip (SOC). As single low power coding scheme will not solve all application demands, a correlation analysis based adaptive data coding scheme is presented. Based on the classification of data traffic as low, moderate and highly correlated, different coding scheme is applied. The proposed system is simulated in labVIEW FPGA tool for the USRP RIO target. Based on comparative analysis of power consumption between the existing coding schemes and proposed adaptive scheme 25% energy saving is achieved at the worst case scenario. © 2019 Inderscience Publishers. All rights reserved.

Author Keywords
Correlation analysis; network-on-chip; NoC; SoC; System-on-chip; USRP RIO

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Aarthi, J.[a] , Rodrigues, S.J.L.[b] , Sujatha, S.[c] , Mahesh, R.[c]

Cariogenic potential of commercially available date syrup as a sweetening agent in milk – An in vitro study
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Abstract
Background: Early childhood caries is a condition with multifactorial etiology, of which frequent nighttime use of bottle containing milk sweetened with sucrose plays a significant role. In the quest for finding an alternative low cariogenic sweetening agent to sucrose, date syrup was studied. Aim: The study aimed to determine the cariogenic potential of commercially available date syrup in combination with milk and to compare it with milk sweetened with sucrose. Materials and Methods: Analysis of viscosity and constituent sugars of the test substances were performed using viscosimeter and high-performance liquid chromatography (HPLC), respectively. The effect of the test substances on the growth of Streptococcus mutans was carried out using ditch plate method (zone of inhibition/exhibition). Results: Date syrup showed the highest viscosity, but in combination with milk, it was not statistically different from milk sweetened with 10% sucrose. Analysis of sugars by HPLC revealed the presence of sucrose (1.039% w/w), glucose (3.365% w/w), fructose (4.033% w/w), lactose (0.466% w/w), and a polyol (sorbitol – 8.045% w/w) in date syrup. When combined with milk, the concentration of fructose and sorbitol decreased significantly. Date syrup showed a zone of inhibition (20.72 mm) when tested using ditch plate method. However, in combination with milk, no inhibitory action was present. Conclusion: Based on these results, it was concluded that there was no significant difference in the viscosity and effect on growth of S. mutans between milk sweetened with date syrup and 10% sucrose. However, the inhibitory action of date syrup against S. mutans when used alone is a novel one and warrants more research. © 2018 Termedia Publishing House Ltd.. All rights reserved.

Author Keywords
Cariogenicity; Date syrup; Early childhood caries

Index Keywords
fructose, glucose, lactose, polyol, sorbitol, sucrose, sweetening agent; Article, bacterial growth, cariogenic diet, chemical analysis, comparative study, concentration (parameter), dental caries, high performance liquid chromatography, in vitro study, milk, Streptococcus mutans, sweetened milk, syrup, viscosity, zone of inhibition

Chemicals/CAS
fructose, 30237-26-4, 57-48-7, 7660-25-5, 77907-44-9; glucose, 50-99-7, 84778-64-3; lactose, 10039-26-6, 16984-38-6, 63-42-3, 64044-51-5; sorbitol, 26566-34-7, 50-70-4, 53469-19-5; sucrose, 122880-25-5, 57-50-1

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Abstract
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Computational analysis of mixing in scramjet combustor using cross flow injection technique
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Abstract
The prime issue in supersonic combustion is proper mixing within short duration of time. Computational study has been performed to analyse the mixing of air and fuel using cross flow injection technique. Cross flow injection is performed by placing the fuel injectors on the walls of the scramjet engine which is perpendicular to the flow. To enhance the mixing of fuel and air, cavities were introduced. The flow recirculation inside the cavity will enhance the mixing and combustion. The fuel injectors were placed just upstream of the cavity. Analyses were done by changing the injection angles. The air is allowed to enter at different Mach numbers and the changes were analysed using ANSYS software. The roles of cavity cross flow injection, pressure, temperature, velocity and Mach number variation were examined in this study and the obtained results were compared between various configurations. © 2019. MechAero Foundation for Technical Research & Education Excellence.

Author Keywords
Cavity; Combustion; Computational fluid dynamics; Cross flow injectors; Mach number; Ramp angle

Index Keywords
Aerodynamics, Combustion, Computational fluid dynamics, Fuel injection, Fuels, Mach number, Mixing; Cavity, Computational analysis, Computational studies, Cross flows, Cross-flow injections, Ramp angle, Scramjet combustors, Supersonic combustion; Ramjet engines

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Asparagus racemosus - A review

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Abstract
Asparagus racemosus (A. racemosus) commonly known as Shatavari or satavar belongs to family of Liliaceae. It is grown in tropical areas of India, Sri Lanka and Himalayas. Shatavari crop generally shows resistance to pest and insects and unaffected with diseases. The crop grows well in tropical and hot climate. Well drained fertile black soil is most preferred for the cultivation of crop. The dried root extracts of the plant are used as drug. The root extracts are proved for to possess pharmacological efficacies such as antioxidant potential, antimicrobial property, anti-tumor potential, hepatoprotective role and antidiabetic activity. The present article explores the therapeutic properties of A. racemosus root which are reported so far. © 2019 EManuscript Technologies. All rights reserved.

Author Keywords
Antimicrobial property; Asparagusracemosus; Hepatoprotective role; Rootextract; Shatavari

Index Keywords
Asparagus racemosus extract; antidepressant activity, antidiabetic activity, antiinflammatory activity, antimicrobial activity, antineoplastic activity, antioxidant activity, Asparagus racemosus, drug effect, drug efficacy, heart protection, liver protection, nonhuman, phytochemistry, plant root, priority journal, Review, species cultivation

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Phytochemical Screening, HPTLC Fingerprinting and Invitro Antioxidant Activity of Root Extract of Asparagus racemosus

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Abstract
Background: Asparagus racemosus is a climber shrub used in Indian medicine for centuries. It has been used as galactogogue and nerve tonic in folk medicine. The recent research on A. racemosus has revealed its disease fighting properties such as anti-bacterial, immunomodulatory, cardio protective, anti-stress, etc. Phytochemicals present in the plants are associated with their therapeutic capabilities. Hence, phytochemical screening of a therapeutic plant is essential. Materials and Methods: A preliminary qualitative screening of phytoconstituents present in the ethanol and aqueous extract of the plant was done. high-performance thin layer chromatography (HPTLC) was used to create a phytochemical fingerprint of the plant extract. Further, a series of antioxidant assays, i.e., 2,2-diphenyl-1-picrylhydrazyl (DDPH) radical, Nitric oxide (NO) radical, Superoxide (SO) radical and 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid) (ABTS) radical scavenging assays were done. Results: The phytochemical screening and the HPTLC fingerprint showed the presence of phenolic compounds, flavonoids, glycosides, triterpenoids, saponins etc. They also showed free radical scavenging property and hence can be used as potential primary antioxidant. Conclusion: A preliminary screening created a phytochemical profile of A. racemosus extracts. These phytoconstituents may be linked to the various known therapeutic applications of the plant. This may aid in further extensive studies for identifying and isolating compounds with potential therapeutic value in A. racemosus. © 2019 Phcogj.

Author Keywords
Antioxidants; Asparagus racemosus; Chromatography; Phytochemistry; Phytoconstituents; Therapeutics

Index Keywords
alcohol, antioxidant, ascorbic acid, Asparagus racemosus extract, flavonoid glycoside, glycoside, nitric oxide, phenol derivative, saponin derivative, scavenger, superoxide, triterpenoid; antioxidant activity, antioxidant assay, aqueous solution, Article, Asparagus racemosus, DPPH radical scavenging assay, drug screening, high performance thin layer chromatography, IC50, in vitro study, nonhuman, phytochemistry, plant root

Chemicals/CAS
alcohol, 64-17-5; ascorbic acid, 134-03-2, 15421-15-5, 50-81-7; nitric oxide, 10102-43-9; superoxide, 11062-77-4

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The GC MS studies of one ayurvedic medicine, Amritarishtam

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Abstract
The knowledge of the types of biomolecules present in Ayurvedic medicines can help in understanding the underlying mechanism of action of such medicines. This type of study is very pertinent and being sought after in the present day medical scenario, which needs newer and better approaches of treatment. The present study deals with the GC MS analysis of one such Ayurvedic medicine, Amritarishtam, which is used for the treatment of all types of fevers. The medicines was procured from standard Ayurvedic vendor at Chennai and subjected to GC MS analysis after following proper procedures. The GC MS profile indicated the presence of 12 biomolecules, such as, Phenylethyl Alcohol, Ethyl Hydrogen Succinate, 5-Hydroxymethylfurfural, Thymol, Ethanone,1-(2-hydroxy-4-methoxyphenyl)-, Hexadecanoic acid,2-hydroxy-1-(hydroxymethyl)ethyl ester and Ocatadecanoic acid,2,3-dihyroxypropyl ester which have medicinal values relating to that of Amritarishtam. Further work to isolate the molecules and understand their role is in process. © RJPT All right reserved.

Author Keywords
6-hydroxymethylfurfural; Amritarishtam; Ayurveda; GC MS; Phenylethyl alcohol; Thymol

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Histopathological spectrum of fungal infections in a tertiary care hospital

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Abstract
Context: Infections caused by funguses are increasing at a steady rate worldwide. Elderly individuals and who are at an immunocompromised state are at risk of developing this disease. Though fungal infections which either manifest as cutaneous or invasive type, Cutaneous lesions are very common. Fungal diseases are diagnosed usually by correlating the clinical findings with histopathology and confirmation is done based on culture. Aim: The current study was aimed at categorizing the spectrum of fungal infections diagnosed in the histopathology specimens and their distribution according to age, sex and site of involvement. Settings and Design: This was a cross sectional analysis, conducted over a period of one year from September 2016 to August 2017. Methods and Material: A total of 60 cases were enrolled in the study. Clinical findings inclusive of age and sex parameters were noted from hospital registrars. Specimens were fixed in formalin and processed under standard procedure protocols. Slides were prepared and stained with routine H & E stain; special stains like PAS and GMS stains were used wherever necessary. Statistical analysis used: Data analysis was using IBM Statistical Package for the Social Sciences Software version 21. Significance of the statistical tests at P value less than 0.05 was based on 95% confidence interval. Results: Out of 60 cases, 18 cases turned out to be positive for fungal infection. The mean age of the studied population was 49.11 years (SD 11.02). The male female ratio was found to be 0.8:1. The mean age of male population was found to be 53.375 years (SD 7.44), mean age of female population was 45.7 years (SD 12.54). The commonest fungal infection encountered in our study was Rhinosporidiosis. Conclusions: Histopathological examination provides reliable diagnosis in individuals with uncertain clinical findings of fungal infection. © Red Flower Publication Pvt. Ltd.

Author Keywords
Cutaneous; Histopathology; Immunocompromised; Periodic acid- Schiff; Rhinosporidiosis

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Predicting pricing stock by ANN using genetic algorithm

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Abstract
Currently, Investment is the crucial section of our country financial system. The forecasting of price indicator is very necessary for stockholders to earn the maximum profit from their investment. The stocks vary by some factors likely financially, political and public. By using typical strategies for stock market forecast lead to precise results. As, the intellectual techniques have this ability that consider the complicated effects of the factors within the analysis, thus we came to use them in stock key prediction. Hence, use of genetic algorithm for predicting and optimizing the input variable in the neural network. Some models be assigned for this predictions as ARIMA as Hybrid by Artificial Neural Networks as approaching Genetic Algorithm. © 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved.

Author Keywords
Artificial neural networks; Genetic algorithm; Hybrid-ARIMA; Price index; Stock market

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Computational prediction of binding of monocrotophos and its analogues on human acetylcholinesterase, oxyhaemoglobin and IgE antibody

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Abstract
In this study, a computational approach has been employed to study the interactions of human acetylcholinesterase (AChE), human oxyhaemoglobin and human high-affinity IgE receptor with an organophosphate pesticide, and the comparative binding affinity, interacting residues of protein, H-bond distance and fitness score have been evaluated using GOLD software. Monocrotophos and its analogues bind to AChE with the highest fitness score. The analogue RPR-II binds to the receptor with a highest fitness score: 42.17 when compared with RPR-V (fitness score: 40.62) and monocrotophos (fitness score: 35.25). Monocrotophos, RPR-II and RPR-V interact with oxyhaemoglobin with a fitness score of about 17.68, 20.16 and 24.62, respectively. Monocrotophos, RPR-II and RPR-V interact with human high-affinity IgE receptor with a fitness score of about 18.29, 19.05 and 22.57, respectively. The above-mentioned results indicate that RPR series are highly toxic than monocrotophos, hence there is a need for complete evaluation of the toxicological effect of new pesticides. Copyright © 2019 Inderscience Enterprises Ltd.

Author Keywords
Acetylcholinesterase; IgE receptor; Monocrotophos; Oxyhaemoglobin; RPR series; Toxicology

Index Keywords
acetylcholinesterase, immunoglobulin E antibody, immunoglobulin E receptor, monocrotophos, neurotransmitter, oxyhemoglobin, phosphoric acid derivative; antibody combining site, Article, binding affinity, binding site, bond distance, computer prediction, conformational transition, crystal structure, fitness score, hydrogen bond, molecular docking, molecular dynamics, molecular model, nuclear magnetic resonance, protein binding, protein interaction, scoring system, X ray crystallography

Chemicals/CAS
acetylcholinesterase, 9000-81-1; monocrotophos, 6923-22-4; oxyhemoglobin, 9061-63-6

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In vitro cytotoxicity activity of ethanolic leaf extract of costus igneus against hepatocellular carcinoma (HepG2) Cells

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Abstract

Costus igneus popularly known as 'Insulin plant' belongs to Costaceae family. The anti diabetic potential of the plant has been evaluated and widely used as Ayurvedic medicinal herb to treat diabetes mellitus and associated metabolic syndrome. Recently Non- alcoholic fatty liver disease (NAFLD) associated metabolic syndrome has been identified as an important risk factor for hepatocellular carcinoma (HCC).So agents with insulin sensitizing action could play dual role in the control of metabolic syndrome and cancer. This study is designed to evaluate the in vitro anticancer activity of the ethanolic extract of Costus igneus leaves against hepatocellular carcinoma(HepG2) cells. The viable cells were assessed by cytotoxicity activity (MTT assay) with the eight different concentration (1000 to7.8 µg/ml) of the extracts. The percentage of viability was calculated. From the graph the concentration required for a 50% of viability (IC50) was calculated as 62.5 µg/ml. However 74.57% and 22.65% of cell viability were produced by the concentration of 7.8 µg/ml and 1000 µg/ml respectively. The results showed the cytotoxic activity of ethanolic extract of Costus igneus leaves and proved the anticancer activity against liver cancer cells. © 2019 Oriental Scientific Publishing Company. All rights reserved.

Author Keywords

Anticancer; Costus igneus; HCC; MTT assay; NAFLD

Index Keywords

antineoplastic agent, Costus igneus extract, plant extract, unclassified drug; antineoplastic activity, Article, cell viability, controlled study, Costus, Costus igneus, cytotoxicity, drug design, Hep-G2 cell line, human, human cell, in vitro study, liver cell carcinoma, MTT assay, plant leaf

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Abstract
In the competitive market, Quality and Reliability are playing a vital role. Reliability is a measure of quality, which is a key characteristic at each stage of the product starting from Design through Manufacturing, Assembly, Delivery & Usage in the field. Reliability is differentiated from quality by being particularly concerned with time [1]. Reliability gives the data about how long the product will work with specified quality. Reliability is defined as the probability that an item will perform a required function for a given period of time when used under stated operating conditions [1]. The reliability stresses on four elements namely [1]; Probability, Intended function, Time, and operating conditions. Reliability / Design life of the product could not be predicted accurately using Lab test failures unless it is correlated with Field conditions. This gap can potentially result in increased Cost of Poor Quality (COPQ) [2], increase in warranty returns & most importantly Customer dissatisfaction. On the other hand, over designing due to inaccurate reliability / Design life predicted results in the unnecessary increase in product cost, reducing the profit. The conventional way of product development is, designing & developing the product as per requirements & then validation of design by physical testing. The testing process involves, subjecting the samples to various test conditions like vibration test, corrosion test, etc., for pre-defined test duration as per national & international standards. If the sample passes all the required tests, then the product will be launched. A major drawback in this system is tested standards do not always reveal the field failures. Unless we know the correlation between test conditions & field conditions, field failures cannot be predicted or eliminated. This paper estimates the reliability of carburetor from its lab test and field failures. A warranty period of one year is accounted for the calculation of reliability. This means product reliability at the end of one year is predicted and the same is compared with the reliability calculated from warranty / field failures, to check if any Over design exists or opportunity exists to improve the reliability of the product. A two-wheeler carburetor is selected for this study & the methodology can be horizontally deployed to any product. © TJPRC Pvt. Ltd.

Author Keywords
Cost of Poor Quality; Customer Satisfaction & Warranty Failures; Design for Reliability

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Frugal product development: Think beyond conventional product development approach to "ensure customer satisfaction, by familiarizing product and its performance"

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Abstract
Customer satisfaction is one of the key elements, to be successful in competitive business. The big challenge in front of every manufacturers, irrespective of Industry they are in is; how to satisfy customers. By and large customer satisfaction is mostly measured after the product or service is launched. Once we have customer feedbacks, its important to understand and categorize as Defects and Dissatisfactions. Ideally Defects shall be treated by improving the product, whereas Dissatisfaction items have to be treated carefully case-by-case. As in the case of Indian Automotive Industry, there are considerable amount of First time car buyers who might not be fully aware of Products' features. So its important that manufacturer deals it with specific care on how Product features are communicated to customers and how familiar are they with the same. This plays a vital role in deciding Customer satisfaction. Though many attempts have been made to capture customer voice during design phase and to consider in formation of specification through Quality Function Deployment, it mainly focuses on Defects only, not Dis-satisfaction which is purely driven by customer expectations. This paper attempts to understand and address Dissatisfaction items by Customer familiarization. A sample case of Passenger car Real world Fuel efficiency has been taken in to study and demonstrated that appropriate Customer familiarization brings sizeable results and improves customer satisfaction. © TJPRC Pvt. Ltd.

Author Keywords
Customer Familiarization; Customer Satisfaction; Defects; Dissatisfaction; New Product Development; Real World Fuel Efficiency

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8-Hydroxy deoxyguanosine - A potential biomarker in periodontitis

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Abstract
Periodontal disease is one of the most prevalent oral diseases affecting the supporting tissues of the teeth, gingiva, periodontal ligament, cementum, and alveolar bone. Periodontal diseases are inflammatory disorders; oxidative stress (OxS) plays an important role in the pathogenesis of periodontitis, which can cause damage to genetic biomolecules such as proteins, lipids, and DNA. Increased OxS leads to oxidative damage of DNA with the formation of 8-hydroxydeoxyguanosine (8-OHdG) which is excreted in body fluids including gingival crevicular fluid (GCF) and saliva. 8-OHdG is used as a standard biomarker of oxidative DNA damage mainly due to its reliable detectability © 2019 JPR Solutions. All rights reserved.

Author Keywords
8-hydroxydeoxyguanosine; DNA damage; Oxidative stress; Periodontitis

Index Keywords
8 hydroxydeoxyguanosine, guanine, hydroxyl radical, purine, pyrimidine; cell damage, DNA damage, human, oxidative stress, periodontitis, respiratory burst, Review

Chemicals/CAS
guanine, 69257-39-2, 73-40-5; hydroxyl radical, 3352-57-6; purine, 120-73-0; pyrimidine, 289-95-2

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Effect of dominant fatty acid esters on emission characteristics of waste animal fat biodiesel in CI engine
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Abstract
This present study aims in understanding the influence of dominant fatty acid esters of waste animal fat biodiesel on its emission characteristics in CI engine. Biodiesel was produced from waste animal fat by means of base catalysed transesterification; and Ethyl oleate (40.21%), ethyl palmitate (25.36%) and ethyl stearate (16.87%) were characterized as dominant fatty acid esters using GC spectra. Test samples were prepared for these ester molecules based on their availability, in addition to biodiesel blend and plain diesel and were tested for their emission levels in single cylinder four stroke CI engine using flue gas analyser. High exhaust gas temperature was contributed by Ethyl oleate (1.15% lesser than biodiesel), as a result of low cetane number due to unsaturation and high viscosity. Likewise, the increased carbon chain length and unsaturation of ethyl oleate (2.55% lesser than biodiesel) resulted in high concentration of CO emission for biodiesel whereas high CO2 emission concentration was because of ester molecules with increased carbon chain length (stearate and Oleate esters). Reduced NOX emission for biodiesel was as a result of higher cetane number from ethyl stearate (CN=86.83) and ethyl palmitate (CN=86.55), which reduced its ignition delay thereby moderating the heat release rate. In addition, long carbon chained ester molecules (oleate and stearate esters) in biodiesel consumed more oxygen content for improving overall rate of combustion while increased HC emission was explained by unsaturation in biodiesel because of ethyl oleate (on average, 50 PPM). © 2019 Srinivasan, Palani, Jambulingam and Shankar.

Author Keywords
Animal fat biodiesel; Cetane number; Emission Characteristics; Fatty acid esters; Unsaturated double bonds

Index Keywords
Animals, Antiknock rating, Carbon, Chain length, Diesel engines, Esters, Molecules, Palmitic acid, Unsaturated fatty acids, Waste incineration; Animal fat, Bio-diesel blends, Carbon-chain length, Emission characteristics, Exhaust gas temperatures, Fatty acid esters, Heat Release Rate (HRR), Unsaturated double bonds; Biodiesel

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Comparative analysis of liver segmentation using K-means, fuzzy c-means and spatial FCM using mumford shah approach

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Abstract
In medical environment,liver segmentation plays an important role by helping physicians to find the location of affected region of the liver from the normal part.Automatic extraction which is recognized as segmentation by computer processing may diminish the burden as well as time consuming. To overcome the burden of identification of definite organ segmentation technique is used. In general liver analysis have done through CT scan or MRI scan whereas the image of MRI scan is utilized for the complete process which is more convenient than other scanning while diagnosing. This does not create harmful to human body due to no practice of radiation. As the initial stage, image segmentation has been done through spatial fuzzy clustering which can control level of its parameter to set advancement as a result in the fuzzy clustering. In this advanced technique, mumford shah method is used to improve the robustness with less time consumption. This study has focused on both less time extraction and also the accuracy. So, in order to attain spatial fuzzy clustering is proposed and also compared with the existing clustering algorithm such as K-means, Fuzzy C-Mean (FCM) to evaluate the performance efficiency in time extraction using clustering outcomes. © 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved.

Author Keywords
Fuzzy C-Means Clustering; K-Means Clustering (KMC); Liver Segmentation; Spatial Fuzzy Clustering (SFCM)

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Abstract
Finnair Systems is an all around centered Software Developed and IT Services Company situated in Chennai. We have committed groups of Professionals with assorted specialized ability sets to handle the difficulties in different zones of IT administration. Our principle center is around stringent quality models, outstanding asset abilities and a steady record of conveying quality answers for customers on calendar. Essentially Finnair Systems is a center Product Development Company fundamentally concentrate on Enterprises Applications Development and Web based Applications Development. Numerous Indian organizations including littler and greater scale ventures incline toward our advancement focus to take care of their issue as per their necessities. Our central goal is to advance programming use not just for multinational bodies additionally for our Indian little scale ventures with our limited time projects and occasions. Presently the time has arrived when all little scale businesses likewise need to utilize programming instead of manual framework. We need to give arrangements according to their prerequisites with no budgetary constraints."We vow to convey quality items and advance little scale enterprises for programming use that leads them to accomplish pinnacle." Finnair Systems offers world-class advances to its clients in the accompanying ranges: Enterprise Solutions (ESOL). Web Development Management (WDM). IT Management Consultancy (ITMC). Event Management (EMG). Technical Expertise. © 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved.

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A study on antioxidant activity, phenol, and flavonoid content of seedpod of Nelumbo nucifera Gaertn.
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Abstract
Objective: The objective of the present study was to evaluate the presence of phenol, flavonoid, tannin, antioxidant activity, and high-performance liquid chromatography (HPLC) analysis of quercetin (active component of Nelumbo nucifera [NN]) in ethanolic extract of the seedpod of Nelumbo nucifera (NNE). Materials and Methods: Preliminary screening of NNE was done for the presence of phenol, flavonoid, tannin, qualitatively, and quantitatively. Antioxidant activities of the NNE were estimated using extracts of aqueous, acetone, ethanol, and chloroform by in vitro antioxidant assays such as 1,1-diphenyl-2-picrylhydrazyl (DPPH) and ferric reducing antioxidant power (FRAP) assays. Results: Total phenolic content in NNE was 93.45 mg gallic acid equivalents, the total flavonoid content was 295.312 mg/g quercetin equivalents in NNE, and tannin content is 508.7 mg/g tannin equivalents in NNE. The NNE was evaluated for antioxidant activities by DPPH and FRAP assays. Among the different solvent, the ethanolic extract recorded the most effective DPPH radical scavenging activity (69.2%) and FRAP value was 21.52 μm. The results of HPLC analysis revealed the presence of active principle, namely quercetin. Conclusion: It can be concluded that NNE can be used as a potent natural antioxidant to overcome oxidative stress-induced diseases. © 2019 JPR Solutions. All rights reserved.

Author Keywords
1; 1-Diphenyl-2-picrylhydrazyl; Antioxidant activity; Ferric-reducing antioxidant power; Flavonoid; Nelumbo nucifera; Phenol

Index Keywords
antioxidant, flavonoid, Nelumbo nucifera extract, phenol derivative, quercetin, reactive oxygen metabolite, tannin; antioxidant activity, Article, colorimetry, drug screening, high performance liquid chromatography, in vitro study, India, Nelumbo nucifera, oxidative stress, qualitative analysis, quantitative analysis

Chemicals/CAS
quercetin, 117-39-5; tannin, 1401-55-4

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Evaluation of antibacterial activity of asparagus racemosus extract – An in vitro study
(2019) *Drug Invention Today*, 11 (4), pp. 971-973. Cited 1 time.

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Abstract
Introduction: In Ayurveda, Asparagus racemosus is an amazing herb known as the “Queen of Herbs” because it promotes love and devotion. Shatavari is the main Ayurvedic rejuvenative tonic for the female, as is Withania for the male. This herb is highly effective in problems related with female reproductive system. A. racemosus is a well-known Ayurvedic rasayana which prevent aging, increase longevity, impart immunity, improve mental function, vigor, and add vitality to the body and it is also used in nervous disorders, dyspepsia, tumors, inflammation, neuropathy, and hepatopathy. The aim of the study was to evaluate the antimicrobial activity of Allium cepa against bacteria causing enteric infection. Materials and Methods: The screening of antibacterial activity of extracts was carried out using the disc diffusion method. The culture plates were allowed to stand on the working bench for 30 min for pre-diffusion and were then incubated in upright position at 37°C for 24 h. Standard antibiotic discs gentamycin (30 mcg/disc) were used as positive control. Results: The extracts at different concentrations exhibited antibacterial activity against the bacterial strains tested. The extract was more effective against Lactobacillus acidophilus with a zone of inhibition of 16 mm diameter (at conc. of 400 mg/ml) and with Streptococcus mutans, the zone of inhibition was found to be 15.8 mm (at conc. of 400 mg/ml). Conclusion: We conclude that the extracts of A. racemosus can be used as antimicrobial agent. © 2019 JPR Solutions. All rights reserved.

Author Keywords
Asparagus racemosus; Disc diffusion technique; Lactobacillus acidophilus; Streptococcus mutans

Index Keywords
Asparagus racemosus extract, gentamicin; antibacterial activity, Article, Asparagus racemosus, bacterial infection, bacterial strain, controlled study, disk diffusion, evaluation study, in vitro study, intestine infection, Lactobacillus acidophilus, nonhuman, Streptococcus mutans, zone of inhibition

Chemicals/CAS
gentamicin, 1392-48-9, 1403-66-3, 1405-41-0

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Gaswin Kastro, G.[a] , Wiselin, M.C.J.[b]

Design of wide band pass filters
(2019) *Journal of Advanced Research in Dynamical and Control Systems*, 11 (4), pp. 2409-2417.

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Abstract
Bandpass filter are of very high importance when considering features such as signal transmission and wireless communication. The use of Microstrip technology offers us a very compact realization of a microwave filter thereby reducing the filter size and output parameters. This project proposes a capacitor tuned microstrip coupled bandpass filter (BPF) loaded with parallel coupled microstrip line with capacitors connected in the middle in order to enhance tuning of the bandpass filter instead of free ends. This configuration enhances the tunability of the suggested BPF by varying the values of the capacitances inserted in the circuit, which leads to a wide tuning range even with a small capacitance values. Therefore, a wide tuning range can be obtained by employing low capacitance values with which a tunable bandpass filter can be achieved. As a result, the proposed tunable BPF can keep nearly constant bandwidth over the wide tuning range. Based on the requirement of the operating frequency the bandpass filter can be tuned for the particular frequency thereby enhancing the band selectivity character in the design. © 2019, Institute of Advanced Scientific Research, Inc. All rights reserved.

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Kastro, G.G.[a] , John Wiselin, M.C.[b]

1-10 GHZ couple line band pass filter design

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Abstract
Bandpass filter play a very vital role in the field of communication. With the advent of large number of communication the devices working a range of frequencies the use of Microstrip technology offers us a very compact realization of a microwave filter thereby reducing the filter size and output parameters. This work presents a tunable dual-band tunable bandpass filter (BPF) with dual band bandpass response with a novel tunable dual-mode character in the range of 1-15GHz and a single band bandpass filter in the range of 1-10GHz. The proposed dual band bandpass filter design primarily consists of tunable components such as varactor diodes and capacitances to bring about tunability in the filter design. The circuit designed is a Triple U-shaped circuit so as to obtain a compact filter structure which has varactor is placed at the center of the microstrip circuit and capacitances so as to produce a tunable bandpass filter response. This approach has enhanced the tunability of the proposed dual band filter by tuning the varactors and capacitances present in the circuit, thereby exhibiting a uniform tuning range with a minor changes in the values of the capacitor and varactor. Therefore, a uniform tuning is obtained by employing capacitance and varactor and the circuit can maintain nearly a constant bandwidth over the tuning range. The single band filter is designed to work in the range of 1-10GHz where the single band can be tuned between the entire operating frequencies. Simulated results are found to be more efficient. The S-Parameter [S (2, 1)] results for the dual band bandpass filter show that the first passband can be tuned in a frequency range from 2.4 to 4.45 GHz, whereas the second passband varies from 8.5 to 11 GHz. © 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved.

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Muthukumar, S.[a] , Wiselin, M.C.J.[b] , Kumar, K.S.[c]

Development of class E 2 power converter using power amplifier
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Abstract
In this paper a class E 2 power converter is designed using class E power amplifier. The concept of combining the use of GaN HEMT devices, both for the inverter and the synchronous rectifier, with multi-harmonic matching networks has been utilized. The power amplifier is an inverter and the process of amplifier converts the DC to AC signal, the inverter designed by using the transistor of RF3931 and achieves the steps for testing the transistors range verified and the HSMS2862 rectifier used for high switching frequency and converts AC to DC signal and for high output voltage compare to inverter the rectifier achieves high output voltage to develop for very high frequency applications and the matching circuits developed to matches the inverter and rectifier. The resultant measurement of power converter achieves 60dBm output voltage. © 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved.

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Dilli Arasu, S.[a] , Thirumalaiselvi, R.[b]

Effective forecast of CKD database using imputation based feature priority assigning algorithm
(2019) *Journal of Advanced Research in Dynamical and Control Systems*, 11 (4), pp. 339-348.

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Abstract
This article explains the working of proposed singular value attribution approach incorporating (EM)-Expectation-Maximization and (RDF)-Random Decision Forest techniques. It handles the absenting values efficaciously in diminutive data set so that, assigning priority for each parameter to foresee the disease in the early stage. As a result, anyone can take adequate preventive methods to control the development of the disease. To handle the voluminous database, multiple value imputation models are adopted. The proposed (WAELI)-Weighted Average Ensemble Learning Imputation algorithm can be used in predicting kidney disease with more accuracy. By using RDF, (CART)-Classification and Regression Tree and C4.5 algorithms the absenting valance in the dataset uniquely reckoned. Priority assigning algorithm is thereafter used to make the classification process, which very efficiently reduces the time consumption. © 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved.

Author Keywords
ANN; Data Mining; PLS-DA; SVM; WAELI; WAELI-FPA

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Kotteeswaran, C.[a] , Khanaa, V.[b] , Rajesh, A.[c]

Real time RNA sequence edition with matrix insertion deletion for improved bio molecular computing using template match measure

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Abstract
The RNA sequence editing has become a challenging task in the molecular computing. There are number of approaches that have been discussed earlier for the problem RNA editing in bio molecular computing, but they suffer to achieve higher performance. To improve the performance, an real time approach has been presented which uses sequence depth measure (SDM). The method receives the RNA sequence and estimates the depth measure for different sub sequences generated. Based on the SDM value, a cumulative sequence match measure (SMM) has been measured to classify the sequence towards the different classes available. The matrix insertion and deletion is performed based on the template match measure (TMM) which has been computed based on the matches found in the templates available for different classes. The experimental results of our approach prove to outperform in terms of Accuracy, Risk Detection Accuracy, Time Complexity and False Classification Ratio which in turn increases the performance of bio molecular computing and matrix insertion deletion. © 2018 The Science and Information (SAI) Organization Limited.

Author Keywords
Bio molecular computing; RNA sequence; SDM; SMM; Templates; TMM

Index Keywords
Calculations, RNA, Template matching; Bio molecular computing, Bio-molecular, Molecular computing, Performance, Real-time, RNA sequences, Sequence depth measure, Sequence match measure, Template, Template match measure; Matrix algebra

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Shriram, R.[a d] , Baskar, V.V.[a] , Martin, B.[b] , Sundhararajan, M.[c] , Daimiwal, N.[d]

Regression analysis of coherence between concurrent EEG-EEG and EEG cppg signals from prefrontal cortex during music evoked emotions

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Abstract
This paper summarizes the results of experiment that focus on effect of music evoked emotions on mean squared coherence and phase coherence between two signals with same nature (electrical brain signal EEG) and the two signals with different nature (EEG and hemodynamic brain signal CPPG). Regression analysis was carried out to find out the mathematical relation between mean squared coherence and phase coherence estimated between the two signals captured from prefrontal cortex and the physiological parameters. Number of synaptic connections between the two measurement sites/ signals and its strength is reflected in the coherence. It is a quantitative measure of association between the two simultaneously acquired signals as a function of frequency. Physiological parameters studied by the authors are SBP, DBP, HR, Blood Glucose and BMI. These are some of the potential biological markers closely related to emotional response. Data was collected from twenty multi-lingual subjects of both the genders with Meanage = 39.25 years and SDage = 11.625 years. No strong correlation was found between the coherence (calculated between EEG-EEG and EEG-CPPG) and the physiological parameters studied during the various emotional states. It was observed that MS Coherence between the signals with similar nature is higher than it in between the signals with dissimilar nature. T-paired test was carried out to show that the means of these two coherences is different. Coherence between EEG-EEG was compared with coherence between EEG-CPPG and it was observed that they are very different ($p < 0.001$), were as when coherence between EEG-EEG (or EEG-CPPG) is compared with coherence between EEG-EEG (or EEG-CPPG) p-value was > 0.05. This technique can be applied to wider population in the field of clinical neuroscience with or without any known neurological disorder. More connectivity measures can also be included to study music evoked emotions or stroop task. © 2019 Institute of Information Science. All rights reserved.

Author Keywords
Cranial photoplethysmogram; Electroencephalogram; Emotions; Mean square coherence; Phase coherence; Physiological parameters; Regression analysis

Index Keywords
Neurology, Physiological models, Physiology, Regression analysis; Emotions, Mean square, Phase coherence, Photo-plethysmogram, Physiological parameters; Electroencephalography

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Sakthivel, N.K.[a] , Gopalan, N.P.[b] , Subasree, S.[c]

Deep learning based human diseases pattern prediction technique for high dimensional human diseases data sets
(2019) *International Journal of Engineering Research and Technology*, 12 (2), pp. 204-211.

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Abstract
For decades, more and more experimental researches have collectively indicated that microRNA (miRNA) could play a vital role in many important biological processes and thus it also the pathogenesis of human complex diseases. It is also noticed that the resource and time cost requirement for processing data in traditional biological method is more expensive and thus more and more focusing have been paid to the enhancement of eff ective and accurate computational mechanisms for predicting potential associations between diseases. To focus towards this, researchers identified that Gene is not responsible for many Human Diseases and instead, diseases occur due to interaction of different group of genomes that is responsible for different diseases. Hence it is very important to analyze and associate the complete genome sequences and its associations to understand or predict various possible human diseases. To identify and predict the associations between diseases, We earlier proposed the Deep Learning based Intelligent Human Diseases-Gene Association Prediction Technique (IHDGAP). It employs Convolution Neural Network (CNN) algorithm which contains multiple number of hidden layers which is helping to predict Gene Patterns and its Associations to predict Human Diseases. This Research Work revealed that our previous Model, IHDGAP unable to classify boundary region. To address this issue to enhance Classification Accuracy, this research work proposed an enhanced Classifier called Deep Learning based Human Diseases Pattern Prediction Technique (ECNN-HDPT), where an Enhanced CNN is employed. The proposed model is implemented and analyzed carefully in terms of Processing Time, Memory Usage/Utilization, Accuracy, Sensitivity, Specificity and FScore. From the experimental results, it is noticed that the proposed deep learning mechanism improves the performances of the proposed classifier in terms of Classification Accuracy, Sensitivity, Specificity, and FScore as compared with our previous model Gene Signature based Hierarchical Random Forest (G-HRF) and Intelligent Human Diseases-Gene Association Prediction Technique (IHDGAP). However, it was noticed that the proposed model consumes relatively more Memory and Processing Time as we employs SVM-ECNN to train and test Patterns. Though it takes relatively more time to train the Data Sets, it is established that the Classification Accuracy is higher as compared with our previous Classifier. © International Research Publication House.

Author Keywords
Association mining; Confidence Divider; Convolution Neural Network(CNN); Deep Learning; Gene Hierarchical based Random Forest(G-HRF); Intelligent Human Disease Gene Association Prediction(IHDGAP); Prediction Accuracy; SVM-ECNN

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Thirusangu, S.[a] , Sivakumar, G.[b] , Kasirajan, S.P.[c] , Francis, Y.M.[d]

Vitamin E and C protects the liver from diclofenac-induced histopathological changes and oxidative damage in experimental animals

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Abstract
Aim: This study was done to show the changes in the liver following diclofenac treatment and to study the hepatoprotective effects of Vitamin E and C in diclofenac treated rats. Materials and Methods: Rats were divided into four groups each six rats. Group-1: Control rats (n = 6), Group-2: Rats (n = 6) treated with diclofenac at dose of 50 mg/kg IM for 7 days, Group-3: Rats (n = 6) treated with Vitamin C at dose of 200 mg/kg orally followed by diclofenac at 50 mg/kg IM 2 h later for 7 days, and Group 4: Rats (n = 6) treated with Vitamin E at dose of 200 IU/kg orally followed by diclofenac at 50 mg/kg IM 2 h later for 7 days. Later it was analyzed with standard biomarkers, and it was histologically interpreted. Results: the results showed that there was an rapid increase in the levels of liver function test in diclofenac treated group, which was significantly decreased after pretreatment with vitamin E than vitamin c. The liver acinus showed centriacinar necrosis of hepatocytes after 7 days of diclofenac treatment, which was prevented by administration of Vitamin E and C. Discussion: Drug-induced liver injury possesses a major clinical problem and has become a leading cause of acute liver failure and transplantation. Overstressed liver compromises its detoxification role which may expose it to a variety of diseases and disorders. Diclofenac sodium is a phenylacetic acid derivative, a widely used nonsteroidal anti-inflammatory drug (NSAID) for the treatment of inflammatory conditions such as osteoarthritis, rheumatoid arthritis, polymyositis, dermatomyositis, dental pain, spondyloarthritis, acute migraine, gout attacks, and pain management in gall and renal stones. Although the exact mechanism by with diclofenac injuries liver is not understood, some studies explain the toxicity by affecting cytochrome P 450 leading to the production of active metabolites. Conclusion: hepatoprotective effects of Vitamin E were better compared to Vitamin C following treatment with NSAID. Hence, it may be necessary to administer Vitamin E in patients treated with diclofenac. © 2019 JPR Solutions.All right reserved.

Author Keywords
Diclofenac; Rheumatoid arthritis hepatotoxicity; Vitamin C; Vitamin E

Index Keywords
alanine aminotransferase, alkaline phosphatase, alpha tocopherol, ascorbic acid, aspartate aminotransferase, bilirubin, creatinine, diclofenac, glutathione, thiobarbituric acid reactive substance, urea, alpha tocopherol, ascorbic acid, biological marker, cytochrome P450, diclofenac, liver protective agent; alanine aminotransferase blood level, alkaline phosphatase blood level, animal experiment, animal model, Article, aspartate aminotransferase blood level, bilirubin blood level, biochemical analysis, comparative study, controlled study, creatinine blood level, diclofenac induced liver toxicity, experimental animal, histopathology, liver cell, liver function test, liver protection, liver toxicity, male, nonhuman, oxidative stress, rat, urea blood level, acute liver failure, histopathology, liver, liver acinus, liver necrosis, liver transplantation, oxidative stress, protein blood level, toxic hepatitis

Chemicals/CAS
alanine aminotransferase, 9000-86-6, 9014-30-6; alkaline phosphatase, 9001-78-9; alpha tocopherol, 1406-18-4, 1406-70-8, 52225-20-4, 58-95-7, 59-02-9; ascorbic acid, 134-03-2, 15421-15-5, 50-81-7; aspartate aminotransferase, 9000-97-9; bilirubin, 18422-02-1, 635-65-4; creatinine, 19230-81-0, 60-27-5; diclofenac, 15307-79-6, 15307-86-5; glutathione, 70-18-8; urea, 57-13-6; cytochrome P450, 9035-51-2

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Magneto-resistivity and magnetization investigations of YBCO superconductor added by nano-wires and nano-particles of titanium oxide

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Abstract

We study in this work the influence of titanium oxide (TiO 2) nano-wires (NWs) and nano-particles (NPs) addition on the flux trapping potential of YBa 2 Cu 3 O y (YBCO for brevity). Samples were characterized using various techniques, including X-rays diffraction, scanning electron microscopy, temperature dependence of resistivity under magnetic field and magnetization measurements. Three kinds of YBCO + x TiO 2 samples with x = 0.0 and 0.1 wt% were synthetized via the solid-state reaction route. The activation energy U 0 , the coherence length ξ(0), the upper critical field H c2 (0) and irreversibly field H irr are estimated and discussed in the relation to TiO 2 addition effect. The derived parameters are increased for samples containing 0.1 wt% of TiO 2 nano-entities and are more enhanced in Y–Ti NPs sample. It results therefore, that suitable amount of TiO 2 nano-particles addition can be useful tool for the manufacture of a promising YBCO compound for practical applications. © 2019, Springer Science+Business Media, LLC, part of Springer Nature.

Index Keywords

Activation energy, Barium compounds, Magnetization, Nanoparticles, Nanowires, Scanning electron microscopy, Solid state reactions, Temperature distribution, TiO2 nanoparticles, Titanium dioxide, Titanium oxides, Yttrium barium copper oxides; Derived parameters, Magnetization measurements, Solid state reaction route, Temperature dependence of resistivities, Trapping potential, Upper critical fields, X-rays diffraction, YBCO superconductor; Copper compounds

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Identification of artificial recharges structures using remote sensing and gis for arid and semi-arid areas
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Abstract
Extensive and poorly regulated groundwater extraction to cater to agricultural, industrial, and domestic needs has severely depleted natural groundwater levels in arid and semi-arid areas. Suitable artificial recharge structures can serve as viable options for increasing groundwater levels in areas dependent on aquifers as their water source. Potential sites and suitable artificial recharge structures were suggested to recharge the groundwater level of the study area. The paper's aim is to facilitate an increase in aquifer recharge during non-rainfall days in the study area and contribute to sustainable groundwater conservation during periods of poor water availability by using remote sensing and GIS. © 2019 Technoscience Publications. All Rights Reserved.

Author Keywords
Artificial recharge structure; GIS; Groundwater recharge; Hydrology; Remote sensing

Index Keywords
Aquifers, Arid regions, Geographic information systems, Groundwater resources, Hydrogeology, Hydrology, Remote sensing, Water conservation; Arid and semi-arid areas, Artificial recharge, Ground water recharge, Groundwater extraction, Natural groundwater, Remote sensing and GIS, Sustainable groundwater, Water availability; Recharging (underground waters); aquifer, arid region, artificial recharge, GIS, hydrology, identification method, remote sensing, semiarid region, water availability, water level

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Aarthi Nisha, V.[a b] , Julius, A.[c] , Valiathan, M.[d] , Narasimhan, B.[e] , Jayaram, V.[b] , Geethalakshmi, M.[f]

Prevalence of oral mucosal lesions in type 2 diabetic patients in Chennai, India

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Abstract
Aim: The present study is aimed to evaluate the prevalence of oral mucosal lesions among type 2 diabetic patients in Chennai, India. Methods: The study group comprised of 100 type 2 diabetic patients (n = 100), aged between 21 and 80 years attending the outpatient department of Sree Balaji Dental College and Hospital, Chennai, during a 6-month period. This was a cross-sectional observational study that comprised of a thorough clinical evaluation and diagnostic tests followed by recording of the oral mucosal lesions that were commonly observed in the above population. Results: Of the 100 patients, 56 (56%) were females and 34 (34%) were males. All the patients were among 21–80 years of age. 86 (86%) type 2 diabetic patients were found with associated oral mucosal lesions. The most common oral lesions being denture stomatitis (34%), angular cheilitis (21%), and gingival hyperplasia (20%) followed by other oral mucosal lesions. Conclusion: The above study concludes that patients with type 2 diabetes present with higher prevalence of oral lesions when compared with non-diabetics which implies the need for the dental surgeon to have a knowledge of the common oral mucosal lesions that may help to diagnose diabetes mellitus in patients who are unaware of their diabetic status and provide early treatment. © 2019 JPR Solutions. All Rights Reserved.

Author Keywords
Angular cheilitis; Denture stomatitis; Early diagnosis; Gingival hyperplasia; Oral mucosal lesions; Type 2 diabetes mellitus

Index Keywords
adult, aged, Article, cheilitis, clinical evaluation, cross-sectional study, female, gingiva hyperplasia, human, India, lichen planus, major clinical study, male, middle aged, mouth lesion, non insulin dependent diabetes mellitus, observational study, oral mucosal disease, periodontal abscess, prevalence, sex ratio, stomatitis, thrush, tongue disease, xerostomia

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An enabling technique analysis in data mining for stock market trend by approaching genetic algorithm

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Abstract
A trend is the common direction at which the stock is moving. Based on whether the market is optimistic or pessimistic, the trends move upwards or downwards. Share market trend analysis is a part of technical analysis that tries to predict the future development of a stock based on past data. This study try to help the investors in the stock market to choose the better timing for buying or selling stocks based on the knowledge extracted from the chronicled prices of such stocks. The decision taken will be focused on decision tree classifiers which are one of the data mining techniques and by impending genetic algorithm. © 2019, World Academy of Research in Science and Engineering. All rights reserved.

Author Keywords
Data Mining; Data Mining techniques; Decision tree classifier; Genetic algorithm; Share market trend

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Actionable info: Data mining will derive unjust data from massive volumes of information. For instance, a city planner would possibly use a model that predicts financial gain supported by demographics to develop an idea for low-income housing. An automobile leasing agency may a use model that identifies client segments to style a promotion targeting high-value customers.

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A review on pricing prediction on stock market by different techniques in the field of data mining and genetic algorithm

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Abstract
In the current developing focused market, forecasting or predicting the stock returns just as the organization's economic status will give more profits for the investors to contribute positively. Stock forecast can be done by utilizing the present and past information accessible available. Forecasting the stocks should be more exactness, scalability and less time utilization. Various enabling techniques has been taken in the field of data mining for predicting the stock market by approaching the genetic algorithms. Such as Decision Tree Classifiers, Artificial neural networks-ARIMA, Bollinger bands, RSI and so on. This survey paper review helps to know the best enabling technique tools for the predicting the stock mining how to invest, when to invest for the investors in the future. Many of the researchers has been analyzing the predictions of stock market by getting the help of Mining through genetically. © 2019, World Academy of Research in Science and Engineering. All rights reserved.

Author Keywords
Data Mining; Enabling Techniques; Genetic Algorithm; Review; Stock Market

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- Genetic Programming An Introductory Tutorial and a Survey of Techniques and Applications Riccardo Poli Department of Computing and Electronic Systems University of Essex, UK rpoli@essex.ac.uk

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Documents

Ruvanthika, P.N.[a] , Manikandan, S.[b]

Investigation of the effect of noise stress-induced changes in behaviour and the neuroprotective role of Nelumbo nucifera seedpod and quercetin in rat brain

(2019) *Drug Invention Today*, 11 (2), pp. 378-385.

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Abstract
Background: Stress is an unavoidable phenomenon which disturbs physiological homeostasis. Stressors can have multiple effects on individuals depending on the nature of the stressors. Noise stress is an environmental stress factor, and acute as well chronic noise stress induces oxidative stress. The brain is more vulnerable to the effects of stress, affecting cognitive functions and behavior. The ethanolic extracts of Nelumbo nucifera (NNE) seedpod and its active component Quercetin (QRCT) were investigated for its protective role in ameliorating the changes induced by noise stress exposure. Materials and Methods: Adult male Wistar strain albino rats, weighing between 180 and 220 g, were used and divided into 12 groups. Animals were given drugs NNE (400 mg/kg body weight [bw]) and its active principle quercetin (40 mg/kg bw) through oral administration in different concentration 10 days before noise stress exposure. Neuroprotective role of NN seedpod and quercetin on hippocampus and medial prefrontal cortex was assessed by open field apparatus. Results: The stress group animal showed increased corticosterone levels, decreased movements, and increased immobilization time due to anxiety. However, the drug-treated animals had increased exploratory activity by moving freely with less immobilization. Among the drug groups, the active component quercetin group showed more effective anxiolytic activity than crude extract of seedpod. Conclusion: The findings of the present study showed that both the NNE and quercetin groups were effective in ameliorating the noise stress-induced changes, but the active component quercetin group had a higher protective impact on the changes.
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Author Keywords
Hippocampus; Medial prefrontal cortex; Nelumbo nucifera; Noise stress; Quercetin

Index Keywords
corticosterone, Nelumbo nucifera extract, quercetin; acoustic stress, adult, animal behavior, animal experiment, animal tissue, anxiety, Article, controlled study, corticosterone blood level, exploratory behavior, grooming, hippocampus, immobilization, locomotion, male, medial prefrontal cortex, movement (physiology), Nelumbo nucifera, neuroprotection, nonhuman, open field behavior, plant seed, rat, rearing, seedpod, tranquilizing activity, white noise

Chemicals/CAS
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Forecasting stock price trend using data mining techniques
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Abstract
Nowadays, Most of them want to forecast stock prices precisely, but woeful, that is A very difficult part. To note that one cannot forecast stock prices; it is that the edge of error in the forecasts is disagreeably extensive and that the best approach to forecast stock prices is simple to the point that it is accessible without exertion to everybody. The forecast of stock price is regarded as a challenging task of fiscal time series predict. There are five techniques to examine stocks were secured to predict the closing price. The techniques used are Typical Price (TP), Bollinger Bands, Relative Strength Index (RSI) and Moving Average (MA). Data Mining helps these techniques to give better results. This research paper will discuss to forecast the closing stock price will raise or reduce by scientifically. © BEIESP.

Author Keywords
Bollinger Bands; Data mining; Forecast; Moving Average; Relative Strength Index; Typical Price

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De-noising of EEG, ECG and PPG signals and analyzing based on IoT device

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Abstract
Fragile analyses of the electroencephalograph (EEG) records can manage the cost of supportive knowledge and upgraded comprehension of the components causing epileptic issue. In this examination, the predominant job of the wavelet change in the cross examination of the ECG is talked about in detail, where both the steady and the discrete change are considered thus. A Wavelet denoising is practical on the first flag to kill high recurrence noise, and after that a procedure dependent on wavelet change joined with versatile channel is useful to destroy the movement antiquity. This methodology utilizes Wavelet deterioration to extricate the movement ancient rarity, which is in this manner used as the reference contribution of a versatile channel for commotion abrogation. The strategy decreases the overhead of the circuit since it needn't bother with a different gathering of reference input flag which connect to commotion. Testing results represent that this methodology can proficiently expel movement relic and improve the flag quality. A remote framework for human heart observing/Electrocardiograph (ECG) based on IoT was proposed. Here same technique is used for EEG as well as PPG signals. So here all the three signal are taken here and monitored through raspberry-pi and updated in net using IOT. © BEIESP.

Author Keywords
Denoise; ECG; EEG; IoT; PPG; Wavelet decomposition tree; Wavelet transform

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Mani Sundar, N.[a] , Julius, A.[b] , Valiathan, M.[c] , Raj, K.[d] , Paddmanabhan, P.[e]

Correlation of salivary nitric oxide and stress levels in patients with chronic periodontitis - A biochemical study
(2019) *Drug Invention Today*, 12 (1), pp. 141-147. Cited 1 time.

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Abstract
Background: The past millennium has witnessed tremendous research regarding attempts to enhance our understanding of the etiopathogenesis of periodontal disease. Nitric oxide (NO), a free radical gas, is a noxious chemical in the atmosphere but in small controlled concentrations in the body, acts as a physiological and pathophysiological mediator and plays an important role in biological systems. It is known that stress mechanisms contribute to onset, exacerbation, and maintenance of oral inflammatory diseases and it is also known to generate a plethora of free radicals including NO. Hence, this study performed to explore the salivary NO levels and correlate it with chronic periodontitis and the patients stress level. Materials and Methods: A total of 60 subjects who were in the age group of 30-55 years, who participated in this study participated and were divided into two groups: Group I, which includes 20 healthy nonsmoking subjects and Group II, 20 subjects who are non-smokers with chronic periodontitis. The biochemical estimation of NO in the collected saliva was performed using the Griess colorimetric reaction. The measurement of stress levels for all the patients was requested to fill up a stress audit questionnaire by Miller and Smith to measure their stress levels.Statistical Analysis and Results: The statistical comparisons were done under the Griess Reaction. There were statistically significant salivary levels of NO in the group of periodontitis (group II) as compared to those in the healthy controls (group I). The collected data were subjected to statistical analysis through SPSS for windows (version 16.0). The statistical methods applied were descriptive statistics, one-way analysis of variance, Scheffe's post hoc test, correlation analysis, independent samples t-test, and regression analysis. Conclusion: NO plays an important complex role in the immunoinflammatory process and the remodeling and maintenance of osseous structures. The salivary NO levels which are increased in patients with periodontitis and the positive correlation of salivary NO levels with the patients stress levels in this present study indicated NO being a potent modulator of inflammatory disease processes. © 2019 JPR Solutions. All Rights Reserved.

Author Keywords
Nitric oxide; Periodontitis; Stress levels

Index Keywords
nitric oxide; adult, Article, biochemical analysis, chronic periodontitis, clinical examination, colorimetry, controlled study, gingival index, human, inflammatory disease, major clinical study, measurement, nonsmoker, plaque index, saliva level, stress, stress assessment

Chemicals/CAS
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COMPACT: Classifying stream data optimally using a modified pruning and controlled tie-threshold
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Abstract
Big data mining become important in extracting the potential information from the continuously arriving stream data. By extracting knowledge, the data mining algorithms significantly compute feasible decisions for various applications. The Very Fast Decision Tree (VFDT) classifier is a widely applied incremental decision tree to make better decisions. The VFDT classifier processes the arrival of the new instances, without storing them and updates the existing tree structure. Most of the conventional incremental decision tree based algorithms exploit the hoeffding's bound based on the user-defined tie-threshold to split the tree and to manage the tree growth. Even though the size of the tree tremendously increases when handling the fluctuated and imbalanced stream data, it suffers from the misclassification issue due to lack of capturing the optimal attributes over the incoming stream data and declines the classification accuracy and performance. In order to resolve these issues, this paper extends the VFDT, named as Classifying stream data optimally using a Modified Pruning technique And Controlled Tie-threshold (COMPACT). The COMPACT method includes two components, such as enhanced information gain measurement and tie-breaking threshold based pruning method. In order to improve the VFDT performance without affecting the imbalanced data stream handling, the enhanced information gain measurement effectively identifies an optimal number of attributes for a data stream. In order to avoid the information gain biasing, it utilizes the advantages of enhanced splitting metric in attribute reduction. Instead of randomly selecting the threshold, the tie-breaking threshold based pruning method determines the tie-breaking threshold using a number of breaking points. The tie-breaking threshold based pruning method ensures the optimal tree structure while handling the large-scale stream dataset. Finally, the COMPACT method is evaluated using the weather dataset to demonstrate the efficiency. The proposed method significantly outperforms the existing DTFA approach in terms of recall, Root Mean Square Error (RMSE) rate, and execution time. © BEIESP.

Author Keywords
Bias; Big data; Decision making; Imbalanced data; Information gain; Optimal attributes; Pruning; Stream data; Threshold; VFDT classifier

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Singaravelu, S.[a b] , Sankarapillai, J.[c] , Chandrakumari, A.S.[b d] , Sinha, P.[e]

Effect of Azadirachta indica crude bark extracts concentrations against gram-positive and gram-negative bacterial pathogens

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Abstract

Background: Today's pharmaceutical markets are crowded with antibacterial agents, yet their toxicities and resistance are always contentious. Azadirachta indica is used in India as an age-old treatment for diverse medical conditions. This study was put forth to analyze the antibacterial action of A. indica bark extract on different bacterial pathogens. Materials and Methods: A. indica bark extract was prepared using Soxhlet extraction method. The bark extract of A. indica was screened for antibacterial activity by agar well diffusion assay technique against Staphylococcus aureus, Enterococcus faecalis, Pseudomonas aeruginosa, and Proteus mirabilis. Ciprofloxacin (5 μg per disc) was used as positive control. All assays were carried out under strict aseptic precautions. All the concentrations included were duplicated, and the results obtained were the average of two independent experiments. Broth microdilution method was used to study the minimum inhibitory concentration of the bark extract of A. indica. Results: A. indica bark extract has shown antibacterial activity against all concentrations of bark extract, whereas antibacterial activity against S. aureus was observed at higher concentration of >500 μg/mL. The bark extract of A. indica showed zone of clearance against E. faecalis, P. aeruginosa, and P. mirabilis at all concentrations. Zone of inhibition was observed in higher concentrations against S. aureus. Conclusion: This study has shown that A. indica bark extract has a potent antibacterial property against S. aureus, E. faecalis, P. aeruginosa, and P. mirabilis. Further isolation of bioactive compounds may lead to a new scope in the treatment of bacterial infections. © 2019 Journal of Pharmacy and Bioallied Sciences | Published by Wolters Kluwer-Medknow.

Author Keywords

Antibacterial; Azadirachta indica; bark extract; ciprofloxacin; minimum inhibitory concentration

Index Keywords

antineoplastic agent, antioxidant, Caralluma adscendens attenuata extract, cisplatin, flavonoid, free radical, hexane, methanol, phenol derivative, plant extract, unclassified drug; antineoplastic activity, antioxidant activity, Apocynaceae, apoptosis, Article, Caralluma adscendens attenuata, cytotoxicity assay, drug isolation, drug synthesis, Hep-G2 cell line, HT-29 cell line, IC50, MTT assay, plant stem, priority journal, thin layer chromatography, ultraviolet spectrophotometry

Chemicals/CAS

cisplatin, 15663-27-1, 26035-31-4, 96081-74-2; hexane, 110-54-3; methanol, 67-56-1

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Ramakrishnan, S.[a] , Vijaya Kumar, K.R.[b]

Design for customer satisfaction – A proactive approach to input customer expectations in design phase
(2019) *International Journal of Mechanical Engineering and Technology*, (1), pp. 534-542.

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Abstract
This paper attempts to classify various possible reasons for customer satisfaction or dissatisfaction, especially focusing on Product Design. Taking an example of Automotive Industry. It further deep dives to understand customer expectations and how to ensure those elements are captured in the early design stage itself. It also suggests a method to fine-tune the current development model, to be proactive in securing customer satisfaction after the product is launched. © IAEME Publication

Author Keywords
Customer satisfaction; Defects; Design for Quality; Design for Reliability; Dissatisfaction; New Product Development

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Manisaran, N.[a] , Santhan, G.[a] , Meenakshi, C.M.[a] , Krishnamoorthy, A.[b]

A comparative study on the effect of hygrothermal exposure over the mechanical strength of glass fiber and hybrid fiber reinforced polyester composites

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Abstract
A composite material is a combination of two or more different materials and it plays a vital role in a wide range of applications. In automotive and mechanical industries the demand for lighter weight components is increasing day by day. Glass and flax reinforced composites have superior properties such a high tensile strength at any weather conditions. As the composite materials are used in many applications and exposed to harsh environment, the water molecules from the environment may induced in to the material then reinforcements may be affected and which causes damage to the interface bonding. In this work the effect of hygrothermal environment on hybrid fiber reinforced composites are studied, two types of composite laminates are prepared one is glass fiber reinforced composite (GFRC) and the other is glass and flax fiber reinforced hybrid composite (HFRC). Tensile test samples are cut from the laminates prepared as per ASTM D 638 standard and the tensile strength values before and after hygrothermal exposure are identified and compared from the result it is presumed that hybrid materials are showing better resistance towards hygrothermal behaviour compare to mono glass fiber composites. © 2019 Asian Journal of Chemistry. All Rights Reserved.

Author Keywords
Fiber reinforced composites; Hygrothermal testing; Polyester resin; Tensile strength

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Beulah Hemalatha, S.[a] , Vigneswaran, T.[b]

Reconfigurable communication wrapper for QoS demand for network on chip
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Abstract
Efficient communication wrapper design is one of the important research issues in network on chip. A single wrapper with fixed design parameter will not be efficient one for the heterogeneous environmental network on chip scenario. The system on chip has many different computing and communication blocks with different data rate and data format. To interconnect such a heteronymous block a standard-based wrapper framework such as OCI wrapper are proposed. But such standard wrapper does not support the QoS demand of the every block. So this work proposes a framework of reconfigurable communication wrapper design with support of QoS. The proposed framework is simulated in LABVIEW software and tested on National Instruments FlexRIO 7845R FPGA hardware. The result shows that on the fly re-configurability is achievable with the framework. Copyright © 2019 Inderscience Enterprises Ltd.

Author Keywords
OCI wrapper; QoS; Reconfigurable communication wrapper; SoC; System on chip

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Arputha Rathina, X.[a] , Ponnavaikko, M.[b] , Mehata, K.M.[a] , Kavitha, M.S.[c]

Analysis of user's behavior using markov model
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Abstract
This paper proposes to model the dynamic interaction of the complex emotions excited by audiovisual stimuli. The behavior of the user is modeled through Markov chain procedure, and the transition probabilities are calculated. A parameter variation study of the dynamical behavior is undertaken to examine the scope of chaos and stability, thus leading to the derivation of the extent of stability. The arch motive of the paper lies in the prediction of chaos and stability of emotional dynamics from the instantiation of emotion in facial expression stimulated by external audiovisual impetus. Such prediction may help in the early discovery of mental disorders. © Springer Nature Singapore Pte Ltd. 2019

Author Keywords
Emotional intelligence; Image processing; Lyapunov exponent; Markov model

Index Keywords
Image processing, Lyapunov methods, Markov processes; Audio-visual stimulus, Dynamic interaction, Dynamical behaviors, Emotional intelligence, Facial Expressions, Lyapunov exponent, Markov model, Transition probabilities; Behavioral research

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Daimiwal, N.[a] , Poornapushpakala, S.[a] , Martin, B.[b] , Sundararajan, M.[c] , Shriram, R.[d]

Welch's power spectral density of cranial PPG signal using AVR ATmega 8535 microcontroller
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Abstract
Functional near-infrared spectroscopy is an optical non-invasive technique for measurement of neural activity and hemodynamic response and has a potential for brain mapping. In this work, we aimed to develop a system to capture the cranial photoplethysmogram (CPPG) using IR source (860 nm) and detector (OPT 101). AC excitation for the IR source in the range of 1−2 MHz plays a major role in the CPPG sensor. Brain functional activity in prefrontal lobe is detected by placing the sensor on the forehead. The CPPG signal is captured with eyes open (EO) and eye blinking (EB) activity for various emotions (happy and sad) on prefrontal lobe. Data acquisition is done using AVR ATmega 8535 microcontroller at a sampling rate of 500 Hz. The data are acquired from subjects in the age group of 20−60 years. Using Daubechies 9, six-level wavelet decomposition of CPPG signal is performed, and spectral analysis of each level is done using Welch's method. From the spectral analysis, it is found the centre frequency of A6 is at 1.953 Hz. The higher frequency part of the signal is found in D4 scale and the centre frequency is 17.58 Hz. All other scales D3−D1 show predominantly the noise part of the signal. Statistical features of A6 and D6 decomposition levels are important for analysis and classification of activity. © Springer Nature Singapore Pte Ltd. 2019.

Author Keywords
Cranial PPG; Functional activity; Spectral analysis; Statistical analysis; Wavelet decomposition

Index Keywords
Brain, Brain mapping, Data acquisition, Discrete wavelet transforms, Infrared devices, Intelligent computing, Microcontrollers, Near infrared spectroscopy, Neurons, Power spectral density, Spectral density, Spectrum analysis, Statistical methods, Wavelet decomposition; Classification of activity, Cranial PPG, Decomposition level, Functional activities, Functional near infrared spectroscopy, Hemodynamic response, Noninvasive technique, Statistical features; Signal processing

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Shriram, R.[a e] , Baskar, V.V.[b] , Martin, B.[c] , Sundhararajan, M.[d] , Daimiwal, N.[e]

Energy distribution and coherence-based changes in normal and epileptic electroencephalogram
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Abstract
In endeavor toward better understanding of brain functions, the analysis of information transfer between the various brain lobes plays a crucial role. Electroencephalogram (EEG) is an electrical brain signal in microvolts, which provides unique and important information about the brain dynamics. Frequency of EEG signal lies between 0 and 100 Hz. In epileptic or seizure related studies, decomposition of EEG signal into various frequency sub-bands such as α, β, δ, θ, and γ is essential. EEG plays a key role in diagnosis of neurological disorders such as epilepsy. In this paper, we explore decomposition of EEG by db18 wavelet, power spectral density, coherence, energy distribution, and empirical cumulative distribution function of EEGs. This work was carried out to study the changes in the normal and epileptic EEGs with respect to PSD, coherence, energy, and ECDF to check the suitability of these parameters as an input to the classifiers. The methodology was applied mainly to three groups consisting of male and females between the age group of 01–107 years: (1) healthy subjects (normal), (2) subjects with focal seizures, (3) subjects with generalized seizures. The work was carried out on the signals obtained from real subjects to study the EEG-based brain connectivity analysis. It was observed that PSD and coherence study related to the sub-bands reveal more accurate information than the study of complete EEG with or without the seizures. © Springer Nature Singapore Pte Ltd. 2019.

Author Keywords
Coherence; Decomposition; EEG; Empirical cumulative distribution function; Energy distribution; Power spectral density; Seizures; Wavelet

Index Keywords
Coherent light, Decomposition, Distribution functions, Gears, Intelligent computing, Neurology, Power spectral density, Signal processing, Spectral density, Wavelet decomposition; Brain connectivity, Electro-encephalogram (EEG), Empirical cumulative distribution functions, Energy distributions, Information transfers, Neurological disorders, Seizures, Wavelet; Electroencephalography

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Varghese, R.[a] , Almalki, M.A.[c] , Ilavenil, S.[b] , Rebecca, J.[a] , Choi, K.C.[b]

Silver nanopaticles synthesized using the seed extract of Trigonella foenum-graecum L. and their antimicrobial mechanism and anticancer properties

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Abstract
Background: Synthesis of silver nanoparticles (AgNPs) through biological route plays an important role in their applications in the medical field, especially in the prevention of disease causing microbial pathogens and arresting the propagation of cancer cells. The stable, green synthesis of AgNPs is very much welcomed in the medical field because of their low toxicity. Therefore, the demands of AgNPs synthesised biologically is on the rise. The present study aimed to investigate the antimicrobial mechanisms and anticancer properties of the AgNPs synthesized using the seed extract of Trigonella foenum-graecum L. The AgNPs were characterized by UV–vis, SEM, XRD, FTIR and EDAX analysis. The minimum inhibitory concentrations (MIC) of the AgNPs were determined by the broth micro dilution method. Results: The formation of brownish red color indicated the formation NPs with the absorption maximum at 420 nm. The average size was found to be 33.93 nm and sphere shaped. The FTIR spectrum revealed the absorption bands at 3340 cm−1 and 1635 cm−1 indicated the presence of –OH or –COOH and amide group stretching in the AgNPs. The X-ray diffraction report confirmed the presence of strong peak values of 2θ within the angle of 37.1°. The lowest MIC of the AgNPs against Staphylococcus aureus was 62.5 μg mL−1. MIC values against Escherichia coli and Klebsiella pneumonia, were 125 and 250 μg mL−1 respectively. The MIC of the AgNPs against Aspergillus flavus, Trichophyton rubrum and Trichoderma viridiae were each 250 μg mL−1, respectively. The extracellular protein concentration, levels of lactate dehydrogenase and alkaline phosphtase enzyme in the AgNPs treated bacterial pathogens demonstrated greater antimicrobial mechanism. Additionally, the AgNPs exhibited significant anticancer activity against the MCF7 and Vero cell lines. Conclusion: The synthesized AgNPs could be further evaluated in large scale as a botanical antimicrobial agent. © 2017 The Authors

Author Keywords
AgNPs; Anticancer activity; Antimicrobial activity; Antimicrobial mechanism; FTIR; Trigonella foenum-graecum L.

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Naresh, V.[a] , Prabhakar, S.[b] , Annamalai, K.[c] , Naveenchandran, P.[d]

Effect of injection pressure and injection timing in performance and emission characteristics in di engine using blend of methyl esters of algae

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Abstract
In the study on “Performance and Emission Studies on a four stroke internal-combustion engine mistreatment alkyl organic compound of algae oil with EGR”, a detailed investigation of characteristics (performance and emission) of Blends of alkyl Esters of protoctist oil by varying the EGR management price (5 to 20%) mistreatment with direct injection internal-combustion engine was made. From the preceding studies on similar title, it has been established that the discharge in Night is higher in protoctist, primarily based on biodiesel. This paper from the present study focuses on the Night emission, and the way it is reduced by mistreatment with the cooled EGR. © TJPRC Pvt. Ltd.

Author Keywords
Algae Oil; Alkyl Esters; Emission & EGR; Methyl Esters

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Abraham Subaraj, M.[a] , Bensam Raj, J.[b] , Christopher EzhilSingh, S.[c] , Sankar, C.[d]

The corrosion rate of B 4 C particles reinforced with Al-Si alloyprepared by powder metallurgy in acidic solution using RSM

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Abstract
This present study is to progress the arithmetical model that might be utilized to determine the corrosion rate (CR) of Al–12Si-x B 4 C (x = 0, 4, and 8 wt. % of B 4 C) composites have faith in densification of the powder metallurgy throughout compaction and sintering. The acidic solutions used for corrosion is 1 N HCl, 1 N H 2 SO 4 and 1 N HNO 3 for varying plummeting time (i.e., 72, 144, and 216h) correspondingly. The hardness of the composites will rise because of the increased wt. % of B 4 C. The result indicates that with the enhancement of nanoB4C particles into the matrix decrease the corrosion rate respectively. The corrosion behaviour of composites was studied by SEM and corrosion rate method. As input parameters such as reinforcement, acid and time were designed by RSM design and the response parameter was corrosion rate was obtained experimentally by the corrosion rate method. The L17 orthogonal array was selected for investigating the response surface methodology (RSM) design using three factors with one replicate. RSM design was investigated for the evaluation of interactions between response parameter and input parameters. Analysis of variance was utilized to explore the influencing input factors on corrosion rate (CR). The corrosion rate specifies varying results depending on the input values of the response parameters. The outcomes revealed that all the parameters had significant effects on the corrosion rate at 95 % confidence level. © TJPRC Pvt. Ltd.

Author Keywords
Al-Si- B 4 C Composites; ANOVA; Corrosion Rate; RSM; SEM

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Tribological Performance of Al-MMC Reinforced with Treated Fly Ash using Response Surface Methodology
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Abraham Subaraj, M.[a] , Bensam Raj, J.[b] , Christopher EzhilSingh, S.[c] , Sankar, C.[d]

An effect of wear behaviour on B 4 C particles reinforced with Al-Si alloy prepared through powder metallurgy method using response surface methodology

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Abstract
This present study is to develop the statistical model that might be used to forecast the wear of Al–12Si-x B 4 C (x = 0, 4, and 8 wt. % of B 4 C) composites have faith in densification of the powder throughout compaction and sintering. The L17 orthogonal array was selected for investigating the response surface methodology (RSM) design using three factors with one replicate. Analysis of Variance (ANOVA) was utilized to explore the influencing input factors on Wear Loss (WL). The hardness of the composites will rise because of the increased wt. % of B 4 C. The Pin-on-disc and Scanning Electron Microscope (SEM) were used to examine the wear and friction, and characterization of Al–12Si-x B 4 C composites respectively. The mathematical model was applied by design expert software so as to precise the influence degrees of the most wear variables like reinforcement, sliding distance and load on WL. The results specify that the load and sliding distance is that the dominant factor affecting WL mainly. © TJPRC Pvt. Ltd.

Author Keywords
Al-Si- B 4 c Composites; ANOVA; RSM &Wear Loss; SEM

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Prakash Arul Jose, J.[a] , Rajesh Prasanna, P.[b]

A new construction methodology based convective heat transformer enhancement and emission reduction and power reservoir systems

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Abstract
Numerical simulation of a geothermal reservoir, modeled as a bottom-heated square box, filled with water-CO 2 mixture is presented in this work. In first part, results for two limited cases of a reservoir filled with either pure water or CO 2 are presented. Effects of different parameters including CO 2 concentration as well as reservoir pressure and temperature on the overall performance of the system are investigated. With a fixed reservoir pressure and temperature, any increasein CO 2 concentration leads to better performance, that is, stronger convection and higher heat transfer rates. With a fixed CO 2 concentration, however, the reservoir pressure and temperature can significantly affect the overall heat transfer and flow rate from the reservoir. The second part calculates amount of CO 2 , SO 2 , NO and particulate matters emissions from main grid and from μ sources which forms micro grid. The results indicates that more penetration of μ sources in the power systems especially the renewable sources will help in reducing or removing emission problems and solve the green house gas problems. Finally this paper proved with calculations that the micro grid can solve most of the problems which facing the conventional power system and keep the surrounding environment clean from pollution and the micro grid will be the future power system. Geothermal cogeneration or Combined Heat and Power (CHP) plant is the use of a heat engine or power station to simultaneously generate electricity and useful amount of heat from a single process. An advanced focus on sustainability will be made industrial CHP Plant more attractive, as it substantially reduces the carbon footprint when compared to generating steam or burning fuel on-site and importing electric power from the grid. © TJPRC Pvt. Ltd.

Author Keywords
Computational fluid dynamics; Convective heat transfer; Emission reduction; Geothermal reservoir; Micro grid; Voltage enhancement and power saving

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Documents

Venkatesan, M.[a] , Selvakumar raja, S.[b]

Secure conveyance using message confirmation in vehicular ad-hoc networks
(2018) *International Journal of Mechanical Engineering and Technology*, 9 (13), pp. 685-692.

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Abstract
The Vehicular ad-hoc networks (VANETs) have been studied to improve operator's safety and ease. In VANETs, all vehicles send their position and road conditions with adjacent nodes by periodically sending secure messages. To give staunch VANET services, message authentication is a powerful feature. In particular, undisclosed message authentication has brought about great interest, because intervallic broadcast messages from a vehicle can be used to track its location. Lamentably, earlier suggested anonymous message authentication protocols had serious practical disadvantages, like high communication, authentication, and revocation costs, as well as reliability issues. Thus, this paper suggests an anonymous authentication protocol based on a cooperative authentication method. The proposed method does not require mode synchronization between cooperative and non-cooperative authentication. Besides, designed a two-layer pseudo-identity generation method and develop a key update tree for efficient revocation. Simulations illustrate that the researched protocol does not result in packet losses caused by authentication overheads. © IAEME Publication.

Author Keywords
Message Loss ratio; Message reliability; OBU; RSU; Trusted Authority; VANET

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An implementation of InvaNet hybrid architecture and hybrid routing protocol using deep neural network
(2018) *International Journal of Mechanical Engineering and Technology*, 9 (13), pp. 377-386. Cited 2 times.

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Abstract
Usually the vehicles are running in the urban and rural environment. Those vehicles can be communicating each other using some architectures and protocols. The communication can be possible with vehicle to vehicle (V2V) or vehicle to some pre erected infrastructures (V2I). If the module used both type of communication, then it is called hybrid architecture. There are some protocols used by the vehicles to communicate with each other. This paper proposes the Zone Hierarchical Link State protocol (ZHLS) with gate flooding, which is the sub classification of topology based hybrid routing protocol and the implementation of the hybrid architecture of both V2V and V2I communications in the Intelligent Vehicular Ad Hoc Network (InVANET). The set of complete module of this proposed architecture is controlled and operated by the Deep Neural Network (DNN) and the outcomes of the proposal are simulated with MATLAB. The major aim of this proposal is to implement the efficient communication between the vehicles by reducing the real time complications. The complications in real time implementation are concentrated by the DNN. © IAEME Publication.

Author Keywords
Deep Neural Network (DNN); Hybrid Architecture; Index Terms: Intelligent Vehicular Ad Hoc Network (InVANET); Zone Hierarchical Link State protocol (ZHLS)

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Alpha-amylase and alpha-glucosidase inhibitory effects of calliandra haematocephala and its potential role in diabetes mellitus

(2018) *Asian Journal of Pharmaceutical and Clinical Research*, 11 (12), pp. 429-432.

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Abstract
Objective: The global burden and the high prevalence of diabetes mellitus in India signify the importance of its control with effective measures. Particularly, intestinal alpha-amylase and alpha-glucosidase enzyme inhibitors reduce postprandial hyperglycemia and play a key role in preventing diabetic complications. Herbal plants also possess greater antioxidant, enzyme inhibitory, and antihyperglycemic activities with minimal side effects. Hence, this study is done to elucidate the inhibition of alpha-amylase and alpha-glucosidase enzyme activity and antidiabetic potential of Calliandra haematocephala. Methods: The leaves of C. haematocephala extracted by ethanol as a solvent were used to elucidate the blocking of alpha-amylase and alpha-glucosidase enzymes for antidiabetic effect, and the absorbance was measured using spectrophotometry. The percentage of inhibition and half maximal inhibitory concentration (IC50) value of the plant and control were calculated. Results: The maximum percentage inhibition of C. haematocephala against alpha-amylase was 61% (IC50 value of 82.18 µg/ml) and alpha-glucosidase was 71% (31.07 µg/ml). The maximum percentage inhibition of acarbose against alpha-amylase was 92% (IC50 value of 42.65 µg/ml) and alpha-glucosidase was 89% (62.28 µg/ml). Conclusion: Hence, the above study proved the antidiabetic activity of C. haematocephala and its significant role in the pharmacotherapy of diabetes mellitus. © 2018, Innovare Academics Sciences Pvt. Ltd. All rights reserved.

Author Keywords
Alpha-amylase; Alpha-glucosidase; Calliandra haematocephala

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Punnagai, K.[a] , Vijaybabu, K.[b] , Glory Josephine, I.[c] , David, D.C.[a]

Comparative analysis of the anticancer activity of angiotensin receptor blockers-irbesartan and telmisartan
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Abstract
Objective: Angiotensin receptor blockers (ARBs) are effective hypertensive drugs. Reduction in risk of lung cancer with ARBs was proven in clinical studies. Telmisartan and irbesartan are the second-generation ARBs. This study screens the anticancer activity of these two drugs in a dose-dependent manner using A549 cell line. Methods: Different concentrations of irbesartan and telmisartan were treated on A549 cells and the anticancer activity was evaluated through methylthiazolyldiphenyl-tetrazolium [3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide] cytotoxicity assay. The dot plot of the cytotoxicity results was used to extrapolate the half maximal inhibitory concentration (IC50) values. Microscopic changes in the cells post-treatment with these drugs were also recorded at ideal concentrations. Results: A reduction in cell viability was noted in A549 cells with increasing concentration of the drug. The IC50 values for irbesartan and telmisartan were 31.1 µg and 15.6 µg, respectively. Microscopic observation of the cells shows more rounded and deformed dead cells on telmisartan-and irbesartan-treated cells when compared with the untreated control. Conclusion: The results confirm the anticancer activity of both the drugs with telmisartan being more efficient. The anticancer activity could probably be due to the role of irbesartan and telmisartan in inhibiting mitogen-activated protein kinase cell survival pathway and local angiogenesis. © 2018, Innovare Academics Sciences Pvt. Ltd. All rights reserved.

Author Keywords
Angiotensin receptor blockers; Cytotoxicity; Irbesartan; Methylthiazolyldiphenyl-tetrazoliumbromide assay; Telmisartan

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Mahalakshmi, K.[a] , Krishnan, P.[b] , Chandrasekaran, S.C.[c]

Detection of Tannerella forsythia bspA and prtH genotypes among periodontitis patients and healthy subjects—A case—Control study

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Abstract

Background: T. forsythia a gram negative, anaerobe inhabits the mature biofilm present at sites expressing progressive periodontitis. It is a part of “red complex” group which contributes to the pathogenesis of periodontitis. The BspA protein and prtH gene encoded cysteine protease play a vital role in the virulence of T. forsythia. The present study aims to detect the two genotypes (bspA and prtH) in periodontitis and healthy subjects. Materials & Method: Subgingival plaque samples were collected from periodontitis patients and healthy subjects (Chronic Periodontitis n = 128, Aggressive Periodontitis n = 72, healthy subjects n = 200). The samples were screened for the presence of T. forsythia 16S rRNA, bspA and prtH genotypes by Polymerase Chain Reaction. The prevalence of the genotypes between periodontitis patients and healthy subjects was compared with Pearson's Chi-square test. A P value of < 0.05 was considered to be statistically significant. Results: The prevalence for T. forsythia in Chronic Periodontitis (n = 128), Aggressive Periodontitis (n = 72) and health (n = 200) was 73.4%, 59.7% and 10.5% respectively. The prevalence of T.forsythia bspA/prtH genotypes was 81.90%/43.60%, 88.40%/53.50% and 33.30%/14.3% in Chronic Periodontitis, aggressive Periodontitis and health respectively. Compared to healthy subjects, the odds of detecting T.forsythia 16S rRNA was 18.53 times high in individuals with periodontitis (P = 0.0001). Conclusion: The high odds ratio of T.forsythia 16S rRNA among periodontitis strongly suggests its role in periodontitis. In addition, the high prevalence of T. forsythia bspA genotype among Chronic Periodontitis signifies it as a useful marker for chronic periodontitis. © 2018 Elsevier Ltd

Author Keywords

Periodontitis; Polymerase chain reaction; T. forsythia; Virulence

Index Keywords

bacterial protein, BspA protein, bacteria, cysteine proteinase, membrane protein, PrtH protein, bacteria, RNA 16S; adult, agar gel electrophoresis, aggressive periodontitis, case control study, female, genetics, genotype, human, India, isolation and purification, male, microbiology, middle aged, periodontal index, polymerase chain reaction, prevalence, Tannerella forsythia; Adult, Aggressive Periodontitis, Bacterial Proteins, Case-Control Studies, Cysteine Endopeptidases, Electrophoresis, Agar Gel, Female, Genotype, Humans, India, Male, Membrane Proteins, Middle Aged, Periodontal Index, Polymerase Chain Reaction, Prevalence, RNA, Ribosomal, 16S, Tannerella forsythia

Chemicals/CAS

cysteine proteinase, 37353-41-6; mucosa associated lymphoid tissue lymphoma translocation protein 1; Bacterial Proteins; BspA protein, bacteria; Cysteine Endopeptidases; Membrane Proteins; PrtH protein, bacteria; RNA, Ribosomal, 16S

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Sivakumar, K.[a] , Mohankumar, T.[a] , Rajan, K.[b]

Numerical analysis of heat transfer characteristics with triangular cut twisted tape inserts
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Abstract
Numerical investigation of heat transfer analysis was taken with different flow rates using CFD simulation. A commercial CFD package of fluid simulation in solid works was used to analyses the heat transfer and friction factor characteristics. In this present study the double pipe heat exchanger for a plain tube and twisted tape with the triangular cut copper material inserts, the heat transfer from hot water to cold water by was experimentally investigated. In this paper CFD analysis was used for heat transfer enhancement of laminar flow of water as a working fluid. In a circular tube fitted with triangular cut twisted tape inserts with twist ratio Y = 5.4 and 1.2 cm cut depths of triangular cut was used for flow analyses. A plain twisted tape caused a swirling motion and triangular cut used for the heat transfer augments. In addition that, a triangular cut twisted tape inserts increases the surface contact area of the flow motion. The performance of heat transfer characteristics, Reynolds number and Nusselt number were analyzed using flow analysis. The data obtained from the simulation analysis and these data were correlated with plain twisted tape inserts. The performance of heat transfer characteristics of triangular cut twisted tape was enhanced compared with smooth plain twisted tape. © 2018 Author(s).

Author Keywords
flow analysis; fluid dynamics; heat transfer; Triangular twisted tape

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Sonia, M.M.L.[a] , Anand, S.[a] , Vinosel, V.M.[a] , Janifer, M.A.[a] , Pauline, S.[a] , Manikandan, A.[b]

Effect of lattice strain on structure, morphology and magneto-dielectric properties of spinel NiGdxFe2−xO4 ferrite nano-crystallites synthesized by sol-gel route

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Abstract
Nanocrystalline powders of Gadolinium (Gd3+) substituted nickel ferrite spinel (NiGdxFe2−xO4: x = 0.00, 0.025, 0.050, 0.075 and 0.1) samples were synthesized via sol-gel method. Nickel nitrate hexahydrate and Ferric nitrate hexahydrate were used as the precursors and rare earth Gadolinium nitrate hexahydrate [Gd(NO3)3·6H2O] was used as the dopant. The structural, morphological, magnetic and dielectric properties of the synthesized nanoparticles were examined by XRD, FTIR, HRSEM, EDX, TEM, VSM and dielectric studies. The Scherrer method and Williamson-Hall (W-H) method were used to evaluate the crystallite sizes and lattice strain. The crystallite size of NiGdxFe2−xO4 samples were found to decrease from 25 nm to 11 nm with increase in Gd3+ content. Lattice parameters decrease and lattice strain increases with the increase in Gd3+ content in the sample. HRSEM images showed the spherical morphology and uniform size distribution. The elemental composition analysis confirms the stoichiometric presence of expected elements in the samples. The crystallite size and the particle size calculated from the XRD analysis and HRTEM monographs indicate the correlation of the data obtained from both the measurements. Magnetic studies of the samples were performed using vibrating Sample Magnetometer, in which magnetizations (Ms) decrease with increase in Gd3+ concentration from 36.51 emu/gm to 19.69 emu/gm. As the gadolinium content was gradually increased, coercivity and remnant magnetization were also decreased. Magnetic anisotropy of nickel ferrite was also found to decrease with increasing gadolinium content. The saturation magnetization values were achieved by using the “Law of Approach (LA) to Saturation magnetization” technique. Specific correlation between magnetic interaction and lattice strain was observed in Gd3+ substituted nickel ferrite. Dielectric parameters such as dielectric constant and dielectric loss of the prepared samples decrease with increase of applied frequency and increasing of Gd3+ doping concentration. © 2018 Elsevier B.V.

Author Keywords
Dielectric studies; Gd3+ substituted NiFe2O4; Lattice strain; TEM; VSM; XRD

Index Keywords
Crystallite size, Dielectric losses, Dielectric properties, Ferrite, Magnetic anisotropy, Nanocrystalline powders, Nanocrystals, Nanomagnetics, Nickel compounds, Nitrates, Particle size, Particle size analysis, Rare earths, Saturation magnetization, Sol-gel process, Sol-gels, Synthesis (chemical), Transmission electron microscopy, X ray diffraction; Dielectric studies, Elemental compositions, Lattice strain, Magnetic and dielectric properties, NiFe2O4, Remnant magnetization, Spherical morphologies, Vibrating sample magnetometer; Gadolinium compounds

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Malicious node identification in mobile adhoc networks leveraging genetic algorithm and adaptive neuro-fuzzy inference system

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Abstract

Security threat is the chief problem in 'mobile adhoc networks' (MANET). The effectiveness of the MANET is influenced via the malicious nodes' existence. It is an extremely hard job for recognizing the malicious nodes (MN) as of the faithful nodes in MANET owing to related traits betwixt MA and trusty node. An effective feature extraction centered MN detection system with GA in addition to ANFIS approach is proposed. Features like trust factor, service trust features, and weightage are extorted as of trusty and MNs. The finest attributes are selected utilizing GA; the extorted sorts are proficient in addition categorized utilizing ANFIS. The proposed MN detection's performance on MANET is examined concerning ordinary packet loss ratio, throughput, and also detection ratio. The outcomes showed the domination of the proposed work. © 2018 American Scientific Publishers All rights reserved.

Author Keywords

Adaptive Neuro Fuzzy Interference System (ANFIS); Genetic Algorithm (GA); MANET

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Kavitha, E.[a b] , Srikumar, R.[c] , Muthu, G.[d]

Inducible clindamycin resistance among clinical isolates from a tertiary care hospital
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Abstract
Background: Clindamycin is an important drug in the treatment of various Staphylococcal infections and inducible clindamycin resistance can lead to treatment failure with clindamycin. As methicillin resistance in Staphyloccusspp is quite common, Clindamycin could be used for the treatment of Methicillin resistance Staphylococcus aureus (MRSA) infections as well as infections produced by Coagulase negative staphylococcus (CoNS). Aims: To detect and to find the prevalence of clindamycin resistance among the clinical isolates of Staphylococcus spp. by D test method. Materials and Methods: A total of 573 clinical isolates were tested for inducible clindamycin resistance by disk approximation test (D test). Results: Among the clinical isolates Staphylococcus aureus were 376 (65.6%) whereas Coagulase negative Staphylococcus (CONS) were 197(34.4%). From the isolated strains-Methicillin resistant Staphylococcus aureus (MRSA) was 191(33.3%), Methicillin sensitive Staphylococcus aureus (MSSA) was 185(32.3%), Methicillin resistant coagulase negative staphylococcus (MRCONS) was 87(15.2%) and Methicillin sensitive coagulase negative staphylococcus (MSCONS) was 110(19.2%). Inducible clindamycin resistance (iMLS B) was observed to be 57 (15.2%) in Staphylococcus aureus group and 43 (21.8%) among Coagulase negative Staphylococcus group. Conclusion: Detection of inducible clindamycin resistance by a simple D test helps to avoid treatment failure with clindamycin. © RJPT All right reserved.

Author Keywords
Antibiotic resistance; Clindamycin; Kirby Bauer disk diffusion method; Staphylococcus aureus

Index Keywords
clindamycin, erythromycin; Article, blood analysis, clinical chemistry, coagulase negative Staphylococcus, community care, controlled study, disk diffusion, genotype phenotype correlation, methicillin resistance, methicillin resistant Staphylococcus aureus, microbiological examination, microbiology, nonhuman, prevalence, sputum analysis, Staphylococcus infection, tertiary care center, treatment failure, urinalysis

Chemicals/CAS
clindamycin, 18323-44-9; erythromycin, 114-07-8, 70536-18-4

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Friction behavior of Al-Si-B4C composites prepared by powder metallurgy technique using RSM
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Abstract
This present study is to develop the statistical model that might be used to forecast the friction of Al–12Si-x B4C (x = 0, 4, and 8 wt. % of B4C) composites have faith in densification of the powder throughout compaction and sintering. The L17 orthogonal array was selected for investigating the response surface methodology (RSM) design using three factors with one replicate. Analysis of Variance (ANOVA) was utilized to explore the influencing input factors on Coefficient of Friction (CoF). The hardness of the composites will rise because of the increased wt. % of B4C. The Pin-on-disc and Scanning Electron Microscope (SEM) were used to examine the CoF, and characterization of Al–12Si-x B4C composites respectively. The mathematical model was applied by design experts software so as to precise the influence degrees of the most friction variables like reinforcement, sliding distance and load on CoF. The results specify that the load and sliding distance is that the dominant factor affecting CoF mainly. © IAEME Publication.

Author Keywords
Al-Si- B4C Composites; ANOVA; COF; RSM; SEM

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Tribological Performance of Al-MMC Reinforced with Treated Fly Ash using Response Surface Methodology
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Weight losson Al-Si-XB4c composites prepared through powder metallurgy in acidic solution using response surface methodology

(2018) *International Journal of Mechanical Engineering and Technology*, 9 (11), pp. 1350-1360.

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Abstract
This present study is to progress the arithmetical model that might be utilized to determine the weight loss of Al–12Si-x B4C (x = 0, 4, and 8 wt. % of B4C) composites have faith in densification of the powder metallurgy throughout compaction and sintering. The acidic solutions used for corrosion is 1 N HCl, 1 N H2SO4 and 1 N HNO3 for varying plummeting time (i.e., 72, 144, and 216h) correspondingly. The hardness of the composites will rise because of the increased wt. % of B4C. The result indicates that with the enhancement of nanoB4C particles into the matrix decrease the weight loss respectively. The corrosion behavior of composites was studied by SEM and weight loss method. As input parameters such as reinforcement, acid and time were designed by RSM design and the response parameter was weight loss was obtained experimentally by weight loss method. The L17 orthogonal array was selected for investigating the response surface methodology (RSM) design using three factors with one replicate. RSM design was investigated for the evaluation of interactions between response parameter and input parameters. Analysis of variance was utilized to explore the influencing input factors on Weight Loss (WL). The weight loss specifies varying results depending on the input values of the response parameters. The outcomes revealed that all the parameters had significant effects on the weight loss at 95 % confidence level. © IAEME Publication

Author Keywords
Al-Si- B4C Composites; ANOVA; RSM; SEM; Weight Loss

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Meikandaan, T.P.[a] , Murthy, A.R.[b]

Experimental study on strengthening of rc beams using glass Fiber
(2018) *International Journal of Civil Engineering and Technology*, 9 (11), pp. 959-965. Cited 20 times.

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Abstract
Experimental investigations on the flexural and shear behavior of RC beams strengthened using continuous glass fiber reinforced polymer (GFRP) sheets. Two sets of beams were casted for this experimental test program. In SET I six under reinforced concrete beams were casted, out of which three control beams and other three beams were strengthened using continuous glass fiber reinforced polymer (GFRP) sheets for flexure test. In SET II six under reinforced concrete beams were casted; out of which three control beam and other three beams were strengthened using continuous glass fiber reinforced polymer (GFRP) sheets for shear test. Experimental data on load, deflection and failure modes of each of the beams were obtained. The effect of GFRP layers and its orientation on ultimate load carrying capacity & failure mode of the beams are investigated. © 2018 IAEME Publication.

Author Keywords
Glass fiber; Polymer (GFRP) sheets; Reinforced concrete beams

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Singaravelu, S.[a e] , Sankarapillai, J.[b] , Chandrakumari, A.S.[c e e] , Sinha, P.[d]

Effect of Trigonella foenum gracecum (Fenugreek) seed extract in experimentally induced gastric ulcer in wistar rats

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Abstract
Background: Trigonella foenum graceum (Fenugreek) seeds are commonly used in India as traditional medicine for Diabetes, Dysmenorrhea, lactation and arthritis. The gastro-protective role of Fenugreek seeds are yet to be explored. Objectives: To evaluate the effect of Fenugreek seed extract in Indomethacin induced gastric ulcer models. Materials and Methods: Albino wistar rats were divided into five groups with eight animals in each. Gastric ulcer was induced using Indomethacin 20 mg/Kg. Fenugreek at dose of 200 mg/Kg and 400 mg/Kg was administered to group III, IV and group V received Rantidine 30 mg/Kg. Ulcer index, volume of gastric juice and acidity was estimated. To study the anti-oxidant property the level of catalase, SOD, GST and T. Bars were done. Results: Fenugreek treated group III showed a significant decrease in ulcer index, volume of gastric juice and acidity when compared to control positive group II. Oxidative enzyme study indicated a significant increase in Catalase, SOD and GSH value in treated group when compared with control positive group II and significant decrease in T. Bars value in treated group. Conclusion: Fenugreek seed extract has both gastro-protective and Anti-oxidant property. © 2018 Phcog.Net.

Author Keywords
Fenugreek; Gastro-protection; Indomethacin; Seed-extract; Ulcer inhibition

Index Keywords
catalase, fenugreek extract, glutathione transferase, indometacin, ranitidine, superoxide dismutase, thiobarbituric acid reactive substance; animal experiment, animal model, antioxidant activity, antiulcer activity, Article, controlled study, drug dose comparison, drug efficacy, drug mechanism, drug screening, enzyme analysis, indomethacin-induced gastric ulcer, nonhuman, plant seed, rat, stomach juice, stomach pH, stomach protection, treatment duration, ulcer index, Wistar rat

Chemicals/CAS
catalase, 9001-05-2; glutathione transferase, 50812-37-8; indometacin, 53-86-1, 74252-25-8, 7681-54-1; ranitidine, 66357-35-5, 66357-59-3; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1

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Structural, morphological and magneto-optical properties of CuMoO4 electrochemical nanocatalyst as supercapacitor electrode

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Abstract

Copper molybdate (CuMoO4) nanoparticles (NPs) were synthesized by microwave combustion method and urea act as the fuel. The formation of nanocrystalline structure was confirmed by X-ray powder diffraction (XRD). The chemical composition of the CuMoO4 NPs was investigated by Fourier transform infrared (FT-IR) spectroscopy. Scanning electron microscope (SEM) associated with energy dispersive X-ray (EDX) was used to investigate morphological and elemental composition of the prepared sample. The morphology and particle size of sample were investigated by high-resolution transmission electron microscope (HR-TEM) analysis. The optical and electronic defects were confirmed by the UV-Vis absorption and photoluminescence (PL) spectroscopy at room temperature (RT). The magnetic behavior was analyzed by vibrating sample magnetometer (VSM) analysis recorded at RT. The X-ray Photoelectron spectroscopy (XPS) was used to analyze the chemical state of the elements in the prepared sample. The electrochemical behavior was examined by cyclic voltammetry (CV), galvanostatic charge and discharge analysis (GCD) and electrochemical impedance spectroscopy (EIS). The presence of redox pairs is showed in CV curves and along with the EIS data showed the supercapacitor nature. The GCD analysis displayed discharge curves and a high specific capacitance of ~ 127 F/g was acquired at a stable discharge current density (1 mA/cm2). The cyclic stability analysis showed capacitance retention of about 82.5% after 1000 cycles, proposing the potential application of CuMoO4 in energy storage devices. © 2018 Elsevier Ltd and Techna Group S.r.l.

Author Keywords

CuMoO4; Microwave combustion; Nanorods; Specific capacitance; Supercapacitor

Index Keywords

Capacitance, Combustion, Copper compounds, Cyclic voltammetry, Digital storage, Electric discharges, Electrochemical impedance spectroscopy, Fourier transform infrared spectroscopy, Nanocatalysts, Nanocrystals, Nanorods, Optical properties, Particle size, Particle size analysis, Photoluminescence spectroscopy, Scanning electron microscopy, Spectrum analysis, Supercapacitor, Synthesis (chemical), Urea, X ray photoelectron spectroscopy, X ray powder diffraction; CuMoO4, Discharge current density, Fourier transform infra red (FTIR) spectroscopy, High specific capacitances, Nano-crystalline structures, Specific capacitance, Supercapacitor electrodes, Vibrating sample magnetometer; Chemical analysis

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Comparative investigation of the ball milling role against hand grinding on microstructure, transport and pinning properties of Y3Ba5Cu8O18±δ and YBa2Cu3O7-δ

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Abstract
We report a comparative investigation between the two high temperature superconductor materials YBa2Cu3O7-δ (Y-123) and Y3Ba5Cu8O18±δ (Y-358) by probing the impact of high-energy ball milling (HEBM) technique on the microstructure, transport properties and pinning capacities. Products were elaborated via the solid-state reaction (SSR) by employing two kinds of milling; hand grinding in agate mortar and HEBM in a planetary crusher. The morphology, chemical compositions and crystal structure of all produced products were explored by scanning electron microscope (SEM) along with EDXS and X-ray diffraction (XRD). The superconductivity was confirmed by electrical resistivity measurements. The transport and intra-granular critical currents densities were estimated through the current–voltage and magnetization measurements. The planetary HEBM process generates nano-sized Y-deficient Y-123 and nano-sized Y-deficient Y-358 entities dispersed in the Y-123 and Y-358 matrix, respectively. The Y-358 sample milled by HEBM exhibits the best pinning capacity. This result can be ascribed to the occurrence of more disorder in Y-358 compound compared to Y-123 one. © 2018 Elsevier Ltd and Techna Group S.r.l.

Author Keywords
Ball milling process; Flux pinning; Microstructure; Y-deficient YBCO nano-entities; Y3Ba5Cu8Ox superconductor; YBa2Cu3Oy superconductor

Index Keywords
Barium compounds, Copper compounds, Crystal structure, Flux pinning, High temperature superconductors, Microstructure, Milling (machining), Scanning electron microscopy, Solid state reactions, Yttrium barium copper oxides; Agate mortar, Ball milling process, Chemical compositions, Electrical resistivity measurements, High-energy ball milling, Magnetization measurements, Pinning properties, YBa2Cu3Oy; Ball milling

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Structural, Morphological and Optical Properties of ZnO, ZnO:Ni2+ and ZnO:Co2+ Nanostructures by Hydrothermal Process and Their Photocatalytic Activity

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Abstract
ZnO, ZnO:Ni2+ and ZnO:Co2+ nanoparticles (NPs) were prepared via hydrothermal process. The synthesized samples were characterized by using various techniques such as, FT-IR, powder XRD, SEM-EDX, TEM-SAED, UV–Visible, PL and BET. The as-synthesized ZnO, ZnO:Ni2+ and ZnO:Co2+ NPs exhibit strong physicochemical properties including in structural, surface morphology, chemical composition, surface area, optical and photocatalytic activity were comparatively investigated as function of Ni2+ and Co2+ doping. UV–Visible absorption spectra exhibit blue shifted in absorption edge of ZnO, ZnO:Ni2+ and ZnO:Co2+ NPs compared to bulk counterparts. The photocatalytic activity of the ZnO, ZnO:Ni2+ and ZnO:Co2+ NPs have been evaluated by monitoring the degradation of MeB and RhB dyes under UV light irradiation. In degradation efficiency, 84 and 93% of the MeB and RhB dyes is degraded in the presence of the ZnO:Ni2+ and ZnO:Co2+ photocatalyst under optimum experimental conditions. The rate of de-coloration of MeB and RhB dyes are detected by UV–Visible absorption spectroscopy and organic dye mineralization is confirmed by table of carbon study. In addition, the mechanism of the photocatalytic degradation of MeB and RhB dyes has been briefly discussed. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
Dopants; Hydrothermal; MeB and RhB dyes; Optical; Photocatalytic; ZnO

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Magneto Optical Properties and Hyperfine Interactions of Cr3+ Ion Substituted Copper Ferrite Nanoparticles
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Abstract
Spinel CuCrxFe2−xO4 (0.0 ≤ y ≤ 1.0) nanoparticles were fabricated by co-precipitation. X-ray diffraction proved the pureness and cubic crystal assembly of products which have the crystallite sizes varying between 16 and 33 nm. The cubic morphology and expected chemical composition, spectral analyses of all sample were accomplished via Scanning electron microscopy along with Energy Dispersive X-ray spectroscopy and Fourier transform infrared spectroscopy respectively. Magnetic and optical characterization of samples were done via Vibrating sample magnetometer, Mössbauer spectroscopy and Diffuse reflectance spectroscopy. Kubelka–Munk model was applied to UV–Vis data for calculating the optical Eg (band gap) values between minimum 1.20 and maximum 1.80 eV. Mössbauer analysis determined the consequence of Cr3+ substitution on isomer shift and quadrupole splitting of all products etc. The specific magnetization (σ-H) hysteresis curves have finite coercivity (in a range of 35–410 Oe) and retentivity (in a range of 0.33–3.84 emu/g) values and reveal the soft ferrimagnetic nature of spinel CuCryFe2−yO4 nanoparticles (NPs). The estimated saturation magnetization Ms value of 35.17 emu/g is maximum for pristine CuFe2O4 NPs and decreases to minimum value of 1.57 emu/g for CuCr0.4Fe1.6O4 NPs due to Cr3+ ion substitution. The calculated squareness ratios less than 0.5 assign the uniaxial anisotropy for all CuCryFe2−yO4 NPs. The magneto-crystalline anisotropy field (Ha) values less than 10.0 kOe except for the composition of CuCr0.2Fe1.8O4 NPs are other magnetic data to reveal the soft magnetic character of samples. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
Hexafferites; Hyperfine interactions; Magnetic properties; Mossbauer spectroscopy; Optical materials/properties

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Enhanced Magneto-optical and Photocatalytic Properties of Ferromagnetic Mg1−yNiyFe2O4 (0.0 ≤ y ≤ 1.0) Spinel Nano-ferrites

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Abstract
Spinel Mg1−yNiyFe2O4 (0.0 ≤ y ≤ 1.0) ferrite magnetic nanoparticles (MNPs) were synthesized by a sol-gel combustion method using urea as the reducing agent/fuel. Powder X-ray diffraction (XRD) analysis revealed the formation of cubic spinel Mg1−yNiyFe2O4 powders and confirmed pure crystalline phase and the average crystalline size of 21.25 to 17.04 nm. Functional group bonds between metal and oxygen (M–O) were confirmed by Fourier transform infrared (FT-IR) spectra. The microstructure of the powders was recorded by high-resolution scanning electron microscope (HR-SEM) and confirmed the particle-like surface morphology with smaller agglomeration, due to the magnetic interaction of the particles. Energy-dispersive X-ray (EDX) results showed the composition of the expected elements and confirmed the phase purity of the products. Vibrating sample magnetometer (VSM) technique recorded at room temperature was used to analyse the magnetic properties of the samples and the hysteresis loops showed the ferromagnetic behaviour. Moreover, the samples Mg1−yNiyFe2O4 NPs were tested for the photocatalytic degradation (PCD) of methylene blue (MB) dye and the sample y = 0.6 showed maximum degradation efficiency (96.83 %), due to the smaller particle size with higher surface area than other compositions. Furthermore, spinel Mg1−yNiyFe2O4 nano-photocatalysts can be reused several times without change of its catalytic activity. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
Ferrites; Methylene blue; Nanoparticles; Photocatalyst; Sol-gel method; Spinel

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Aromatic compounds, Catalyst activity, Crystalline materials, Degradation, Ferrite, Ferrites, Ferromagnetic materials, Ferromagnetism, Nanoparticles, Particle size, Photocatalysts, Powder metals, Scanning electron microscopy, Sol-gel process, Sol-gels, Synthesis (chemical), Urea, X ray diffraction analysis; Fourier transform infrared, High-resolution scanning electron microscopes, Magnetic nanoparti cles (MNPs), Methylene Blue, Photocatalytic degradation, Sol-gel combustion method, Spinel, Vibrating sample magnetometer; Nanomagnetics

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Abstract
Thermal stability of composites and their constituents becomes an important criterion during their processing and application in different fields. The present work deals with the thermal stability of coir pith/nylon/epoxy hybrid composites by studying the thermogram, heat deflection temperature, and accelerated ageing of these composites. The effect of chemical treatment of coir pith and hybridization on these properties is dealt in detail in the discussion. The composite samples were prepared by hand layup method followed and by compression molding. Coir pith was subjected to different types of chemical treatments—sodium hydroxide, dicumyl peroxide, acrylic acid, acetic acid, sodium hypochlorite, and sulfuric acid before processing. Thermogravimetric analysis of composite samples showed improved thermal stability with treatment of coir pith and hybridization with nylon fabric. The effect of temperature on the ageing of composites was studied after an accelerated ageing process followed by a comparison of retention in impact strength. The thermogram of the samples was found to complement the results obtained in accelerated ageing and heat deflection analysis. J. VINYL ADDIT. TECHNOL., 24:297–303, 2018. © 2017 Society of Plastics Engineers. © 2017 Society of Plastics Engineers

Index Keywords
Chemical analysis, Compression molding, Hybrid materials, Impact strength, Organic acids, Peroxides, Sodium hydroxide, Temperature measuring instruments, Thermodynamic stability, Thermography (temperature measurement); Accelerated ageing, Accelerated ageing process, Chemical treatments, Di-cumyl peroxides, Effect of chemicals, Effect of temperature, Heat deflection temperature, Sodium hypochlorites; Thermogravimetric analysis

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Agaricus blazei extract abrogates rotenone-induced dopamine depletion and motor deficits by its anti-oxidative and anti-inflammatory properties in Parkinsonic mice

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Abstract
Neuroinflammation and oxidative damage are the two main malfactors that play an important role in the pathogenesis of experimental and clinical Parkinson's disease (PD). The current study was aimed to study the possible anti-oxidant and anti-inflammatory effects of the methanolic extract of Agaricus blazei (A. blazei) against rotenone-induced PD in mice. Male Albino mice were randomized and divided into the following groups: control, treated with rotenone (1 mg/kg/day), co-treated with rotenone and A. blazei (50, 100, and 200 mg/kg b.w.), and treated with A. blazei alone (200 mg/kg b.w.). After the end of the experimental period, behavioral studies, biochemical estimations, and protein expression patterns of inflammatory markers were studied. Rotenone treatment exhibited enhanced motor impairments, neurochemical deficits, oxidative stress, and inflammation, whereas oral administration of A. blazei extract attenuated the above-said indices. Even though further research is needed to prove its efficacy in clinical studies, the results of our study concluded that A. blazei extract offers a promising and new therapeutic lead for treatment of PD. © 2017, © 2017 Informa UK Limited, trading as Taylor & Francis Group.

Author Keywords
Agaricus blazei; Dopamine; Neurodegenerative disease; Neuroinflammation; Oxidative stress

Index Keywords
Agaricus blazei extract, brain derived neurotrophic factor, catalase, catecholamine, dopamine, glutathione, glutathione peroxidase, immunoglobulin enhancer binding protein, interleukin 1beta, interleukin 6, nitroblue tetrazolium, rotenone, superoxide dismutase, thiobarbituric acid reactive substance, tumor necrosis factor, antiinflammatory agent, antioxidant, catalase, dopamine, glutathione, glutathione peroxidase, rotenone, superoxide dismutase, thiobarbituric acid reactive substance; animal experiment, animal tissue, antiinflammatory activity, antioxidant activity, Article, behavioral science, biochemical analysis, controlled study, drug induced disease, drug isolation, effective dose (pharmacology), enzyme activity, high performance liquid chromatography, inflammation, male, motor dysfunction, mouse, neuromuscular function, neuroprotection, nonhuman, oxidative stress, Parkinson disease, priority journal, protein expression, Western blotting, Agaricus, animal, chemistry, deficiency, drug effect, metabolism, mitochondrion, Parkinson disease; Agaricus, Animals, Anti-Inflammatory Agents, Antioxidants, Catalase, Dopamine, Glutathione, Glutathione Peroxidase, Male, Mice, Mitochondria, Oxidative Stress, Parkinson Disease, Secondary, Rotenone, Superoxide Dismutase, Thiobarbituric Acid Reactive Substances

Chemicals/CAS
brain derived neurotrophic factor, 218441-99-7; catalase, 9001-05-2; dopamine, 51-61-6, 62-31-7; glutathione, 70-18-8; glutathione peroxidase, 9013-66-5; nitroblue tetrazolium, 298-83-9; rotenone, 83-79-4; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1; Anti-Inflammatory Agents; Antioxidants; Catalase; Dopamine; Glutathione; Glutathione Peroxidase; Rotenone; Superoxide Dismutase; Thiobarbituric Acid Reactive Substances

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Studies on sodium nitrate based polyethylene oxide / polyvinyl pyrrolidone polymer blend electrolytes
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Abstract
Solid polymer electrolytes (SPEs) consisting of polyethylene oxide (PEO) /Polyvinyl pyrrolidone (PVP) complexed with sodium nitrate have been synthesized by solution casting technique. Structural studies were carried out using X-ray diffraction (XRD) measurements. The complex formation between the bonding of polymers and the salt were confirmed by Fourier Transform Infrared (FT-IR) spectral data. The ionic conductivity and dielectric response of the SPEs were studied within the frequency range of 42 Hz–1 MHz at the temperature range of 303–363 K. The maximum ionic conductivity was found to be 6.157 × 10−7 S/cm at 303 K for PEO (67 wt %) /PVP (27 wt %)/NaNO3 (6 wt%). The dielectric properties were also studied using the complex dielectric permittivity spectra of the SPE films. The higher dielectric permittivity was obtained due to accretion of ionic charges at lower frequencies. The surface morphology of the polymer blend electrolyte film complexed with sodium nitrate was studied using Scanning Electron Microscopy (SEM). © 2018 Elsevier B.V.

Author Keywords
FTIR; Ionic conductivity; Polymer blend electrolyte; SEM; Transference number; XRD

Index Keywords
Fourier transform infrared spectroscopy, Ionic conductivity, Nitrates, Permittivity, Polyethylene oxides, Polyethylenes, Polymer blends, Scanning electron microscopy, Sodium nitrate, Solid electrolytes, X ray diffraction; Complex dielectric permittivities, Dielectric permittivities, Fourier transform infrared, FTIR, Polyethylene oxide (PEO), Solid polymer electrolytes, Solution-casting technique, Transference number; Polyelectrolytes

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Seevakan, K.[a] , Manikandan, A.[b] , Devendran, P.[c] , Baykal, A.[d] , Alagesan, T.[a]

Electrochemical and magneto-optical properties of cobalt molybdate nano-catalyst as high-performance supercapacitor

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Abstract
Nanorod shaped cobalt molybdate (CoMoO4) electro-catalysts synthesized by microwave combustion route using urea as the fuel. The formation of monoclinic nanocrystalline structure, metal-oxygen (M–O) and chemical bonding was confirmed by X-ray powder diffractometry (XRD), Fourier transform infrared (FT-IR) and Raman spectroscopy, respectively. Scanning electron microscope (SEM) associated with energy dispersive X-ray (EDX) and high-resolution transmission electron microscope (HR-TEM) were used to confirm the morphology, elemental composition and particle size of the samples, respectively. The optical and defects were confirmed by the UV–vis. absorption and photoluminescence (PL) spectroscopy at room temperature (RT). The room temperature magnetic behaviors of product were investigated by vibrating sample magnetometer (VSM). Surface binding energy and element confirmation were examined by X-ray Photoelectron spectroscopy (XPS). The electrochemical (EC) performance was studied by cyclic voltammetry (CV), galvanostatic charge-discharge analysis (GCD) and electrochemical impedance spectroscopy (EIS) analysis. The CV curve proved the existence of redox pairs and the supercapacitor nature exhibited by the EIS (Nyquist plots). The GCD studies provided the non-symmetrical discharge curves and the highest specific capacitance (Csp) of ~ 133 F/g were acquired at a constant discharge current density (1 mA/cm−2). The cyclic stability investigations revealed capacitance retention of about 100% after 1000 cycles, proposing the prospective usage of CoMoO4 in energy-storage devices. © 2018 Elsevier Ltd and Techna Group S.r.l.

Author Keywords
CoMoO4 nanocatalyst; Electrochemical studies; Magneto-optical properties; Microwave combustion; Specific capacitance

Index Keywords
Binding energy, Capacitance, Chemical bonds, Cobalt, Cobalt compounds, Combustion, Cyclic voltammetry, Electric discharges, Electrochemical electrodes, Electrochemical impedance spectroscopy, Molybdenum compounds, Nanocrystals, Nanorods, Optical properties, Particle size, Photoluminescence spectroscopy, Polyacrylonitriles, Scanning electron microscopy, Semiconductor quantum wells, Spectrum analysis, Supercapacitor, Urea, X ray photoelectron spectroscopy; Absorption and photoluminescence, Electrochemical studies, Galvanostatic charge discharges, Magnetooptical properties, Nano-catalyst, Nano-crystalline structures, Specific capacitance, Vibrating sample magnetometer; Nanocatalysts

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Correlation of serum copper, zinc, magnesium with insulin resistance in Pcos female of reproductive age group
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Abstract
Background: Insulin resistance is communal in patients with PCOS-Polycystic Ovary Syndrome. Serum copper, zinc, magnesium are measured and it is correlated with insulin resistance. Aim of Study: The present study intended to determine correlations among insulin Resistance and minerals like copper, zinc, magnesium inpatients with PCOS. Methodology: The subjects were identified from gynecology OPD of private medical college in Tamilnadu. The study involved 200 female of age 15-45 years (100female had PCOS and the other 100 female were controls). Results: HOMA was meaningfully higher in female with PCOS in contrast with Control. There was a significant correlation of copper, zinc and magnesium with insulin resistance. It was observed that the levels of copper and zinc increases with patient showing insulin resistance while magnesium was lowered in the same. Conclusion: There is a significant correlation between the levels of copper, zinc, magnesium and IR in patients with PCOS. © 2018, Advanced Scientific Research. All rights reserved.

Author Keywords
Copper; HOMAIR; Magnesium; PCOS; Zinc

Index Keywords
copper, insulin, magnesium, zinc; adult, Article, copper blood level, correlation analysis, female, glucose blood level, homeostasis model assessment, human, insulin blood level, insulin resistance, magnesium blood level, major clinical study, middle aged, ovary polycystic disease, zinc blood level

Chemicals/CAS
copper, 15158-11-9, 7440-50-8; insulin, 9004-10-8; magnesium, 7439-95-4; zinc, 7440-66-6, 14378-32-6

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Thamarai, P.[a] , Adalarasu, K.[b]

An effective method to remove noise in EEG signal using wavelet packet transform
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Abstract
Electroencephalogram (EEG) sign is the recording of impulsive electrical interest of the mind over a small period of time. Signals are made through attack of neurons in the brains that are measured and calculated through EEG. EEG indicators are low voltage indicators that are contaminated with the aid of various types of noises that are additionally known as artifacts. As these alerts are used to diagnose diverse varieties of mind related diseases like narcolepsy, Sleep apneasyndrome, Insomnia and parasomnia it will become necessary to make those indicators free from noise for correct evaluation and detection of the sicknesses. Various noise elimination strategies together with ICA-Independent Component Analysis, PCA-Principle Component Analysis, Wavelet packet transform and Wavelet Packet Transform are to be had and can be carried out in mat lab. All these strategies may be used for EEG signal de-noising through noise to the original sign and then put in force the noise reduction method and their overall performance can be evaluated based on the elements which includes SNR and MSE. In this article, an arithmetical method for putting off artifacts from EEG demos via wavelet packet transform without thinking about SNR calculation is proposed. © 2018, Advanced Scientific Research. All rights reserved.

Index Keywords
algorithm, arithmetic, Article, artifact, comparative study, differential threshold, electroencephalography, electrooculogram, independent component analysis, linear regression analysis, mathematical parameters, noise reduction, principal component analysis, signal detection, signal noise ratio, signal processing, waveform, wavelet analysis, wavelet transformation

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Analyzing continuous data streams using improved stratified sampling and ensemble classification
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Abstract
The streaming data technologies play a vital role in real-time applications. To analyze the data, Random sampling with replacement has a problem in drawing inferences from the small random sample, while sampling without replacement is not preferable to sub-streams that correspond to different sources. Hence, to effectively mine the data streams from heterogeneous sources, this work proposes Adaptive Reservoir sampling Of stream In a Time window (AdROIT) which partitions the streams in a window on time factor and determines the size of historical data on reference window regarding the data changes in the observation window. By measuring the standard deviation of the partitioned window, we can identify whether the changes in statistical properties of a data stream is due to one or multiple sources. The AdROIT allocates the reservoir sampling size to the source, ensures the adaptability, updates the ensemble classifier with dynamically estimated weight, decides accuracy of each member regarding weight. The experimental results show that the AdROIT provides better classification and mining results over heterogeneous data streams. The AdROIT increases the precision by 16%, compared to the Chain sampling under a high degree of heterogeneity. Under the same scenario, the proposed scheme increases the recall by 30 %, more than that in Chain sampling. In high degree of heterogeneity, the Chain sampling utilizes 40kb for storage, more than that of Chain sampling. Finally, the high window size reduces the execution time in AdROIT by 15 seconds and improves the recall by 40%, compared to the Chain sampling. © 2018, International Journal of Intelligent Engineering and Systems.

Author Keywords
Dynamic weighting; Ensemble classifier; Heterogeneous sources; Reservoir sampling; Time windows

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Comparative analysis of cranial capacity with body mass index and academic performance of first year medical students

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Abstract
Introduction: The cranial capacity indirectly reflects the volume of the brain, hence may predict the mental ability of an individual. Aim: To estimate the cranial capacity and correlate it with Body Mass Index (BMI) and academic performance of first-year students of a Medical College in Chennai, Tamil Nadu, india. Materials and Methods: A total of hundred first year MBBS students aged between 17 and 19 years were selected for the present study from Sree Balaji Medical College and Hospital, Chrompet, Chennai, India. Cranial capacity and BMI were calculated by standard methods. The average academic performance during the year was obtained by calculating the average of the total marks secured in the academic year. All the above data were tabulated and analysed statistically by using Pearson's correlation test and Paired Student t-test. Results: The cranial capacity had no significant correlation with the academic performance in the present study. However, the BMI had a significant correlation with cranial capacity; this may be because larger cranial capacity is required for controlling larger muscular body mass. Conclusion: The present study showed a larger cranial capacity was related with increased BMI and hence may be helpful in the medicolegal and anthropological examination to find the relations between cranial capacity and age, height, body weight and BMI. There was no significant correlation between academic abilities with cranial capacity. © 2018, Journal of Clinical and Diagnostic Research. All rights reserved.

Author Keywords
Body weight; Cranial volume; Individual intelligence; Mental ability

Index Keywords
academic achievement, adolescent, adult, article, body mass, body weight, controlled study, height, human, human experiment, intelligence, medical school, medical student, Tamil Nadu

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Aggrandize efficiency of ultra-thin silicon solar cell via topical clustering of silver nanoparticles

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Abstract
A highly efficient photovoltaic nanocomposite device is demonstrated by fabrication of structural clusters of silver nanoparticles (Ag NPs) on silicon solar cells via a boil deposition method. The efficiency of silicon solar cell was augmented by coating Ag NPs ultra-thin-film deposition on silicon solar cell. Chemically synthesized silver NP's, their consumption on a silicon thin layer and the operation of photovoltaic nanocomposite device were characterized by using several electron probe microscopic pectroscopic and spectrometric techniques viz. x-ray diffraction (XRD), scanning electron microscopy (SEM), high resolution transmission electron microscopy (HR-TEM), Photoluminescence, UV–visible absorption, dielectric, current vs. voltage (I~V) and capacitance vs. voltage (C~V) characteristics. Poly-dispersed nature of 'Ag' nanoparticles established the anisotropy of these NPs when coated on silicon solar cells. Their efficiency enhancement was confirmed from HR-TEM image via time-domain finite-difference technique to deliberate the particle distribution effect on an ultra-thin film of silicon solar cell, indicating the sufficient enrichment in the efficiency of solar cell. Furthermore, the current work explores the developement of novel glass frits for utilization in next generation of high efficiency smart solar cells. © 2018 Elsevier B.V.

Author Keywords
AFM; C–V and I–V response; Dielectric; Optical; Silver nanoparticles; Solar cell

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Kaushik Pal was born in India. He received his Ph.D. from University of Kalyani, Nadia, (India). Most significant prestigious awards " Marie-Curie Experienced Researcher (Postdoctoral Fellowship) " offered by the European Commission at Aristotle University of Thessaloniki, Greece and " Brain Korea National Research Foundation Visiting Scientist Fellowship " at CNU, South Korea , achieved in his career. He was appointed " Senior Postdoctoral Fellow " at Wuhan University, China and after he obtained the most prestigious position " Scientist & Faculty CAS Fellow " by Chinese Academy of Science . Most Recent, he has been working as a " Research Professor & (Independent Scientist) ", at the Department of Nanotechnology, Bharath University (BIHER), Chennai . Based of his research background he selected "Editor-in-Chief" of the International peer reviewed journals and publishers ' Pan Standford ', En Press , and ' InTech ' as well as edited significant numbers of the book chapters, partially reviewed 85-research articles . Prof. Pal is an excellent group leader as well as associate member in various scientific communities, reorganizations and professional bodies. Since last year organized and chairperson around 10-National/International events/symposiums/conferences/workshops and himself contributed around 8-Keynote & 18-Invited lectures and attained distinguish chief guest in worldwide Nanoscience research community.

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Effect of Annealing Temperature on Magnetic and Mössbauer Properties of ZnFe2O4 Nanoparticles by Sol-gel Approach

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Abstract
In this study, spinel ZnFe2O4 nanoparticles (NPs) were synthesized by citrate sol-gel route using nickel nitrates, ferric nitrates and citric acid by annealing at 900, 1000, and 1100◦C. We reported the structural and magnetic properties (including Mössbauer analysis) for anisotropy ZnFe2O4 NPs annealed at different temperatures. Fourier transform infrared (FT-IR) and X-ray powder diffraction (XRD) were utilized to analyze the structural properties of magnetic nanoparticles (MNPs). Morphological features of resultant MNPs were examined by scanning electron microscopy (SEM). The observed XRD results displayed that the crystallite size increased from 38.60 to 49.28 nm with increasing the annealing temperature in a distinct linear trend. The enhancement of saturation magnetization of the uniaxial ZnFe2O4 NPs was studied and varied from 1.28 to 1.66 emu/g as the annealing temperature increases. The Mössbauer spectra results show that ZnFe2O4 ferrites were paramagnetic in nature at room temperature (RT). © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
Annealing temperature; Hyperfine interactions; Magnetic properties; Spinel ferrite; ZnFe2O4

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Effect of Annealing Temperature on Magnetic and Mössbauer Properties of ZnFe2O4 Nanoparticles by Sol-gel Approach

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Abstract
In this study, spinel ZnFe2O4 nanoparticles (NPs) were synthesized by citrate sol-gel route using nickel nitrates, ferric nitrates and citric acid by annealing at 900, 1000, and 1100◦C. We reported the structural and magnetic properties (including Mössbauer analysis) for anisotropy ZnFe2O4 NPs annealed at different temperatures. Fourier transform infrared (FT-IR) and X-ray powder diffraction (XRD) were utilized to analyze the structural properties of magnetic nanoparticles (MNPs). Morphological features of resultant MNPs were examined by scanning electron microscopy (SEM). The observed XRD results displayed that the crystallite size increased from 38.60 to 49.28 nm with increasing the annealing temperature in a distinct linear trend. The enhancement of saturation magnetization of the uniaxial ZnFe2O4 NPs was studied and varied from 1.28 to 1.66 emu/g as the annealing temperature increases. The Mössbauer spectra results show that ZnFe2O4 ferrites were paramagnetic in nature at room temperature (RT). © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
Annealing temperature; Hyperfine interactions; Magnetic properties; Spinel ferrite; ZnFe2O4

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Annealing, Crystallite size, Iron compounds, Magnetic properties, Nanomagnetics, Nanoparticles, Nickel compounds, Nitrates, Saturation magnetization, Scanning electron microscopy, Sol-gel process, Sol-gels, Synthesis (chemical), X ray powder diffraction; Annealing temperatures, Fourier transform infrared, Hyperfine interactions, Magnetic nanoparti cles (MNPs), Morphological features, Spinel ferrites, Structural and magnetic properties, ZnFe2O4; Zinc compounds

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Direct electrochemical reduction of hematite decorated graphene oxide (α-Fe2O3@erGO) nanocomposite for selective detection of Parkinson's disease biomarker

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Abstract
An unusual approach is reported herein to fabricate magnetic hematite (α-Fe2O3) decorated electrochemically reduced graphene oxide (α-Fe2O3@erGO) nanocomposite. The method utilizes direct electrochemical reduction of self-assembled, ex-situ synthesized α-Fe2O3 anchored GO to erGO (α-Fe2O3@erGO) on glassy carbon electrode (GCE) for selective detection dopamine (DA), an important biomarker of Parkinson's disease. The formation of α-Fe2O3@erGO/GCE has been confirmed by XPS and Raman spectroscopy. α-Fe2O3@erGO modified GCE exhibits synergistic catalytic activity nearly 2.2 and 5 fold higher than α-Fe2O3@GO and other modified electrodes, respectively towards oxidation of DA. The fabricated sensor exhibited linear dynamic ranges over 0.25 − 100 μM in response to DA with a LOD of 0.024 μM (S/N = 3), LOQ of 0.08 μM (S/N = 10), and a sensitivity of 12.56 μA μM–1 cm–2. Finally, the practical analytical application of the proposed α-Fe2O3@erGO/GCE was investigated for the determination of DA in commercially available pharmaceutical formulation and human serum samples, and showed satisfactory recovery results towards DA. © 2018 Elsevier B.V.

Author Keywords
Direct electrochemical reduction; Dopamine; Hematite; Reduced graphene oxide; Self-assembly

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Amines, Biomarkers, Catalyst activity, Catalytic oxidation, Electrolytic reduction, Glass membrane electrodes, Graphene, Nanocomposites, Neurodegenerative diseases, Neurophysiology, Self assembly; Analytical applications, Dopamine, Electrochemical reductions, Electrochemically reduced graphene, Glassy carbon electrodes, Linear dynamic ranges, Pharmaceutical formulation, Reduced graphene oxides; Hematite; biological marker, dopamine, ferric oxide, graphene oxide, nanocomposite, biological marker, dopamine, graphite, iron, nanocomposite; Article, chemical modification, controlled study, electrochemical analysis, human, limit of detection, limit of quantitation, nanofabrication, Parkinson disease, protein analysis, Raman spectrometry, sensitivity analysis, blood, chemistry, genetic procedures; Biomarkers, Biosensing Techniques, Dopamine, Graphite, Humans, Iron, Nanocomposites, Parkinson Disease, Spectrum Analysis, Raman

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dopamine, 51-61-6, 62-31-7; ferric oxide, 1309-37-1, 56449-54-8; graphite, 7782-42-5; iron, 14093-02-8, 53858-86-9, 7439-89-6; Biomarkers; Dopamine; Graphite; Iron

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Development of inhouse immunoblot method for detection of anti Salmonella antibody and comparison with Widal test

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Abstract
Enteric fever has emerged as an important infectious disease in the early 19th century. This study is carried out in search of an accurate diagnostic method enabling direct observation of antibody binding to antigen profiles, avoiding problems with non-specific antibody binding. To develop an inhouse immunoblot method for detection of anti salmonella antibody against antigens like LPS and S.typhi culture filtrates and compare with Widal in search of an accurate diagnostic assay for typhoid fever. Cross-sectional comparative study for a period of 1 year in a tertiary care hospital. 100 cases having clinical suspicion of typhoid fever and 40 controls (20 healthy persons and 20 non- typhoidal febrile patients) were studied. Subjects were investigated by blood culture, Widal test and Immunoblot and the results were compared. SPSS version 20 was used to analyze the results.Out of 100 cases 58(58%) were positive by widal and 74(74%) by immunoblot.Sensitivity and Specificity was found to be 58%, 85% for widal and 74%, 95% for Immunoblot respectively.Positive and negative predictive values were found to be 90.63%, 44.74% for widal and 97.37%, 59.38% for Immunoblot.Immunoblotting procedure incorporating Salmonella typhi culture filtrates is found to be more sensitive than the Widal agglutination assay for providing evidence of infection with Salmonella typhi. © 2018 Journal of Pure and Applied Microbiology. All rights reserved.

Author Keywords
Immunoblot; Typhoid fever; Widal agglutination test

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bacterium antibody, lipopolysaccharide; agglutination test, antibody detection, Article, bacterium culture, blood culture, comparative study, controlled study, cross-sectional study, diagnostic accuracy, diagnostic test accuracy study, early diagnosis, human, immunoblotting, major clinical study, predictive value, Salmonella, Salmonella enterica serovar Typhi, sensitivity and specificity, tertiary care center, typhoid fever, widal agglutination assay

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Comparative study between mechanical behaviors of FSW and MIG welded AA7075 and AA6063 alloys joints
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Abstract
In this paper welding characteristics of AA6063 and AA7075 dissimilar aluminum alloy joints has been investigated. The central goal of the experiments is to identify the suitable method of welding and the optimal welding process parameters for mechanical properties. The weld joint fabricated by means of friction stir welding and metal inert gas welding with various functional parameters. FSW and MIG welded joint mechanical properties were compared with each other to understand the merits and demerits of the functional variables used for joining of aluminum alloys. Superior tensile strength of 150.32Mpa, elongation of 14.62% and impact strength 22 joule were obtained with FSW welded joints made by taper profile tool. This occurred due to the size of the heat affected region of FSW was narrower than MIG welded joints. Hence results show that FSW provides the joints with superior mechanical properties and it's suitable for joining of aluminum alloys. © IAEME Publication.

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Friction stir welding; Gas metal arc welding; Mechanical properties; Process parameters

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Factors affecting the performance of microbial fuel cells

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Abstract
A microbial fuel cell (MFC) is a bioreactor presents an advanced eco-friendly technology that converts chemical energy in the chemical bonds in organic compounds to electrical energy through catalytic reactions of microorganisms under anaerobic conditions. It has been known for many years that it is possible to generate electricity directly by using bacteria to break down organic substrates. The recent energy crisis has invigorated interests in MFCs among educational researchers as some way to generate electrical power or hydrogen from biomass without a net carbon emission into the ecosystem. MFCs may be utilized in waste product treatment facilities to break down organic matters. MFCs can also be used in wastewater treatment facilities to organic matters. It was also studied for applications as biosensors for biological oxygen demand monitoring. Power output and Coulombic efficiency are found to be significantly affected by the types of microbe in the anodic chamber of an MFC, configuration of the MFC and operating conditions. Presently, real-world applications of MFCs are limited because of their low power density level of several thousand mW/m2. This paper presents a review on factors affecting performance of microbial fuel cells. © IAEME Publication.

Author Keywords
Bio cathodes; Electrode materials; MFC

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Single stage electrospun multicomponent scaffold for bone tissue engineering application
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Abstract
Incorporation of oils in to the polymer matrix results in the improvement of physicochemical and biocompatible properties. A novel polyurethane based composite bone scaffold was fabricated by electrospinning using sunflower and neem oil for the first time. Scanning electron microscopy (SEM) revealed the mean fiber diameter of the electrospun nanocomposite was decreased with the addition of sunflower oil (816 ± 129.54 nm) and sunflower/neem oil (739 ± 130.922 nm) into the PU matrix (890 ± 116.9115 nm). The strong interactions between PU, sunflower oil and neem oil were observed through Fourier transform infrared spectroscopy (FTIR) and thermogravimetric analysis (TGA). Contact angle analysis depicted the hydrophobic (PU/sunflower oil - 112° ± 1) nature and with the incorporation of neem oil it shifted to hydrophilic (PU/sunflower oil/neem oil - 61.67° ± 2.517) behavior. Further, the tensile strength analysis showed the improvement in the mechanical strength with the addition of sunflower oil (10.62 MPa) and sunflower/neem oil (11.67 MPa) in to the PU matrix (7.12 MPa). In addition, the developed composites exhibited reduced hemolytic index percentage and enhanced blood clotting time through coagulation studies. Moreover, the cytocompatibility investigation revealed the non-toxic nature of the fabricated nanocomposites with human dermal fibroblast (HDF) cells than the pristine PU. Hence, the developed PU based composites rendering better physio-chemical and cytocompatible properties can serve as an alternate substitute for bone tissue engineering applications. © 2018

Author Keywords
Biocompatibility; Bone tissue engineering; Nanofibers; Physico-chemical characteristics; Polyurethane; Sunflower oil/Neem oil

Index Keywords
Biocompatibility, Bone, Cell culture, Chemical analysis, Contact angle, Fourier transform infrared spectroscopy, Nanocomposites, Nanofibers, Polyurethanes, Scaffolds (biology), Scanning electron microscopy, Tensile strength, Thermogravimetric analysis, Tissue; Bone tissue engineering, Contact angle analysis, Cytocompatibility, Human dermal fibroblasts, Physicochemical characteristics, Physio-chemical, Strength analysis, Strong interaction; Sunflower oil

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Substitution effect of Cr3+ on hyperfine interactions, magnetic and optical properties of Sr-hexaferrites

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Abstract
Chromium-substituted strontium nano-hexaferrites, SrCrxFe12-xO19 (0.0 ≤ x ≤ 1.0), were produced by the hydrothermal route. The structure, morphology, optical and magnetic properties were studied. Crystal structure, spinel phase and functional groups were verified using X-ray diffraction and Fourier Transform Infrared spectroscopy. The average crystallites size is ranging between 50 and 67 nm. Scanning electron microscopy observations indicated that the multi-grains of the particles are aggleromated and are hexagonal in shape. The isotherm plots obtained from the nitrogen physisorption experiments showed that the mesopore area and the total pore volume decreased progressively with increasing the Cr3+ content. Besides, the band gap energy (Eg) decreases from 1.75 to 1.43 eV. The magnetic hysteresis loops showed that the produced nano-hexaferrites exhibit hard ferromagnetic-like (FM) behavior. Compared to the pristine SrFe12O19 product, the deduced saturation (Ms) and remanent (Mr) magnetizations, the coercivity (Hc) and the magnetocrystalline anisotropy field (Ha) increase for lower Cr3+ content (x ≤ 0.4) and then decrease as the Cr3+ content further increases. The squareness ratio Mr/Ms are ranging between 0.5 and 0.6, suggesting the single domain nano-sized particles with uniaxial anisotropy for various synthesized products. Mossbauer analysis was done to determine the quadrupole splitting, the isomer shift, and the hyperfine magnetic field values of all products. © 2018 Elsevier Ltd and Techna Group S.r.l.

Author Keywords
BET analysis; Cr substitution; Hyperfine interactions; Magnetic properties; Optical properties; Sr hexaferrites

Index Keywords
Chromium compounds, Crystal structure, Energy gap, Ferrite, Fourier transform infrared spectroscopy, Iron compounds, Magnetic materials, Magnetic properties, Magnetism, Magnetocrystalline anisotropy, Particle size, Scanning electron microscopy, Strontium compounds; BET analysis, Cr substitutions, Hexa-ferrites, Hyperfine interactions, Hyperfine magnetic fields, Magnetic and optical properties, Nano-sized particles, Nitrogen physisorption; Optical properties

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Arul Hency Sheela, J.[a] , Lakshmanan, S.[a] , Manikandan, A.[b] , Arul Antony, S.[a]

Preparation and Characterizations of PVP–TiO2 NPs Calcined at 500, 600 and 700 °C by the Hydrothermal Method and Their Properties

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Abstract
The effect of the crystalline phase PVP encapsulated titanium dioxide (TiO2) nanoparticles (NPs) to optimize the optical properties and photocatalytic activity were comparatively investigated at different calcination temperatures. The synthesized products were characterized using instrumental techniques, such as powder X-ray diffraction (XRD), Fourier-transform infrared spectroscopy (FT-IR), transmission electron microscope, energy dispersive X-ray, ultraviolet–visible (UV–visible), photoluminescence (PL) and vibrating sample magnetometer. The functional groups were identified by the FT-IR analyses. XRD result showed that the anatase and rutile phase structure of TiO2 NPs was confirmed. The spherical shaped morphology is predicted by the SEM analysis. The optical properties of the TiO2 NPs were studied by the UV–visible and PL analysis. The magnetic behavior of the TiO2 NPs was studied. Photocatalytic activity of TiO2 NPs was tested by the degradation of MeB dye under UV light irradiation. In addition, the chemical oxygen demand removal follows the photo degradation in behaviour was observed. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
500, 600 And 700 °C; Hydrothermal; Magnetic; Optical; Photocatalytic; PVP–TiO2

Index Keywords
Calcination, Chemical oxygen demand, Fourier transform infrared spectroscopy, Optical properties, Oxide minerals, Phase structure, Photocatalysis, Transmission electron microscopy, X ray diffraction; Chemical oxygen demand removals, Fourier transform infra red (FTIR) spectroscopy, Hydrothermal, Magnetic, Optical, Photo-catalytic, Photocatalytic activities, Vibrating sample magnetometer; Titanium dioxide

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Microwave combustion synthesis, magneto-optical and electrochemical properties of NiMoO4 nanoparticles for supercapacitor application

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Abstract

Nickel molybdate (NiMoO4) nanoparticles (NPs) were synthesized by a simplistic one-pot microwave combustion method using urea as the fuel. The produced NPs have been examined by powder X-ray diffraction (XRD), Fourier transform infrared (FT-IR) analysis, scanning electron microscope (SEM), energy dispersive X-ray (EDX), high-resolution transmission electron microscopy (HR-TEM) analysis. Further, optical and electronic properties were determined by UV-Visible and Photoluminescence (PL) analysis, respectively. The magnetic performance of the NiMoO4 NPs was investigated by vibrating sample magnetometer (VSM) and the surface chemical composition was identified by X-ray photoelectron spectroscopy (XPS). The electrochemical activities of the NiMoO4 NPs were studied by cyclic voltammetry (CV), electrochemical impedance spectroscopy (EIS) and galvanostatic charge/discharge (GCD) analysis. From the results, the CV curves indicated the occurrence of redox couples and besides with the EIS data (Nyquist plot), confirmed the supercapacitor nature of the synthesized NiMoO4. The prepared NiMoO4 exhibits a high specific capacitance and rateability. This electrode grants a high specific capacitance of 450 F g−1 at 2 mA cm−2 and the well permanency with a cycling proficiency of 94% after 1000 cycles. These results clearly showed that the synthesized NiMoO4 NPs have potential application for the forthcoming flexible and lightweight energy storage. © 2018 Elsevier Ltd and Techna Group S.r.l.

Author Keywords

Combustion method; Cyclic Voltammetry; Magnetic properties; Nanoparticles; NiMoO4; Optical properties

Index Keywords

Capacitance, Chemical analysis, Combustion synthesis, Cyclic voltammetry, Digital storage, Electrochemical impedance spectroscopy, Electronic properties, High resolution transmission electron microscopy, Magnetic properties, Nanomagnetics, Nanoparticles, Optical properties, Scanning electron microscopy, Supercapacitor, Synthesis (chemical), Urea, X ray diffraction, X ray photoelectron spectroscopy; Combustion method, Fourier transform infrared, Galvanostatic charge/discharge, Microwave combustion synthesis, NiMoO4, Optical and electronic properties, Surface chemical composition, Vibrating sample magnetometer; Nickel compounds

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Magneto-optical and microstructural properties of spinel cubic copper ferrites with Li-Al co-substitution
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Abstract
Nanospinel Li2xCu1-xAlyFe2-yO4 ferrites with composition x = y = 0.0, 0.2, 0.3 and 0.4, were successfully synthesized via hydrothermal method. The effect of co-substitution (Li and Al) on structural, morphological and magnetic properties of CuFe2O4 nanoparticles were investigated using Powder X-ray Diffraction (XRD), Fourier-Transform Infrared spectroscopy (FT-IR), Scanning Electron Microscopy (SEM), Vibrating Sample Magnetometer (VSM) and Mossbauer spectroscopic techniques. The cation distribution of all composition was calculated. Both XRD and FT-IR analyses confirmed the synthesis of single-phase spinel cubic product for all the substitutions. Mossbauer investigation showed that the Li1+ and Al3+ ions occupied B-sites. Nonetheless, some amounts of Li1+ occupy A-site. The magnetization hysteresis loops M (H), revealed that the final products with x, y = 0.0, 0.3 and 0.4 exhibit superparamagnetic (SPM) behavior at room temperature, however the composition x, y = 0.2 displays a ferromagnetic-like (FM) behavior. The saturation magnetization (Ms) reduces with rising the Li and Al contents. Compared to pristine CuFe2O4 spinel, the remanent magnetization (Mr), coercive field (Hc) and the magneto-crystalline anisotropy fields (Ha) improved for products synthesized with x, y = 0.2 and then decrease for x, y = 0.3 and 0.4. The squareness ratio Mr/Ms are less than 0.500, which suggest the single domain nanoparticles with uniaxial anisotropy for Li2xCu1–xAlyFe2-yO4 (0.0 ≤ x, y ≤ 0.4) nanoparticles. The magneto-crystalline anisotropy constant (Keff) value is improved for Li0.8Cu0.6Al0.2Fe1.8O4 (i.e. x, y = 0.2) magnetic nanoparticles and then decreased for higher Li and Al contents, due to the replacement of Cu and Fe ions with respectively Li and Al ions. © 2018 Elsevier Ltd and Techna Group S.r.l.

Author Keywords
Cation distribution; Hyperfine interaction; Magneto-optical properties; SEM; Spinel ferrites

Index Keywords
Aluminum, Anisotropy, Binary alloys, Copper, Copper alloys, Copper compounds, Crystalline materials, Ferrites, Fourier transform infrared spectroscopy, Lithium, Nanomagnetics, Nanoparticles, Optical properties, Positive ions, Saturation magnetization, Scanning electron microscopy, X ray diffraction; Cation distributions, Fourier transform infra red (FTIR) spectroscopy, Hyperfine interactions, Magnetization hysteresis-loop, Magnetooptical properties, Micro-structural properties, Spinel ferrites, Vibrating sample magnetometer; Iron compounds

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One-pot hydrothermal preparation of Cu 2 O-CuO/rGO nanocomposites with enhanced electrochemical performance for supercapacitor applications

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Abstract
The preparation of copper oxides/reduce graphene oxide (Cu 2 O-CuO/rGO) nanocomposites via a simple hydrothermal route is reported. The Cu 2 O-CuO/rGO nanocomposites are synthesized through redox reaction between CuCl 2 ·2H 2 O and graphene oxide (GO) without using any reducing agent. The X-ray diffraction (XRD) and X-ray photoelectron spectroscopy (XPS) results authenticate the formation of Cu 2 O-CuO/rGO nanocomposites. It is evident from the high resolution transmission electron microscopy (HRTEM) images that the Cu 2 O-CuO nanorods are firmly wrapped on the rGO sheets. The electrochemical properties are investigated employing cyclic voltammetry (CV), galvanostatic charge-discharge (GCD) and electrochemical impedance spectroscopy (EIS) techniques. The Cu 2 O-CuO/rGO1 nanocomposites demonstrate highest specific capacitance of 436.6 F g −1 at 1 A g −1 and excellent cyclic stability with no variation in the capacitance even after 1000 cycles. © 2018 Elsevier B.V.

Author Keywords
Cu 2 O-CuO; Nanocomposites; Ragone plot; Reduced graphene oxide; Supercapacitor

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A comparative study on normal symptomatic medication with Andrographis Paniculata (Nila-Vembu) extract on platelets count in thrombocytopenia patient affected from dengue fever

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Abstract
Dengue virus is a mosquito borne belongs to the Flaviviridae family, are the causative agents of dengue fever. Globally about 50 million cases of dengue fever reported in which 500000 cases of dengue haemorrhagic fever (DHF) each year which require hospitalization. The present study was aimed to explore the potential of Andrographis paniculata extracts against the Dengue fever. Totally 86 patients who infected with dengue virus were enrolled for this study and divided into two groups. In which one group 43 were administered with Andrographis paniculata extract as complementary drug along with normal symptomatic medication. About 25ml of nila vembu extract juice was administered orally twice a day (morning and evening) for 7 consecutive days (1 week). Result showed average platelet count at the time of hospitalization was 83575/μL of blood and it was significantly raised to 151539/μL and 182182/μL of blood in the patient with normal medication and normal medication with Andrographis paniculata extract respectively. Administration of Andrographis paniculata extract showed significant rise in the platelet count when compared with normal medication subjects in the present study. Still, this is a preliminary study and required large clinical trials, identification and isolation of the active compounds and mechanism of action from this valuable Andrographis paniculata extract are warranted which may help in control / treat against the Dengue fever. © 2018, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Aedes aegypti; Andrographis paniculata (Nila Vembu); Dengue; Dengue haemorrhagic fever

Index Keywords
Andrographis paniculata extract; adolescent, adult, age distribution, alternative medicine, Article, child, comparative study, dengue, female, gender, hospitalization, human, major clinical study, male, platelet count, thrombocytopenia, treatment duration

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Performance improvement of DSR protocol by controlling overhead in MANET
(2018) *International Journal of Mechanical Engineering and Technology*, 9 (8), pp. 686-690.

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Abstract
Ad Hoc networks usually consist of mobile nodes, which are characterized by lower computing and energy resources. For real-time streaming applications, choosing the shortest path for these kinds of sessions is insufficient. Such networks must operate energy-efficiently to maximize the lifetime of mobile devices and applications. In this paper we develop an energy-ware and delay-aware routing approach for mobile ad hoc network (MANET). Dynamic Source Routing (DSR) protocol is a reactive source routing protocol designed specifically for mobile ad hoc networks (MANETs). In DSR protocol the network traffic is increased due to the source routing technique used for routing. In large networks intermediate nodes increases due to many source destination pairs generated, which further increases the routing overhead and energy consumption of a network in DSR. In order to improve the network scalability of DSR protocol, in this paper modifications are proposed known as HR-DSR i.e. Header Reduction DSR protocol to reduce the increased routing overhead length, due to longer routes of source-destination pairs by limiting hop count of a route. Thus modification will effect to reduce energy consumption due to routing overhead. © 2018 IAEME Publication.

Author Keywords
DSR; HR-DSR; MANET

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Mechanism for energy consumption routing protocols for WSN using RSES
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Abstract
The Major problem in wireless sensor network to achieve an energy efficient routing protocol. Energy consumption is a critical problem in wireless sensor network for nodes and network life. For increasing lifetime of networks energy saving is must and also energy saving routing protocols are very important in wireless sensor networks. More the radius more is energy requirement. Hence if radius is less then energy consumption will be less. In this paper a RSES routing protocol is presented which adjusts the radius according to threshold value, by using this protocol energy consumption is minimized. The on-demand route discovery process is used for routing table information. After remaining energy level reaches, a certain threshold, node reduces its transmission radius and again modification is done in order to achieve less energy consumption under the premise of some certain coverage ratio. By using this algorithm Energy consumption can be minimized. Using RSES, network lifetime and has a balanced network load, energy saving and routing traffic. © 2018 IAEME Publication.

Author Keywords
Coverage ratio; Power saving; Radius self-adjust energy-saving routing protocol; Wireless communication; Wireless sensor network

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Fungal-mediated deterioration and biodegradation study of low-density polyethylene (LDPE) isolated from municipal dump yard in Chennai, India

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Abstract

Low-density polyethylene (LDPE) is a conventionally used polymer and possesses diverse applications in various industries due to its low cost, excellent strength, and numerous mechano-thermal properties. Unfortunately, the deliberate and unconscious release of excess polythene in the environment causes serious ecological threat. To deal with this issue, biodegradation of LDPE was considered using different fungal strains, namely Aspergillus flavus, Aspergillus versicolor, and Fusarium solani isolated from local municipal dump yard in Chennai, India. For degradation study, the polymers were subjected to microbial cultures for 60 days under laboratory conditions. The extent of the degradation was quantified in terms of the weight loss of the LDPE films, pH changes of the culture medium, mineralization, and analysed by field emission scanning electron microscopy (FESEM) and Fourier transform infrared (FTIR) spectroscopy. FESEM micrographs revealed the fungal colonization on the polythene matrix due to their metabolic activities, whereas FTIR spectra showed the changes in chemical nature of the polymer films and confirmed the biodegradation of LDPE. By comparing the reduction in dry weight of LDPE strips and Sturm test results, A. versicolor strain was found to be a potential LDPE-degrading candidate than A. flavus and F. solani and, hopefully, can address the global issue of polymer pollution. © 2018, Joint Center on Global Change and Earth System Science of the University of Maryland and Beijing Normal University and Springer-Verlag GmbH Germany, part of Springer Nature.

Author Keywords

Biodegradation; FESEM; FTIR; Fungi; LDPE

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Facile combustion synthesis, structural, morphological, optical and antibacterial studies of Bi1−xAlxFeO3 (0.0 ≤ x ≤ 0.15) nanoparticles

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Abstract
In this study, undoped and Al-doped BiFeO3 (Bi1−xAlxFeO3: x = 0.0, 0.05, 0.1 and 0.15) nanoparticles were successfully prepared by solution combustion method using urea as the fuel. The obtained product was sintered at 550 °C for 2 h to obtain pure phase. The as-prepared samples were characterized by powder XRD, FT-IR, FE-SEM, EDX, TEM, UV-Vis absorption and PL spectroscopic analysis. Powder XRD study revealed that the synthesized nano-powders exhibit rhombohedral structure. The average crystallite size of the samples decreased from 56.25 to 48.55 nm with “x”. Surface morphology of the samples were analyzed by FE-SEM and TEM micrograph technique and the grain distribution was not quite homogeneous and observed agglomeration, which is mainly due to the magnetic interaction among the particles. EDX analysis showed that the presence of Bi, Fe, O and Al peaks only without any form of impurity peak in all products. PL spectroscopy showed a high intense peak at 464 nm, which was attributed to blue emission. Antibacterial activity of Bi1−xAlxFeO3 nanoparticles was found to be enhanced with increase in Al doping concentration as it caused a reduction in the grain size of the samples. © 2018 Elsevier Ltd and Techna Group S.r.l.

Author Keywords
Antibacterial activity; BiFeO3; Combustion route; Nanoparticles; PL study

Index Keywords
Absorption spectroscopy, Aluminum, Aluminum compounds, Combustion synthesis, Crystallite size, Iron compounds, Nanoparticles, Spectroscopic analysis, Synthesis (chemical), Transmission electron microscopy, Urea; Anti-bacterial activity, Anti-bacterial studies, BiFeO3, Grain distribution, Magnetic interactions, PL study, Rhombohedral structures, Solution combustion method; Bismuth compounds

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Abstract

In this study, nano-sized particles of BaCrxFe12−xO19 (0.0 ≤ x ≤ 1.0) hexaferrite were fabricated through citrate auto gel combustion process and the impact of Cr-ion substitution on ac magnetic susceptibility properties of Ba-hexaferrite were explored. X-ray powder diffraction (XRD) measurements approved the purity of prepared samples and showed a reduction of the average crystallite size with increasing the content of Cr. Transmission electron microscopy (TEM) observation indicated the hexagonal morphology of all samples. AC susceptibility measurements displayed a frequency dependence of the magnetic responses. These measurements indicated that there are strong magnetic interactions (which is the highest for BaCr0.3Fe11.7O19 NP) between particles which cause a superspin glass-like (SSG) behavior at low temperatures. Estimating the values of loss power density revealed an increase of loss power density with increasing Cr-substitution element. The relative sensitivity of the prepared MNPs to the variation of applied frequency is very influenced by Cr-substitution and is highest in BaCr0.3Fe11.7O19 MNPs, suggesting that this sample can be considered as magnetic nanomaterial for hyperthermia and for many other applications. © 2018 Elsevier B.V.

Author Keywords

AC magnetic susceptibility; Cr substitution; Hard ferrite; M-type hexaferrite

Index Keywords

Barium, Barium compounds, Chromium compounds, Crystallite size, Ferrite, High resolution transmission electron microscopy, Iron compounds, Magnetic susceptibility, Magnetism, Particle size, Sensitivity analysis, Transmission electron microscopy, X ray powder diffraction; AC Magnetic susceptibility, Ac-susceptibility measurements, Cr substitutions, Gel combustion process, Hexagonal morphology, M-type hexaferrite, Magnetic interactions, Relative sensitivity; Phosphorus compounds

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Abraham, H.M.[a] , Philip, J.M.[b]

The effect of loading condition on peri-implant bone stress in regular and narrow diameter implants: A three dimensional finite element analysis

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Abstract
Introduction: The mechanisms responsible for biomechanical implant failure are not fully understood owing to complications from many related factors. One such important factor is the implant loading condition. Aim: The aim of this study was to evaluate the effect of loading condition on stress distribution in the peri-implant area. Materials and Methods: Three dimensional finite element models created to replicate completely osseointegrated endosseous titanium implants were used for the purpose of stress analysis. Two study models consisting of a regular platform group and a narrow platform group were used with a standard bone density and loaded using the ANSYS workbench software to calculate the Von Mises and Principal (maximum tensile and minimum compressive) stress under vertical and oblique loading conditions. Results: The von Mises, compressive, and tensile stresses in the peri-implant bone were lower under vertical loading compared to the oblique loading condition. Conclusion: Vertical loading yielded a positive result with regard to lowering of peri-implant bone stress levels, in standard bone qualities when compared to oblique loading models. © 2018 JPR Solutions.

Author Keywords
Crestal bone loss; Implant loading; Peri-implant bone stress

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titanium; Article, bone density, bone stress, computer aided design, finite element analysis, tensile strength

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Oxi Ldl and lipid profile level changes in chronic renal failure and maintenance haemodialysis patients
(2018) *Biomedicine (India)*, 38 (3), pp. 423-427.

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Abstract
Introduction and Aim:Chronic kidney disease (CKD) is associated with an enhanced oxidative stress and deep modifications in lipid and lipoprotein metabolism. First, many oxidized lipids accumulate in CKD and were shown to exert toxic effects on cells and tissues. Approximately, 50% of hemodialysis (HD) patients die from cardiovascular events. Hyperlipidemia is the main risk factors for cardiovascular events. Progressive renal failure is associated with the lipoprotein abnormalities and dyslipidemia. To study Oxi LDL and lipid profile level changes in chronic renal failure and MHD patients. Materials and Methods: Present study were divided into four groups, Group-I: healthy controls 100, Group-II: CRF Patients – 50, Group-III: CRF patients on haemodialysis (Pre HD)-50 and Group-IV: CRF patients on haemodialysis (Post HD) 50. The obtained serum samples were used for biochemical analysis for estimating oxi-LDL and lipid profile levels. Results:Oxi LDL, serum cholesterol, LDL, and TG levels were significantly increased in CRF, pre and post HD patients when compared with controls. Oxi LDL, TG levels were significantly increased in CRF when compared with post HD. Serum Cholesterol, LDL and HDL levels were slightly decreased in CRF when compared with Post HD. The p-value <0.001 is comparatively highly significant. Conclusion: In conclusion, the CRF patients on dialysis are at risk of developing cardiovascular disease. © 2018 Indian Association of Biomedical Scientists. All rights reserved.

Author Keywords
Chronic kidney disease; High-Density Lipoprotein; Low-Density Lipoprotein; Oxi – LDL; Oxidized lipids

Index Keywords
cholesterol, corticotropin releasing factor, lipid, low density lipoprotein, oxidized low density lipoprotein, triacylglycerol; Article, cholesterol blood level, chronic kidney failure, controlled study, hemodialysis, hemodialysis patient, human, lipoprotein blood level, maintenance therapy, triacylglycerol blood level

Chemicals/CAS
cholesterol, 57-88-5; corticotropin releasing factor, 9015-71-8, 178359-01-8, 79804-71-0, 86297-72-5, 86784-80-7; lipid, 66455-18-3

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Shanmuganathan, P.[a] , Rajasulochana, P.[a] , Ramachandra Murthy, A.[b]

Recent developments in microbial fuel cells
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Abstract
Microbial fuel cells (MFC) are an environmental friendly energy conservative technology that not only helps in generating power from waste but also in remediating the environmental pollution. This paper reviews some technological aspects and developments of microbial fuel cells. A brief history of abiotic to biological fuel cells and subsequently, microbial fuel cells is presented. Secondly, the development of the concept of microbial fuel cell into a wider range of derivative technologies, called bio electrochemical systems, is described by introducing briefly microbial electrolysis cells, microbial desalination cells and microbial electro synthesis cells. The focus is then shifted to electroactive biofilms and electron transfer mechanisms involved with solid electrodes. Carbonaceous and metallic anode materials are then introduced, followed by the discussion on electro catalysis of the oxygen reduction reaction and its behavior in neutral media. Cathode catalysts based on carbonaceous, platinum-group metal and platinum-group-metal-free materials are presented, along with membrane materials with a view to future directions. © IAEME Publication.

Author Keywords
MFC; Pollution; Wastewater

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Prevalence of group a Streptococcal infection among healthy school children in Chennai
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Abstract
Objective: To study the prevalence of Group A Streptococcal (GAS) carriers among healthy school children residing at Chennai. Methods: A total of 730 school children were screened and enrolled to this study. Two throat swabs were collected from all the children irrespective of their symptoms. Throat swabs were cultured and bacterial culture was isolated and confirmed by streptococcal group identification kit. Beta haemolytic streptococci isolates were further sero-grouped by agglutination tests by using specific antisera. Results: 730 school children between the age of 5 to 15 years were enrolled in this study. The mean age of the study group was 7.6 years. Out of the 313 culture positive cases, 217 (29%) were Group A Streptococci, 64 (8%) were Group B Streptococci, 18(2.4%) were Group C Streptococci,2(0.27%) were Group D Streptococci, 1(0.1%) were Group F Streptococci, 2 (0.27%) were Group G Streptococci and 9(1.2%) were mixed Group C and F Streptococci. Among the 29% GAS positive children, 64% were transient carriers, 27% were recurrent carriers and 9% were chronic carriers. Conclusion: All the GAS positive cases were referred to Primary Health Centre for treatment. Identification of the GAS and treating them, not only prevents them from developing non-suppurative complications, but also prevent the spread of GAS to their family members and other children. © 2018, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Asymptomatic children; Carrier throat swab; Group A Streptococcus

Index Keywords
adolescent, agglutination test, Article, child, childhood disease, disease carrier, female, group A streptococcal infection, human, India, major clinical study, male, prevalence, school child, Streptococcus, Streptococcus agalactiae, Streptococcus group A, Streptococcus group C, Streptococcus group D, Streptococcus group F, Streptococcus group G, throat culture

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Selenium Influences trace elements homeostasis, cancer biomarkers in squamous cell carcinoma patients administered with cancerocidal radiotherapy

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Abstract

In the perspective of selenium as an antioxidant and anti-carcinogen, so far no strong intervention trials with selenium over radiation-treated oral squamous cell carcinoma cases have been conducted, to examine the response of the disease and the subsequent biochemical alterations. In the present study, untreated oral cancer cases (Gp II) were compared with radiation-treated groups with and without selenium (Gp IIa, IIb), forward to find the trace elements and cancer biomarkers status, at a follow-up of 6 months. Severe alteration in the trace elements levels of Se, Cu, Fe, Zn, Na, K, Ca, Cl, were noticed in Gp II. Though Gp IIa showed slight improvement, administration of selenium (Gp IIb) improved the level of all these elements to a greater extent ($p < 0.001$). GpII and IIa showed increased level of bio markers 5'-nucleotidase, PschE, LAP, γ-GTP, LDH, SGOT, SGPT, ACP, ALP, CPK, TNF, CEA, AFP, Scc-Ag. The greater extent of restitution to near normalcy was observed in patients given selenium (Gp IIb) ($p < 0.001$). Owing to the fact that selenium scavengers oxidants and hence decelerate carcinogenesis by eliminating tumors, so the tumor released constituents into the systemic circulation declined significantly. Therefore, the outcome of the study suggests selenium as a valuable therapeutic measure as adjuvant for oral cancer patients undergoing cancerocidal radiotherapy. © 2018 Asian Pacific Organization for Cancer Prevention.

Author Keywords

Cancer biomarkers; Oral cancer; Oxidative stress; Selenium; Trace elements

Index Keywords

antioxidant, selenium, trace element, tumor marker; blood, case control study, follow up, homeostasis, human, metabolism, mouth tumor, oxidative stress, pathology, prognosis, squamous cell carcinoma; Antioxidants, Biomarkers, Tumor, Carcinoma, Squamous Cell, Case-Control Studies, Follow-Up Studies, Homeostasis, Humans, Mouth Neoplasms, Oxidative Stress, Prognosis, Radiotherapy, Selenium, Trace Elements

Chemicals/CAS

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Economic analysis of distributed generation with photovoltaic systems
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Abstract
During the recent past, the interest towards the adoption of Distributed Generation (DG) has increased greatly among the electric power system utilities. It has been well established that installation of PV Generation at the load points in a distribution system is great advantages for both consumers and the utilities. The question arises whether the maximum beneficiary is the Utility or the consumer and who must bear the cost. This research analyses the economics of the DG with PV Systems, taking a typical 400V distribution system. A detailed procedure adopted for performing the economic analysis is presented in this paper. Benefits considered includes Saving in the energy losses, Energy substitute by the PV system, Capacity release in the Feeders and in the Transformer. The PV system is installed at the selected consumer load points, based on the size and location of the loads. Discounted Cash Flow technique is used to assess the economics of the system, by computing the Internal Rate of Return. The paper presents clearly the advantages of using PV Generating systems in the Power Distribution System, quantifying economic benefits both for the Utilities and for the Customers with supporting data. © 2018, Advanced Scientific Research. All rights reserved.

Author Keywords
Discounted cash flow; Distributed generation (DG); IRR; Micro grid; Photovoltaic(PV); Smart grid

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Article, distributed generation, economics, electric potential, electricity, energy cost, mathematical analysis, photovoltaic system, productivity, solar energy

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Antifungal properties of secondary metabolites of Azadirachta indica and Lawsonia inermis – An in silico study
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Abstract
Objective: This study was aimed to inhibit the sulfite reductase using naturally obtained secondary metabolites of common plants Azadirachta indica and Lawsonia inermis. Methods: The active ingredients of neem and henna were selected and the.sdf files of these were downloaded from PubChem database. Converted the.sdf files to.pdb files with the help of OPENBABEL software which is prerequisite to dock. The three-dimensional structure was incurred from the template of homology of sulfite reductase using MODELLAR software version 9.0. Docking of sulfite reductase with the ligands was performed using iGEMDOCK and Autodock Vina softwares. The physicochemical, pharmacokinetic, drug-likeness, lead-likeness, and toxicological properties were obtained by SWISSADME and admetSAR online tools. Results: The active ingredients show an excellent affinity with the sulfite reductase which obtained was tabulated and the significant properties of a ligand were showing that these can be an investigational new drug entity. Conclusion: In this research, it can concluded that the secondary metabolites obtained from plants were inhibiting the induction of sulfite reductase thereby inhibiting Sulfite Assimilation Pathway leads to commove the amino acid metabolism of organism which shows unique in fungi. © 2018 The Authors.

Author Keywords
AdmetSAR; Autodock Vina; Azadirachta indica; iGEMDOCK; Lawsonia inermis; OPENBABEL; Sulfate assimilation pathway; Sulfite reductase; SwissADMET

Index Keywords
sulfite reductase; amino acid metabolism, antifungal activity, Article, Azadirachta indica, data base, Lawsonia inermis, metabolite, molecular docking, physical chemistry, phytochemistry

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Significant bacterial islolates in patients presenting with acute exacerbation of idiopathic pulmonary fibrosis
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Abstract
Introduction: Idiopathic Pulmonary Fibrosis (IPF) is a chronic and progressive, condition that is due to aberrant wound healing response following repetitive alveolar injury. Though traditionally viruses have played a key role in altering the wound healing cascade, the role played by bacteria in the pathogenesis of IPF is unclear. If there is a recurrent bacterial isolate in sputum or bronchial wash appropriate antibiotic both prophylactically and therapeutically can help prevent the decline in lung function and morbidity. This is particularly relevant in the treatment since it involves immunosuppressives during exacerbations. Aim: This study analyses the sputum for bacterial isolates in patients with acute exacerbation of IPF and aims to find the significance of such association. Materials and Methods: Sputum samples of 60 patients who came with acute exacerbation of IPF to a Tertiary Medical College and Hospital between February 2015 to March 2016 were analysed. Patients who were unable to produce sputum and who had received antibiotics for the present exacerbation prior to admission were excluded. Expectorated sputum samples were collected in wide mouth sterile containers and were subjected to gram staining and culture using blood agar after assessing the sputum quality. Chi-Square tests were used to find the significant association between the bacterial isolates in the sputum samples. Results: Among the 60 patients, there were isolates in 78.3% (n=47) and rest had no isolates. Streptococcus pneumoniae was isolated in 12 patients and Escherichia Coli in 13 patients and these were found to have significant association statistically in patients presenting with acute exacerbation of IPF. Whereas the rest of the isolates like Klebsiella (n=9), Haemophillus influenza (n=8), Enterococcus (n=2) and Moraxella catarrhalis (n=3) were found to have insignificant association. Conclusion: Preserving the lung functions in patients with IPF is the basis of treatment. Whether infectious causes play a role in attenuating lung function and treating these with prophylactic antibiotics needs to be seen with larger studies in different geographic areas. © 2018, Journal of Clinical and Diagnostic Research. All rights reserved.

Author Keywords
Blood agar; Lung function; Prophylactic antibiotics; Sputum

Index Keywords
agar; Article, bacterium isolate, disease exacerbation, Enterococcus, Escherichia coli, fibrosing alveolitis, Haemophilus influenzae type a, human, Klebsiella, major clinical study, Moraxella catarrhalis, observational study, prospective study, sputum analysis, Streptococcus pneumoniae

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Prevalence of urinary incontinence among females with vaginal delivery, Lower segmental cesarean section, diabetic and hypothyroidism and its impact on quality of life

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Abstract
Introduction: Urinary incontinence is defined as involuntary loss of urine that represents both hygienic and social problem to the individual. Prevalence of urinary incontinence in women is nearly 30 to 40% in middle aged and 50% in older women. There are some risk factors associated with urinary incontinence such as age, childbirth, pregnancy, surgery, lifestyle habits, neurological problem, menopause, obesity, pelvic organ prolapsed etc. Some studies suggested that urinary incontinence has been related with BMI, races, age, smoking, alcohol intake, physical activity. Aim: The study aimed to find out the prevalence of urinary incontinence among different aged women with vaginal delivery, lower segmental caesarean section, diabetic and hypothyroidism and its impact on quality of life. Materials and Methods: A total of 240 women were selected from 300 volunteers based on the inclusion criteria of six months after delivery either a vaginal delivery or lower segmental caesarean section and females taking medication for hypothyroidism and diabetes for maximum of 5 years. Exclusion criteria were patients who underwent recent abdominal surgeries, any recent fracture, long standing disease, uncooperative patient and neurological or psychological problems. They were divided into 4 groups, 60 in each group. After getting the consent from the patients, assessment form and questionnaires were given and to be filled by the sample and asked to answer the entire question ensuring confidentiality. The materials used were Questionnaires for Urinary Incontinence Diagnosis (QUID), Incontinence Impact Questionnaire short form (IIQ-7) and Incontinence Severity Index (ISI). Results: The study showed that the prevalence of urinary incontinence was higher among women with Group C (Diabetic) followed by Group A (Vaginal delivery), Group B (Lower segmental caesarean section) and Group D (Hypothyroidism. It showed invariable effect on the quality of life of the women. Conclusion: The study concluded that the prevalence of urinary incontinence among the four groups of women is higher in Group C (diabetic) followed by Group A (vaginal delivery), Group B (lower segmental caesarean section), and Group D (hypothyroidism). The urge incontinence was more prevalent than the stress incontinence. However, it also showed that there is an impact on the quality of life of the affected women. Thus, the null hypothesis is rejected and alternate hypothesis is accepted. © 2018, Journal of Clinical and Diagnostic Research. All rights reserved.

Author Keywords
Incontinence severity index; Questionnaires for urinary incontinence diagnosis; Thyroid

Index Keywords
adult, Article, cesarean section, diabetes mellitus, disease severity assessment, experimental study, female, human, hypothyroidism, Incontinence Impact Questionnaire, Incontinence Severity Index, major clinical study, middle aged, outcome assessment, patient-reported outcome, pelvic floor muscle training, prevalence, quality of life, questionnaire, risk factor, stress incontinence, urge incontinence, urine incontinence, vaginal delivery, young adult

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The Temperature Effect on Magnetic Properties of NiFe2O4 Nanoparticles

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Abstract

In this study, NiFe2O4 nanoparticles (NPs) were fabricated via auto citric acid sol–gel route at three different temperatures (900, 1000 and 1100 °C). X-ray diffraction (XRD) and Fourier transform infrared were utilized to analyze the structural properties of magnetic nanoparticles (MNPs). XRD patterns reflect the formation of spinel ferrites without the existence of any kind of secondary phases. Morphological features of resultant MNPs were characterized by scanning electron microscopy. The XRD results show that the crystallite size increases from 30.75 to 42.32 nm with increasing the temperature of the calcination process in a distinct linear trend. The enhancement of the saturation magnetization and magnetic moment of the uniaxial NiFe2O4 NPs were studied and varying from 35 to 40 emu/g and 1.47–1.68 μB, respectively, as the temperature increases. Mössbauer parameters for different calcination temperature have been determined. The occupation ratio of Ni2+ ions at the A sites decreases from 53 to 49% with increasing calcination temperature from 900 to 1100 °C. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords

Auto citric sol–gel route; Cation distribution; Magnetic materials/properties; NiFe2O4 nanoparticles

Index Keywords

Calcination, Crystallite size, Iron compounds, Magnetic materials, Magnetic moments, Nanomagnetics, Nanoparticles, Saturation magnetization, Scanning electron microscopy, Sols, X ray diffraction; Calcination temperature, Cation distributions, Fourier transform infra reds, Magnetic nanoparti cles (MNPs), Morphological features, Nanoparticle (NPs), NiFe2O4, Temperature increase; Nickel compounds

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The Temperature Effect on Magnetic Properties of NiFe2O4 Nanoparticles

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Abstract

In this study, NiFe2O4 nanoparticles (NPs) were fabricated via auto citric acid sol–gel route at three different temperatures (900, 1000 and 1100 °C). X-ray diffraction (XRD) and Fourier transform infrared were utilized to analyze the structural properties of magnetic nanoparticles (MNPs). XRD patterns reflect the formation of spinel ferrites without the existence of any kind of secondary phases. Morphological features of resultant MNPs were characterized by scanning electron microscopy. The XRD results show that the crystallite size increases from 30.75 to 42.32 nm with increasing the temperature of the calcination process in a distinct linear trend. The enhancement of the saturation magnetization and magnetic moment of the uniaxial NiFe2O4 NPs were studied and varying from 35 to 40 emu/g and 1.47–1.68 μB, respectively, as the temperature increases. Mössbauer parameters for different calcination temperature have been determined. The occupation ratio of Ni2+ ions at the A sites decreases from 53 to 49% with increasing calcination temperature from 900 to 1100 °C. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords

Auto citric sol–gel route; Cation distribution; Magnetic materials/properties; NiFe2O4 nanoparticles

Index Keywords

Calcination, Crystallite size, Iron compounds, Magnetic materials, Magnetic moments, Nanomagnetics, Nanoparticles, Saturation magnetization, Scanning electron microscopy, Sols, X ray diffraction; Calcination temperature, Cation distributions, Fourier transform infra reds, Magnetic nanoparti cles (MNPs), Morphological features, Nanoparticle (NPs), NiFe2O4, Temperature increase; Nickel compounds

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GC MS analysis of one ayurvedic preparation 'aswagandharishtam'

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Abstract
Aswagandharishtam is classical medicine for diseases pertaining to nervous system and digestive system prepared by a number of plants and plant parts. The present work is to know the types of biomolecules present in it by GC MS analysis. Aswagandharishtam was procured from standard Ayurvedic outlet and was subjected to Gas Chromatography Mass Spectrometry after due processing.The GC MS analysis of Aswagandharishtam has shown some promising molecules like Prostaglandin A2, Cholesterol, Piperine, Gentamicin a, d-Mannose, Eugenol, Pipradrol among others, which have activities similar to that of Aswagadharistham. This is a preliminary report where some clue about the various types of biomolecules present in Aswagandharishtam was obtained. Further work is on to prove the efficacy of this medicine by other parameters. Published by Oriental Scientific Publishing Company. © 2018.

Author Keywords
Aswagandharishtam; Cholesterol; D-Mannose; Eugenol; GC MS; Piperine

Index Keywords
1 (3 acetamidophenyl) 3 (2,2,2 trichloro 1 isovaleramidoethyl) 2 thiourea, 20beta dihydroprogesterone, 3 phenylpropanol, asarone, ayurvedic drug, cholesterol, cyclopropanecarboxylic acid derivative, dichloroacetic acid, e 2 octadecadecen 1 ol, eugenol, folic acid, gentamicin, geranyl vinyl ether, mannose, monoamine oxidase inhibitor, oleic acid, palmitic acid, phenol, piperine, pipradol, plant medicinal product, propionitrile, prostaglandin A2, pyridine, pyrrolidine derivative, squalene, stearic acid, tramadol, unclassified drug, unindexed drug, vaccenic acid; Acorus calamus, antibacterial activity, anticonvulsant activity, antidiabetic activity, antifungal activity, antiinflammatory activity, antimicrobial activity, antineoplastic activity, antiulcer activity, Article, bacteriostasis, Berberis aristata, Cinnamomum, Curcuma longa, Cyperus rotundus, ginger, Hemidesmus indicus, herbicidal activity, ionization, mass fragmentography, molecular weight, nonhuman, Piper (plant), Plumbago zeylanica, retention time (chromatography), Santalum album, temperature, Withania somnifera

Chemicals/CAS
20beta dihydroprogesterone, 145-15-3; asarone, 494-40-6; cholesterol, 57-88-5; dichloroacetic acid, 13425-80-4, 2156-56-1, 79-43-6; eugenol, 97-53-0; folic acid, 59-30-3, 6484-89-5; gentamicin, 1392-48-9, 1403-66-3, 1405-41-0; mannose, 31103-86-3, 3458-28-4; oleic acid, 112-80-1, 115-06-0; palmitic acid, 57-10-3; phenol, 108-95-2, 3229-70-7; piperine, 94-62-2; pipradol, 467-60-7, 71-78-3; propionitrile, 107-12-0; prostaglandin A2, 13345-50-1; pyridine, 110-86-1; squalene, 111-02-4, 7683-64-9; stearic acid, 57-11-4, 646-29-7; tramadol, 27203-92-5, 36282-47-0; vaccenic acid, 143-25-9, 693-72-1

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Study on PIK3CA gene mutations in oral squamous cell carcinoma among South Indian populations

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Abstract
The present investigation was performed in South Indian Populations to determine the hotspot mutation frequency in Oral Squamous Cell Carcinoma (OSCC) patients with PIK3CA gene Exon 9 and Exon 20 and its correlations with help of their clinical characteristics leading to these mutations. PI3KCA belongs to a group of regulatory heterodimeric lipid kinase which is involved in proliferation of cells, apoptosis and as well in metastasis which is controlled by PIK3CA gene is subjected to high frequency of somatic mutation in various tumors including OSCC. Methods: Total of 25 OSCC patients samples comprising of male and female subjects from Government tertiary care Centre were included in this study. Tumor specimen samples were collected and amplified for PIK3CA gene by PCR and subjected to genomic DNA Sequencing. Results: Our findings showed total of 20% of oncogenic frequency in PIK3CA gene. We also observed two hot spot mutations (E545K) in exon 9 gene and three hot spot mutations (H1047Q, H1047Y, H1048Q) in exon 20 gene in our study populations. Conclusion: Based on our findings it may be concluded that PIK3CA gene Exon 9 and Exon 20 contributes to a major role in pathogenesis on OSCC among South Indian populations may act as therapeutic target for a anticancer drug for the treatment OSCC. . Published by Oriental Scientific Publishing Company © 2018

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Arul Murugan, M.[a] , Kumar, J.G.K.[b]

Cheap natural fibers as composite material for automobiles - An experimental research
(2018) *International Journal of Mechanical Engineering and Technology*, 9 (6), pp. 182-185.

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Abstract
Natural fibers reinforced composite materials are used to reinforce the matrix in the form of polymer for improving the mechanical and tribological properties. Since these kind of fibers are environmental and Eco-friendly also they are very cost effective when compared with synthetic fiber reinforced composite materials. The abundant availability of natural fiber in India at very low cost and they are very easy to manufacture and they are suitable for the automobile industry to make any kind of component. The Natural fiber like hemp/flax, coconut fiber with different combinations needs to be treated chemically to improve the best bonding between the fiber surface and polymer matrix. The natural fibers which are chemically treated exhibits better and improved properties than the untreated fiber one. Therefore the Natural fiber reinforcements had given best results in impact, toughness/strength. This experimental research explains about research and best development in the improved properties of natural fibers in the vehicle industry. © IAEME Publication.

Author Keywords
Chemicals; Coconut fiber; Composites; Mechanical properties; Mixing of natural fibers; Polymers

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Geetha, R.[a] , Sivakumaran, T.S.[b]

Experimental analysis of fourth order resonant power converter with capacitive output filter converter
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Abstract
DC-DC control transformation utilized as a part of industry and different applications where the interest for smaller power supplies develops significantly. Conventional DC-DC converters have moderately poor voltage direction. Notwithstanding, the resounding DC-DC converters have various focal points for DC-DC control transformations with various combinations like LCC, LCL, and LCLC, etc. a fourth request Resonant Power Converter (LCLC) topology is chosen, and the relentless state strength of the converter is investigated utilizing state space approach. To enhance the execution of the proposed DC-DC thunderous converter shut circle control is actualized using SPARTAN 3E FPGA controller. © TJPRC Pvt. Ltd.

Author Keywords
DC-DC resonant converter; FPGA; LCLC resonant tank; State space approach

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Biogenic synthesis, characterization of gold and silver nanoparticles from Coleus forskohlii and their clinical importance

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Abstract

In modern era, the great interest and demand among chemists and researchers for metal nanoparticles is increasing in the application of biomedical fields, textiles, cosmetics and various sectors. Consequently, the present study reports an eco-friendly, cost-effective, rapid and easy method to produce environment-friendly metal nanoparticles to prevent exhaustion of metal resources. In this context, gold and silver metal nanoparticles were green synthesized using the Root Extract of Coleous forskohlii (RECo) as capping and reducing agent. The synthesized gold (GNPs) and silver nanoparticles (SNPs) were characterized using UV–Visible spectrophotometer, High-resolution transmission electron microscopy (HR-TEM), Particle size analysis (PSA), Fourier-transform infrared spectroscopy (FT-IR) and X-Ray Diffractometer (XRD). Their clinical importance was analysed using anti-oxidant assay (DPPH - 2,2-diphenyl-1-picrylhydrazyl and Phosphomolybdenum PMA) and cytotoxicity (MTT assay) against HEPG2 (liver cancer cell lines). Further, the antimicrobial activity against two microorganisms were tested using disc diffusion method against Proteus vulgaris pathogen and Micrococcus luteus pathogen. RECo-GNPs and SNPs were found to be stable in aqueous medium for a longer time and exhibited favorable anti-oxidant, anti-bacterial and anti-cancer activity. The phytoconstituents present in the root extract of Coleous forskohlii was elucidated using GC–MS analysis. © 2018 Elsevier B.V.

Author Keywords

Coleus forskohlii; GC–MS; Gold and silver nanoparticles; Green synthesis; Root extract; Therapeutic

Index Keywords

1,1 diphenyl 2 picrylhydrazyl, Coleus forskohlii extract, gold nanoparticle, molybdenum, plant extract, silver nanoparticle, tetracycline, unclassified drug, antiinfective agent, antioxidant, gold, metal nanoparticle, plant extract, silver; antibacterial activity, antimicrobial activity, antineoplastic activity, antioxidant activity, aqueous solution, Article, Coleus, Coleus forskohlii, concentration response, controlled study, disk diffusion, DPPH radical scavenging assay, drug stability, drug synthesis, Fourier transform infrared spectroscopy, green chemistry, Hep-G2 cell line, high resolution transmission electron microscopy, human, human cell, mass fragmentography, Micrococcus luteus, MTT assay, nonhuman, particle size, plant root, priority journal, Proteus vulgaris, ultraviolet spectrophotometry, X ray diffraction, cell survival, chemistry, drug effect, infrared spectroscopy, metabolism, Plectranthus, transmission electron microscopy; Anti-Infective Agents, Antioxidants, Cell Survival, Disk Diffusion Antimicrobial Tests, Gold, Green Chemistry Technology, Hep G2 Cells, Humans, Metal Nanoparticles, Micrococcus luteus, Microscopy, Electron, Transmission, Plant Extracts, Plant Roots, Plectranthus, Proteus vulgaris, Silver, Spectrophotometry, Ultraviolet, Spectroscopy, Fourier Transform Infrared, X-Ray Diffraction

Chemicals/CAS

1,1 diphenyl 2 picrylhydrazyl, 1898-66-4; molybdenum, 7439-98-7; tetracycline, 23843-90-5, 60-54-8, 64-75-5, 8021-86-1; gold, 7440-57-5; silver, 7440-22-4; Anti-Infective Agents; Antioxidants; Gold; Plant Extracts; Silver

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Pal, K.[a] , Elkodous, M.A.[b] , Mohan, M.L.N.M.[c]

CdS nanowires encapsulated liquid crystal in-plane switching of LCD device

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Abstract
Well-defined ultra-thin 'wire' like cadmium sulfide (CdS) nanostructures have been synthesized by applying simple cost-effective hydrothermal route. The content of nanostructures modifies the nature of surface interaction between two liquid crystal (LC) components as revealed by optical and electrical investigation. Those synthesized nanowires have an average diameter of about 7–10 nm and length up to several micrometers region. A possible mechanism has been proposed and the addition of cataionic surfactant cetyltrimethylammonium bromide (CTAB) into the two mixed-solvents would play an important role on the growth dynamics of the desired product. Those CdS-nanowires dispersing LC was found a remarkable signature on the nucleation and provides a more fundamental approach to modify the crystallographic configuration of host nanostructures. Polarizing optical microscopy (POM) revealed temperature dependent various phases appearence in different textural patterns are the proof the significant influence of CdS nanomaterials complete homogenious dispersion with host LC-matrix. Most observed phenomena are discussed in terms of a new smectic ordering labeled as 'Smectic X*', which is sandwiched between the traditional 'Nematic' and convectional 'Smectic C*' phases. This feature article deals with dielectric relaxations, rotational viscosity, spontaneous polarization in the smectic C phase have been analyzed. A range of remarkable responses of the capacitance with voltage in a Preisach model, fourfold dipolar species in hybrid nanocomposites matrix as well as bi-stable DC switching also offering recent breakthroughs in next generation smart display (LCD) and novel switchable device. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Index Keywords
Capacitance, Cost effectiveness, Dispersions, Ferroelectric materials, II-VI semiconductors, Liquid crystal displays, Nanowires, Smectic liquid crystals, Sulfur compounds; Cataionic surfactants, Cetyltrimethylammonium bromide, Hybrid nanocomposites, Hydrothermal routes, Polarizing optical microscopy, Rotational viscosity, Spontaneous polarizations, Temperature dependent; Cadmium sulfide

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Detection of aggregatibacter actinomycetemcomitans leukotoxin and fimbria-associated protein gene genotypes among periodontitis patients and healthy controls: A case-control study

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Abstract

Background: Aggregatibacter actinomycetemcomitans has been reported in higher proportions in subgingival microbiota of individuals with aggressive periodontitis (AgP) compared with those with chronic periodontitis (ChP) and healthy controls. The major virulence factors are the ones that help in colonization and evasion of host's defenses. Hence, this study was aimed to assess the prevalence of A. actinomycetemcomitans 16S rRNA and its virulent genotypes (leukotoxin [lktA] and fimbria-associated protein [fap]). Materials and Methods: In this case- control study We performed periodontal examination and measured probing depth and clinical attachment level (CAL). Subgingival plaque samples from 200 (ChP: n = 128 and AgP: n = 72) periodontitis patients and 200 healthy controls were screened for the presence of A. actinomycetemcomitans 16S rRNA, lktA, and fap genotypes by polymerase chain reaction. The prevalence of genotypes between periodontitis patients and healthy controls was compared with Pearson's Chi-square test. P < 0.05 was considered statistically significant. Results: Mean pocket probing depth and CAL were high as compared to the healthy controls. The prevalence of A. actinomycetemcomitans in ChP (n = 128), AgP (n = 72), and healthy individuals (n = 200) was 32.0%, 61.1%, and 2.5%, respectively. A. actinomycetemcomitans lktA genotype prevalence was 71.8% among periodontitis patients, while A. actinomycetemcomitans fap genotype showed 31.8% prevalence. The prevalence of these genotypes was insignificant in healthy controls. Conclusion: The high odds ratio for A. actinomycetemcomitans prevalence suggests its strong link to periodontitis. Detection of A. actinomycetemcomitans lktA + genotype may be a useful marker for AgP as its prevalence was found to be high in AgP. © 2018 Dental Research Journal | Published by Wolters Kluwer - Medknow.

Author Keywords

Aggregatibacter actinomycetemcomitans; aggressive periodontitis; chronic periodontitis; polymerase chain

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In vitro investigation on probiotic, anti-Candida, and antibiofilm properties of Lactobacillus pentosus strain LAP1
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Abstract
Objective: To investigate the probiotic characteristics, anti-Candida activity, and antibiofilm attributes of Hentak derived Lactobacillus pentosus strain LAP1. Design: The probiotic properties of strain LAP1 was depicted by adapting standard protocols. The anti-Candida and antibiofilm properties of isolate were determined using agar well diffusion assay and ELISA reader test, respectively. The time-kill assay was performed using viable colony count assay. Further, the co-aggregation property of strain LAP1 was determined based on standard methodology. Results: Strain LAP1 exhibited not only tolerance to acidic pH but also showed resistivity ($P \leq 0.05$) to simulated gastric juice exposure. Similarly, the strain was able to tolerate bile salt, showed hyperproteolytic activity, and also depicted susceptibility to most of the antibiotics tested. Auto-aggregation phenomenon (37.5–60%), hydrophobicity nature (42.85%), and survival potentiality of strain LAP1 under freeze-dried condition (9.0 ± 0.01 log CFU/ml) made the isolate a promising probiotic candidate. Cell-free neutralized supernatant (CFNS) of strain LAP1 exhibited potent antifungal activities against C. albicans, C. tropicalis, and C. krusei with arbitrary unit of 150 ± 4.34, 200 ± 5.21, and 130 ± 5.13 AU/ml, respectively and depicted remarkable reduction in the biofilm formation of respective Candida sp. in a concentration dependent manner. Moreover, time-kill assay data provided the growth inhibition of all Candida sp. in a time dependent manner. Additionally, strain LAP1 revealed significant co-aggregate percentage with C. albicans, C. tropicalis, and C. krusei. Conclusions: L. pentosus strain LAP1 exhibited a good probiotic characteristics, potent anti-Candida activity, and significant antibiofilm property that could be undoubtedly recommended for its vast applications not only in food industries but also as biotherapeutic agent against Candida infections in pharmaceutical industries. © 2018 Elsevier Ltd

Author Keywords
Anti-Candida; Antibiofilm; L. pentosus; Probiotic; Time-kill assay

Index Keywords
antifungal agent, antiinfective agent, bile acid, peptide hydrolase, probiotic agent; bacterial count, biofilm, Candida, candidiasis, chemical phenomena, drug effect, growth, development and aging, Lactobacillus pentosus, microbial sensitivity test, microbial viability, pH, physiology, stomach juice; Anti-Bacterial Agents, Antifungal Agents, Bile Acids and Salts, Biofilms, Candida, Candidiasis, Colony Count, Microbial, Gastric Juice, Hydrogen-Ion Concentration, Hydrophobic and Hydrophilic Interactions, Lactobacillus pentosus, Microbial Sensitivity Tests, Microbial Viability, Peptide Hydrolases, Probiotics

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Synthesis and Magnetic Characterization of Cu Substituted Barium Hexaferrites
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Abstract
Cu2+ ion substituted nanocrystalline BaFe12O19 [Ba1 − xCuxFe12O19 (0.0 ≤ x ≤ 0.5)] hexaferrite powders were synthesized by sol–gel combustion route and its effects on structure, morphology and magnetic properties of barium hexaferrite (BaFe12O19) were presented. X-Ray Powder Diffraction (XRD), Scanning Electron Microscopy (HR-SEM), Transmission Electron Microscopy (HR-TEM) and Fourier Transform Infrared (FT-IR) analyses revealed the M-type hexagonal structure of all samples. Vibrating sample magnetometer (VSM) analyses showed that all samples have strong ferromagnetic behavior at room temperature. The crystallite size varies in a range of 23.30–35.12 nm. Both HR-SEM and HR-TEM analyses confirmed the hexagonal morphology for products. A minimum of 40.49 and a maximum of 54.36 emu/g estimated specific saturation magnetization (σs) were observed for Ba0.5Cu0.5Fe12O19 and Ba0.9Cu0.1Fe12O19 NPs, respectively. The remnant magnetization (σr) has a minimum value of 21.27 emu/g belonging to Ba0.5Cu0.5Fe12O19 and has a maximum value of 28.15 emu/g belonging to Ba0.7Cu0.3Fe12O19 NPs. The coercive fields are between 1726 Oe and 2853 Oe. Keff (calculated effective anisotropy constants) is changing from 2.31 × 105 to 3.23 × 105 Ergs/g. It was observed that the strong magneto-crystalline anisotropy fields, (Ha) above 11.0 kOe for all samples which confirmed that all samples are hard magnet. Due to their small crystallite size (smaller than 50 nm) and high saturation magnetization, Ba1 − xCuxFe12O19 (0.0 ≤ x ≤ 0.5) nanoparticles can be employed as magnetic recording materials. © 2017, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords
Barium hexaferrites; Hard ferrites; Magnetic properties; Morphology

Index Keywords
Anisotropy, Barium, Barium compounds, Crystallite size, Electron microscopy, Ferrite, High resolution transmission electron microscopy, Iron compounds, Magnetic
properties, Magnetism, Magnetization, Morphology, Nanocrystals, Nanomagnetics, Saturation magnetization, Scanning electron microscopy, Sols, Transmission electron microscopy, X ray powder diffraction; Barium hexaferrites, Effective anisotropy constant, Fourier transform infrared, High-saturation magnetization, Magnetic characterization, Magnetic recording materials, Specific saturation magnetization, Vibrating sample magnetometer; Copper compounds

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Dielectric Investigation of NaLiS Nanoparticles Loaded on Alginate Polymer Matrix Synthesized by Single Pot Microwave Irradiation

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Abstract

Sodium lithium sulfide (NaLiS) nanocomposite have been successfully synthesized by using microwave-irradiation (MWI) method. The study suggested that the application of microwave heating is to produce homogeneous and fine NaLiS nanocomposite which were achieved by using the precursors of lithium acetate and thioacetamide in the presence of sodium alginate biopolymer. FTIR is used to identify the structural coordination and functional groups of the prepared nanocomposite. The structural property of NaLiS particles was investigated by XRD. The surface morphology and elemental composition of synthesized material was confirmed by SEM and EDX analyses. The optical property was studied by using UV–Vis spectrophotometer. Thermal stability of as prepared sample was studied by TGA/DTG analysis. Electrical transport studies of the prepared nanocomposite have been analyzed for various temperatures. NaLiS nanocomposite has ionic conductivity of ~ 10−7 S cm−1 at 35 °C which is six orders of magnitude higher than that of micro sized bulk Li2S (~ 10−13 S cm−1). © 2017, Springer Science+Business Media, LLC.

Author Keywords

Conductivity; Impedance analysis; Microwave-irradiation; NaLiS; Nanocomposite; Sodium alginate

Index Keywords

Alginate, Electric conductivity, Irradiation, Microwave heating, Microwave irradiation, Microwaves, Nanocomposites, Optical properties, Sodium, Sodium alginate, Sodium compounds, Sulfur compounds, Synthesis (chemical), Thermodynamic stability; Alginate polymers, Electrical transport, Elemental compositions, Impedance analysis, Lithium sulfides, NaLiS, Orders of magnitude, Synthesized materials; Lithium compounds

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Ramasubramanian, S.[a] , Naveen, M.R.[b] , Karikalan, L.[a] , Manavalan, S.[b]

Assessment of combustion, performance and emission features of biodiesel in a thermal barrier coated diesel engine

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Abstract
Thermal Barrier Coating technique was used to coat the piston crown with Alumina. The test was conducted in a single cylinder DI diesel engine. In common, the coating acts as a thermal barrier which improves the efficiency by dipping energy losses. In the first phase of the investigation, baseline reading of diesel was taken. The second part of the investigation, engine components was coated. And the third phase of investigation has carried the performance, combustion and emission of biodiesel in thermal barrier coated diesel engine. Thus the coating and testing were done successfully. As per our aim of improving the burning, performance and pollutant features of CI engine by Coating the Piston head with a Ceramic Coating of Alumina (Al2O3) Up to 250 microns have improved the burning characteristics like cylinder pressure and heat release rate considerably, As well as the performance characteristics like Brake Thermal Efficiency is enlarged up to 15.69 %, Mechanical Efficiency is increased up to 67.9% for TBC coated piston with Biodiesel when compared to others and Other Performance Characteristics were also increased. Notably, the Exhaust Emission like CO, Hydrocarbons ,and Oxygen were also reduced. Thus the project conducted by implementing the Thermal Barrier Coating in the Piston Head had given a good improvement in all burning, performance and pollutant features of the tested CI Engine. © TJPRC Pvt. Ltd.

Author Keywords
Biodiesel; Coating; Emission & combustion; Engine; Performance

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Biodiesel production from pomance oil improvement of its properties with synthetic manganese additive”
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Enhanced magneto-optical and photo-catalytic properties of transition metal cobalt (Co2+ ions) doped spinel MgFe2O4 ferrite nanocomposites

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Abstract
In this study, spinel magnesium cobalt ferrite (CoxMg1−xFe2O4: x = 0.0, 0.2, 0.4, 0.6, 0.8 and 1.0) nanocomposites were synthesized successfully by modified sol-gel combustion method. Magnesium nitrate, cobalt nitrate and iron nitrate were used as the source of divalent (Mg2+ and Co2+) and trivalent (Fe3+) cations, respectively and urea were used as the reducing (fuel) agent. The effects of cobalt ions on morphology, structural, optical, magnetic and photo-catalytic properties of spinel CoxMg1−xFe2O4 nanocomposites were investigated. Various characterization methods, including X-ray powder diffraction (XRD), high resolution scanning electron microscope (HR-SEM), transmission electron microscopy (HR-TEM), energy-dispersive X-ray spectroscopy (EDX), Fourier transforms infrared (FT-IR) spectroscopy, vibrating sample magnetometer (VSM) and photo-catalytic degradation (PCD) activity were used to study the phase purity, microstructure, particle size, elemental composition, functional group determination, band gap calculation, magnetic properties and degradation efficiency of nanoparticles, respectively. The observed results showed that the final products consists cubic spinel phase with sphere-like nanoparticles morphologies. Furthermore, spinel Co0.6Mg0.4Fe2O4 nanocomposite showed highest PCD efficiency (98.55%) than other composition of ferrite nanoparticles. © 2018 Elsevier B.V.

Author Keywords
Combustion method; Ferrites; Magnetic nanoparticles; Methylene blue; Photo-catalytic activity; Spinel

Index Keywords
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Daimiwal, N.[a] , Poornapushpakala, S.[a] , Martin, B.[b] , Sundhararajan, M.[c] , Shriram, R.[d]

Design of optical system for measurement of SpO2 using systolic amplitude based photoplethysmography signal
(2018) *Biomedicine (India)*, 38 (2), pp. 249-253.

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Abstract
Introduction and Aim: The pulse oxygen saturation is the percentage of HbO2 in the total Hb in the blood so called the O2 concentration in the blood. It is an important bio parameter for the respiration. Pulse Oximeter is a widely accepted method for noninvasive measurement of arterial oxygen saturation (SpO2) and pulse rate. The work describes the design of sensor for the purpose of measuring the SpO2 more easily. Materials and Methods: The reflectance type pulse Oximeter is designed using two wavelengths 660nm and 860nm with OPT101 as detector. The analysis is carried out by measuring the systolic amplitude (SA) for both the wavelength, SpO2 is measured mathematically by measuring the concentration of Hb and HbO2. Results: The results obtained by the proposed system are verified using pulse Oximeter instrument by CONTEC (CMS50E). For SpO2 measurement is done by placing the finger on the sensor and measurement are in the range of 70-100%. Conclusion: SpO2 and pulse rate can be measured non invasively by the proposed pulse Oximetry system. © 2018 Indian Association of Biomedical Scientists. All rights reserved.

Author Keywords
Oxygen saturation (SpO2); Photoplethysmography; Reflectance type; Systolic amplitude (SA)

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Senthilnathan, C.V.[a] , Abinaya, P.[a] , Rajalaxmi, V.[a] , Mohan Kumar, G.[a] , Subramanian, S.S.[b]

Efficacy of physical training program on chronic obstructive pulmonary disease
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Abstract
Introduction and Aim: Chronic obstructive pulmonary disease (COPD) is a lung disorder systemic illness with significant extra pulmonary feature such as exercise intolerance and muscle weakness. The aim was to assess the efficacy of a physical exercise training program in patients with mild to moderate COPD.The objective of this study was to evaluate the efficacy of a physical exercise training program in patients with mild to moderate COPD on exercise capacity, physical activity, dyspnoea and quality of life. Materials and Methods: Randomized control trail in 30 patients with mild to moderate airflow obstruction (FEV150-70% of predicted), dyspnoea and physically inactive life style were randomizedinto experimental and control group. The study was done for 7 weeks as a comparative study in which 35 to 50 years age patients were recruited and divided into two groups. Group A:[n=15] Breathing training, strengthening training, huffing and coughing technique , relaxation technique and advises on how to increase the level of physical activity given for 7 weeks and the subjects were treated for 5 sessions in a week .Time required: 5-10min, 3-4times daily.Group B: [n=15] usual care and advice on how to increase the level of physical activity given for 7 weeks and the subjects were treated for 2 sessions in a week. Results: On comparing Mean values of GROUP A and GROUP B on functional activity, it shows significant reduction in the post test but (GROUP A) shows (4.00) lower Mean values is more effective than (GROUP B) shows (3.09) at p<0.0001. Hence the null hypothesis is rejected and alternative hypothesis is accepted. Conclusion:The study concludes that physical training increases exercise capacity, physical activity, and quality of life reducing dyspnicattacks. © 2018 Indian Association of Biomedical Scientists. All rights reserved.

Author Keywords
COPD; Physical training; Quality of Life

Index Keywords
adult, airway obstruction, alternative hypothesis, Article, breathing exercise, chronic obstructive lung disease, clinical article, controlled study, coughing, dyspnea, exercise, forced expiratory volume, human, lifestyle, muscle strength, muscle training, null hypothesis, patient care, physical activity, quality of life, randomized controlled trial, relaxation training, therapy effect, treatment duration, treatment outcome

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Ayshath Zaheera, K.M.[a] , SenthilKumar, C.B.[b] , Nallusamy, S.[c]

Important factors on human recruitment approach for the accomplishment of an organization
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Abstract
In the current global scenario, recruitment policy outline needs a goal of an organization and explains how it can be achieved. The human recruitment policies vary from every organization based on their requirements. Most of the successful organization give an importance to each point right from the needs of staff, recruitment budget, how to find the new employees, ways to measure the results and to find the policy working conditions. The aim of this research is to study and find the right recruitment policies should be implemented in every business, manufacturing and health care organizations. © IAEME Publication.

Author Keywords
Branding; Organization; Policy; Recruitment; Success

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Significance of research design in supply chain management for small and medium enterprises
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Abstract
In modern global level scenario, the long term survival of any business entity is dictated by the well-organized supply and delivery methods that organization has employed. Supply chain management research provides various key factors for improving the performance of internal and external organisations. Single versus multiple respondent research design questions are raised on various management of different business organizations. In this research article the importance of supply chain management in small and medium enterprises research is described. Identification of supply chain management research can be performed with the differences of supply chain management process. Opportunities of supply chain management are explained clearly in supply chain management research. Supply chain management has been moved to local consideration and optimization factors to the consideration of the entire supply chain management. © IAEME Publication.

Author Keywords
Crises; SCM; Single Design Respondent; SME; Survey Questions

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Significance of an employee and team satisfaction for augmentation and successfulness of an organization
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Abstract
In global working environment, employee satisfaction, employee engagement and job satisfaction are similar concepts as many uses these terms interchangeably. Employee satisfaction covers the basic concerns and needs of employees. Employee satisfaction or job satisfaction is the measure of the satisfaction level of employees in their jobs. Job satisfaction is usually measured using an employee survey. These surveys give importance to study in detail on topics such as management perception, compensation, workload, flexibility, team work and work atmosphere. To be a successful organization, it is very important that the human resource department show keen interest to know how happy and content individuals are at their work. In this article an attempt was made to study the significance of an employee and team satisfaction for augmentation and successfulness of an organization. Having an idea of their employee satisfaction level, helps companies to maintain and improve in every level thereby reducing the employee turnover. © IAEME Publication.

Author Keywords
Employee Satisfaction; Job Satisfaction; Motivation; Stress; Workload

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Evaluation of in vitro antidiabetic and antioxidant potential of Barleria cristata leaves extracts

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Abstract
Objectives: The objectives of the study were to study the in vitro antidiabetic and antioxidant activity of Barleria cristata leaves extracts. Methods: Ethanol extract and petroleum ether extract of leaf and root of B. cristata were tested for their antidiabetic activity. The in vitro antidiabetic activity from α-amylase, α-glucosidase, and antioxidant activity was used to assess the potential activity of the fractions. Results: Our attempt results suggest that ethanol and the petroleum ether leaf extract from B. cristata show signs of dose-dependent increases to inhibitory activity on α-amylase, α-glucosidase enzymes, and antioxidant activity when compared with control. Ethanolic leaves to extract produced maximum in vitro antidiabetic effect and antioxidant activity when compared to petroleum ether extract. Conclusion: The ethanol leaf extract from B. cristata may be used in managing of blood glucose in a medical condition like diabetes. © 2018 The Authors.

Author Keywords
Antidiabetic activity; Antioxidant activity; Barleria cristata; Ethanol extract; In vitro study; Petroleum ether extract

Index Keywords
alpha glucosidase, amylase, antidiabetic agent, antioxidant, ascorbic acid, Barleria cristata extract, butylcresol, glucose, plant extract, unclassified drug; antidiabetic activity, antioxidant activity, Article, controlled study, dose response, drug screening, enzyme inhibition, glucose blood level, in vitro study, nonhuman, phytochemistry, plant leaf, plant root

Chemicals/CAS
alpha glucosidase, 9001-42-7; amylase, 9000-90-2, 9000-92-4, 9001-19-8; ascorbic acid, 134-03-2, 15421-15-5, 50-81-7; butylcresol, 128-37-0, 30587-81-6; glucose, 50-99-7, 84778-64-3

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Hydrothermal synthesis of CoyZnyMn1-2yFe2O4 nanoferrites: Magneto-optical investigation

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Abstract
Manganese ferrites nanoparticles (NPs) substituted with both Co2+ and Zn2+ simultaneously (CoyZnyMn1-2yFe2O4 NPs for y=0.0 to 0.5), have been produced by hydrothermal approach. The substitution with both Co2+ and Zn2+ ions on the structure, spectroscopic and magneto-optical properties of nanocrystalline MnFe2O4 spinel ferrites have been analyzed in detail. The formation of spinel phase and structural changes induced by Co2+ and Zn2+ ions substitutions were confirmed by X-ray diffraction studies. Rietveld refinement revealed the cubic spinel phase for all products (minor amount of Fe2O3). Lattice constant and crystallite size were found to decrease from 8.478 to 8.370 Å and from 14.68 to 8.22 nm, respectively with increasing substitution of Co2+ and Zn2+ ions. HR-SEM and HR-TEM micrographs revealed the high homogeneity cubic structure of samples. The hyperfine magnetic field values for all products after Mn2+, Zn2+ and Co2+ ions substitution were determined by Mössbauer analysis. The estimated optical Eg (Energy band gap) values are in the range of 1.41–1.54 eV for the samples. The smaller Eg values are mainly attributed to greater particle size and decreasing quantum confinement effect. © 2017 Elsevier Ltd and Techna Group S.r.l.

Author Keywords
BET analysis; Magnetic nanoparticles; Magnetic properties; Optical analysis; Spinel ferrites

Index Keywords
Crystallite size, Energy gap, Ferrites, Ions, Iron compounds, Magnetic properties, Magnetism, Manganese, Manganese compounds, Nanocrystals, Nanomagnetics, Nanoparticles, Optical properties, Particle size, Rietveld refinement, Transmission electron microscopy, X ray diffraction, Zinc; BET analysis, Hyperfine magnetic fields, Magnetic nano-particles, Magnetooptical properties, Optical analysis, Quantum confinement effects, Spinel ferrites, X-ray diffraction studies; Hydrothermal synthesis

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Exploration of Wedelia chinensis leaf-assisted silver nanoparticles for antioxidant, antibacterial and in vitro cytotoxic applications

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Abstract

Green synthetic route of silver nanoparticles (AgNPs) has already been proved to be an advantageous over other physico-chemical approaches due to its simplicity, cost effectiveness, ecofriendly and nontoxicity. In this finding, aqueous Wedelia chinensis leaf extract (WLE) mediated synthesis of AgNPs was approached. Surface plasmon resonance (SPR) band at 408 nm preliminary indicated the formation of AgNPs, while TEM and XRD characterization confirmed the formation of spherically shaped and crystalline AgNPs with an average size of 31.68 nm, respectively. The plausible biomolecules in the aqueous leaf extract responsible for the reduction and stabilization of AgNPs were identified by FTIR analysis and found to be polyphenolic groups in flavonoid. Further, synthesized AgNPs was explored for different biological applications. Biosynthesized AgNPs showed significant free radical scavenging activity as compared to Wedelia leaf extract and antibacterial activity against clinically isolated test pathogens where Gram-negative bacteria were found more susceptible to AgNPs than Gram-positive one. In addition, in vitro cytotoxic response was also evaluated on hepatocellular carcinoma Hep G2 cell lines and showed a dose-dependent cytotoxic response with an IC 50 value of 25 µg/mL. © 2017

Author Keywords

AgNPs; Antibacterial; Antioxidant; Cytotoxicity; Wedelia chinensis

Index Keywords

ascorbic acid, ferric ion, hydrogen peroxide, hydroxyl radical, lactate dehydrogenase, nanocrystal, silver nanoparticle, silver nitrate, singlet oxygen, superoxide, antiinfective agent, antioxidant, metal nanoparticle, plant extract, silver; antibacterial activity, antimicrobial activity, antioxidant activity, Article, bacterial cell wall, biosynthesis, cell growth, cell viability, comparative study, controlled study, cytotoxicity, DPPH radical scavenging assay, enzyme activity, Escherichia coli, Hep-G2 cell line, in vitro study, infrared spectroscopy, Listeria monocytogenes, nonhuman, particle size, plant leaf, reaction time, surface plasmon resonance, transmission electron microscopy, Wedelia, Wedelia chinensis, X ray diffraction, zone of inhibition, bacterium, cell survival, chemistry, drug effect, growth, development and aging, human, Wedelia; Anti-Bacterial Agents, Antioxidants, Bacteria, Cell Survival, Hep G2 Cells, Humans, Metal Nanoparticles, Plant Extracts, Silver, Surface Plasmon Resonance, Wedelia

Chemicals/CAS

ascorbic acid, 134-03-2, 15421-15-5, 50-81-7; ferric ion, 20074-52-6; hydrogen peroxide, 7722-84-1; hydroxyl radical, 3352-57-6; lactate dehydrogenase, 9001-60-9; silver nitrate, 7761-88-8; superoxide, 11062-77-4; silver, 7440-22-4; Anti-Bacterial Agents; Antioxidants; Plant Extracts; Silver

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Documents

Manikandan, A.[a] , Mani, M.P.[b] , Jaganathan, S.K.[c d e] , Rajasekar, R.[f]

Morphological, thermal, and blood-compatible properties of electrospun nanocomposites for tissue engineering application

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Abstract
In this work, the morphological, thermal, and blood compatibility properties of prepared polyurethane (PU) and gandharvahasthadi eranda thailam (GHT) nanocomposites were investigated. Morphological and thermal characterization revealed reduced diameter, improved surface roughness, and higher thermal degradation compared to control. The activated partial thromboplastin time (APTT) and prothrombin time (PT) assay revealed that the fabricated nanocomposites displayed delayed blood clotting time owing to improved surface morphology. The hemolytic assay suggested that nanocomposites would be nonhemolytic material due to low hemolytic index of about 1.15% compared to pure PU (2.733%) portraying its safety with the red blood cells. Thus, the newly developed PU/GHT composite scaffold possessing better physicochemical and blood compatibility may be considered as a potential substitute scaffold for replacing damaged tissue. POLYM. COMPOS., 39:E132–E139, 2018. © 2017 Society of Plastics Engineers. © 2017 Society of Plastics Engineers

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Abstract
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Bomila, R.[a] , Srinivasan, S.[a] , Gunasekaran, S.[b] , Manikandan, A.[c]

Enhanced photocatalytic degradation of methylene blue dye, opto-magnetic and antibacterial behaviour of pure and la-doped ZnO nanoparticles

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Abstract

The different doping concentrations of lanthanum (La)-doped ZnO nanoparticles were synthesized successfully using zinc acetate and lanthanum nitrate via wet chemical method. Characterization of the prepared sample was done by standard analytical techniques such as powder x-ray diffraction analysis (P-XRD), high-resolution scanning electron microscopy (HR-SEM), energy-dispersive spectroscopy (EDS), Fourier transformer-infrared (FT-IR) spectroscopy, photoluminescence (PL) and UV-Vis spectroscopy (UV-Vis), and magnetic studies (VSM). The structural analysis has been carried out by powder x-ray diffraction. X-ray diffraction studies revealed that the nanoparticles are well-crystalline and possess hexagonal wurtzite structure. HR-SEM images showed the homogenous spherical-shaped morphology of the synthesized ZnO nanoparticles. EDS analysis confirmed the presence of La ions into ZnO lattice. The band gap (Eg) energy was determined by UV-Visible spectral data, and it was found that the Eg value decreases with increasing the La concentration into ZnO lattice. PL spectra confirmed that the effective La doping enhance the UV and visible region near band gap emission. The effect of La doping on the photocatalytic activity of ZnO nanoparticles for the degradation of methylene blue dye was studied under solar illumination and the results showed that the La doping kindles appreciable degradation of MB. The optical density measurements of the ZnO nanoparticles against both gram-positive (Bacillus subtilis, Staphylococcus aureus) as well as gram-negative bacteria (Proteus mirabilis, Salmonella typhi) showed better bacterial activity than pure ZnO. Moreover, it showed that higher dopant La in ZnO exhibit efficient antibacterial activity. © Springer Science+Business Media, LLC 2017.

Author Keywords

La-doped ZnO nanoparticles; Luminescent properties; Photocatalytic and antibacterial activity; Wet chemical method

Index Keywords

Aromatic compounds, Bacteriology, Chemical analysis, Density measurement (optical), Energy dispersive spectroscopy, Energy gap, II-VI semiconductors, Lanthanum compounds, Metal nanoparticles, Nanomagnetics, Organic polymers, Oxide minerals, Photocatalytic activity, Salmonella, Scanning electron microscopy, Spectrum analysis, Synthesis (chemical), Ultraviolet visible spectroscopy, Uranium metallography, Vanadium metallography, X ray powder diffraction, Zinc oxide, Zinc sulfide; Anti-bacterial activity, Energy dispersive spectroscopies (EDS), Hexagonal wurtzite structure, High-resolution scanning electron microscopies, Luminescent property, Photo catalytic degradation, Wet-chemical method, X-ray diffraction studies; ZnO nanoparticles

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Production and hemocompatibility assessment of novel electrospun polyurethane nanofibers loaded with dietary virgin coconut oil for vascular graft applications

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Abstract

To develop biodegradable polymer scaffolds suitable for vascular tissue engineering applications, the bioengineering community has invested an extensive effort. The most common cause for the failure of vascular graft scaffolds is thrombosis. In this work, the scaffold based on polyurethane and virgin coconut oil was produced by electrospinning process for vascular tissue engineering applications with improved antithrombogenicity. The diameter of this electrospun polyurethane/virgin coconut oil composite was found to be reduced in the range of 886 ± 207 nm compared to pristine polyurethane which was in the range of 969 ± 217 nm. The Fourier transform infrared spectroscopy analysis revealed the interaction between polyurethane and virgin coconut oil as indicated by phase shifting of CH bond along with the formation of hydrogen bond. The contact angle measurement of fabricated composites was found to be increased owing to hydrophobic nature and also exhibited enhanced thermal stability as noted in thermogravimetric analysis. The atomic force microscopy analysis insinuated the increased surface roughness of the composite in comparison with the pure polyurethane. Developed scaffold resulted in delayed blood clotting as revealed by activated partial thromboplastin time and partial thromboplastin time assay. The hemolytic index of fabricated composites was found to be low indicating the enhanced safety of red blood cells. Hence, the newly developed nanofibrous composite scaffold could open the door for a suitable alternative for vascular graft applications. © 2017, © The Author(s) 2017.

Author Keywords

electrospun; nanocomposite; Polyurethane; vascular graft applications; virgin coconut oil

Index Keywords

Atomic force microscopy, Biodegradable polymers, Blood, Fourier transform infrared spectroscopy, Grafts, Hydrogen bonds, Nanocomposites, Nanofibers, Polyurethanes, Scaffolds (biology), Surface roughness, Tissue, Tissue engineering, Vegetable oils; Activated partial thromboplastin time, Biodegradable polymer scaffolds, Electrospinning process, Electrospuns, Polyurethane nanofibers, Vascular grafts, Vascular tissue engineering, Virgin coconut oil; Thermogravimetric analysis; coconut oil, nanocomposite, nanofiber, polyurethan, unclassified drug, virgin coconut oil; activated partial thromboplastin time, Article, atomic force microscopy, biodegradability, blood clotting, blood compatibility, blood vessel graft, contact angle, controlled study, electrospinning, hemolysis, human, hydrogen bond, hydrophobicity, infrared spectroscopy, surface property, thermogravimetry, thermostability, thrombogenicity, tissue engineering, vascular tissue

Chemicals/CAS

coconut oil, 8001-31-8; polyurethan, 61789-63-7

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Oxygen vacancies induced room temperature ferromagnetism in Li, Na and K co-doped ZnO synthesized by solution combustion technique

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Abstract
The room temperature ferromagnetism along with a rare orange emission in ZnO with equally concentrated Li, Na and K dopants is discussed here. In this report the alkali dopants Li, Na and K are co-doped in ZnO by solution combustion technique and annealed to two different temperatures 500 °C and 800 °C. The XRD analysis reveals the hexagonal wurtzite structure and the substitution of the alkali in ZnO. The SEM and EDAX study shows the morphology and impurity free samples of alkali doped ZnO. The photoluminescence data brings the profuse interstitial O atoms to light that involves in orange emission. The oxygen vacancies are also responsible for a weak green emission that decreases and then increases with alkali content. There is also a weak UV emission due to bound acceptor–donor recombination. The VSM shows the ferromagnetic behavior of the samples and thereby establishes that the alkali doped ZnO turns to be a member of the family of dilute magnetic semiconductors. © 2017, Springer Science+Business Media, LLC, part of Springer Nature.

Index Keywords
Citrus fruits, Combustion, Doping (additives), Ferromagnetism, Lithium, Lithium compounds, Magnetic semiconductors, Oxygen vacancies, Sodium, Wide band gap semiconductors, Zinc oxide, Zinc sulfide; Alkali contents, Dilute magnetic semiconductors, Ferromagnetic behaviors, Green emissions, Hexagonal wurtzite structure, Orange emissions, Room temperature ferromagnetism, Solution combustion technique; Zinc compounds

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Dynamic lateral balance of humanoid robots on unstable surfaces

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Abstract
This work presents a control algorithm to achieve dynamic lateral balance in humanoid robots on unstable and geodynamic surfaces such as a seesaw or a suspension bridge. The proposed method generates a stable pose at any given point using the feedback from an Inertial Measurement Unit (IMU) in realtime which enables the robot to balance on dynamic surfaces. The algorithm provides a robust control of the Center of Gravity (CoG) of the robot and constricts the CoG from moving away from the most stable pose of the robot in the double support mode thus achieving stability at any given point in time. The method implemented is relatively less heavy in the terms of computation and easy to implement. The proposed system works on any humanoid platform irrespective of size and weight, given the robot has the required degrees of freedom needed to achieve balance. © 2017 IEEE.

Author Keywords
Bipedal Robots; Dynamic Stabilisation; Humanoid Robotics; Lateral Balance

Index Keywords
Degrees of freedom (mechanics), Robust control; Bipedal robot, Center of gravity, Dynamic stabilisation, Humanoid robot, Humanoid robotics, Inertial Measurement Unit (IMU), ON dynamics, Real time; Anthropomorphic robots

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Agaricus blazei extract attenuates rotenone-induced apoptosis through its mitochondrial protective and antioxidant properties in SH-SY5Y neuroblastoma cells

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Abstract
The present study was aimed to find out the effect of Agaricus blazei mushroom extract against rotenone-induced cellular model. SH-SY5Y neuroblastoma cells are divided into four experimental groups (control, rotenone (100 nM), A. blazei (5 µg/ml) + rotenone (100 nM), and A. blazei alone treated) based on MTT assay, cells were allowed to measure the ROS, TBARS levels, and antioxidants activities. Finally, mitochondrial transmembrane potential (MMP) and expressions of apoptotic proteins were also analyzed. Pre-treatment with A. blazei significantly enhanced cell viability, attenuated rotenone-induced ROS, MMP, and apoptosis. Our results indicated that anti-apoptotic properties of this natural compound due to its antioxidant and mitochondrial protective function protect rotenone-induced cytotoxicity. Therefore, it may be concluded that A. blazei can be further developed as a promising drug for the treatment of Parkinson's disease (PD). © 2016 Informa UK Limited, trading as Taylor & Francis Group.

Author Keywords
A. blazei; Apoptosis; Mitochondria membrane potential; Oxidative stress; Rotenone

Index Keywords
Agaricus blazei extract, caspase 3, caspase 8, caspase 9, glutathione peroxidase, protective agent, protein Bax, protein bcl 2, reactive oxygen metabolite, rotenone, superoxide dismutase, thiobarbituric acid reactive substance, antioxidant, apoptosis regulatory protein, glutathione, reactive oxygen metabolite, rotenone, superoxide dismutase; antioxidant activity, apoptosis, Article, cell viability, cell viability assay, controlled study, cytotoxicity, human, human cell, lipid peroxidation, membrane potential, mitochondrial membrane potential, MTT assay, neuroblastoma, oxidative stress, Parkinson disease, priority journal, protein expression, Western blotting, Agaricales, Agaricus, apoptosis, cell survival, chemistry, drug effect, genetics, metabolism, mitochondrion, neuroblastoma, Parkinson disease, tumor cell line; Agaricales, Agaricus, Antioxidants, Apoptosis, Apoptosis Regulatory Proteins, Cell Line, Tumor, Cell Survival, Glutathione, Humans, Membrane Potential, Mitochondrial, Mitochondria, Neuroblastoma, Oxidative Stress, Parkinson Disease, Reactive Oxygen Species, Rotenone, Superoxide Dismutase, Thiobarbituric Acid Reactive Substances

Chemicals/CAS
caspase 3, 169592-56-7; caspase 8; caspase 9, 180189-96-2; glutathione peroxidase, 9013-66-5; protein bcl 2, 219306-68-0; rotenone, 83-79-4; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1; glutathione, 70-18-8; Antioxidants; Apoptosis Regulatory Proteins; Glutathione; Reactive Oxygen Species; Rotenone; Superoxide Dismutase; Thiobarbituric Acid Reactive Substances

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A fuzzy control application for environment control system
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Abstract
One of the significant issues confronting present-day filtration innovation is the savvy filtration of nitrate, NO3. The outline of a cost-effective, coordinated nitrogen expulsion framework including both nitrification and de-nitrification procedure is paramount to the proceeding with an improvement of business recycling aquaculture frameworks. Current nitrification framework is satisfactory and is commercial1y accessible; in any case, existing procedures for de-nitrification are only given water trade. The motivation behind this research is to deliver the primary business, autonomous de-nitrification channel, utilising surviving biotechnology (i.e., organic reactors and artificial intelligence). The objective of the review has been to plan a fuzzy rationale framework to control the operation of a de-nitrification bioreactor created by the College of Texas Medical Branch, Marine Biomedical Institute, for use in a shut recycling aquaculture framework. The improvement of a model structure was expert through a multi-disciplinary program including PC researchers, bioengineers, organic chemists and aquaculture. © 2018 EM International. All rights reserved.

Author Keywords
Fuzzy controller; Nitrification; Rate reduction

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aquaculture system, bioreactor, biotechnology, control system, denitrification, filtration, fuzzy mathematics, innovation, nitrate, nitrification, reaction rate, research

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Correspondence: health issues among radiologists: Toll they pay to their profession
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bursitis, carpal tunnel syndrome, computer assisted tomography, health care personnel, human, Letter, musculoskeletal disease, radiologist, radiology, stress, tendinitis, walking

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Kaleel Ahmed, A.[a] , Senthilkumar, C.B.[b] , Nallusamy, S.[c]

Study on environmental impact through analysis of big data for sustainable and green supply chain management
(2018) *International Journal of Mechanical and Production Engineering Research and Development*, 8 (1), art. no. IJMPERDFEB2018145, pp. 1245-1254. Cited 12 times.

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Abstract
In an emerging global scenario, an effective and smooth supply chain is vital in operations, since thousands of organizations are serving millions of customers. For the organizations, having large product portfolios and serving millions of customers at various locations, getting the right product to the right customer at the right time is paramount. The supply chain ensures this flow from the supplier to the retailer and finally to the customer. Technology is a key role for these operations in general and the data in particular big data, i.e. vast quantities of data used in the supply chain helps, not only increasing the efficiency but also in forecasting the demand and understanding tastes and preferences of customers. Due to climate changes and global warming, customers and companies are increasingly looking at how their carbon footprint is impacting and how can data help achieve a sustainable and green supply chain. These are some of the issues that businesses need to grapple with to withstand relevant and successful. Hence, a study was made to analyze the usage of big data to enhance the environmental impact and green supply chain management. © TJPRC Pvt. Ltd.

Author Keywords
Big data & forecasting; Environmental impact; Organization; SCM

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Investigation study on effective tools for conscription of various industrial applications
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Abstract
Improper selection of worker or supplier may lead an unpleasant impact on original equipment manufacturer. The greatest challenge for every industry is the acquisition of workers with talents and the strength of the supplier. In industries, the workers are expected to work with skill and technical knowledge based on the applications of the industry. There are different tools available for accurately monitoring and tracking the supply of conscription and connecting this with the performance, every industry can bring their maximum production rate on their production achievement. In this research, an attempt was made to study on the investigation of effective tools for conscription of workers for various industrial applications was carried out and necessary suggestions were made. © TJPRC Pvt. Ltd.

Author Keywords
Applications; Conscription; Industry; Tools & effects

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Ayshath Zaheera, K.M.[a] , Senthilkumar, C.B.[b] , Nallusamy, S.[c]

Execution of selection process in regular area of industrial application with its current features for manufacturing enhancement in SMEs

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Abstract
In the current scenario, selection of right workers and suppliers in the manufacturing industry is an exigent activity. Selection of supplier and worker is the method of formatting the appropriate workers and suppliers to provide the right quality of products with right quantities, at the right price in the right time. Area of application describes to the premises in which the problem of worker and supplier selection was defined and relevant criteria, alternative and environment are considered. The objective of this research is to study the execution of selection processes in the regular area of industrial application with its current features for enhancement of manufacturing. The electronic selection process is under use in the internet technology to match the people for the right jobs and right suppliers. It is about advertising requirements on either in general sites or in concerned industry websites. At the very basic level it is particularly effective in getting a high level of response. While it may generate more than hundred applications and quotations than traditional print advertising, simply attracting more candidates and suppliers is only part of the work. The internet has become the major source of potential for material suppliers and job seeking candidates. Well known as online selection process or e-selection process, which reaches a large number of people and can get immediate feedback. This article also highlights the current features in the selection process of industrial area of applications. © TJPRC Pvt. Ltd.

Author Keywords
Industrial applications; Manufacturing features; Selection process; SME; Workers

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Study on amalgamation of internet of things in industrial applications

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Abstract
Internet of things is a new concept that shows the power of what connected devices can do in day to day lives. Millions of people in some way, shape or form are contributing towards an internet society and an internet economy by having and using devices that are connected to the internet and to each other. IoT has great potential to support society, to improve energy efficiency and to optimize various kinds of mobility and transport. On the other hand, IoT elevates the significant challenges to ensure through recognizing its probable merits. Issues regarding cyber security, theft and hacking of personal and financial data is the primary concern among a majority of public and organizations. A simple mobile phone can connect to other devices to sensors in public to regulate traffic and other civic institutions, the necessary data is merged with IoT and also the concern data analysis will engage in recreation as key role to continue in future. In this study the integration of IoT in various industrial applications were studied. © TJPRC Pvt. Ltd.

Author Keywords
Cyber Security & Business; Industrial Application; IoT; Mobility

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Experimental study of mechanical and metallurgical properties of friction stir welded dissimilar aluminum alloys

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Abstract
Friction stir welding is a comparatively quiet new solid state metal joining process developed by the Welding Institute in 1991 and is used for joining of aluminum alloys and dissimilar materials which were difficult to using conventional welding. Objective of this work is to produce sound weld of dissimilar aluminum alloy of AA7075 and AA6101 by using FSW process with two different tool pin profile and investigate the mechanical and metallurgical properties such as tensile Strength, impact strength and microstructure in terms of Process parameters such as tool Rotational speed, tool transverse speed and axial force. Better mechanical properties were obtained at a tool rotational speed of 1200 rpm, transverse speed 45mm/min and axial force of 6KN. Better mechanical and metallurgical properties were obtained by the joint made by straight cylindrical tool pin profile. This study was focused on process parameters and suitable tool profile that necessary for fabricating superior welded joints. © TJPRC Pvt. Ltd.

Author Keywords
Dissimilar aluminum alloys; Friction stir welding; Mechanical properties; Process parameters & tool profile

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Advanced nanofibrous textile-based dressing material for treating chronic wounds
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Abstract
In the present work, an electrospun nanofibrous textile composed of polyurethane (PU), sodium bicarbonate (NaHCO 3) and pantothenic acid (PA) is developed for treating chronic wounds. Wounds are a common health problem and in particular, the chronic wounds such as vascular ulcers, diabetic ulcers and pressure ulcers cause a large number of morbidity and mortality. The main problems of the chronic wounds are prolonged inflammation phase and presence of acidic environment. These events deactivate the operation of growth factors and also the progression of natural healing mechanism. Hence, various types of advanced textile-based dressings are developed to address the clinical complications associated with chronic wound management. The prepared electrospun scaffolds were characterized to study their physicochemical and haemocompatible properties. The scanning electron microscopy micrographs depicted continuous, smooth-interconnected nanofibrous morphology of PU–NaHCO3–PA scaffolds. The Fourier transform infrared spectroscopy spectra indicated the addition of NaHCO3 and PA-based hydrophilic chemical groups, which significantly enhanced the wettability of the composites. Further, the PU–NaHCO3–PA composite membrane inferred to have a highly porous structure with the mean porosity of 79.4 ± 4.8%, which may provide a conducive environment for adherence and proliferation of skin cells. The composite scaffold also offers a highly haemocompatible surface by delaying coagulation of blood through contact activation pathways and by limiting red blood cells damage. Therefore, the excellent physicochemical properties, blood compatibility and the delivery of PA are anticipated to speed up the impaired healing process of chronic wounds. © 2018, Indian Academy of Sciences.

Author Keywords
Advanced textiles; chronic wound healing; electrospinning; pantothenic acid; sodium bicarbonate

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Balakrishnan, G.[a] , Sastikumar, D.[b] , Kuppusami, P.[c] , Babu, R.V.[d] , Song, J.I.[e]

Microstructural and mechanical properties of Al2O3/ZrO2 nanomultilayer thin films prepared by pulsed laser deposition

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Abstract

Single layer aluminium oxide (Al2O3), zirconium oxide (ZrO2) and Al2O3/ZrO2 nano multilayer films were deposited on Si (100) substrates at room temperature by pulsed laser deposition. The development of Al2O3/ZrO2 nanolayered structure is an important method used to stabilize the high temperature phase (tetragonal and cubic) of ZrO2 at room temperature. In the Al2O3/ZrO2 multilayer structure, the Al2O3 layer was kept constant at 5 nm, while the ZrO2 layer thickness varied from 5 to 20 nm (5/5, 5/10, 5/15 and 5/20 nm) with a total of 40 bilayers. The X-ray diffraction studies of single layer Al2O3 indicated the γ-Al2O3 of cubic structure, while the single layer ZrO2 indicated both monoclinic and tetragonal phases. The 5/5 and 5/10 nm multilayer films showed the nanocrystalline nature of ZrO2 with tetragonal phase. The high resolution transmission electron microscopy studies indicated the formation of well-defined Al2O3 and ZrO2 layers and that they are of uniform thickness. The atomic force microscopy studies revealed the uniform and dense distribution of nanocrystallites. The nanoindentation studies indicated the hardness of 20.8 ± 1.10 and 10 ± 0.60 GPa, for single layer Al2O3 and ZrO2, respectively, and the hardness of multilayer films varied with bilayer thickness. © 2018, Springer-Verlag GmbH Germany, part of Springer Nature.

Index Keywords

Aluminum compounds, Atomic force microscopy, Deposition, Film preparation, Gamma rays, Hardness, High resolution transmission electron microscopy, Multilayer films, Multilayers, Nanocrystals, Oxide films, Oxides, Pulsed laser deposition, Pulsed lasers, Thin films, X ray diffraction; Bilayer thickness, High temperature phase, Micro-structural, Multilayer structures, Nano-multilayer film, Si (100) substrate, Tetragonal phasis, X-ray diffraction studies; Zirconium compounds

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Influence of Mn2+ ions on both core/shell of CuInS2/ZnS nanocrystals

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Abstract
The present work involves the synthesis of CuInS2/ZnS core/shell nanocrystals by hot injection method. Since CuInS2 itself is a strong luminescent material, we would like to study the influence of either the ZnS shell or Mn2+ ions dopant on CuInS2 core will enhance the luminescent property of the CuInS2 core. To find out the effect of ZnS shell and Mn2+ ions on CuInS2 core, we synthesized each of the above said nanocrystals separately and recorded their optical properties by UV–vis absorption and PL emission spectra. The band gap of the synthesized nanocrystals was confirmed by Cyclic Voltammetry. Further the influence of morphology and crystal structure of the shell and dopant on CuInS2 core was also be analyzed by recording their TEM and XRD studies. The elemental compositions of the synthesized nanocrystals were also analyzed by EDX analysis. The outcomes of the studies were agreed well with literature results. © 2017 Elsevier Ltd

Author Keywords
Core/shell nanocrystals; CuInS2; Cyclic voltammetry; Hot injection method; HR-TEM; Morphology; XRD

Index Keywords
Copper compounds, Crystal structure, Cyclic voltammetry, Emission spectroscopy, Energy gap, Ions, Luminescence, Manganese, Manganese compounds, Morphology, Nanocrystals, Optical properties, Zinc compounds, Zinc sulfide; Core/shell nanocrystals, CuInS2, Elemental compositions, Hot injection, Luminescent material, Luminescent property, Morphology and crystal structures, Vis absorption; Indium compounds

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A facile gold nanoparticle–based ELISA system for detection of osteopontin in saliva: Towards oral cancer diagnostics

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Abstract
In the current study, we emphasize that osteopontin is overexpressed in oral squamous cell carcinoma. Overexpression of osteopontin levels was confirmed by mRNA quantification studies and immunohistochemistry analysis. Based on this, a gold nanoparticle–based ELISA system was developed for non-invasive osteopontin detection. The incorporation of AuNRs (Gold nanorods) or AuNSs (Gold nanospheres) in the conventional ELISA improved the sensitivity of analyses. A considerably lowered detection limit in case of AuNR (detection limit: 0.02 ng mL− 1) and AuNS (detection limit: 0.03 ng mL− 1) modified assay was obtained as compared to commercially available OPN ELISA kit (detection limit: 0.14 ng mL− 1). The modified ELISA had a wide linear detection range (0.31–20 ng mL− 1), good reproducibility, and specificity against the tested interferents in the saliva. Finally, the nanoELISA was validated with osteopontin spiked in artificial and normal saliva samples and observed to show good recovery (95.4–97.85%), which indicates the application potential of the developed kit for real sample analysis. © 2017 Elsevier B.V.

Author Keywords
Gold nanorod; Gold nanosphere; Nano ELISA; Oral cancer; Osteopontin; Sensitivity

Index Keywords
gold nanoparticle, gold nanorod, gold nanosphere, messenger RNA, nanosphere, osteopontin, tumor marker, unclassified drug, gold, metal nanoparticle, osteopontin, tumor marker; Article, cancer diagnosis, controlled study, disease marker, enzyme linked immunosorbent assay, human, human cell, human tissue, immunohistochemistry, intermethod comparison, limit of detection, major clinical study, mouth cancer, priority journal, protein analysis, quantitative analysis, reproducibility, saliva analysis, sensitivity and specificity, validation study, chemistry, genetics, mouth tumor, saliva; Biomarkers, Tumor, Enzyme-Linked Immunosorbent Assay, Gold, Humans, Metal Nanoparticles, Mouth Neoplasms, Osteopontin, Saliva

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Blood compatibility and physicochemical assessment of novel nanocomposite comprising polyurethane and dietary carotino oil for cardiac tissue engineering applications

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Abstract

Cardiovascular diseases (CVD) were estimated to claim 17 million lives each year. Among these, coronary heart disease almost accounts 50% deaths associated with CVD, which causes the blockage of the coronary arteries that supplies blood to the heart. Nowadays, the cardiac tissue engineering have become a promising solution to overcome the drawbacks associated with current therapies. Further, the scaffold used in cardiac tissue engineering must possess thromboresistant and anticoagulant nature to serve as a plausible candidate for cardiovascular applications. In this present investigation, a novel nanocomposite based on polyurethane (PU) and carotino oil was fabricated using electrospinning. Scanning electron microscopy images indicated that the nanocomposites have smaller fiber diameter (702±130 nm) compared to the pristine PU (969±217 nm). The Fourier transform infrared spectroscopy analysis confirmed the interaction between the carotino oil and PU by the formation of hydrogen bond and shifting of CH peak. The contact angle of electrospun PU/carotino oil was found to be 119°, which was increased compared to pristine PU (86°) indicating the hydrophobic nature of developed nanocomposites. Moreover, the surface roughness and thermal stability were found to be enhanced due to the presence of carotino oil in the PU matrix indicated in atomic force microscopy and thermogravimetric analysis. The enhanced surface roughness of nanocomposites resulted in delayed activation of the blood clot as revealed in activated partial thromboplastin time and prothrombin time assay. Moreover, the hemolytic index of fabricated nanocomposites was found to very low of about 1.33% compared to pristine PU (2.73%), suggesting non-hemolytic nature and also better blood compatibility. So, the developed PU/carotino nanocomposites having desirable characteristics like better physicochemical and blood compatibility may render appropriate potentials for raw materials of cardiac tissue engineering. © 2017 Wiley Periodicals, Inc.

Author Keywords

Biocompatibility; Degradation; Electrospinning; Thermal properties; Thermogravimetric analysis

Index Keywords

Atomic force microscopy, Biocompatibility, Biomaterials, Blood, Cardiology, Degradation, Diseases, Electrospinning, Fourier transform infrared spectroscopy, Heart, Hydrogen bonds, Nanocomposites, Polyurethanes, Scaffolds (biology), Scanning electron microscopy, Spinning (fibers), Surface roughness, Thermodynamic properties, Thermogravimetric analysis, Tissue; Activated partial thromboplastin time, Blood compatibility, Cardiac tissue engineering, Cardiovascular applications, Cardiovascular disease, Coronary heart disease, Novel nanocomposites, Scanning electron microscopy image; Tissue engineering

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Lincy, G.[a] , Ponnavaikko, M.[b] , Lenin Anselm, W.A.[c]

Optimal sitting and sizing of PV generation connected to the radial distribution feeders
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Abstract
Electricity is a basic need for the daily life of everyone, and it serves as the main driver for the economic growth in any country. Coalfired Electricity generation forms the major share of energy resources in the world. In India, Coalfired electricity generation represents about 78% of the total power generation in the country. Coal reserve is fast depleting in the world. This situation has necessitated many countries in the world to opt for Distributed Generation (DG), using renewable sources of energy, to meet, the growing demand for electricity and to meet the depleting situation of Coal. In the past, some studies have been carried out by the Researchers using different types of DG systems. This study considers installation of PV systems, making use of the abundant availability of Solar Energy Resources. Appropriate sitting and sizing of DGs could lead to many positive effects for the distribution systems concerned. However, at the same time, inappropriate sitting and sizing of DGs could lead to many negative effects on the distribution systems concerned, such as the voltage profiles, beyond permissible limits and increased network losses. Therefore, it becomes necessary to allocate DGs at optimal locations with optimal sizing. This paper presents the results of the study carried out in a 400 V distribution system as well as in an 11-kV feeder in the Kanchipuram Distribution System in Tamil Nadu, India. This paper also presents the economic impact of the system with PVCs regarding Internal Rate of Return (IRR)for the investment made. © 2018 Authors.

Author Keywords
Distributed Generation(DG); Distribution system; Internal Rate of Return; Optimal sizing and sitting; Photovoltaic Generation (PVG)

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Optimal Placement of Distributed Generation on Radial Distribution System for Loss Minimisation& Improvement of Voltage Profile
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Arul Selvan, M.[a] , Selva Kumar, S.[b]

Maximum accuracy in MANET-node-localization using multi-stage trackerwith less time-complexity
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Abstract
An ad hoc network (referred as MANET), is also called as mobile ad-hoc network and also wireless ad hoc network, is automatic self-configuring, infrastructure-less wireless network of mobile devices, and it widely used in various areas. Wireless sensor network composed of wireless sensor nodes and these nodes can do processing, sensing, computation and wireless communication. Because of its more functionality and low cost of energy consumption the wireless sensors are used widely in various areas such as ranging from sensors for environment, road safety, home, peer-to-peer messaging, vehicular ad hoc communications, health, disaster recovery operations, robots, weapons, defense, etc. The localization information is very important for the operation of MANET because of security, routing, and other needs. This articles mainly contracts with the network node station identification in wireless environment with maximum accuracy. There are many methods of localization exist for MANET, and this paper discusses, compares and explains the betterments through experimental localization methods. Localization process is a vital and essential part in lots of applications that signifies a supplementary procedure in a network function or sometime it can be a primary goal of the application. Localization, as an essential procedure is also desirable based on data mining and data fusion, efficient routing with the view of hierarchical data aggregation. The hierarchical aggregation method itself signifies beneficial function of all data networks as it decreases important energy consumption and saves bandwidth in ad hoc network. And also it makes sure of repeatability-of-tests through multiple test-environments which is a problematic task in many situations in wireless networks. Eventually the accuracy of the location identification is critical aspect of any algorithm and technique that will be the important aspect of this paper. © 2018 Authors.

Author Keywords
Accurate node Location identification; Energy consumption; MANET; Wireless sensor networks; WSN

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Senthil Kumar, K.[a b] , Muthukumaravel, A.[c]

A hybrid approach for test case prioritization using PSO based on software quality metrics
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Abstract
Effective functionality checking of any software application is the crucial event that determines the quality of outcome obtained. Generally, checking scenarios that involves multiple test cases in mixture with multiple components is time consuming and also increases the quality assurance cost. Selection of suitable method/approach for optimization and prioritization of test cases as well as appropriate evaluation of the application would result in reduction of fault detection effort without appreciable information loss and further would also significantly decrease the clearing up cost. In the proposed method, test cases are optimized and then prioritized by Particle Swarm Optimization algorithm (PSO) and Improved Cuckoo Search algorithm (ICSA), respectively. Finally, the result will be evaluated for software quality measures. © 2018 Authors.

Author Keywords
Cuckoo search; Particle swarm optimization; Quantitative measure; Regression testing; Software metrics; Test case optimization; Test case prioritization

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A color map for pseudo color processing of medical images

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Abstract
A color map is one which converts the colors of one image to the colors of another image. This paper says about a color map for pseudocoloring of medical image which converts gray scale medical images to color with the already existing color map. Converting a black and white image to color has no correct way or method, this method provides a direct way to choose, Red, Green and Blue (RGB) colors to individual components, but the color map conversion is done by converting the entire gray-scale image to color. By creating a color map then the color map is to be used to color the medical gray scale image. This method is applied for gray scale medical images such that the perception and quality of the image can be improved. © 2018 Authors.

Author Keywords
And medical images; Color map; Pseudocoloring; RGB images

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Selvam, R.[a] , Ravi, S.[b] , Balasubramanian, K.[a]

Stress analysis of SIC reinforced polyester nano composite spur gear

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Abstract
Gears are most powerful machine element to transmit the motion between rotating shaft. It acts as a dominating transmission system from many years ago. In this study, we analyzed a spur gear machine toolfor special application using theoretical method and Finite element analysis. Here, the bending stress on the spur gear is analyzed since these stresses induced play a vital role in gear life. The analysis presented the effect of gear material on induced bending stress. Finally results of theoretical method and Finite element analysis were determined and when compared gives a better results. © 2018 Authors.

Author Keywords
ANSYS workbench; Finite element analysis; Spur gear

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Sivakumar, C.[a] , Latha Parthiban, P.[b]

Improved energy efficient Wireless Sensor Networks using balanced Multi-Hop routing protocol
(2018) *International Journal of Engineering and Technology(UAE)*, 7 (3), pp. 24-29.

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Abstract
In this paper, consumption of energy by the sensor nodes in Wireless Sensor Nodes (WSNs) is been handled effectively using a combined technique. The objective of the paper is to increase the network lifetime with dynamic routing protocol. Here, the proposed routing algorithm, named Balanced Multi-Hop (BMH) protocol combines the multi-hop and direct transmission communication. This method further uses Dijkstra algorithm to route the packets between the sensor nodes and base station in mobile network. This method avoids the use of central router to control the other nodes. The results of the proposed method is tested against various result metrics. The evaluation over other existing methods prove that the BMH method achieves higher lifetime and high network throughput. © 2018 Authors.

Author Keywords
Dijkstra protocol; Energy-efficient routing; Least-hop routing; Wireless sensor network

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Documents

Balaguru, S.[a] , Kumar, K.S.[b] , Deenadayalan, G.[a] , Sathishkumar, P.[c]

Effect of sheet thickness during superplastic forming of AZ31B alloy into a hemispherical die

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Abstract
This paper deals with the effect of various combinations of temperature and pressure in the Superplastic forming process of AZ31B Magnesium alloy of different thickness into a hemispherical die. Using the time taken and the corresponding depth formed, the values of strain, strain rate and strain rate sensitivity were calculated. From these values, graphs were plotted. From the graphs, the effective pressure and temperature combination for specific thickness was determined. © 2018 Authors.

Author Keywords
Hemispherical die; Magnesium alloy; Superplastic forming

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Optimization on cryogenic Co2 machining parameters of AISI D2 steel using Taguchi based grey relational approach and TOPSIS

(2018) *International Journal of Engineering and Technology(UAE)*, 7 (3.12 Special Issue 12), pp. 885-893. Cited 2 times.

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Abstract
The Machinability, and the process parameter optimization of Cryogenic CO2 machining operation for AISI D2 steel have been investigated based on the Taguchi based grey approach and Technique for Order Preference by Similarity to Ideal Solution (TOPSIS).In this examination work, the measure of the work materials utilized was AISI D2 Steel of size is 150mm × 50 mm × 50m with SANDWIK influence CVD To TiN coated carbide cutting insert tool device embed was utilized. The time taken for machining is 5 min and profundity of cut were kept up steady with various lower cutting velocities, and diverse encourage rate. An L27 orthogonal array was selected for planning the experiment. Cutting speed, depth of cut and feed rate were considered as input process parameters. Cutting force (Fz) and surface roughness (Ra) were considered as the performance measures. These performance measures were optimized for the improvement of machinability, quality of product. A comparison is made between the multi-criteria decision making tools. Grey Relational Analysis (GRA) and TOPSIS are used to confirm and prove the similarity. To determine the influence of process parameters, Analysis of Variance (ANOVA) is employed. The end results of experimental investigation proved that the machining performance can be enhanced effectively with the assistance of the proposed approaches. © 2018 Authors.

Author Keywords
Cryogenic machining CO2; Design of experiments; Grey Relational Analysis; TOPSIS.ANOVA

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An effective method to denoiseeeg, ECG and PPG signals based on meyer wavelet transform

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Abstract
In this analysis, the prevailing role of the wavelet transform in the interrogation of the ECG is discussed in detail, where both the constant and the discrete transform are considered in turn.A Wavelet denoising is functional on the original signal to eradicate high frequency noise, and then a process based on Meyer wavelet transform combined with adaptive filter is functional to eradicate the motion artifact. This approach uses Meyer Wavelet decomposition to extract the motion artifact, which is subsequently utilized as the reference input of an adaptive filter for noise cancellation. The technique diminishes the overhead of the circuit because it does not need a separate collection of reference input signal which link to noise. Testing results illustrate that this approach can efficiently remove motion artifact and make better the signal quality. © 2018 Authors.

Author Keywords
And wavelet decomposition tree; ECG; EEG; Noise removal; PPG; Wavelet transform

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Anandrao, D.T.[a] , Parthiban, L.[b] , Veer, R.A.[c] , Siddanna Gowd, L.C.[d] , Kokare, A.J.[e]

Comparative study of routing techniques in Wireless Sensor Network

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Abstract
A Wireless Sensor Network is made up of small sensor nodes. These nodes are deployed in monitoring area. All nodes collect necessary data and route this data to centre server. A WSN should have self-organizing capability, as nodes positions are not determined in advance. Important factor in WSN is co-operation between nodes. Depending on WSN architecture and application, routing between nodes can vary. This paper presents a comparative study of different routing protocols/algorithm in WSN. Depending on network organization, WSN routing algorithms gets divided into 3 types, i.e. location based, hierarchical and flat. These routing algorithms can be divided further into sub types, depending on how an algorithm/protocol operates. This paper presents advantages and limitations of each routing algorithm. © 2018 Authors.

Author Keywords
Routing algorithm; WSN; WSN energy limitation

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Mechanical testing of plastoceramic (nPMC sheet- SiC reinforced polyester nano composite)
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Abstract
Concept of nano-composite Technology has gained greater momentum in its recent engineering applications. Recent works on Nano-composite technology have proved the viability of its use and its importance in modern engineering fields of applications particularly in the field of materials and manufacture. When dissimilar materials are used with different compositions to obtain newer nano- composite materials, it has lead to the production of novel products with unique properties. In the present study, the ceramic material SiC is used as reinforcement owing to its superior properties such as hardness, thermal conductivity and strength. And this has paved the way for using it in the making of polyester nano-composite sheet (nPMC) with aforementioned properties. Fabrication and characterization of Nano-composite sheet is carried out using a weight ratio of 30% so as to understand the molecular structure and mechanical behavior under external load. The synthetic procedure and characterization used in this study has made it possible to obtain SiC nano particles reinforced polyester nano-composites (nPMC) film with good thermal strength and chemical homogeneity over the traditional composite. © 2018 Authors.

Author Keywords
Nano composites film; Nano particulates; NPMC; Polystyrene

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Fuzzy based adaptive controller for on - Chip communication

(2018) *International Journal of Engineering and Technology(UAE)*, 7 (3.27 Special Issue 27), pp. 362-367.

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Abstract
Occurrence of bit error is more when communication takes place in System on chip environment. By employing proper error detection and correction codes the bit error rate can be considerably reduced in On-chip communication. As System on chip involves heterogeneous system the efficiency of communication is improved when reconfigurable multiple coding schemes are preferred. Depending upon the requirements for various subsystem the correct code has to be selected. Due to the variations in input demands based on various subsystems the proper selection of codes become fuzzy in nature. In this paper Fuzzy Controller is designed to select the correct coding scheme. Inputs are given to the fuzzy controller based on the application demand of the user. The input parameters are minimum bit error rate, computational complexity and correlation level of the input data. Fuzzy Controller employs three membership functions and 27 rules to select the appropriate coding scheme. The selected coding scheme should be communicated at the proper time to the decoder. To enable the decoding process selected coding scheme is communicated effectively by using less overhead frame format. To verify the functionality of fuzzy controller random input data sets are used for testing. © 2018 Authors.

Author Keywords
Communication; Error control; Fuzzy controller; Reconfigurable; SoC

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Real time device control over voice recognition in offline

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Abstract
The consistent increase in the number and ownership population of mobile devices introduces a variety of limitations. A set of this limi-tations revolve around interactivity. The overly dependent haptic mechanism of interaction has caused device falls, slower time to inter-action, health concerns, and limited support for the disabled among other problems. There is need to formulate innovative techniques that facilitate our interaction with these devices for users. In order to achieve this, a Real-time Voice Recognition Algorithm is formulated that lets users of mobile devices acquire freedom to move about and reduce the need for constantly glancing at their screen. This is achieved by allowing users to verbally command their devices to carry out ordinary tasks. An added unique feature is that it also offers offline access as any commands given by a user are processed and executed locally on the device. © 2018 C. Rukkumani et al.

Author Keywords
Mobile devices; Real time; Screen; Voice recognition

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Collective network channel decentralized fountain design codes for safe communication in VANET network
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Abstract
Wireless sensor network is noticed as bulk aggregation of slender sensor knobs that can characterize themselves in a decentralized system. Wireless communications assist these trades to increase plant knowledge by acquiring additional measurements from processes and apparatus when wired communication would be infeasible. The merits of the space diversity and transmit nature of wireless transmissions to adopt combined accession in which node transmit the host, that recover the lost host with long credibility by overhearing the transmission of its acquaintance. Article represents an indicating flexible unified management. On the basis of regular set code, the aspect of overall managed flexible WSN activity, local action conversion is protected. © 2018 Authors.

Author Keywords
Broadcast; Content distribution; Data dissemination; Finite length query; Flexible traffic control scheme; Query recognition; Vehicular networks; WSN

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Kotteswari, M.[a] , Krishna Rao, M.R.[b] , Prabhu, K.[c] , Kumar, S.[d] , Shil, S.[b]

Antioxidant studies of one ayurvedic medicine Aswagandharishtam

(2018) *Asian Journal of Pharmaceutical and Clinical Research*, 11 (11), pp. 227-231. Cited 18 times.

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Abstract
Objective: The present study deals with the antioxidant study of one Ayurvedic medicine Aswagandhrishtam by three different methods, namely reducing power, 2,2-diphenyl-1-picrylhydrazyl (DPPH), and 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulfonic acid (ABTS) assays. Methods: Aswagandharishtam, which is a liquid medicine, was taken as such at various concentrations for all the three assays. Results: The results show that Aswagandharistam has good antioxidant potential when compared with ascorbic acid as standard. The IC50 values of reducing power assay were 250.142, that of DPPH were 103.607, and of ABTS assay were 197.79 as compared with that of ascorbic acid being 19.59. Conclusion: All the three assays indicated that Aswagandharishtam showed very good antioxidant results. © 2018 The Authors.

Author Keywords
2,2-Diphenyl-1-picrylhydrazyl; 2,2'-Azino-bis(3-ethylbenzothiazoline-6-sulfonic acid; Antioxidant; Ascorbic acid; Aswagandharishtam; Epilepsy; Vata

Index Keywords
antioxidant, ascorbic acid, Aswagandhrishtam, ayurvedic drug, unclassified drug; ABTS radical scavenging assay, antioxidant activity, Article, Ayurveda, DPPH radical scavenging assay, fermentation, IC50, Kwatha dravyas, medicinal plant, nonhuman, Prakshepa dravyas, ultraviolet spectrophotometry

Chemicals/CAS
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Abstract
This chapter proposes to deliver a summary to the broad arena of manufacturing processes of composites for aerospace application by explaining the principle of how to produce composites, and presenting some of the current processes of manufacturing composites. This chapter also emphasizes problems faced during the manufacturing process. The main objectives in the aerospace industry are in terms of manufacturing cost and composite performance which can be accomplished with improvements in the composite manufacturing process. It is crucial to understand the parameters that could affect composite products. Composite manufacturing processes need to be cost-effective and able to produce composites with good quality. Manufacturing process technology has started to advance, which increases the quality of the composite. This chapter explains the basic principles of manufacturing process related to cost. © 2018 Elsevier Ltd. All rights reserved.

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Fabrication methods; Manufacturing process

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Connectivity analysis of brain signals during colour word reading interference
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Abstract
Introduction and Aim: Colour word interference task is a very commonly used paradigm in cognitive, clinical psychology. The task involves reading, selective attention, language processing and color word naming. During the task, various parts of the brain get stimulated. That creates electrical signals known as an electroencephalogram (EEG). A proper understanding of connectivity is various brain areas is a very important aspect of neuroscience. Statistical analysis of connectivity measures was carried out to study changes in phase and power based connectivity measures during the Stroop task in frontal and temporal brain region to understand the neuropsychological basis of cognitive activities in normal humans. Materials and Methods: The present study explored connectivity analysis of EEG. An analysis was carried out on real signals. Changes in magnitude square coherence and phase coherence were noted to be more prominent in frontal lobe during the cognitive tasks like color word reading interference. Results: Activity related changes were more prominent in gamma and theta frequency band. Stroop task is a reliable, low cost, efficient, effective, flexible and low maintenance clinical test for evaluating psychopathology and brain dysfunctions and can be used as a screen test for the diagnosis. Phase coupling drops for congruent activity; while it shows an increase during incongruent activity. Conclusion: Increased theta band power due to interference in the frontal lobe was observed during the study. Pearson product of theta band reported the significant difference in the coherence phase during congruent and incongruent activity. No prominent change in Pearson product of MS Coherence during congruent and incongruent was observed. © 2018 Indian Association of Biomedical Scientists. All rights reserved.

Author Keywords
Coherence; Colour Word Interference; Congruent-Incongruent; EEG; Power Spectral Density

Index Keywords
adult, Article, brain cortex, brain dysfunction, cognition, correlation analysis, correlation coefficient, electroencephalogram, female, Fourier transformation, frontal lobe, functional connectivity, functional magnetic resonance imaging, gamma rhythm, human, human experiment, male, normal human, occipital lobe, reading, spectroscopy, Stroop test, temporal lobe, theta rhythm, time series analysis, wavelet analysis

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An efficient software verification using multi-layered software verification tool

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Abstract
Rapid advancements in Software Verification and Validation have been critical in the wide development of tools and techniques to identify potential Concurrent bugs and hence verify the software correctness. A concurrent program has multiple processes and shared objects. Each process is a sequential program and they use the shared objects for communication for completion of a task. The primary objective of this survey is retrospective review of different tools and methods used for the verification of real-time concurrent software. This paper describes the proposed tool 'F-JAVA' for multithreaded Java codebases in contrast with existing 'FRAMA-C' platform, which is dedicated to real-time concurrent C software analysis. The proposed system is comprised of three layers, namely Programming rules generation stage, Verification stage with Particle Swarm Optimization (PSO) algorithm, and Performance measurement stage. It aims to address some of the challenges in the verification process such as larger programs, long execution times, and false alarms or bugs, and platform independent code verification. © 2018 Authors.

Author Keywords
Concurrency; Contracts; Swarm optimization; Verification

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Balaji, V.[a] , Ravi, S.[b] , Naveen Chandran, P.[c]

FEM method structural analysis of pressure hull by using hyper mesh

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Abstract
Pressure hulls are the central load bearing structures of naval submarines, and AUVs (autonomous underwater vehicles).. A pressure hull is a structure that is designed to resist the compressive forces related with hydrostatic pressure. The most coherent geometries for resisting these compressive forces are annular cross-sections, and thus, pressure hulls are typically composed of a combination of cones and ring-stiffened cylinders, with torispherical domes or spherical at either end. These shells are subject to an external pressure of 65 Bar due to the difference between outside and inside pressure.In the current paper, 3-D Modelling are carried out as per ASME codes to endure the pressure of 65 Bar. At length to thickness ratio of the pressure hull is very large, both 3D shell and 3D solid FEA models were developed and analyzed using Ansys Simulation. The 3D modeling of the assembly has used UNIGRAPHICS software and Finite element analysis is done using ANSYS-Hyper Mesh software. © 2018 Authors.

Author Keywords
3-D pressure hull model; Hyper mesh; Shell 63 element; Solid 92 element; Submarine pressure hull

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EMOPS: An enhanced multi-objective pswarm based classifier for poorly understood cancer patterns
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Abstract
Microarray based Cancer Pattern Classification is one of the popular techniques in Bioinformatics Research. This Research Work is noticed that for studying the expression levels through the Gene Expression profiling experiments, thousands of Genes have to be simultaneously studied to understand the patterns of the Gene Expression or Cancer Pattern. This research work proposed an efficient Cancer Pattern Classifier called An Enhanced Multi-Objective Pswarm (EMOPS) and it is studied thoroughly in terms of Memory Utilization, Execution Time (Processing Time), Sensitivity, Specificity, Classification Accuracy and FScore. The results were compared with the recently proposed classifiers namely Hybrid Ant Bee Algorithm (HABA), Kernelized Fuzzy Rough Set Based Semi Supervised Support Vector Machine (KFRS-S3VM) and Multi-objective Particle Swarm Optimization (MPSO). For analyzing the performances of the proposed model, this work considered a few cancer patterns namely Bladder, Breast, Colon, Endometrial, Kidney, Leukemia, Lung, Melanoma, Mom-Hodgkin, Pancreatic, Prostate and Thyroid. From our experimental results, it was noticed that the proposed model outperforms the identified three classifiers in terms of Memory Utilization, Execution Time (Processing Time), Sensitivity, Specificity, Classification Accuracy and FScore. To improve the performance of the system further in term of Processing Time, the proposed model Enhanced Multi-Objective Pswarm (EMOPS) is implemented under Parallel Framework and evaluated. That is the model is tested with Two, Four, Eight and Sixteen Parallel Processors and from the results, it is established that the Processing Time decreases considerably which will improve the performance of the Proposed Model. © 2018 S. Subasree et al.

Author Keywords
Cancer Pattern Classifications; Gene Expression; Microarray, Multi-Objective Pswarm; Parallel Framework; Support Vector Machine

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Parallel framework based gene signature-hierarchical random forest cluster for predicting human diseases
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Abstract
Gene is not responsible for many Human Diseases and instead, diseases occur by different or group of genomes interacting together and cause diseases. Hence it is need to analyse and associate the complete genome sequences to understand or predict various possible human diseases. This research work focused i. Hierarchical-Random Forest based Clustering (HRF-Cluster), ii. Genetic Algorithm-Gene Association Classifier (GA-GA) and iii. Weighted Common Neighbor Classifier (wCN). These Classifiers were implemented and studied thoroughly in terms of Prediction Accuracy, Memory Utilization, Memory Usage and Processing Time. To improve the performances of the Gene Classifiers / Predictors further, this research work was proposed and implemented Gene Signature based HRF Cluster, G-HR. Results show that that the performances of the proposed Classifier G-HR is outperforming as compared with the identified three Classifiers in terms of Disease Pattern Prediction, Processing Time, Memory Usage and Classification Accuracy. To improve the performance of the system further in term of Processing Time, the proposed model G-HR is implemented under Parallel Framework and evaluated. That is the model is tested with Two, Four, Eight and Sixteen Parallel Processors and from the results, it is established that the Processing Time decreases considerably which will improve the performance of the Proposed Model. © 2018 N. K. Sakthivel et. al.

Author Keywords
Gene Association; Genetic Algorithm; Hierarchical Clustering; Human Genome Prediction; Parallel Framework; Random

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Karthikayen, A.[a] , Selvakumar Raja, S.[b]

An extended hyper geometric trust factor-based markov foresting scheme for mitigating selfish nodes in MANETs
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Abstract
The trustworthiness of the cooperating mobile nodes in the ad hoc network is considered to be responsible for effective data dissemination. However, the selfish intent of node introduces the act of packet dropping in the network that introduces maximum degradation in the network performance. In this paper, an Extended Hyper Geometric Trust Factor-Based Markov Foresting Scheme (EHGTF-MFS) is proposed for effective prediction of future possibility in selfish behavior that could be mobile nodes in the network during data transmission. This proposed EHGTF-MFS derives the benefits of Hybrid Markov Chain and Enhanced Functional Link Network-based Grey Forecasting Model for preventing selfish node behavior in ad hoc networks. Markov chain is utilized in this proposed EHGTF-MFS approach for estimating the residual that is essential in modifying the forecasting value of enhancing the prediction accuracy. The simulation-based investigations of the proposed EHGTF-MFS determined to be superior in terms of 14 % enhancement in the packet delivery rate, 16% and 21% reduction in energy consumptions and packet delay compared to the baseline selfish detection approaches considered for analysis. © 2018, Institute of Advanced Scientific Research, Inc.. All rights reserved.

Author Keywords
Degradation; Energy consumption; Enhanced packet delivery; Extended Hyper Geometric Trust Factor-Based Markov Foresting Scheme (EHGTF-MFS); Packet delay; Selfish intent of node

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Abstract
The trust of mobile nodes in the ad hoc network is considered as the potential factor that need to be investigated for facilitating predominant network performance. This network performance influencing trust is degraded by the presence of intentionally behaving selfish nodes that does not forward data packets to their neighbourhood cooperative mobile nodes. These selfish nodes reduces the packet forward activity depending on its own energy level for conserving its energy in order to live active in the network. In this paper, a Skellam Distribution Inspired Trust Factor-based Selfish Node Detection Technique (SDITF-SNDT) is proposed for enforcing effective and efficient detection and isolation of selfishly behaving mobile nodes from the network. This proposed SDITF-SNDT initiates the process of selfish node detection by determining the mean packet deviation through which the standard deviation and variance is estimated for computing Skellam Distribution Inspired Trust Factor (SDITF). This SDITF computation aids in reliability estimation of nodes in order to categorize them into selfish and cooperative. The simulation experiments conducted for the proposed SDITF-SNDT approach confirmed excellence improvement in packet delivary rate and phenomenal minimizations in energy consumptions under increasing of mobile nodes in the network. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Mean Packet deviation; Packet delivery rate; Selfish Node Detection Technique (SNDT); Selfish nodes; Skellam Distribution Inspired Trust Factor (SDITF); Trust degradation

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Sasikumar, D.[a] , Saravanakumar, S.[b] , Saravanan, T.[c]

Analysis of security issues and safety measurements in high performance cloud computing systems
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Abstract
The scene of cloud computing has fundamentally changed in the course of the most recent decade. Not just have more suppliers and administration contributions swarmed the space, yet additionally cloud framework that was customarily restricted to single supplier server farms is presently advancing. In this paper, we right off the bat talk about the changing cloud foundation and consider the utilization of framework from different suppliers and the advantage of decentralizing computing far from server farms. These patterns have brought about the requirement for an assortment of new computing models that will be offered by future cloud foundation. These structures are foreseen to affect zones, for example, interfacing individuals and gadgets, information escalated computing, the administration space and self-learning frameworks. At long last, we spread out a guide of difficulties that should be tended to for understanding the capability of cutting edge cloud frameworks. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Cloud Computing; High Performance Architecture; Security Issues and Safety Measurements

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Gaswin Kastro, G.[a] , Wiselin, J.[b] , Sreeja, B.S.[c] , Malathi, T.[c]

Design of microstrip bandpass filter

(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (12), pp. 201-211.

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Abstract
Modern microwave communication systems demand low cost, high performance multiband bandpass filters which characterize low insertion loss, high selectivity and out of band rejection together with optimized size reduction especially in wireless communication system applications such as wireless local area network and global system for mobile communications. In order to achieve the above requirements, a single filter propose to design a microstripbandpass filter using stepped impedance resonator. On the basis of Quad band stepped-impedance resonator, a novel quad-band bandpassfilter is presented, which has a quad-band feature of four passbands at desired frequencies and high out of band suppression. The new coupling scheme can improve the performance of the BPF of the input and output, and the stepped impedance resonator helps reduce the size. A microstrip filter was designed and simulated, and proved the feasibility of design concept in an excellent way with insertion loss of 1, 1.2,1.2 and 1.2 dB at 1.94,3.6, 5.2and 6.8GHz, respectively. © 2018, Institute of Advanced Scientific Research, Inc.. All rights reserved.

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Sundaramoorthy, A.[a] , Wiselin, J.[b] , Sreeja, B.S.[c] , Manikandan, E.[c] , Renita, R.[c]

Narrowband tunable microstrip antenna
(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (12), pp. 219-225.

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Abstract
In this paper, narrowband tuning is achieved using PIN diodes. The circular patch antenna is fed by Coplanar Waveguide (CPW) feed. The circular patch is embedded inside a rectangular patch shaped slot. Two square slots of equal size are found on either side of the patch. The square slots can be either connected or disconnected to the rectangular slot by switching OFF or ON a pair of PIN diodes. The antenna can tune frequency in the range of 0.1 GHz between the WLAN frequencies 4.8 GHz, 4.9 GHz and 5 GHz. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Frequency reconfiguration; Microstrip antenna; PIN diodes; Wideband

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Design of compact reconfigurable ultra-wideband slot antenna with switchable single/dual band notch functions
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A reconfigurable wideband and multiband antenna using dual-patch elements for compact wireless devices
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Sundaramoorthy, A.[a] , Wiselin, J.[b] , Sreeja, B.S.[c] , Manikandan, E.[c] , Renita, R.[c]

Wideband to sub-band reconfigurable microstrip antenna
(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (12), pp. 212-218.

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Abstract
In this paper, wideband to sub-band frequency reconfiguration has been achieved in a simple and compact microstrip patch antenna. The antenna has a ground slot embedded with two PIN diodes. Based on the position and state of the PIN diodes in the ground slot, the resonance bandwidth of the antenna is varied. The antenna operates at a wideband of 4-12.4 GHz and can be reconfigured to operate in two sub-bands 4.2-7.2 GHz and 4-10.2 GHz. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Frequency reconfiguration; Microstrip antenna; PIN diodes; Wideband

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37°C in 5% CO2 humidified atmosphere. IL2 was harvested from the culture supernants while the cell pellets were used to isolate RNAs. mRNAs were isolated from activated spleen cells and reverse transcripted. The first strand cDNA was applied to PCR and the amplified 700-800 bp DNAs (2 bands) were directly cloned into the expression vector. Preliminary screening with SDS-PAGE yielded a positive result. The poliferative response of IL2-dependent T cell line, assessed by 3H-TdR incorporation, was used as an assay system for IL2 activity. *Supported by National Natural Science Foundation of China

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Muthu Kumar, S.[a] , John Wiselin, M.C.[b]

Review of high frequency resonant DC-DC power converters

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Abstract
The demand for high frequency power converters is rising due to the recent technological developments to achieve high efficiency and high power. Dc-dc power converters are used for power regulations and electrical isolation. The output voltage needs to be regulated using dc-dc converters in several applications for wide variations in the input voltage and the load. Electrical isolation is required in renewable energy applications to isolate source and the grid. Increasing the switching frequency reduces the size of the converter; however it also decreases the efficiency and impacts in the losses. This paper presents a review on high frequency high efficiency dc-dc power converters. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
DC-DC power converter; Power amplifier; Resonant frequency

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Chand, D.S.[a] , Vasthadu Vasu Kannah, D.L.[a] , Thanigaiarasu, S.[b] , Elangovan, S.[c]

Influence of perforated tabs on subsonic set control

(2018) *Emerging Trends in Engineering, Science and Technology for Society, Energy and Environment - Proceedings of the International Conference in Emerging Trends in Engineering, Science and Technology, ICETEST 2018*, pp. 423-432.

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Abstract
An experimental analysis has been carried out to examine the mixing encouraging effectiveness of tabs with circular perforation of different perforation diameters, 1.5 mm, 2 mm and 2.5 mm. The geometrical blockage offered by the perforated tabs, placed diametrically opposite, at the nozzle exit, were 8.42%, 7.55% and 6.42%, respectively, for perforation diameters 1.5 mm, 2 mm and 2.5 mm. The Mach along the jet central axis and Mach profiles in the directions along and tangential to the tabs were calculated at various axial locations. The results of the Mach 0.4, 0.6 and 0.8 jets studied show that the tab with 2 mm perforation is a better mixing promoter than 1.5 mm and 2.5 mm perforations, effecting in a core length decrement of 62% for Mach 0.6 jet. The corresponding reduction in core length for 1.5 mm and 2.5 mm holes are only 47.61% and 42% respectively. © 2018 Taylor & Francis Group, London.

Author Keywords
Mixing enhancement; Passive control; Perforated tab; Potential core

Index Keywords
Energy management, Engineering, Industrial engineering, Renewable energy resources; Axial locations, Central axis, Circular perforations, Experimental analysis, Mixing enhancement, Passive control, Perforated tab, Potential core; Mixing

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Documents

Chandrakumari, A.S.[a e] , Sinha, P.[b] , Singaravelu, S.L.D.[c e e] , Kumar, J.[d]

Effectiveness and significance of fine needle aspiration cytology in the diagnosis of thyroid swelling: A single institute experience in a series of 710 patients

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Abstract
Context: Thyroid swelling is a relatively common problem encountered in clinical practice throughout the world. Early detection of thyroid neoplasm is the fundamental basis of thyroid screening. A quest for ease, simple and accurate diagnostic tool that would differentiate between benign and malignant lesion has facilitated fine needle aspiration cytology (FNAC) as the first line tool in the initial thyroid evaluation. Aims: The study was aimed at classifying thyroid lesions according to the Bethesda System for Reporting Thyroid Cytopathology and to compare the diagnostic efficacy of fine needle aspiration cytology by correlating with gold standard histopathology. Settings and Design: This prospective cross-sectional study was conducted over a period of two years in a tertiary hospital, Kerala. Methods and Material: A total of 710 patients were included in the study. FNAC was performed and Staining was performed with Haematoxylin & Eosin (H & E), Papanicolaou and May-Grünwald Giemsa Stains. Diagnosis was made based on TBSRTC. Excision biopsies were fixed in 10% formalin. Statistical Analysis used: IBM Statistical Package for the Social Sciences Software version 21 was used to perform Pearson Chi-square test and Fischer Exact. Results: In this study 592 (83.4%) cases of non-neoplastic lesions, 111 (15.6%) cases of neoplastic lesions and seven cases were found unsatisfactory for diagnosis. FNAC showed high sensitivity and specificity in diagnosing neoplastic thyroid lesions and it showed high level of significance in diagnosing papillary thyroid carcinoma. Conclusions: FNAC is an excellent diagnostic tool in the management of thyroid lesions since it provides rapid diagnosis with high accuracy rate. © 2018, Red Flower Publication Pvt. Ltd.

Author Keywords
Bethesda system; Histopathology; Neoplasm; Papillary thyroid carcinoma

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Kumar, J.G.K.[a] , Venkatesh Babu, R.[a] , Arul Murugan, M.[b]

A reinforced coconut char, jute and glass fibers composite material mechanical effects compared by using taguchi method and analysis (Anova) technique

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Abstract
This research work explains the different mechanical effects of natural fiber composites to increase its strength and they were reinforced with different reinforcements. The matrix is considered as natural fiber matrix composites with coconut char; Jute and glass fiber composite materials were taken and give special properties for different applications in automobiles. Natural fiber composites have different advanced applications in current engineering materials. Hence the special properties like high strength, greater flexibility and abundantly available properties. With the help of different combination and proportions these materials were reinforced with different combinational materials were obtained for testing and selection of best combination material. The general properties for any material like mechanical properties of different reinforcements with different samples were tested and results were analyzed with the help of ANOVA and signal to noise ratio were found out by using MINITAB 18 Statistical software and results were compared. © 2018 J. G. K. Kumar et. al.

Author Keywords
Coconut char; Composite material; Jute and glass fiber; Natural fiber matrix; Natural fibers

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Venkatesan, M.[a] , Selvakumar Raja, S.[b]

Safety on highways by customizing vehicular ad hoc networks

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Abstract
In this paper, the Intelligent Transport Systems (ITS) is used for improving the road safety on highways. It is sharing information about traffic conditions to other vehicles (Vehicle to Vehicle Communications). This methodologies improvement is now available in vehicular ad hoc networks (VANET). The packet success prospect is acquired first for link of vehicles by fetching multiple users' disturbance, rout loses. By considering the delay constraints and types of possibility crash, the optimized channel access probabilities are approximated. Finally the current methodologies customizing the channel access probabilities in Vehicular ad-hoc networks. The NS2 simulation output denote the reduction of traffic crash possibilities difference with same channel access probabilities in optimal range, thus it has vast advantages in other non-ideal systems.
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Author Keywords
Bandwidth; Collision; MAC; Packet Delivery Ratio; Throughput; VANET

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Efficient fuzzy frequent pattern tree mining technique to predict chronic kidney diseases
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Abstract
Data mining is an important role in huge number of applications, which are manufacturing, aerospace, business organizations, government sectors, and medical industry. In the medical field, the data mining is mostly used for detecting disease and diagnoses. The medical analysis is performed in patients to explore the disease are enormous which results in huge data collection. However, in the large number of records some important data are missing. In a dataset, the presence of missing data is a common problem in statistical analysis and it degrades the performance of the classifier model while using the dataset as a training sample. The Weighted Average Ensemble Learning Imputation (WAELI) was proposed for filling the missing values in the clinical dataset by using single value imputation and multiple value imputation models. Furthermore, the priority-assigning algorithm was assigned along with WAELI to each feature (WAELI-FPA) for selecting the high priority features. In this paper, the performance of WAELI-FPA is further improved by modifying the classifier model such as mining fuzzy frequent pattern tree (MFFPT) and orthogonal partial least square (O-PLS) to achieve the optimal result. Initially, the O-PLS is efficiently performed in the reduction of missing valued after that allocating the priority to each feature in the clinical database. Second, the MFFPT is performed which is initially determined the frequent data and assigning fuzzy membership values then utilizing priority mechanism to predict the kidney disease. The performance of proposed model is tested in terms of accuracy, precision, recall and F-Measure. © 2018 S. Dilli Arasu, Dr. R. Thirumalaiselvi.

Author Keywords
Dataset; Missing Values; Statistical analysis and imputation

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Lalithamma, A.[a] , Vadivel, S.[b] , Johnson, W.[c] , Jacob, V.[d] , Chitra, T.[e]

Estimation of serum calcium in sub clinical hypothyroid females of different age groups in Kanchipuram population

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Abstract
Background: Thyroid hormones play an important role in the homeostasis of calcium and phosphorous levels. A person with thyroid dysfunction may exhibit symptoms that are owing to the alteration in calcium levels. Aim: To find out the calcium alteration in hypothyroidism with different age groups in Kanchipuram district. Methodology: In this study 40 patients with the age group of 20-60 y were taken. The parameters like TSH and Ca2+ were estimated with commercially available kits. Results: In our study out of 40 patients 18 patients with hypothyroidism had hypocalcemia, which constitute 45% (n=18) of the study had less serum calcium. Remaining 55% patients having normal calcium levels, In future it may develop hypocalcaemia. Discussion and conclusion: Total calcium levels in serum were found to be significantly lower in hypothyroid patients in all age groups. This study concluded that, in Kanchipuram district patients have low levels of serum calcium in hypothyroidism. S.Ca++ in hypothyroid people demonstrates a constructive connection between the S.Ca++ and serum TSH. These fluctuations of serum calcium ought to be considered in treating the patients with hypothyroidism by therapeutic experts. © 2018, Scientific Publishers of India. All rights reserved.

Author Keywords
Calcium; Subclinical hypothyroidism; Thyroid stimulating hormone

Index Keywords
calcium, thyrotropin; adult, age distribution, Article, calcium blood level, clinical article, cross-sectional study, descriptive research, female, human, hypocalcemia, India, subclinical hypothyroidism

Chemicals/CAS
calcium, 7440-70-2, 14092-94-5; thyrotropin, 9002-71-5

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Swaminathan, G.[a] , Sathiyamurthy, S.[b] , Naveenchandran, P.[c]

Role of non-consumable tool design on tensile properties of friction stir welded aluminium alloy joints
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Abstract
A solid state welding, like friction stir welding (FSW) is commonly suitable for joining dissimilar aluminium plates. A non-consumable revolving tool was used to induce heat and plastic distortion between abutting surfaces of the plates. This paper, presented the influence of tool revolving speed, axial force and weld transverse speed on tensile and impact strength properties were evaluated for the joint by using destructive test. The FSW has been done at tool revolving speed of 1000, 1100, 1200 rpm, weld speed of 30, 45, 60 mm/min and tool plunge force of 3, 4, 5 kN on dissimilar aluminium alloy AA7075 and AA6063 by two different tool profiles of Triangle and square. Better mixing of both aluminium alloy joints was achieved at lower welding transverse speed of 30 mm/min with high tool revolving speed of 1200 rpm. Also it is found that the use of the triangular profile of the tool gives better mechanical properties. The growth in mechanical properties is attributed to the maturation of fine grain and intermetallic compound in the weld region. Copyright © 2018 Inderscience Enterprises Ltd.

Author Keywords
Mechanical properties; Tool pin shape; Tool plunge force; Tool revolving speed; Weld transverse speed

Index Keywords
alloy, aluminum, design, force, mechanical property, shape, tensile strength, velocity, welding

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Lincy, G.[a] , Ponnavaikko, M.[b] , Anselm, L.[c]

Review of optimal siting and sizing techniques for distributed generation in the distribution system
(2018) *International Journal of Pharmaceutical Research*, 10 (4), pp. 80-83. Cited 3 times.

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Abstract
The installation of DG in the distribution system is challenging for the technical, economic and environmental aspects. The smaller scale generation technologies are developed for minimum cost and today's competition. The range capacities from a few kilowatts to 100MW. The optimal siting and sizing of DG in the distribution system improve the reduces the losses, improves the voltage and improve the economics of the system. However, to find the optimal solution for multi-objective problems, the different optimization methods are studied. This paper study the impact of DG onthe distribution system, Distributed generation, a different approach for optimal siting and sizing impact on utilities and the customers. © 2018, Advanced Scientific Research. All rights reserved.

Author Keywords
Distributed generation; Optimal siting and sizing

Index Keywords
economics, review, siting

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Subasree, S.[a] , Gopalan, N.P.[b] , Sakthivel, N.K.[c]

Smart multi-objective particle swarm optimizer for cancer patterns classification and prediction
(2018) *International Journal of Engineering Research and Technology*, 11 (4), pp. 661-674.

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Abstract
The Cancer Pattern Classification and Prediction Technique through Microarray is the one of the demanding research techniques in the research field of Bioinformatics. A lot of Multi-Objective based methods and Multi-Objective Optimization Methods have been developed recently to identify and predict Cancer Patterns. At the same time, for predicting and classifying cancer patterns, hundreds of thousands of Genes Expressions Pattern needed to study to recognize those Gene Expression patterns or Cancer Patterns. As Gene Patterns are complex, we need to employ an efficient Multi Objective Particle Swarm Optimization (MOPSO) Technique to predict Cancer pattern population effectively and efficiently. Recently an Enhanced Multi-Objective Pswarm (EMOPS) was developed by the authors and its classification accuracy was improved. However, we revealed through this work that the current Classifier EMOPS fails to update entire population during each and every iteration to predict the gene pattern (cancer pattern) and it is depending on Global Best Particles that is the major issue which needed to focus for improving the classification accuracy by considering Optimization quality and convergence speed as well. To address this issue, we developed a Smart Multi-Objective Particle Swarm Optimizer (SMOPSO), where Particles are updated based on Pairwise Competitions instead of updating Global best particles. This model is simulated and analyzed thoroughly. The simulated work helps this research work to establish that the developed SMOPSO outperforms the EMOPS classifiers with regard to Convergence and Diversity on bi-objective ZDT 1 and ZDT 3, Execution Time (Processing Time), and Classification Accuracy. © International Research Publication House.

Author Keywords
Cancer pattern classification; Competitive swarm optimizer; Convergence analysis; Gene expression; Microarray; Multi-objective optimization

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EMOPS: An Enhanced Multi-Objective Pswarm based Classifier for Poorly Understood Cancer Patterns
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Sakthivel, N.K.[a] , Gopalan, N.P.[b] , Subasree, S.[c]

G-HWRF: Gene signature based hierarchical weighted random forest clustering technique for high dimensional human disease data sets

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Abstract
Many Human Diseases are not taking place or occurring due to Gene only and instead diseases have occurred due to interact with various genomes together and this is causing diseases. Hence it is needed for analysing the entire genome sequences thoroughly for understanding the interactions that will help us for predicting various patterns of human diseases. A few Gene Signature based Clustering Techniques namely i. Hierarchical-Random Forest based Clustering (HRF-Cluster), ii. Genetic Algorithm-Gene Association Classifier (GA-GA) and iii. Weighted Common Neighbor Classifier (wCN) have been proposed recently by Researchers to predict the gene patterns of Diseases. This research work previously developed a Gene Signature based Hierarchical-Random Forest Cluster(G-HRF Cluster) and achieved better performance compared to the above mentioned Classifiers. However, from the experimental study, it is observed that G-HRF Cluster unable to maximize Classification Accuracy when very High Dimensional Data Sets used and analysed for Diseases Pattern Prediction. To address this issue, this paper proposed an efficient model called Gene Signature based Hierarchical Weighted Random Forest Clustering Technique (G-HWRF). That is the proposed model will construct weighted matrix from Hierarchical Weighted Random Forest, which will minimize Misclassification Rate. This Model was simulated and carefully studied. This research work revealed from its experimental results that the proposed Clustering Technique G-HWRF is performing well compared to that of our previous work G-HRF Cluster with regard to Accuracy Disease Pattern Classification/Prediction Memory Usage Processing Time. © International Research Publication House.

Author Keywords
Gene association; Genetic algorithm; Hierarchical clustering and weighted random forest; Human genome prediction

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Abstract
Background & Objective: Acute Myeloid Leukemia (AML) is characterized by the accumulation of ≥20% myeloid premature blast cells in the bone marrow and they are most often found in the peripheral blood. AML is generally classified based on either French-American-British (FAB) or World Health Organization (WHO) systems. For better clinical management, cytogenetic finding in AML is necessary and in patients with normal karyotypes-molecular, epigenetic and proteomic biomarkers are very important in choosing which drugs to prescribe. Mutations of certain genes like NPM1, FLT3, CEBPA, RUNX1 and MLL play a crucial role in the risk management and clinical stratification of AML patients. We reviewed the literature for the current trends of clinical practice based on laboratory based diagnostic tests in AML. Outcome and Result: We listed in AML chromosomal aberrations (translocations, fusions or RUNX1, CBFB, MYHI1, MLL, EVI1, PML-RARA), genes and mutations (NPM1, FLT3, CEPBA, MLL) epigenetic factors (DNMT34, TET2) and proteomic biomarkers (PTP, PTK, PIP) and analysed how on the basis of these factors medical risk was stratified and accordingly managed. Conclusion: AML is genetically and functionally a heterogenous malignant disease. In the western world, leukemia is one of the most common among all cancers. India is ranked 3rd in cancer disease after United States of America and China. Cytogenetic analysis, molecular/proteomic biomarkers and epigenetic factors assist in determining the management strategies and prognosis of the disease. A number of targeted drugs in pre-clinical and clinical trials based on molecular factors and epigenetic mechanisms have been reported to have promising results in AML patients. © 2018 Bentham Science Publishers.

Author Keywords
Acute myeloid leukemia; CEBPA; Cytogenetics; FLT3; Gene mutation; Molecular biomarkers; NPM1

Index Keywords
biological marker, CCAAT enhancer binding protein, CCAAT enhancer binding protein alpha, CD135 antigen, core binding factor, cytarabine, epidermal growth factor receptor, fibroblast growth factor receptor 1, histone lysine methyltransferase, isocitrate dehydrogenase, Janus kinase 2, MDS1 and EVI1 complex locus protein, mixed lineage leukemia protein, nucleophosmin, protein tyrosine kinase, protein tyrosine phosphatase, protein tyrosine phosphatase SHP 2, transcription factor, transcription factor RUNX1, tumor marker; acute myeloid leukemia, allogeneic stem cell transplantation, cancer classification, cancer prognosis, cancer risk, cancer therapy, cell proliferation, chromosome analysis, chromosome rearrangement, clinical trial (topic), consolidation chemotherapy, cost benefit analysis, epigenetics, French American British system, gene fusion, gene mutation, gene translocation, genetic analysis, genetic transcription, health economics, human, karyotype, molecular genetics, morbidity, prevalence, proteomics, renin angiotensin aldosterone system, Review, risk factor, survival rate, tumor growth, world health organization, acute myeloid leukemia, cytogenetics, female, genetics, male, procedures, prognosis; Cytogenetics, Female, Humans, Leukemia, Myeloid, Acute, Male, Prognosis, Proteomics

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Efficient wireless sensor network with enhanced-omra routing algorithm with low OFDM papr
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Abstract
In modern scenario, government and other agencies are using Wireless Sensor Networks (WSN) in different sectors like defense, society, roads, forest, railway etc. Due to existing node failure, energy consumption problems in WSN, its very complicated to deploy denser node network which is the current age requirement. Sensor nodes usually work on battery-powered source with manual intervention and it is a very tedious and time consuming task in forest and defense areas. Hence, it becomes a necessity to reduce energy consumption of sensor, it will also increase energy lifetime. Many algorithms like Radio Aware (RA), Distance Source Routing (DSR) and directed Diffusion (DD) could not solve problems like network connectivity & asymmetric links. To overcome this problem Optimized Mobile Radio Aware (OMRA) technique is demonstrated in this paper. OFDM (Orthogonal Frequency Division Multiplexing) is wireless communication system which is used for node to node communication in WSN. Hybrid system is proposed here by adding PAPR reduction algorithm for improving BER efficiency. © IAEME Publication.

Author Keywords
OMRA; Wireless sensor networks

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Documents

Kumar, P.J.S.[a] , Kannan, R.J.[b]

Real time symptomatic analysis for efficient disease prediction and recommendation generation using multi level symptom similarity measure

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Abstract
The problem of high dimensional clustering and classification has been well studied in previous articles. Also, the recommendation generation towards the treatment based on input symptoms has been considered in this research part. Number of approaches has been discussed earlier in literature towards disease prediction and recommendation generation. Still, the efficient of such recommendation systems are not up to noticeable rate. To improve the performance, an efficient multi level symptom similarity based disease prediction and recommendation generation has been presented. The method reads the input data set, performs preprocessing to remove the noisy records. In the second stage, the method performs Class Level Feature Similarity Clustering. The classification of input symptom set has been performed using MLSS (Multi Level Symptom Similarity) measure estimated between different class of samples. According to the selected class, the method selects higher frequent medicine set as recommendation using drug success rate and frequency measures. The proposed method improves the performance of clustering, disease prediction with higher efficient medicine recommendation. © 2018 Authors.

Author Keywords
Disease prediction; High dimensional clustering; Map reduce; MLSS; Recommendation; Symptoms

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Performance scaling ofwireless sensor network by using enhanced OMRA routing algorithm
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Abstract
In modern scenario it has become inherent to employ of Wireless Sensor Networks (WSN) for government and other sectors including defense. Sensor networks can be employ in society, industries, military areas, roads, forests, etc. In a traditional networks it becomes complicated to employ denser node deployment and other problems, e.g., node failure, energy consumption and asymmetric are also prominent. Sensor nodes usually works on battery-powered source and these nodes do not operate for longer timewithout anymanual intervention and it is a very tedious and time-consuming task in forest and defense areas. Hence, it becomes a necessity to reduce energy consumption of sensor, it will also increase energy lifetime. Traditional algorithms like Radio Aware (RA), Distance Source Routing (DSR) and Directed Diffusion (DD) do not solve problems like network connectivity and asymmetric links. To overcome this problem Optimized Mobile Radio Aware (OMRA) technique is demonstrated in this paper. © Springer Nature Singapore Pte Ltd. 2019.

Author Keywords
Directed diffusion (DD); OMRA; Wireless sensor networks

Index Keywords
Energy utilization, Forestry, Network security, Problem solving, Radio links, Routing algorithms, Wireless sensor networks; Asymmetric links, Battery powered, Directed diffusion, Network connectivity, Node deployment, OMRA, Reduce energy consumption, Time-consuming tasks; Sensor nodes

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Performance evaluation of double-output luo converters
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Abstract
The micro-power-consumption technique requires high power density DC/ DC converters and power supply sources. The voltage lift technique is a popular application in electronic circuit design. The power converter performs DC-DC step-up voltage conversion with high efficiency, high power density and cheap topology in a simple structure. The objective of this work is to develop PI controller for Elementary circuit of P/O and N/O push-pull switched capacitor Luo converters to ensure constant load voltage under supply and load disturbances using MATLAB/MULTISIM software. The simulation results are presented and evaluated. © 2018, Institute of Advanced Scientific Research, Inc.. All rights reserved.

Author Keywords
DC-DC converter; Luo converter; PI controller

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Srinivasan, S.[a] , Thirumalaivasan, K.[b] , Sivakumaran, T.S.[c]

Implementation of 7-level symmetric multilevel inverter using minimum switches with PI-controller
(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (10 Special Issue), pp. 879-886.

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Abstract
This paper presents an implementation of 7-level symmetric Multilevel Inverter (MLI) using minimum switches with PI-controller for Renewable Energy Source (RES) based applications. MLIs available in the literature have more features inturn more switches. The system with more switches would not opt for wide range applications. To rectify the problems in existing systems a 7-level MLI with reduced number of switches using carrier based PWM techniques proposed in this paper. The performance parameter, Total Harmonic Distortion (THD) is analyzed with reduced Switching loss, size and cost. The system is developed using MATLAB-SIMULINK and shows the effectiveness of the proposed strategies. © 2018, Institute of Advanced Scientific Research, Inc.. All rights reserved.

Author Keywords
Multilevel inverter; PI controller; Renewable energy source; Total harmonic distortion

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Lincy, G.[a] , Ponnavaikko, M.[b] , Lenin Anselm, W.A.[c]

The economic benefit analysis to the consumer and utility due to PV generation connected to the radial distribution system

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Abstract
During the recent past, the interest towards adoption of Distributed Generation (DG) has increased dramatically among the electric power system utilities. It has been well established that installation of PV Generation at the load points in a distribution system is excellent advantages for both consumers and the utilities. The question arises whether the maximum beneficiary is the Utility or the consumer and who has to bear the cost. This research analyses the economics of the DG with PV Systems, taking a typical 400V distribution system. A detailed procedure adopted for performing the economic analysis is presented in this paper. Benefits considered includes Saving in the energy losses, Energy substitute by the PV system, Capacity release in the Feeders and the Transformer. The PV system is installed at the selected consumer load points, based on the size and location of the loads. Discounted Cash Flow technique is used to assess the economics of the system, by computing the Internal Rate of Return. The paper presents the advantages of using PV Generating systems in the Power Distribution System, quantifying economic benefits both for the Utilities and for the Customers with supporting data. © 2018 G. Lincy et.al.

Author Keywords
Discounted cash flow; Distributed Generation (DG); Distribution system; IRR; Micro grid; Photovoltaic(PV); Smart grid

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Geetha, R.[a] , Sivakumaran, T.S.[b]

Steady state stability of fuzzy gain scheduled pi based fourth order resonant power converter with capacitive output filter converter using state space approach

(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (10 Special Issue), pp. 836-846.

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Abstract
DC-DC power conversion used in industry and various applications where the demand for compact power supplies grows significantly. Conventional DC-DC converters have relatively poor voltage regulation. However, the resonant DC-DC converters have numerous advantages for DC-DC power conversions with various combinations like LCC, LCL, and LCLC, etc. This paper focuses on selecting the best topology by considering based on the performance. Based on the analysis a fourth order Resonant Power Converter (LCLC) topology is selected, and the steady state stability of the converter is analysed using state space approach. To improve the performance of the proposed DC-DC resonant converter closed loop control is implemented using PI and fuzzy controller, performance parameters like efficiency, settling time, rise time, and steady-state error is estimated by simulation software in MATLAB/Simulink. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
DC-DC resonant converter; Fuzzy gain scheduled PI controller; LCLC resonant tank; PI controller; State space approach

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Alive node and network lifetime analysis of DEEC protocol and EDDEEC protocol
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Abstract
Wireless device networks (WSNs) were envisioned to wind up the fabric of our condition and society. Be that as it may, they cannot beat a few operational troubles, for illustration, the constrained framework time outline, which chokes their summed up availability. To broaden the time of the WSN, the more prominent portion of the otherworldly gathering plans are orchestrated towards the non-enhanced WSN. This article shows the subject enhanced developed distributed energy-efficient clustering (EDDEEC) for heterogeneous WSN. EDDEEC comprises basically of 3 portions, that is, heterogeneous framework appear energy consumption model, and Clustering-based on routing mechanism. Our heterogeneous framework show depends on 3 centers imperativeness levels. Or maybe than most works, our imperativeness show considers the impact of the radio's environment. At long final, EDDEEC's expected gathering component changes the probability of choosing a bunch header in a money related and energetic way Simulation results validate and ensure the performance domination of EDDEEC compared to existing schemes in terms of varied metrics like network life. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
DECC; EDDECC; MATLAB; Network life time; WSN

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Neuroprotective effect of agaricus blazei extract against rotenone-induced motor and nonmotor symptoms in experimental model of Parkinson's disease

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Abstract
Introduction: In our earlier studies, we reported that rotenone-induced mitochondrial dysfunction, oxidative stress, and apoptosis in the brain of mice have been protected through treatment with Agaricus blazei (A. blazei) extract. The present study is focused on the efficacy of A. blazei in the mitigation of motor and nonmotor symptoms induced by rotenone. Materials and Methods: Mice were randomly divided into four groups and treated with rotenone and simultaneously with A. blazei. Results: Rotenone treatment altered both the motor and nonmotor behavioral deficits as compared to controls. Concurrent treatment with rotenone and A. blazei significantly restored these behavioral deficits. Conclusion: The results of the present study strengthen the fact that the nutritional supplement of A. blazei extract in rotenone-affected areas might offer the neuroprotection. © 2018 International Journal of Nutrition, Pharmacology, Neurological Diseases | Published by Wolters Kluwer - Medknow.

Author Keywords
Motor and nonmotor symptoms; Parkinson's disease rotenone A. blazei

Index Keywords
Agaricus blazei extract, rotenone; akinesia, animal experiment, animal model, Article, behavior disorder, catalepsy, controlled study, drug efficacy, drug synthesis, elevated plus maze test, forced swim test, locomotion, male, motor dysfunction, mouse, movement (physiology), neuroprotection, nonhuman, Parkinson disease, sucrose preference test

Chemicals/CAS
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Lalithamma, A.[a] , Vadivel, S.[b] , Johnson, W.[c] , Jacob, V.[d] , Chitra, T.[d]

Effect of nerve conduction studies in hypothyroidism - An observational study
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Abstract
Objective: This observational study was conducted during the year 2016–2017 to assess the electrodiagnostic evidence of peripheral nerve dysfunction among newly diagnosed hypothyroid patients attending a tertiary care hospital and to find the effect of hormonal treatment after short duration. Methods: An observational study was conducted in 25 newly diagnosed hypothyroid patients with the age group of 20–60 were included. After obtaining informed consent, all participants were examined with electrodiagnostic workup performed at the initial time of diagnosis and after short duration for median and ulnar nerves of upper limb by (NeuroStim-NS2, EMG/EP/NCV, and MEDICAID SYSTEMS). Electrophysiological parameters such as distal motor latency, amplitude, and conduction velocity were evaluated. Results: The mean age of study population was 42.7±12.1 (23–61) years. The mean values of nerve conduction velocity of motor and sensory median before the treatment were 42.8±15.7 and 40.13±4.19 and motor and sensory ulnar before treatment were 41.18±22.4 and 39.46±11.9. The mean values of nerve conduction velocity of motor and sensory median after treatment were 53.35±4.7 and 57.3±5.6 and motor and sensory ulnar After treatment were 54.56±2.99 and 54.09±12.17. The result of the study. Shows that there were reduction of conduction velocity before treatment and statistically significant after 3 months duration of treatment with appropriate doses. Conclusion: After treatment, total triiodothyronine, total thyroxin, free triiodothyronine, free thyroxin, thyroid-stimulating hormone, and median and ulnar nerve motor and sensory functions were normal with appropriate treatment. The involvement of sensory fibers is more than that of the motor fibers. © 2018 The Authors. Published by Innovare Academic Sciences Pvt Ltd.

Author Keywords
Hypothyroidism; Median nerve; Motor nerve conduction; Sensory nerve conduction; Thyroid-stimulating hormone; Ulnar nerve

Index Keywords
liothyronine, thyrotropin, thyroxine; adult, Article, clinical article, controlled study, distal motor latency, electrophysiology, female, human, hypothyroidism, informed consent, latent period, liothyronine blood level, male, motor nerve conduction, observational study, population research, room temperature, sensory nerve conduction velocity, thyrotropin blood level, thyroxine blood level, treatment duration

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Abstract
Functional Magnetic Resonance Imaging (fMRI) is a non-invasive method for investigating the structure and function of the brain. Using fMRI, brain functions and areas responsible for the particular activities are investigated. The objective of the image processing methods using fMRI is to investigate the functional connectivity. To localize mental functions of specific brain regions and to identify the brain regions, those are activated simultaneously. Correlation and cross-coherence of the time series of the pixels are used for the detection of functional connectivity in fMRI images for the different motor movements (upper and lower limb movement and finger tapping action). The methodology was applied to three groups (six subjects) consisting aged between 10 and 75 years: (1) Normal and healthy subject performing finger tapping actions, (2) brain tumour patient performing lower limb movement (LL), and (3) brain tumour patient performing upper limb movements (UL). The threshold applied for the cross-correlation is 5000. Similarly, the threshold applied for cross-coherence and power parameters is in the range of (0.6–0.9). The algorithm implemented is found to be non-destructive, and there is no loss of temporal or spatial data. The result shows that for the normal subject, functionally connected pixels are more as compared to the brain tumour patients. © 2018, Springer Nature Singapore Pte Ltd.

Author Keywords
Cross-coherence; Cross-correlation; Discrete cosine transform; fMRI; Functional connectivity; Time series

Index Keywords
Artificial intelligence, Brain, Discrete cosine transforms, Image processing, Magnetic resonance imaging, Noninvasive medical procedures, Pixels, Time series, Tumors; Cross correlations, Cross-coherence, fMRI, Functional connectivity, Functional magnetic resonance imaging, Image processing - methods, Noninvasive methods, Robust estimation; Functional neuroimaging

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Abstract
Every day risk of cardiovascular diseases is increasing in young adults. Now researchers are working on study related to a single bio-signal for prediction of maximum physiological parameters. One of such a bio-signal is photoplethysmogram (PPG). Non-invasive measurement of blood volume change is carried out by using PPG. PPG captured from a cranial site is known as cranial photoplethysmogram (CPPG). Most of the time various bio-signals acquired from the brain are used to study only the brain-related disorders. Near-infrared spectroscopy-based sensor used to record CPPG from frontal region can be used to predict heart rate, oxygen saturation, blood pressure, cardiac output and respiration rate. This paper explains the design specifications of sensor used and study of various time and amplitude indices of differentiated CPPG signal. Authors have studied two levels of differentiation of CPPG obtained by applying MATLAB-based algorithm. Features obtained from differentiated CPPG signal are compared with the standard available values to check the feasibility of this brain signal in the prediction of vascular health. The study was carried out on 19 healthy subjects aged between 19 and 30 years. Our results showed that the optical brain signal used to study hemodynamic changes in brain can also be used for the prediction of vascular health. © 2018, Springer Nature Singapore Pte Ltd.

Author Keywords
Acceleration photoplethysmogram; Cranial photoplethysmogram; Near infrared spectroscopy; Optical sensor; Vascular health and velocity photoplethysmogram

Index Keywords
Artificial intelligence, Blood pressure, Forecasting, Health, Hemodynamics, Infrared devices, Near infrared spectroscopy, Optical sensors, Physiological models; Cardio-vascular disease, Design specification, Healthy subjects, Hemodynamic changes, Non- invasive measurements, Oxygen saturation, Photo-plethysmogram, Physiological parameters; Musculoskeletal system

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A review of materials used in maxillofacial prosthesis - part 2
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Abstract
Various maxillofacial prosthetic materials have been instrumental in the rehabilitation of maxillofacial defects created by disease or trauma. This is the second part of a two-part article reviewing materials used for fabrication of the maxillofacial prosthesis. While the first part dealt with classification, properties, ideal requirements, and also reviewed in detail some of the materials, this article discusses the widely used silicone elastomers as a maxillofacial prosthetic material. © 2018, JPR Solutions.

Author Keywords
Facial defects; Maxillofacial prosthesis; Rehabilitation; Silicones

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biomaterial, copolymer, dimeticone, polyurethan, silastic, silicone, siloxane; classification, hardness, high temperature procedures, human, maxillofacial disorder, polymerization, Review

Chemicals/CAS
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Hash tag based topic modelling techniques for twitter by tweet aggregation strategy

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Abstract
Social networks such as Twitter, Face book, Linked In etc are one of the major sources of information generator which is accepted by wide spectrum of user worldwide undoubtedly. Twitter is an social networking service where user interact and post messages known as tweets. The twitter messages are now restricted to 280 characters very recently. Understanding the characteristic of the content paved a way to number of research challenges in the spectrum of personalized recommendation system, topic detection, sentiment analysis etc. To address the problem of using standard topic Model for tweet environment, the strategy of aggregating the tweets to form a pseudo document came into existent. In this work, amongst the various other aggregating strategies of tweets, pooling the tweets by Hash tags are considered because they outperform considerably when compared to the baseline state of art methods. Mainly the tweets are pooled to avoid data sparsity problem. The goal of this work is to apply the standard LDA and ATM technique on the pooled data and to compare the metric obtained to differentiate the performance of the model. The various model metrics that are needed to evaluate the models are precision, Recall, F-measure, Perplexity, PMI, purity etc. The metrics that are measured are precision, Recall, F-measure, Perplexity, PMI, Running time. The results clearly states that running time for hashtag-LDA are minimal when compared to hashtag-ATM. The values for precision, Recall, F-measure for hashtag-LDA are high when measured for hashtag-ATM. Perplexity measure obtained for hashtag-LDA are higher which clearly states that the model works very well when compared with hashtag-ATM and un pooled tweets. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
F-measure; Perplexity; PMI; Pooling; Precision; Recall

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Nimala, K.[a] , Thenmozhi, S.[a] , Thamizh Arasan, R.[b]

A study to analyze the performance of supervised machine learning classifiers
(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (3), pp. 1114-1118.

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Abstract
On the rise exponentially, machine learning is adopted by various organizations across various domains to crunch petabytes of data to deliver more meaningful conclusions and predictions. With machine learning, it's become quite possible to transform a wide variety of industries, in this complicated world. A category of machine learning algorithms called as classifiers, have found wide spread use in processing the large datasets efficiently. Classifiers are applied to big datasets through supervised learning methods. Though there exists huge number of classifier algorithms, it is important to apply some intelligence in careful selection of algorithms, to deliver excellent business intelligence. In order to select a more suitable classifier algorithm for a problem, it is important to analyze the performance of classifiers based on certain parameters and different datasets. In this paper, we analyzed variety of classifiers from the perspective of performance measures such as Precision, Recall, Mean Absolute Error, and Root Mean Square Error pertaining to two different datasets using WEKA. Also, in the conclusion we present the findings from analysis of performance of classifiers. © 2017 Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Classifiers; Machine learning; Precision; Recall; Supervised; WEKA

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Jayalakshmi, G.[a] , Swathi, S.[a] , Naveen Kumar, C.[a] , Srikumar, R.[b] , Vijayakumar, R.[c] , Manikandan, S.[e] , Manoharan, A.[d] , Chidambaram, R.[b]

Drinking water stored in copper vessel - reveals antibacterial activity

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Abstract
Introduction and Aim: Recently About 2.2 million diarrheal deaths per year especially in developing countries, in which 1.4 million deaths among children under age five. Safe drinking water, especially in developing countries, is still a major problem. The present study was designed to explore the antibacterial effect of copper vessel stored with drinking water inoculated with diarrhea-causing bacterial strains enterotoxigenic Escherichia coli (ETEC), Vibrio cholera and Shigella flexneri. Materials and Methods: The bacterial strains isolated from fecal sample, identified by colony morphology and biochemical test. About 500 Colony Forming Unit (CFU/mL) of the bacterial strains of E. coli, V. cholera and S. flexneri were inoculated separately in drinking water stored in the copper vessel and non- copper vessel for 12 hrs. After incubation 100 µL of samples was taken from each copper vessel and non-copper vessel container and spread on nutrient agar for the enumeration of bacteria colonies. After 24hrs of incubation at 37°C, dishes were observed for visible bacterial colonies using colony counter. Results: The bacterial strains E. coli (ETEC) (532 CFU), V. cholera (502 CFU) and S. flexneri (512 CFU) was inoculated in copper vessel observed no growth on the selective media and when the bacterial strains inoculated in the non-copper vessel observed growth upon inoculated in selective media E. coli (ETEC) (624 CFU), V. cholera (328 CFU) and S. flexneri (483 CFU). Conclusion: The antibacterial activity may be due to the oligodynamic effect of copper which destroy the cell wall and cell membrane results in membrane damage. The present study recommends the use of cost-effective copper vessels to store drinking water especially in rural areas for protection from water-borne infection. © 2018 Indian Association of Biomedical Scientists. All rights reserved.

Author Keywords
Copper vessel; Diarrheal; Drinking water

Index Keywords
copper, drinking water; antibacterial activity, Article, bacterial growth, bacterial strain, bacterium colony, bacterium culture, biochemical analysis, colony forming unit, controlled study, diarrhea, enterotoxigenic Escherichia coli, female, human, India, nonhuman, rural area, Shigella flexneri, Vibrio cholerae

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Jegannathan, D.[a] , Indiran, V.[b]

Magnetic resonance imaging of classified and unclassified Müllerian duct anomalies: Comparison of the American Society for Reproductive Medicine and the European Society of Human Reproduction and Embryology classifications

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Abstract
Magnetic resonance imaging (MRI), due to its optimal delineation of anatomy, has become the mainstay in imaging for diagnosing Müllerian duct anomalies (MDA). Pelvic MRI is requested for various conditions such as primary amenorrhoea, infertility or poor obstetric history with regard to MDA, as identifying the exact aetiology for these conditions is vital. Knowledge regarding the classification of MDA is important, as the treatment varies with respect to the different classes. As all the lesions do not fit within the classification of the American Society for Reproductive Medicine, a new anatomy-based classification was established by the European Society of Human Reproduction and Embryology and the European Society for Gynecological Endoscopy, to fulfil the needs of experts. We aim to discuss various classes of classified and unclassified MDA with regard to both the above-mentioned classifications and illustrate some of them using various cases based on pelvic MRI studies. © 2018. The Authors.

Index Keywords
anatomy, article, embryology, endoscopy, female, human, nuclear magnetic resonance imaging, reproduction

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Magnetic resonance imaging of classified and unclassified Müllerian duct anomalies: Comparison of the American Society for Reproductive Medicine and the European Society of Human Reproduction and Embryology classifications

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Abstract
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Documents

Srinivasan, S.[a] , Sivakumaran, T.S.[b]

Performance evaluation of multiple lift Push-Pull LUO converters for automotive applications
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Abstract
Solar energy power generation has several advantages such as low maintenance costs; environment friendly, no rotating parts in con-struc-tion gives no noise. In recent years, solar power is used to charge the batteries of electric vehicles and instead of internal combus-tion En-gines the Electric motors such as DC motors, Brushless DC (BLDC) motors are used for driving the vehicles. The Multiple Lift Push-Pull Luo (MLPPL) converter is a DC-DC converter, which combines both switched capacitor and voltage lift techniques. Further, the MLPPL converters can be used in high power density, high power efficiency and voltage transfer gain applications. In this work, a MLPPL convert-er integrated with voltage source inverter (VSI) loading BLDC motor drive for automotive applications have been pro-posed. Further, the simulation of the proposed design has been carried out using MATLAB/Simulink Software. The torque of the BLDC motor has been varied and the performance of the MLPPL converter has been analyzed. Results demonstrate that the proposed design is capable to operate over a wide range of torque, which fulfills the application of Electric Vehicle. © 2018 S. Srinivasan, Dr. T. S. Sivakumaran.

Author Keywords
BLDC motor; DC-DC converter; Push-Pull Luo converter switched capacitor; Torque-speed

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Documents

Balaji, V.[a] , Ravi, S.[b] , Naveen chandran, P.[c]

Finite element model based On 2D-deform software for the analysis for cutting temperature, and cutting forces in cryogenic CO2 coolant in conventional machining

(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (2), pp. 1017-1031.

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Abstract
Metal cutting is the real assembling operation today in perspective of the financial hugeness. A major learning of the metal slicing process is basic to discover ideal conditions and grow new cutting gear. Explanatory and numerical models can be derived from this basic information to foresee factors of enthusiasm for expanding process proficiency and part quality. The present work gives a procedure to decide the stream worry at high distortion rates and temperatures that are experienced in the cutting conditions by utilizing Finite Element models with a specific end goal to recreate metal cutting procedures. FEM based models are exceptionally basic in foreseeing chip development, figuring powers, dispersions of strain, strain rate, temperature, and weight on cutting zone. Johnson Cook's model gave consistent incentive for every single material and stream stretch condition by utilizing SHPB test. By an option test, for example, Orthogonal test, tractable test and influence utilization of Oxley's investigation to stream stretch figured physically contrasted and JC's stream stress and examination got fluctuated directly, thus demonstrated that by an other test stream stress will be ascertained. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Constitutive models; Cryogenic machining CO2; FEA-2D deform software

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Documents

Bhoominathan, R.[a] , Divyabarathi, P.[b] , Manimegalai, R.[a] , Nithya, T.[a] , Shanmugapriya, S.[a]

Infra-red thermography based inspection of hybrid composite laminates under flexure loading
(2018) *International Journal of Vehicle Structures and Systems*, 10 (1), pp. 6-9. Cited 1 time.

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Abstract
Generally, the aircraft structural parts are economically high in cost so the materials need to be inspected for defects or damages using various non-destructive testing (NDT) methods like ultrasonic, thermography and acoustic emission. The aim of this project is to characterize the defects in composite laminates before and after the flexural loading using infra-red thermography NDT method. GFRP and hybrid (GFRP+CFRP) composite laminates are fabricated with different orientation such as uni-directional, cross ply, anti-symmetric and angle ply and then tested under flexural loading according to ASTM D790 standard. The volume fraction of the fibre and matrix needs to be found out to know the void content and the mixing ratio of reinforcement and binder. © 2018. MechAero Foundation for Technical Research & Education Excellence.

Author Keywords
Delamination; Flexural test; Glass fibre reinforced plastic; Infra-red thermography; Non-destructive testing

Index Keywords
Aircraft materials, Bridge decks, Defects, Delamination, Fiber reinforced plastics, Glass fiber reinforced plastics, Laminated composites, Materials testing, Reinforcement, Thermography (imaging), Ultrasonic testing; Aircraft structural parts, Anti-symmetric, Composite laminate, Flexural loading, Flexural tests, Hybrid composite laminate, Non destructive testing, Void contents; Acoustic emission testing

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Divyabarathi, P.[a] , Anand, D.[a] , Richards, S.P.[a] , Chand, D.S.[b]

Performance of circular to non circular shape scramjet isolators
(2018) *International Journal of Vehicle Structures and Systems*, 10 (1), pp. 14-17.

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Abstract
This paper details the influence of geometry variation such as shape transition of the isolator from its entry to exit on overall performance of scramjet isolators. The experiments are conducted to assess the performance of two isolator geometries of circle to pentagon and circle to hexagon. The pseudo shock length is obtained for the two cases by observing the sudden pressure rise in pressure plots taken along the wall. It is found that the shock train length is shorter for circular to pentagon duct compared with the other duct. Hence, this duct is preferable in order to prevent inlet non-start induced by the pressure rise in the combustion chamber. © 2018. MechAero Foundation for Technical Research & Education Excellence.

Author Keywords
Efficiency; Performance; Pressure; Scramjet isolator; Shape; Shock train

Index Keywords
Combustion chambers, Ducts, Efficiency, Pressure, Ramjet engines; Geometry variations, Performance, Pressure rise, Pseudo-shock lengths, Scramjet isolator, Shape, Shape transitions, Shock train; Geometry

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Ramakrishna, M.[a] , Syedhaleem, M.[b] , Divya, C.[a] , Gurunathan, A.[a]

Flow characteristics over a missile at higher angle of attacks using experiments and simulation
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Abstract
The need to determine forces and moments acting on bodies of revolution at high angles of attack originally arose in connection with airships. In general missile aerodynamics is dominated with vertical and separated flows. The advent of highly manoeuvrable missile design concepts has required a major effort in understanding the problem of slender bodies of revolution at high angles of attack. An extensive experimental investigation was conducted to determine the aerodynamic forces and moments. The aerodynamic data are needed to establish the structural and control system requirements. Tests were conducted on a smooth missile model with several interchangeable nose parts in a wind tunnel at subsonic level at high angle of attack. The yaw moments and side forces are determined using force measuring systems by which maximum induced side force was found. Using oil flow visualization technique, vortex shedding location and vortex strength were traced at various angles of attack. Computational analysis was carried out for the cone, elliptical and ogive nose shapes. It is then compared with the experimental results to know where the least flow separation occurs and proper reasons for the side forces. © 2018. MechAero Foundation for Technical Research & Education Excellence.

Author Keywords
Angle of attack; Computational fluid dynamics; Missile; Subsonic flow; Wind tunnel

Index Keywords
Angle of attack, Computational fluid dynamics, Flow separation, Missiles, Subsonic flow, Vortex flow, Wind tunnels; Computational analysis, Experimental investigations, Flow charac-teristics, Force measuring systems, High angle of attack, High angles of attack, Oil flow visualization, System requirements; Bodies of revolution

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Siva Shankar, S.[a] , Rengarajan, A.[b]

Firefly optimization security enhancement using optimal key encrypted exchange in steganography
(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10, pp. 281-290.

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Abstract
Steganography is the art and science of secretly embedding the data inside a statistics source without converting its perceptual quality which can be executed to prevent unauthorized access to computers, large databases, online facts and additionally protects the data from corruption. To increase the ability of the concealed secret information and to provide an imperceptible stego-image and increase the security of the secret image a new irreversible steganography scheme has been proposed. The aim of this paper is to hide a secret image in the cover image that can improve both the visual quality and the security of the stego-image while still providing a large embedding capacity. This is achieved by a Firefly Optimization scheme incorporates Noise Visibility Function (NVF) and a hyper chaos DNA based encryption scheme. NVF analyzes the local image properties to identify the complex areas where more secret bits should be embedded. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Embedding; Extracting; Firefly optimization; Hyper chaos encryption; Noise Visibility Function(NVF); Secret key; Steganography

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Role of supply chain management on indian industrial sectors

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Abstract
In global trade, supply chain management is the management of flow of goods and services, involves the movement and storage of raw materials, of work-in-process inventory and of finished goods from point of origin to point of consumption. In current global level, the long term survival of any business entity is dictated by the efficient supply and delivery processes that unit has implemented. To succeed in a dynamic demand and supply environment, Indian industrial organizations need to ensure that proper coordination is in place between their suppliers and their customers until the last of the supply chain demands are satisfied without delay. This necessitates the need for tracking the inventory on hand augmented by a solid order and supply chain management. This is very crucial to cost control, availability to supply on demand, maintain market control and eventual profitability. In this article the major functions of supply chain management in Indian industrial sectors were studied and analysed. © IAEME Publication.

Author Keywords
Consumer; Functions; Industries; SCM; Transportation; Warehousing

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Regression testing using IGRTCP algorithm for industry application
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Abstract
Regression testing is a testing to test the modified software during the maintenance level. Regression testing is a costly but crucial problem in software development. Both the research community and the industry have paid much attention to this problem. The paper try to do the survey of and current practice in industry and also try to find out whether there are gaps between them. The observations show that although some issues are concerned both by the research community and the industry. This research discusses the problems about current research on regression testing and quality control in application of regression testing in the engineering practice, and proposes a practical regression method, combing with change-impact-analysis, business rules model, cost risk assessment and test case management. This paper presents an approach to prioritize regression test cases based on the factors such as rate of fault deduction, percentage of fault detected and the risk detection capability. The proposed approach is compared with previous approach using APFD metric. The results represent that propose approach outperforms the earlier approach. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
APFD metric; Business rules; Change-impact-analysis; Cost-risk-assessment; Industry application; Regression testing; Test case prioritization

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Microstructural, mechanical and metallurgical analysis of Al interlayer coating on Mg-Al alloy using diffusion bonding

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Abstract
Diffusion bonding process was adopted to bond the two dissimilar metals of aluminium coated AZ 80 magnesium alloy and AA 7075 aluminium alloy for different set of process parameters. The samples of AZ 80 magnesium alloy and AA 7075 aluminium alloy without interlayer were attempted with three trials of five different temperatures ranging from 325°C to 450°C were taken in the present investigation. The other parameters such as bonding pressure of 10 MPa and bonding time of 15 min were kept constant. The mechanical properties of the samples showed improved mechanical properties at optimum temperature and that the surface properties were probed using optical micrsocopy and scanning electron microscope (SEM). The bonding quality with the effect of temperature on diffusion bonded specimen was investigated in detail. © 2017 Elsevier Ltd.

Author Keywords
Diffusion bonding; Intermetallic layer; Lap shear strength (LSS); Optical microscopy; SEM

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Study on factors affecting the physical and mental health by stress and emotional crisis of working women
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Abstract
In our present swift life the times are changing. In day to day activities women are contributing their life equally like men for the society. In any industries we use to observe that women are also playing a key role from the management level to the worker level starting from security, house-keeping to chief executive officer and managing director of an organization. When compared with men, women are facing lots of challenges and they have to handle multiple things unlike men. They take equal responsibilities at home as well at office and they have to balance both. When they are concentrating on both they use to get physical and mental strain and fatigue which causes to ill health. When it comes to physical strain then they can manage very well. But when it comes to emotional or mental strain they will be fed-up and needs some support from others. The objective of this research is to study the stress and emotional crisis of working women and necessary suggestions to control their physical health. © 2018, Indian Journal of Public Health Research and Development. All rights reserved.

Author Keywords
Family issues; Health issues; Psychological issues; Sustaining job; Working women

Index Keywords
adult, Article, backache, controlled study, diseases, emotional
disorder, female, headache, health, home, human, menstruation disorder, mental health, middle aged, pain, physical
stress, responsibility, sex difference, social support, stress, work, working mother, young adult

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Study on effectiveness of internal and external training to the development of employee in corporate sectors and hospitals

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Abstract
In the present corporate scenario, the investment which is vested in training programs is very high. The corporate organizations and hospitals are intending to expand the skill set of the employee thus it helps in the organizational growth. Initially, the training was given from the organization employees who are experts in that particular field. But in early 2000s, the involvement of external training programs started booming and it is now gaining better prominence in the corporate market. The employees are also getting involved in those sessions. This study will give a brief comparison of both internal and external training programs for the employee growth in corporate business sectors and hospitals with necessary suggestions. © 2018, Indian Journal of Public Health Research and Development. All rights reserved.

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EMOPS: An enhanced multi-objective particle swarm based classifier for poorly understood cancer patterns
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Abstract
Microarray based cancer pattern classification is one of the popular techniques in bioinformatics research. At the same time, it was noticed that for studying the expression levels through the gene expression profiling experiments, thousands of genes have to be simultaneously studied to understand the patterns of the gene expression or cancer pattern. This research proposed an efficient cancer pattern classifier called an Enhanced Multi-Objective Particle Swarm (EMOPS) and it is studied thoroughly in terms of memory utilization, execution time (processing time), sensitivity, specificity, classification accuracy and F-score. The results were compared with that of the recently proposed classifiers namely Hybrid Ant Bee Algorithm (HABA), Kernelized Fuzzy Rough Set based semi supervised Support Vector Machine (KFRS-S3VM) and Multi-objective Particle Swarm Optimization (MPSO). For analyzing the performances of the proposed model, this research considered a few cancer patterns namely bladder, breast, colon, endometrial, kidney, leukemia, lung, melanoma, mom-hodgkin, pancreatic, prostate and thyroid. From our experimental results, it was noticed that the proposed model outperforms the identified three classifiers in terms of memory utilization, execution time (processing time), sensitivity, specificity, classification accuracy and F-score. © Medwell Journals, 2018.

Author Keywords
Cancer pattern classification; Classification; Gene expression; Microarray; Multi-objective Particle Swarm; SVM

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Dynamic MRI and isotope renogram in the functional evaluation of pelviureteric junction obstruction: A comparative study [Üreteropelvik bileşke obstrüksiyonunun fonksiyonel değerlendirmesinde dinamik MRG ve izotop renogramı: Bir karşılaştırmalı çalışma]

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Abstract
Objective: The aim of this study was to evaluate and compare the diagnostic accuracy of dynamic contrast- enhanced magnetic resonance imaging (dMRI) and isotope renogram in the functional evaluation of pelviureteric junction obstruction (PUJO). Material and methods: Forty-two patients included in the study were investigated with isotope renogram and subsequently, subjected to dMRI. Time-activity curves were generated for both isotope renogram and dMRI. Out of the 42 cases, 9 cases were conservatively managed. Thirty-three cases were taken up for surgical intervention. Results: Of 33 patients taken up for surgical intervention, 12 underwent laparoscopic nephrectomy and 21 of them pyeloplasty. The mean glomerular filtration rates (GFRs) as measured by isotope renogram and dMRI were 22.5+4.2 mL/min and 23.8+3.1 mL/min respectively. The calculation of GFR by isotope renogram, showed good correlation with that of dMRI with correlation coefficient of 0.93. The dMRI was able to reveal the functional status of the renal unit accurately. dMRI did not yield false positive results with 20 of 21 patients scheduled for pyeloplasty and 11 of 12 patients scheduled for nephrectomy. Isotope renogram had a false positive result in 3 cases compared with surgical diagnosis. Conclusion: Analysis of renal function using dMRI yielded results comparable to those of renal scintigraphy, with superior spatial and contrast resolution. It was also better in prompting management decisions with respect to the obstructed systems. dMRI can be used as a “one stop imaging examination” that can replace different imaging methods used for morphological, etiological and functional evaluation of PUJO. © 2018 by Turkish Association of Urology.

Author Keywords
MRI; Nuclear medicine; Obstruction; Pelviureteric junction

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Smoking habits, oral hygiene practices, and self-perceived malodor among arts and science college students of Manimangalam, Chennai

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Abstract

Aim: To assess the smoking habits, oral hygiene practices, and self-perceived malodor among arts and science college students in Manimangalam, Chennai. Materials and Methods: An epidemiological survey with closed-ended questionnaire was carried out in an Arts and Science College in Manimangalam, Chennai, to assess smoking habits, oral hygiene practices, and self-perceived malodor. All the 1200 students were invited to participate in the study, but only 650 volunteers participated and a self-administered close-ended questionnaire was distributed. Descriptive statistics were used to describe the data. Results: Of 650 students, only 31 (4.8%) had a habit of smoking and 456 (70.1%) were aware of the ill effects of smoking. Among the subjects who participated in the study, 464 (71.3 %) brushed once daily, 457 (70.3%) rinsed their mouth after eating. Self-perceived malodor was expressed by 59 (9%) students and it has interfered with their social life. Conclusion: The habit of smoking was seen in a very small percentage of study participants, and majority of them were aware of its ill effects. There is a need to educate them on brushing techniques and encourage them to visit a physician/dentist whenever they perceive a malodor. © 2018 Journal of International Oral Health | Published by Wolters Kluwer - Medknow.

Author Keywords

Oral hygiene; oral malodor; smoking

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Demethoxycurcumin, a natural derivative of curcumin abrogates rotenone-induced dopamine depletion and motor deficits by its antioxidative and anti-inflammatory properties in Parkinsonian rats

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Abstract
Background: Parkinson's disease (PD) is a progressive neurodegenerative disorder (NDD) associated with the loss of dopaminergic neurons in the substantia nigra and subsequently has an effect on motor function and coordination. The pathology of PD is multifactorial, in which neuroinflammation and oxidative damage are the two of the main protagonists. Objectives: The present study aims to assess the potential antioxidant and anti-inflammatory effects of demethoxycurcumin (DMC), a natural derivative of curcumin, against rotenone-induced PD in rats. Materials and Methods: Rats were randomized and divided into six groups: Control, rotenone (0.5 mg/kg/day, intraperitoneal in sunflower oil) treated for 7 days, rotenone and DMC (5, 10, and 20 mg/kg b.w) cotreated, and DMC (20 mg/kg b.w) alone treated groups. Results: Based on the dopamine concentration and biochemical estimations, the effective dose of DMC was selected and the chronic study was performed. At the end of the experimental period, behavioral studies and protein expression patterns of inflammatory markers were analyzed. Rotenone treatment led to motor dysfunctions, neurochemical deficits, and oxidative stress and enhanced expressions of inflammatory markers, whereas oral administration of DMC attenuated all the above. Conclusion: Even though further research is needed to prove its efficacy in clinical trial, the results of our study showed that DMC may offer a promising and new therapeutic lead for the treatment of NDDs including PD. © 2018 Pharmacognosy Magazine | Published by Wolters Kluwer-Medknow.

Author Keywords
Demethoxycurcumin; dopamine; neurodegenerative disease; neuroinflammation; oxidative stress

Index Keywords
brain derived neurotrophic factor, catalase, cyclooxygenase 2, demethoxycurcumin, dopamine, glutathione, glutathione peroxidase, immunoglobulin enhancer binding protein, inducible nitric oxide synthase, interleukin 1beta, interleukin 6, rotenone, sunflower oil, superoxide dismutase, thiobarbituric acid reactive substance, tumor necrosis factor; animal behavior, animal experiment, animal model, animal tissue, antiinflammatory activity, antioxidant activity, Article, biochemical analysis, controlled study, depletion, dopamine brain level, drug dose comparison, drug efficacy, drug megadose, experimental behavioral test, hang test, high performance liquid chromatography, low drug dose, male, motor dysfunction, neurochemistry, nonhuman, oxidative stress, Parkinson disease, parkinsonism, protein analysis, protein expression, rat, rotarod test, treatment duration, Western blotting

Chemicals/CAS
brain derived neurotrophic factor, 218441-99-7; catalase, 9001-05-2; demethoxycurcumin, 24939-17-1; dopamine, 51-61-6, 62-31-7; glutathione, 70-18-8; glutathione peroxidase, 9013-66-5; inducible nitric oxide synthase, 501433-35-8; rotenone, 83-79-4; sunflower oil, 8001-21-6; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1

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An Enhanced and Efficient Approach for Improving the Performance of HPC Environment Using Map-Reduce with MARIANE

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Abstract
Hadoop is the main open source tool which backs the acknowledgment of the Big data upheaval and depends on Googles MapReduce spearheading mission in the area of very much substantial measure of information stocking space and handling. As of late, functions and advancements tending to "Big Data" confrontations have turned out to be colossally critical in numerous ranges of business and logical registering. The Map-Reduce model has empowered an expansive arrangement of uses, has prodded the improvement of open-source programming advances such as Hadoop, and is making a whirlwind of enthusiasm for the scholarly in addition to researchers from industry around enhancements and optional ways to deal with taking care of the requests of breaking down extensive complex information sets. The HPC people group is constantly vigilant for approaches to influence more extensive product speculations to distinguish mass-market advances which could be viably connected to take care of issues particular to high-performance computing.For example there are a few cases where outing of the rush of mass-business sector innovations has fundamentally affected HPC. Utilizing bigger business sector advances and the related economy-of-scale is being a compelling method for lessening prices and drawing in a bigger group. HPC, much competent devices, and regularly expanding reenactment scales are creating information at a pace that surpasses our capacity to viably oversee, break down, and distribute it. Execution of MapReduce pattern gives a method for extensive information volumes that could be consistently handled through utilization of vast item PCs. Hadoop and MapReduce have generally been utilized for web information handling and just as of late been utilized for exploratory applications. Our recommended framework comprehends the effect of document framework, programming modes on execution and system. Acquirement of an application's execution is to a great extent work load subordinate. Configuration of each MapReduce frameworks needs to incorporate the Key components such as, precise output, Quick Response and High speed. Enhancement of the Fault resilience of Map Reduce Implementation Adapted for High Performance Computing Environments in Distributed and Parallel Computing is considered to be the primary objective of this work. © 2017 Elsevier Ltd.

Author Keywords
Fault Controller; Fault Tolerance; Fault Tracker; Job Scheduling; MapReduce; MARIANE; Weight Based Approach

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Mechanical behaviour of dissimilar aluminum materials joints using FSW with various tool profile
(2018) *ARPN Journal of Engineering and Applied Sciences*, 13 (2), pp. 660-669.

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Abstract
In modern structural concept demand reduction of both weight as well cost of production and fabrication of materials. Aluminum alloys has gathered wide acceptance in the fabrication of light weight structures requiring a high strength to weight ratio. Friction stir welding is at present widely used for the welding aluminum alloys. In this work defect free joints of AA6063-T6 and AA7075-T651 alloy plates of 6.35mm of thickness were butt jointed using friction stir welding. The quality of the joints are influenced by process parameters such as tool rotational speed, axial force and feed rate. The effect of these parameters on tensile strength, impact strength and microhardness of the joints were discussed. The results showed that the tool rotational speed has significant influence of tensile strength. Welding speed and tool profile dominated the impact strength. Microhardness value were found at the in around of the weld zone. © 2006-2018 Asian Research Publishing Network (ARPN).

Author Keywords
Dissimilar aluminum alloys; Impact strength; Micro hardness; Process parameters; Tensile strength

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Thamarai, P.[a] , Adalarasu, K.[b]

Denoising of EEG, ECG and PPG signals using wavelet transform
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Abstract
Physiological signals such as EEG, ECG and PPG are very sensitive in nature and they are invariably corrupted by Power line and environmental noises. Quite often the frequencies of the signal and the noise overlap. Because of the importance of the underlying signal it is imperative to eliminate the noise without altering the time domain representation of the signals. Hence normal frequency selective filtering alone is not suffice for processing these signals. A wavelet based filtering approach is ideal for this problem as wavelet transforms preserve both time resolution and frequency resolution of the input signal. In this manuscript a Multi-scale wavelet based noise removal algorithm is proposed for processing EEG, ECG and PPG signals. And it is shown that the algorithm not only removes the noise effectively but also keeps the time resolution of the input signal intact. The improvement in noise removal is verified by comparing the signal to noise ratio of signal before and after applying wavelet based filtering algorithm. © 2018, Pharmainfo Publications. All rights reserved.

Index Keywords
article, electrocardiogram, filtration, human, noise reduction, publication, signal noise ratio

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Morphometric sex difference in the innominate bone using acetabulum—pubic index
(2018) *Indian Journal of Forensic Medicine and Toxicology*, 12 (1), pp. 186-191.

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Abstract
The pelvic or the innominate bone is the one of the most reliable sex indicator of the skeletal remains during a medicolegal investigation followed by cranium and long bones. The present study was conducted 9 pelvis articulated with known sex and 30 unknown hip bones were selected for the present study. 9 pelvis articulated with known sex was studied using manual vernier calipers to investigate the sexual dimorphism of well established acetabulum – pubis index. In an articulated male pelvis, the A-P index was derived from the measurement of the distance between the anterior rim of acetabulum and pubic symphysis (XY) and the total width of the acetabulum (YZ). In an articulated female pelvis, the A-P index was derived from the measurement of the distance between the anterior rim of acetabulum and pubic symphysis (XY) and the total width of the acetabulum (YZ). Then the same measurement was carried in the individual hip bone of unknown sex. The data collected were tabulated and evaluated as shown in table 1 and table 2. The outcome measures of 9 pelvis showed that XY=YZ in male and XY>YZ in female. Using this scale, out of 30 individuals 22 were male and 8 were female. This study concluded that acetabulum-pubic index could be used for determination of sex. © 2018, Indian Journal of Forensic Medicine and Toxicology. All rights reserved.

Author Keywords
Acetabulum - Pubis index; Medicolegal investigation; Pubic symphysis; Sexual dimorphism

Index Keywords
acetabulum, acetabulum pubic index, Article, autopsy, bone examination, bone length, bone structure, female, hip, human, human tissue, male, musculoskeletal system parameters, pelvis, pubis symphysis, sex determination, sex difference

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Subramanian, R.K.[a] , Saikumar, P.[a] , Joshua, S.D.[b] , Devaki, P.R.[a] , Jagadeesh Marthandam, L.[c]

Estimation of lung functions and risk of developing obstructive sleep apnoea in wind instrument players
(2018) *Indian Journal of Physiology and Pharmacology*, 62 (1), pp. 59-65. Cited 3 times.

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Abstract
Introduction: Decreased incidence of snoring and obstructive sleep apnoea in wind instrument players has been shown by a few studies, probably due to an increased tone of respiratory muscles. Hence their lung functions were evaluated and their risk of developing Obstructive sleep apnoea was assessed. Methodology: Test subjects (n=64) belonged to high resistance wind instrument category and controls (n=65) included subjects who did not play any form of wind instrument. Based on Berlin questionnaire subjects were divided into high or low risk. Lung functions were evaluated and statistical analysis was done using student t test and chi square test. Results: There was no difference in MVV values (P=0.63) between the tests and controls. More number of test group subjects belonged to the low risk group as compared to the controls (P=0.000*) according to the Berlin scores. Pearson's correlation showed no association between MVV and Berlin score (r=0.062, P=0.63). Conclusion: There is no association between improved lung functions and reduced risk of developing OSA although OSA risk is reduced in wind instrument players. Hence wind instrument playing may be considered as an option to reduce the risk or treat obstruction in sleep apnoea. © 2018, Association of Physiologists and Pharmacologists of India. All rights reserved.

Index Keywords
Article, controlled study, experimental study, forced expiratory volume, forced vital capacity, high risk population, human, low risk population, lung function, musician, questionnaire, risk assessment, sleep disordered breathing, snoring, spirometry, wind

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Antifungal activity of a secondary metabolite of Azadirachta indica and its derivatives - An in silico study
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Abstract
Objective: This study was aimed to inhibit the 1, 3 β-glucan synthase with azadirachtin or with the derivatives by docking method. Methods: The homology model of the protein 1, 3 β glucan synthase was prepared with “easy modellar” using query sequence and template and it was validated with procheck of Ramachandran plot. The ligand was selected from the PubChem database, and the. sdf file was downloaded which was converted to another file format with open babel. The. pdb files of protein and ligand were uploaded for rough docking with iGEMDOCK, and finally, the accurate docking was made with autodock vina. The docked poses were visualized with PYMOL then saved. The derivatives of the ligand were generated with SWISS ADME, free online software, and selected the derivative for docking. Results: The results obtained from iGEMDOCK and Autodock Vina were tabulated. It was found out that the Azadirachtin and the derivatives are effective in binding 1, 3 β Glucan synthase and thereby inhibiting the formation and integrity of fungal cell wall. Conclusion: In this study, the secondary metabolite Azadirachtin and the derivatives are showing inhibitory action against the model protein 1, 3 β glucan synthase and it was suggested that the external application of the ligand and its derivatives can be used because of their poor oral bioavailability. © 2018 The Authors.

Author Keywords
1, 3 β-Glucan synthase; Autodock vina; Azadirachtin; Dermatophytes; IGEMDOCK; Open babel; SWISS ADME

Index Keywords
1,3 beta glucan synthase, antifungal agent, azadirachtin, azadirachtin derivative, terpenoid derivative, unclassified drug; acute toxicity, antifungal activity, Article, Azadirachta indica, binding affinity, drug bioavailability, drug penetration, drug solubility, drug structure, enzyme inhibition, fungal cell wall, hydrogen bond, hydrophilicity, LD50, lipophilicity, molecular docking, molecular weight, physical chemistry, structure activity relation, surface area

Chemicals/CAS
1,3 beta glucan synthase, 9037-30-3; azadirachtin, 11141-17-6

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Facile solvothermal synthesis of BiOI microsquares as a novel electrode material for supercapacitor applications
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Abstract
BiOI microsquares was prepared by using hexamine as surfactant through solvothermal approach and used as electrode material for high performance supercapacitor. The crystalline structure and morphology of the BiOI were characterized by X-ray diffraction (XRD), field emission scanning electron microscopy (FE-SEM) transmission electron microscopy (TEM) and X-ray photoelectron spectroscopy (XPS) analysis. The electrochemical performance was investigated by using cyclic voltametry (CV) and galvanostatic charge-discharge studies (GCD) using 6M KOH solutions. BiOI electrode exhibits highest specific capacitance of 706 Fg−1 at a current density of 2 Ag−1. This material retained 55% initial capacitance at a higher current density of 10 Ag−1 indicating its better rate performance. © 2017 Elsevier B.V.

Author Keywords
BiOI; Interfaces; Semiconductors; Supercapacitors

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Capacitance, Electric discharges, Electrochemical electrodes, Electrodes, Electron microscopy, Enamels, Field emission microscopes, High resolution transmission electron microscopy, Interfaces (materials), Lithium compounds, Polyacrylonitriles, Scanning electron microscopy, Semiconductor materials, Silver, Supercapacitor, Transmission electron microscopy, X ray diffraction; BiOI, Crystalline structure, Electrochemical performance, Field emission scanning electron microscopy, Galvanostatic charge discharges, Solvothermal approach, Solvothermal synthesis, Supercapacitor application; X ray photoelectron spectroscopy

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Kuppusamy, M.[a] , Kamaldeen, D.[a] , Pitani, R.[b] , Amaldas, J.[c] , Shanmugam, P.[d]

Effects of Bhramari Pranayama on health – A systematic review

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Abstract
Background Pranayama, a branch of yoga practice is extremely beneficial to mankind in maintaining sound physical and mental health and this article aims to attain an insight on the studies conducted on the effectiveness of Bhramari Pranayama (Bhr.P) on health. The studies done until May 2016 were found using Medline, Embase, Google scholar and manual search. Studies conducted on the health effectiveness of Bhr.P specifically were included on the basis of prisma guidelines. The data were defined by their objectives, methodology, study setting, findings, interventions done and implications suggested in the study. Methodological Quality Rating Scale (MQRS) and Newcastle-Ottawa Scale (NOS) were used in reviewing and reporting results of the included studies. 6 studies satisfied the inclusion criteria; 2 studies were done on the cold pressor test, one on heart rate and BP, one on EEG changes, one each on the inhibitory response and tinnitus condition. In the included studies, the Bhr.P practices have shown para-sympathetic dominance. There are some encouraging effects of Bhr.P on various physiological systems. Methodological quality of the included studies was evaluated to be very low and none of them were RCTs. Yet the available studies are heterogeneous, dealing in different grounds and this heterogeneity serves as a resource for the limited scope of studies on Bhr.P. Therefore, further large-scale, properly designed, randomized trials of Bhr.P on various systems have to be done to justify these effects efficiently. © 2017 Center for Food and Biomolecules, National Taiwan University

Author Keywords
Bhramari; Health benefits; Pranayama; Review; Systemic effects

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Green larvicides against blowflies, Lucilia sericata (Diptera, Calliphoridae): Screening of seven plants used in Indian ethno-veterinary medicine and production of green-coated zinc oxide nanoparticles

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Abstract
Dipteran flies are responsible of myiasis, a common parasitic infestation leading to the invasion of living, necrotic or dead tissues. They also transmit mycobacterial infections to livestock. In the present investigation, seven plant species employed in Southern India for medical and ethno-veterinary purposes were extracted using ethanol or water and tested against second instar larvae of Lucilia sericata. 100% larval mortality was observed testing Lobelia leschenaultiana ethanol extract at 60 mg/L (LC50 = 3.4 mg/L). Based on the highest percentage of larval mortality, we selected L. leschenaultiana for fabrication of ZnO nanoparticles to control L. sericata. Zinc acetate showed 82.2% mortality at 60 mg/L (LC50 = 38.2 mg/L) whereas L. leschenaultiana-coated ZnO nanoparticles (Ll-ZnO NPs) showed 100% mortality at 6 mg/L, the LC50 was 0.78 mg/L. Overall, our research represents an attempt to integrate current ethno-veterinary knowledge from native tribes of Southern India, in order to identify effective botanicals for the development of nano-biopesticides against livestock pests and parasites. © 2017 Elsevier Ltd

Author Keywords
Biosafety; Diptera; Ethnopharmacology; Green synthesis; Myiasis; Nilgiri

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The effectiveness of cloud databases

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Abstract
'Utility computing' was the concept introduced by John McCarthy in 1961 in a speech given at MIT. He proposed that sharing the computing power on a time-sharing basis will help grow business of 'providing computing power as an utility' and this was the inception of the cloud computing. Cloud computing can deliver the best to the end users either through the private, public or hybrid cloud infrastructures. As the databases are of significance importance, it is a mandate that they ought to be designed compatible to the rising cloud technology. Cloud computing has changed the face of the IT industry. But in the current scenario there are many database issues that are not addressed. With tremendous data growth, the need for the paradigm shift in the technology to be used to store, manage and retrieve data is awaited. Databases have changed from file storages to relational databases and further transformed to today's cloud databases. Still the need to process the query efficiently without losing the data privacy had been the topmost priority. The resource optimization and query dynamism are the major unchanged aspects in this changing scenario. The timing constraints on the query execution could be leisurely, indefinite, urgent or instantaneous. In almost all the scenarios, the effective storage, elastic manipulation and efficient data retrieval is the key. © 2017 IEEE.

Author Keywords
Cloud Computing; Cloud databases; Query optimization; security

Index Keywords
Cloud computing, Data privacy, Query processing, Relational database systems; Cloud database, Cloud technologies, Query optimization, Relational Database, Resource optimization, security, Timing constraints, Utility computing; Digital storage

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Deny, J.[a] , Kumar, A.S.[a] , Sundarajan, M.[b] , Khanna, V.[a]

Defensive against collaborative attacks by malicious nodes in MANETs: A cooperative bait detection approach
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Abstract
Because of the far reaching accessibility of cell phones, portable specially appointed systems (MANETs) have been generally utilized for different essential applications, for example, military emergency operations and crisis readiness and reaction operations. This is principally because of their framework less property. In a MANET, every hub functions as a host as well as go about as a switch. While getting information, hubs additionally require collaboration with each other to forward the information bundles, along these lines framing a remote neighborhood. These extraordinary elements likewise accompany genuine downsides from a security perspective. Undoubtedly, the previously mentioned applications force some stringent imperatives on the security of the system topology, steering, and information activity. For example, the nearness and joint effort of noxious hubs in the system may disturb the directing procedure, prompting to a breaking down of the system operations. A system [so-called Cooperative Bait Detection Scheme (CBDS)] is introduced that adequately recognizes the vindictive hubs that endeavor to dispatch grayhole/community oriented blackhole assaults. In the proposed conspire, the address of an adjoining hub is utilized as snare goal deliver to goad pernicious hubs to send an answer RREP message, and malevolent hubs are identified utilizing an invert following strategy. Any distinguished noxious hub is kept in a blackhole list so that every other hub that take an interest to the directing of the message are cautioned to quit speaking with any hub in that rundown. The proposed inquire about endeavors to determine this issue by outlining a dynamic source steering (DSR)-based directing system, which is alluded to as the CBDS, that incorporates the upsides of both proactive and receptive guard designs. Our CBDS strategy executes a turn around following method to help in accomplishing the expressed objective. Recreation results will be given, demonstrating that within the sight of pernicious hub assaults, the CBDS outflanks the DSR, 2ACK, and best-exertion blame tolerant steering (BFTR) conventions (picked as benchmarks) as far as parcel conveyance proportion and directing overhead (picked as execution measurements). Additionally, expect to 1) research the achievability of changing our CBDS way to deal with address different sorts of cooperative assaults on MANETs and to 2) explore the incorporation of the CBDS with other surely understood message security plots keeping in mind the end goal to develop a far reaching secure directing structure to ensure MANETs against scoundrels. Also, exhibit the advantages of our plans through reproduction in ns2. © 2017 IEEE.

Author Keywords
Attacks; Bait Detection Approach; CBDS; MANET

Index Keywords
Cellular telephone systems, Military applications, Mobile phones; Attacks, CBDS, Detection approach, Detection scheme, Emergency operations, MANET, Message securities, System operation; Mobile security

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Documents

Jasmin, M.[a] , Vigneswaran, T.[b]

Fuzzy controller for error control of on - Chip communication

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Abstract
On - chip communication suffer from bit error especially at highly dense implemented system on chip. Reducing the rate of bit error in On-chip communication is carried out by error detection and correction codes. But it has its own limitation. So reconfigurable multiple code based system is suitable for heterogeneous system design. But selecting correct code for the correct subsystem or for current requirements involve good decision system design. More over such selection is fuzzy in nature because heterogeneous subsystem demands different combination of input demands. Here, in this paper a fuzzy controller is designed to select correct error control scheme for the current subsystem demand. The fuzzy controller will take user application demand in terms of minimum required bit rate error, maximum time to compute error code or decode on the receiver side and the correlation level of the input dataset. Fuzzified such input by input membership function is processed by the designed fuzzy controller with 27 rules and selects the appropriate coding scheme. One of the main elements under reconfigurable coding scheme is the communication of selected coding scheme at the given time to decoding unit to enable the decoding process. An efficient frame format with less overhead is designed to communicate the selected coding scheme to the receiver subsystem in order to decode the data. The designed fuzzy controller is tested by random input data and the functionality is verified. © 2017 IEEE.

Author Keywords
Communication; Error Control; Fuzzy Controller; NoC; SoC

Index Keywords
Bit error rate, Communication, Decoding, Errors, Integrated circuit design, Membership functions, Network-on-chip, Programmable logic controllers, System-on-chip, Systems analysis; Decision systems, Decoding process, Error control, Error detection and correction codes, Fuzzy controllers, Heterogeneous systems, On chip communication, Reconfigurable; Controllers

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Hemalatha, S.B.[a] , Vigneswaran, T.[b]

Genetic algorithm based on-chip communication link reconfiguration for efficient on-chip communication
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Abstract
Optimization of On chip communication link in one of the hottest research area in system on chip (SOC) based system design. On chip link are optimized for efficient communication and low power consumption which is trade off in nature. So achieving both efficient communication and low power consumption requires a special optimization mechanism. Evolutionary algorithm of genetic algorithm will be solving such contradictory optimization problems. Here, in this paper genetic algorithm based On chip communication link optimization is presented. The algorithm will optimize efficiency of communication link with constrain of low power consumption. The parameters involved in power consumption and efficient communication link is coded in the chromosomes. By evolutionary iteration the optimal parameters of the communication link is derived that is used for the communication link successfully in the simulated system. The performance of the simulated system is analysed which shows the out performance of the proposed system. © 2017 IEEE.

Author Keywords
AGA; Chip Communication Link; Efficient; GA; Low Power Consumption; NoC; SoC

Index Keywords
Economic and social effects, Electric power utilization, Gallium, Genetic algorithms, Iterative methods, Network-on-chip, Programmable logic controllers, System-on-chip; Efficient, Efficient communications, Low-power consumption, On chip communication, Optimal parameter, Optimization problems, Optimize efficiency, System on chips (SoC); Energy efficiency

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Puzzle based highly secure steganography

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Abstract

Steganography is the insertion of secret data inside a normal cover media such as digital image, audio, video or text. The inserted message must not be damaged when processing is applied on the cover media. Several image processing operations such as format conversion, lossy and lossless compression, noise removal and other enhancement. This paper presents multi layer image encryption and decryption using random puzzle based method to embed secret data into the cover image. This approach enhances the security and provides robust embedding. In this work, a 8×8 Sudoku puzzle which has a 64×64 reference matrix is used. The proposed method gives a superior average capacity of 5 bits per pixel. The message is embedded at the sender using random permutation puzzle. At the Receiver end, the user has to rearrange the image thereby solving the puzzle. The attacker lacks knowledge of original image order and is unable to solve the puzzle. Our outcome indicate that the recommended approach provides high steganographic security while providing high embedding capacity of about 5 bits per pixel. A brief analysis of the performance and security aspects of the proposed method are presented. © 2017 IEEE.

Author Keywords

Embedding; Extraction; Random Permutation; Steganography

Index Keywords

Cryptography, Extraction, Image enhancement, Pixels; Average capacities, Embedding, Embedding capacity, Image encryption and decryption, Lossless compression, Random permutations, Secure steganography, Steganographic security; Steganography

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Enhanced opto-magneto properties of NixMg1-xFe2O4 (0.0 ≤ × ≤ 1.0) ferrites nano-catalysts

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Abstract
Spinel NixMg1-xFe2O4 (0.0 ≤ × ≤ 1.0) nanoparticles (NPs) were synthesized via sol-gel combustion method and characterized using different techniques such as X-ray powder diffraction (XRD), Fourier Transforms Infrared (FT-IR) spectra, Scanning Electron Microscope (SEM), Energy dispersive X-ray (EDX), Photoluminescence (PL) spectra and Vibrating sample magnetometer (VSM) techniques. The morphological and structural investigations revealed that NixMg1-xFe2O4 (0.0 ≤ × ≤ 1.0) samples posses particle shaped morphologies and exhibited pure crystalline phase of a cubic spinel structure with an average crystalline size of 21.22 nm to 15.65 nm for the samples x = 0.0 to 0.6. FT-IR spectra indicate the bonds between metal and oxygen (M-O) and confirmed the formation of spinel. The magnetic hysteresis (M-H) loops confirmed the ferromagnetic behavior of the synthesized nanoparticles. Photocatalytic activities of spinel NixMg1-xFe2O4 NPs were tested towards the degradation of methylene blue, which revealed that the NixMg1-xFe2O4 nanoparticles with the x 0.6 exhibited the highest degradation efficiency of ~97.77% among other prepared ferrite NPs. Copyright © 2017 by American Scientific Publishers All rights reserved.

Author Keywords
Ferrites; Magnetic Nanoparticles; Methylene Blue; Photocatalyst; Powder X-ray Diffraction; Sol-Gel Method; Spinel

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In-vitro antioxidative, antiinflammatory properties of Aurea helianthus leaf extract a Korean traditional medicinal plant

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Abstract
The leaf of Aurea helianthus (A. helianthus Jinhuakui) is popularly used in China traditional medicine, however, scientific evidence on its antioxidant properties rarely studied. In this study, biological activities of A. helianthus leave's 80% ethanol extract (AHL) were investigated. The measured total polyphenol and flavonoid content of AHL was 184.24 ± 5.01 mg GAE/g and 102.53 ± 0.98 mg NAR/g. AHL showed the highest α α-diphenyl-β-picrylhydrazyl (DPPH) and 2,2′-azino-bis-3-ethylbenzo-thiazoline-6-sulfonic acid (ABTS) radical scavenging activities of 98.30 ± 0.18% at 1000 μg/mL. DPPH and ABTS radical scavenging activities significantly increased in a AHL concentration-dependent manner. AHL treatment significantly suppressed the generation of pro-inflammatory mediators, including nitric oxide (NO), in lipopolysaccharide (LPS)-stimulated RAW 264.7 macrophages. AHL demonstrated strong anti-inflammatory activity that reduced NO production in LPS-stimulated RAW 264.7 cells. To test the potential protective effect of AHL, the antioxidant capacity, on the cell growth, viability of a human hepatoma cell (HepG2) and Raw 264.7 cell were investigated. AHL also enhanced cytotoxicity on the proliferation of HepG2 cells and was capable of inhibiting 56% against LPS at 400 μg/mL. The results of this study the potential of AHL as an excellent antioxidant substance for inhibiting inflammatory mediators. Therefore, AHL may be used as a therapeutic approach to various inflammatory diseases. © 2017 King Saud University

Author Keywords
Anti-inflammatory; Antioxidative; Aurea helianthus; HepG2; Raw 264.7

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Antioxidant activity of various tea extracts in relation to their antimutagenicity
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In-vitro antioxidative, antiinflammatory properties of Aurea helianthus leaf extract a Korean traditional medicinal plant

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Abstract
The leaf of Aurea helianthus (A. helianthus Jinhuakui) is popularly used in China traditional medicine, however, scientific evidence on its antioxidant properties rarely studied. In this study, biological activities of A. helianthus leave's 80% ethanol extract (AHL) were investigated. The measured total polyphenol and flavonoid content of AHL was 184.24 ± 5.01 mg GAE/g and 102.53 ± 0.98 mg NAR/g. AHL showed the highest α α-diphenyl-β-picrylhydrazyl (DPPH) and 2,2′-azino-bis-3-ethylbenzo-thiazoline-6-sulfonic acid (ABTS) radical scavenging activities of 98.30 ± 0.18% at 1000 μg/mL. DPPH and ABTS radical scavenging activities significantly increased in a AHL concentration-dependent manner. AHL treatment significantly suppressed the generation of pro-inflammatory mediators, including nitric oxide (NO), in lipopolysaccharide (LPS)-stimulated RAW 264.7 macrophages. AHL demonstrated strong anti-inflammatory activity that reduced NO production in LPS-stimulated RAW 264.7 cells. To test the potential protective effect of AHL, the antioxidant capacity, on the cell growth, viability of a human hepatoma cell (HepG2) and Raw 264.7 cell were investigated. AHL also enhanced cytotoxicity on the proliferation of HepG2 cells and was capable of inhibiting 56% against LPS at 400 μg/mL. The results of this study the potential of AHL as an excellent antioxidant substance for inhibiting inflammatory mediators. Therefore, AHL may be used as a therapeutic approach to various inflammatory diseases. © 2017 King Saud University

Author Keywords
Anti-inflammatory; Antioxidative; Aurea helianthus; HepG2; Raw 264.7

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Abstract
The Poisson equation is used to analyze and measure the waveguide in quick and exact calculation of Green's capacity. For this reason, Green's capacity is composed as far as Jacobian elliptic capacities including complex contentions. Another calculation for the quick and precise assessment of such Green's capacity is definite. The principle advantage of this calculation is effectively appeared inside the casing of the Limit Integral Resonant Mode Expansion technique, where a generous decrease of the computational exertion identified with the assessment of the referred to Green's capacity is gotten. © 2017 Institute of Advanced Engineering and Science. All rights reserved.

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Green's capacity; Jacobian elliptic; Poisson equation

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Scalable synthesis of CdS–Graphene nanocomposite spectroscopic characterizations
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Abstract
Cadmium sulfide–Graphene nanocomposite was synthesized by the chemical precipitation method. Phase formation of the CdS–Graphene nanocomposite was inspected with powder X-ray diffraction, the typical surface morphology was done by using field emission scanning electron microscopy and the transmission electron microscopy, equipped with energy dispersion spectroscopy. The different functional groups were identified by using FT-IR and Raman spectroscopy. The optical properties were analyzed using UV absorption spectrum and photoluminescence spectra. The dielectric properties were examined in the different frequencies and the different temperatures. © 2017, Springer Science+Business Media, LLC.

Index Keywords
Absorption spectroscopy, Cadmium sulfide, Dielectric properties, Electron microscopy, Field emission microscopes, High resolution transmission electron microscopy, Nanocomposites, Optical properties, Photoluminescence, Precipitation (chemical), Scanning electron microscopy, Transmission electron microscopy, X ray diffraction; Chemical precipitation method, Different frequency, Field emission scanning electron microscopy, Graphene nanocomposites, Photoluminescence spectrum, Powder X ray diffraction, Spectroscopic characterization, UV absorption spectrum; Graphene

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Abstract
Nanotechnology offers a number of nanoscale implements for medicine. Among these, nanoparticles are revolutionizing the field of drug and gene delivery. Chitosan is a natural polymer which provides a profitable tool to an innovative delivery system due to its inherent physicochemical and biological characteristics. Chitosan nanoparticles are promising drug and gene delivery carriers because of small size, better stability, low toxicity, inexpensiveness, simplicity, easy fabrication and versatile means of administration. Chitosan can also be easily modified chemically due to the presence of reactive functional hydroxide and amine groups. Folic acid is commonly engaged as a ligand, for targeting cancer cells, as its receptor, that transports folic acid into the cells through endocytosis and is over-expressed on the surface of several human epithelial cancer cells. Integrating folic acid into chitosan-based drug delivery inventions directs the systems with a well-organized targeting ability. The present review outlines several illustrations of this versatile system based on folate decorated chitosan, which have shown potential as auspicious delivery systems published over the past few years. In addition, it is probable to formulate chitosan nanocarriers that exhibit manifold usage beyond targeted delivery, such as nanotheranostics and cancer stem cell therapy. © 2017. All rights reserved.

Author Keywords
5-fluorouracil; Cancer; chitosan; doxorubicin; drug delivery; folic acid; gene delivery.

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A review on image processing methods in detecting lung cancer using CT images

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Abstract
Lung cancer is the most common cancer for death among all cancers and CT scan is the best modality for imaging lung cancer. A good amount of research work has been carried out in the past towards CAD system for lung cancer detection using CT images. It is divided into four stages. They are pre-processing or lung segmentation, nodule detection, nodule segmentation and classification. This paper presents in detail literature survey on various techniques that have been used in Pre-processing, nodule segmentation and classification. © 2017 IEEE.

Index Keywords
Biological organs, Diseases, Image processing, Processing; Image processing - methods, Literature survey, Lung Cancer, Lung cancer detections, Lung segmentation, Nodule detection, Nodule segmentation, Pre-processing; Computerized tomography

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Cancer-related fatigue treatment: An overview

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Abstract
Cancer-related fatigue is a symptom of cancer where most patients or the general practitioners tend to misinterpret due to the insufficient understanding or knowledge of cancer-related fatigue (CRF). This paper will provide a better perspective for the patients and the health professionals on how to manage and handle CRF for both mild and severe fatigue patients. Articles were selected from the searches of PubMed database that had the terms 'randomized controlled trials,' 'cancer,' 'fatigue,' 'pharmacologic treatment,' and 'nonpharmacologic treatment' using both Mesh terms and keywords. The authors have reviewed the current hypothesis and evidence of the detailed etiology of the CRF present in the literature for healthier management, directives, and strategies to improve the treatment of cancer-related fatigue. An algorithm has been blueprinted on screening, and management, of the CRF, and various kinds of effective treatments and assessment tools have been briefly studied and explained. Although many strategies seemed promising, the quality of randomized controlled trials is generally quite low in studies, making it difficult to draw conclusions about the effectiveness of each self-care strategies. Therefore, future studies require better design and reporting of methodological issues to ensure evidence-based self-care recommendations for people receiving cancer treatment. © 2017 Journal of Cancer Research and Therapeutics | Published by Wolters Kluwer - Medknow.

Author Keywords
Cancer-related fatigue; complementary and alternative medicine; erythropoietin-stimulating agents; management of cancer-related fatigue; Modafinil; nonpharmacologic treatment; pharmacologic treatments; psychostimulants; randomized controlled trials

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antianemic agent, carnitine, dexmethylphenidate, erythropoietin, methylphenidate, modafinil; algorithm, alternative medicine, cancer fatigue, cognitive behavioral therapy, exercise, health personnel
attitude, human, nonhuman, nutrition, patient attitude, rest, Review, self care, sleep, chemically
induced, complication, fatigue, neoplasm, pathology, quality of life, treatment outcome;
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A study on maternity benefit and its effectiveness in construction industry
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Abstract
Around 10 crore women employees i.e. 90% of the women employees are employed in unorganized sector. Unorganized sector includes Agriculture, Seasonal workers, Domestic workers, Construction workers etc. Law Commission of India, in 2015 recommended that the provisions of Maternity Benefit Act, 1961 should cover women workers working in organized as well as unorganized sector, but the government is yet to think over extending the maternity benefit scheme to women in unorganized sector. Presently, the only benefit available to the workers in unorganized sector is Pradhan Mantri Matriva Vandhana Yojana (PMMVY) where they get Conditional Cash Transfer (CCT) of Rs. 6000/- in two installments (Rs. 3000/ each) on fulfilling the conditions. When survey was conducted, it was proved that the reach of PMMVY is very poor, hardly anyone got the benefit. Through Maternity Benefit (Amendment) Act 2017, the labour ministry enhanced the benefit to employees, employed in certain establishments, this may benefit only 1.8 million women employees, but ministry disregards the women employees of unorganized sector. Is it not discrimination? Is it fair to leave this lot out from the ambit of the new law?" © IAEME Publication

Author Keywords
Construction workers; Maternity benefit (Amendment) Act; Maternity Benefit in informal sector; Unorganized worker welfare

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Challenges and strategies for retaining women talent in it industry : Managerial strategies for reducing women voluntary turnover in the workplace

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Abstract
Retaining women talent over a potential career span of 30 years is a common challenge for organizations. Except perhaps public sector enterprises, most companies are facing a situation where the business case for diversity is well acknowledged but the various means deployed to achieve it are proving ineffective as shown by statistics. Losing talented employees can cost an organization in a variety of ways. The organization might lose clients, there may be team disruptions, other employees might be influenced toward leaving the business, and a loss in productivity may occur. As the corporate world is a subset of the society, change is taking place albeit at a slow and steady pace. The need of the hour is to examine the challenges in detail and explore strategies which are being used with some degree of success. © IAEME Publication.

Author Keywords
Attrition; Challenges; Issues; Retention; Strategies

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A study on employee welfare in construction industry

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Abstract
Welfare is anything done by the employer to his employees for the well-being or to improve their standard of living, it may be statutory or voluntary. But as far as India concerned, the welfare benefit whether it be statutory or voluntary is available only to the workers employed in formal sector, who are hardly 10%. 90% of the workers, who are more than 40 crore in number, and employed in unorganised / informal sector like construction, agriculture industry are either deprived their rights. On 29th May, 2017 the Labour Minister Mr. Bandaru Dattatreya said that workers from unorganised sector will be covered under social security schemes such as ESI, EPF. According to him, the government is committed to ensure wages, jobs and social security for all workers including the unorganized sector. It is crystal clear that workers in unorganised sector are living their life below the minimum standard. There are number of labour laws for the safety and security of the formal sector workers but not applied for the workers in unorganised sector. © IAEME Publication.

Author Keywords
Construction employees welfare; Construction industry welfare; Unorganized sector employees welfare

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Three phase hybrid AI-heuristics for mTSP in network problems

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Abstract
A multiple Vehicle Routing Problem (mVRP), which consists of shaping a set of routes for m vehicles who all start from and return back to a home city (depot). Given a set of cities, let there are m vehicles located at a single depot node. The remaining cities that are to be visited are called intermediate nodes. SP Routing concept is the crucial element in the performance of any network. The Shortest path between any two nodes is mandatory in most of the real world leaning network problems. The intention of this paper is to widen proficient optimization algorithms to solve diverse real world SP routing network problems of high complexity, to find the shortest possible balanced routes for multiple salespersons and to find clustering based simple straight-forward hierarchical SP routing in solar powered WSNs. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
K-means clustering; Multiple vehicle routing problem; Simulated anealing; SWA; Tabu search; Three phase hybrid GA

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Abstract
The re-emerging field of phage therapy is the potential biocontrol agents for the transfer of virulence factor and to kill their bacterial hosts. In this study, the lytic Vibrio vulnificus phages were studied to provide a better understanding of phage-host interactions and development of phage therapy. Four new V. vulnificus phages were detected from shrimp aquaculture system, named VV1, VV2, VV3 and VV4. All lytic V. vulnificus phages are the Tectiviruses of the family Tectiviridae with typical double layered elongated icosahedral head and tailless morphology. Lytic V. vulnificus phages which infect other Vibrio isolates were further characterized by long term storage, enzymes treatment, organic solvents treatment, detergents treatment, pH stability, temperature stability, agar bioassay method and one-step growth experiment. The effects of chloroform, acetone, ethyl alcohol, methyl alcohol, ribonuclease (RNase), trypsin, protease, Triton-X100 treatments were not affected the growth of VV1, VV2, VV3 and VV4 phages. These phages (VV1-VV4) were inactivated completely with temperature (over 60 °C), pH (<3 or >12), lysozyme and sodium dodecyl sulfate (SDS) treatment. One-step growth experiments indicated that the latent period was at 3 h and burst size was at 37 °C. Agar bioassay method indicated that the percentage of inhibition was 75% (VV1) and 70% (VV2, VV3 & VV4), respectively. SDS-PAGE analysis of all V. vulnificus phages had similar protein patterns with molecular weight masses of 260, 249, 204, 148, 63, 59, 22 and 15 kDa. Hence, it could be concluded that V. vulnificus phage had a broad lytic spectrum and potential biocontrol of luminous Vibriosis in the shrimp aquaculture system. © 2017 Elsevier Ltd

Author Keywords
Growth inhibition; Inhibitory effect; One step growth experiment; Phage morphology; Vibrio vulnificus phage

Index Keywords
acetone, alcohol, chloroform, dodecyl sulfate sodium, lysozyme, methanol, organic solvent, proteinase, ribonuclease, triton x 100, trypsin; agar medium, aquaculture, Article, bacterial growth, bacteriophage, bacterium detection, bacterium isolate, bioassay, biological control agent, controlled study, enzyme therapy, growth inhibition, India, inhibition kinetics, latent period, marine environment, molecular weight, nonhuman, pH, pH measurement, polyacrylamide gel electrophoresis, priority journal, temperature measurement, temperature sensitivity, thermostability, transmission electron microscopy, Vibrio vulnificus, vibriosis, animal, Crustacea, growth, development and aging, microbiology, physiology, sea food, Vibrio vulnificus, virology; Animals, Aquaculture, Bacteriophages, Crustacea, Seafood, Vibrio vulnificus

Chemicals/CAS
acetone, 67-64-1; alcohol, 64-17-5; chloroform, 67-66-3; dodecyl sulfate sodium, 151-21-3; lysozyme, 9001-63-2; methanol, 67-56-1; proteinase, 9001-92-7; ribonuclease, 59794-03-5, 9001-99-4; trypsin, 9002-07-7

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Imidazolium based ionic liquids' structure and optical properties influenced by semiconductor metal oxide thin films

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Abstract
This paper reports the preparation of two protic ionic liquids (PILs) 2-methylimidazolium lactate and 2-methylimidazolium acetate through simple proton-transfer reaction by microwave irradiation method. This work further improves the influences of semiconductor metal oxides like CuO (p-type), ZnO (n-type) [two transition metal oxides] and SnO2 (n-type a non-transition metal oxide) over the synthesized PILs. These metal oxides were prepared by sol-gel method and doped over the synthesized ILs by making thin films by spin coating method. The focus of the present study is to learn how the band gap of p-type and n-type metal oxide varies when it is incorporated over the PILs. Their structure, optical properties and morphology were studied through FT-IR, UV-Visible, photoluminescence and XRD spectral studies. © 2017

Author Keywords
FT-IR; Metal oxides; PILs; Spin-coating; UV-Vis; XRD

Index Keywords
Chemical sensors, Coatings, Energy gap, Film preparation, Ionic liquids, Metallic compounds, Microwave irradiation, Optical properties, Oxide films, Proton transfer, Sol-gel process, Sol-gels, Spectroscopic analysis, Spin coating, Thin films, Transition metal compounds, Transition metals; Imidazolium-based ionic liquid, Metal oxides, PILs, Protic ionic liquids, Proton transfer reactions, Semiconductor metal oxides, Transition-metal oxides, UV-Vis; Metals

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Exploitation of chemical, herbal and nanoformulated acaricides to control the cattle tick, Rhipicephalus (Boophilus) microplus – A review

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Abstract
The tick Rhipicephalus (Boophilus) microplus is a key vector of bacterial and protozoan diseases causing heavy economic losses directly and indirectly in animal husbandry. In the past decades, the control of ticks faced some major issues, such as the rapid development of resistance in targeted vectors and non-target effects on human health and the environment, due to the employ of synthetic acaricides and repellents. Eco-friendly pesticides for treating and controlling animal parasites such as ticks were mainly from medicinal plants and thus they form the richest entity for manufacturing resources for drugs. Even though there are efforts made to discover reliable plant-based acaricides to control ectoparasites in animal husbandry, the effective control of R. (B.) microplus ticks still represent a major challenge in current veterinary entomology. Recently, a wide number of promising attempts have been conducted to use herbal preparations and green-fabricated nanoparticles for the control of R. (B.) microplus. The aim of this review is to critically summarize and discuss the use of herbal preparations used in ethno-veterinary as well as green-fabricated nanoparticles as novel acaricides for the control of the cattle tick R. (B.) microplus. © 2017 Elsevier B.V.

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Babesia; Ethno-veterinary; Ixodidae; Medicinal plant; Tick control

Index Keywords
acaricide, nanoparticle, plant medicinal product; animal, animal husbandry, arachnid vector, bovine, cattle disease, chemistry, drug effects, drug formulation, medicinal plant, parasitology, procedures, Rhipicephalus, tick control, tick infestation, veterinary; Acaricides, Animal Husbandry, Animals, Arachnid Vectors, Cattle, Cattle Diseases, Drug Compounding, Nanoparticles, Plant Preparations, Plants, Medicinal, Rhipicephalus, Tick Control, Tick Infestations

Chemicals/CAS
Acaricides; Plant Preparations

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Work life integration: Study on how women balance the work & life in the present scenario
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Abstract
In the present scenario, it is very difficult for everyone to balance the work life & also personal life. The work scenario is getting more challenging & demanding. When it comes to balancing the work life & personal life, it is even more challenging for women who are working & who also has a strong extended family. Balancing both is very important. When it comes to the conservative mind-set, people still believe that women should do all the domestic work & also help the family financially. They work for 24 hours a day, 7 days a week & 364 days a year.

Author Keywords
Personal success; The issues; Traits needed; Work life balance and women

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Antioxidant study of one ayurvedic preparation Katakakhadiradi Kashayam

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Anti-fungal activity of a secondary metabolite of lawsonia alba and its derivatives – An in-silico study
(2017) *Journal of Pharmaceutical Sciences and Research*, 9 (9), pp. 1470-1477.

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Abstract
Introduction: Fungal infections of skin, hair, and nails, are common and the incidence rate of these diseases were continuously increasing around 20–25% of the world's population. The clinically important fungal infections are characterized by primary or opportunistic. Cutaneous fungal infections and the emerging multidrug resistance are driving interest in fighting these microorganisms with natural products. Endoproteases are responsible for the cleavage of the various proteins and produce C or N compounds that enable the activity of exoproteases, which is cause for availability of aminoacids like nutrient material for the survival of fungal organism. The phytochemical analysis of the aqueous and ethanol extracts of the leaves of Lawsonia inermis revealed the availability of myriad of secondary metabolites. This lawsone is having the ability to inhibit the invasion of fungal organism probably by inhibiting the M36 metalloendopeptidase known as Fungalysin. By this inhibition it can arrest the purulence of fungal diseases. Methods: The 3D structure of Fungalysin was not available in the pubchem database. Homology model was prepared with software and validated. The physicochemical parameters were obtained for the secondary metabolite, Lawsone and the derivatives and these were docked. The derivatives were generated by SWISS ADME online tool. The files were interconverted with OPENBABEL from.mol to.sdf and.pdb files. Results: The protein and ligand were docked and posed with Pymol and the binding affinity values were obtained by Autodock Vina and were tabulated. The Van der Waals force between the protein and ligands were generated by iGEMDOCK and tabulated. Conclusion: The Fungalysin and Lawsone have a good binding affinity and thereby inhibits the targeted protein thereby inhibits the invasion of fungal organism. © 2017, Pharmainfo Publications. All rights reserved.

Author Keywords
Autodock Vina; Fungalysin; IGEMDOCK; Lawsone; Lawsonia alba; Metalloprotease; OPENBABEL

Index Keywords
cytochrome P450 1A2, docking protein, lawsone, metalloproteinase; antifungal activity, Article, binding affinity, blood brain barrier, computer model, drug bioavailability, fungal cell wall, hydrophilicity, Lawsonia alba, lipophilicity, Lythraceae, molecular docking, mycosis, nonhuman, pharmacokinetic parameters, physical chemistry

Chemicals/CAS
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Cloud security and compliance - A semantic approach in end to end security

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Abstract
The Cloud services are becoming an essential part of many organizations. Cloud providers have to adhere to security and privacy policies to ensure their users' data remains confidential and secure. Though there are some ongoing efforts on developing cloud security standards, most cloud providers are implementing a mish-mash of security and privacy controls. This has led to confusion among cloud consumers as to what security measures they should expect from the cloud services, and whether these measures would comply with their security and compliance requirements. We have conducted a comprehensive study to review the potential threats faced by cloud consumers and have determined the compliance models and security controls that should be in place to manage the risk. Based on this study, we have developed an ontology describing the cloud security controls, threats and compliances. We have also developed an application that classifies the security threats faced by cloud users and automatically determines the high level security and compliance policy controls that have to be activated for each threat. The application also displays existing cloud providers that support these security policies. Cloud consumers can use our system to formulate their security policies and find compliant providers even if they are not familiar with the underlying technology.

Author Keywords
Cloud computing; Cloud security; Cloud security models; Security compliance models

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Data mining with big data revolution hybrid

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Abstract
Big Data concern large-volume, complex, growing data sets with multiple, autonomous sources. With the fast development of networking, data storage, and the data collection capacity, Big Data are now rapidly expanding in all science and engineering domains, including physical, biological and biomedical sciences. This paper presents a HACE theorem that characterizes the features of the Big Data revolution, and proposes a Big Data processing model, from the data mining perspective. This data-driven model involves demand-driven aggregation of information sources, mining and analysis, user interest modeling, and security and privacy considerations. We analyze the challenging issues in the data-driven model and also in the Big Data revolution.

Author Keywords
Data storage; Demand-driven; HACE

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A new approach for cloud data security: From single to Cloud-of-Clouds

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Abstract
In the corporate world, a large number of people store their data on clouds. For doing this they need to give their confidential data in the hands of the third party, commonly known as service providers. These cloud service providers cannot be trusted since the complete data is stored in one single cloud. This increases security risks to the user's sensitive data. Due to this issue of data integrity risk and service availability failure, the concept of "Cloud-of-Clouds" comes into picture. Cloud-of-clouds are also known as "inter-clouds" or "multi-clouds". Use of cloud-of-clouds provides a higher level of security to the user's confidential data. The aim of this paper is to secure the user's data by using cloud-of clouds.

Author Keywords
Cloud-of-clouds; Confidential data; Data integrity; Inter-clouds; Multi-clouds; Security; Software cloud computing

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Wireless Zigbee Network Cluster - Capacity calculation and secure data conveyance using indegree

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Abstract
A tree topology is used to construct to construct a Zigbee networks practices by wireless sensor network for data delivery applications. There are 3 types of nodes in zigbee networks; coordinator, router and mobile end devices. Coordinator performs the initialization and maintenance functions in the network. A router is responsible for routing data between the coordinator and mobile end device. In-order to avoid the delivery failures occurs due to node movements and network topology changes, the existing system collect and analyze data about device movement and gives Zigbee node deployment and tree construction framework, which uses three algorithms ZND(zigbee node deployment), ZCD(zigbee coordinator decision) and ZTC(zigbee tree construction). In the proposed system we improve the data delivery by introducing the capacity calculation. If any two nodes have same number of indegree or out-degree, we select the node with maximum capacity.

Author Keywords
Mobility robustness; Network Clusters; Tree topologies; ZigBee wireless networks

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Association Between NOS1 Gene Polymorphisms and Schizophrenia in Asian and Caucasian Populations: A Meta-Analysis

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Abstract

Schizophrenia is a complex psychiatric disorder characterized by memory impairments with delusions and hallucinations. Several investigations have focused on determining the association between NOS1 (nitric oxide synthase-1) polymorphisms and risk of schizophrenia (SZ). However, the association of rs2682826, rs3782206, rs499776, rs3782219, rs41279104, rs3782221, rs1879417, rs4767540, rs561712, and rs6490121 polymorphisms with schizophrenia remains inconclusive. We performed a systematic meta-analysis for each polymorphism to determine its association with SZ by calculating their pooled odds ratio and 95% confidence intervals. The heterogeneity between studies was evaluated using Cochran's Q test to adopt random effects or fixed effects model. Based on our analysis, the rs3782206 polymorphism showed a strongest association with schizophrenia in allelic OR 1.15 (95% CI [1.05–1.25]), homozygote OR 1.35 (95% CI [1.09–1.66]), dominant OR 1.16 (95% CI [1.04–1.29]), and recessive OR 1.29 (95% CI [1.05–1.58]) models in Asian population. Similarly, in Caucasian population, the rs499776 polymorphism attributes risk association in homozygote OR 0.70 (95% CI [0.50–0.98]), dominant OR 3.57 (95% CI [2.34–5.27]), and recessive models OR 0.68 (95% CI [0.50–0.93]) with schizophrenia. Further, the sensitivity analysis was carried out based on leave-one-out method to confirm the reliability of the analysis. Overall, our meta-analysis demonstrates the significance of NOS1 genetic variants that are functionally associated with cognitive and neuropsychiatric symptoms of schizophrenia. © 2017, Springer Science+Business Media, LLC.

Author Keywords

Meta-analysis; Neuropsychiatric conditions; Nitric oxide; NOS1; Polymorphism; Schizophrenia

Index Keywords

neuronal nitric oxide synthase, neuronal nitric oxide synthase, nitric oxide, NOS1 protein, human; Article, Asian, Caucasian, genetic association, genetic risk, genetic variability, homozygote, human, nitric oxide synthase 1 gene, priority journal, schizophrenia, single nucleotide polymorphism, Asian continental ancestry group, biological model, case control study, dominant gene, genetic predisposition, genetics, meta analysis, odds ratio, physiology, recessive gene, schizophrenia; Asian Continental Ancestry Group, Case-Control Studies, European Continental Ancestry Group, Genes, Dominant, Genes, Recessive, Genetic Predisposition to Disease, Humans, Models, Genetic, Nitric Oxide, Nitric Oxide Synthase Type I, Odds Ratio, Polymorphism, Single Nucleotide, Schizophrenia

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Engineered electrospun polyurethane and castor oil nanocomposite scaffolds for cardiovascular applications
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Abstract
Design of scaffolds with natural substances holds potential in several cardiovascular applications. In this study, we have fabricated scaffold using the electrospinning technique with blends of PU and castor oil. The characterization was performed using scanning electron microscopy (SEM), Fourier transform and infrared spectroscopy (FTIR), thermogravimetric analysis (TGA), contact angle measurement, and atomic force microscopy (AFM). Further the blood compatibility of prepared composites was calculated using APTT, PT, and hemolytic assay. SEM analysis of the fabricated scaffolds indicated random morphology of nanofibers with reduced fiber diameter of about 766 ± 147 nm compared to pristine PU control. The FTIR confirms the interaction between PU and castor oil as identified by the formation of hydrogen bond. The developed composite rendered hydrophobic nature owing to increased contact angle and also exhibit higher thermal stability as shown by TGA. The AFM analysis revealed that the surface roughness of the nanocomposites was observed to be improved compared to control. A delay in the activation of clot was noted in activated partial thromboplastin time (APTT) and partial thromboplastin time (PT) assay revealing the anticoagulant nature of the fabricated scaffolds. Moreover, the hemolytic index of developed composites was found to be low indicating the safety of the scaffold in protecting the red blood cells from damage. The present study suggested that newly developed nanocomposite enabled tailoring of desirable characteristics matching for cardiac tissue engineering. © 2017, Springer Science+Business Media, LLC.

Index Keywords
Atomic force microscopy, Blood, Contact angle, Fabrication, Fourier transform infrared spectroscopy, Hydrogen bonds, Infrared spectroscopy, Nanocomposites, Scaffolds (biology), Scanning electron microscopy, Surface roughness, Tissue engineering, Vegetable oils; Activated partial thromboplastin time, Blood compatibility, Cardiac tissue engineering, Cardiovascular applications, Electrospinning techniques, Hemolytic assays, Hydrophobic nature, Nanocomposite scaffolds; Thermogravimetric analysis

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Dermatological indications and usage of topical corticosteroid
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Abstract
Practice of dermatology has been revolutionised with the introduction of topical corticosteroids (TCS).The ever-expanding search to maximise their effects while minimising their side effects has been complemented by synthesising newer molecules with modified chemical structures. The TCS are a class of primarily synthetic steroids with profound anti-inflammatory and antipruritic action. With this most sought-after therapeutic property, a long list of "steroid responsive dermatoses" has emerged into contemporary dermatologic practice. Success of treatment however depends on the accurate diagnosis and selection of the appropriate steroid molecule with relevant consideration of the delivery vehicle, potency, frequency of application, site of involvement, duration of treatment, and strict vigil on the side effects. One has to remember that no single agent has been proven to have the best benefit-to-risk ratio. This chapter deals concisely with the aforementioned and specially is directed against TCS abuse. © Springer Nature Singapore Pte Ltd. 2018. All rights reserved.

Author Keywords
Chemical structure of TCS; Indications of TCS; Methods of usage of TCS; Topical corticosteroids

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Domain-specific Search engine optimization using healthcare ontology and a neural network backpropagation approach

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Abstract
Search engines are a dime a dozen today. Trawling the net for content with specific keywords and using particular algorithms reduces search time. The existing search engines work only by means of related keywords, and their success largely depends on the weight of the keywords in question. As a general rule, however, search engines lose the connect between the semantic relationship of the keyword and the content. Our proposed method concentrates on creating an ontology for a healthcare system. A neural network back-propagation algorithm is used to retrieve content for keywords, during that retrieval, it deals with healthcare ontology. This methodology deals with a comprehensive approach to the contents of the system. For application purposes, this method is constructed by means of a semantic relationship with a decision tree. It underlines the explicit relationship between the keywords and their corresponding contents. © 2017 Research Journal of BioTechnology. All rights reserved.

Author Keywords
Decision tree; Healthcare ontology; Neural network back-propagation; Search engine

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Assessment of handedness and footedness by lateral preference inventory
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Abstract
Handedness is considered as the most obvious type of behavioral and cognitive asymmetry reported in human beings. Also we have footedness in the motor domain. This study investigated the percentage distribution and their significance for handedness and footedness in both sexes of adolescent age group in both left and right handers based on laterality preference inventory. Handedness got a significant result whereas footedness score has no significance based on the laterality preference inventory. © RJPT All right reserved.

Author Keywords
Footedness; Handedness; Laterality

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adolescent, article, female, handedness, hemispheric dominance, human, human experiment, male

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UMAPATHY, V.[a b] , NEERAJA, P.[c] , MANIKANDAN, A.[d] , RAMU, P.[e]

Synthesis of NiMoO4 nanoparticles by sol–gel method and their structural, morphological, optical, magnetic and photocatlytic properties

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Abstract
Nickel molybdate (NiMoO4) nanoparticles (NPs) were synthesized by sol–gel method. Utilizing water as solvent provides crystalline nanostructures. These nanocrystals were structurally characterized by X-ray diffraction, energy dispersive X-ray analysis (EDX), and Fourier transform infrared spectra. Compositional stoichiometry was confirmed by EDX technique. The size and shape were observed by scanning electron microscopy (SEM) and transmission electron microscope (TEM). It was found that the obtained NPs were pure and single phase crystalline with monoclinic structure. The optical properties were studied by ultraviolet–visible diffuse reflectance spectroscopy (UV–Vis–DRS) and photoluminescence (PL) measurements at room temperature. The magnetic properties were studied by vibrating sample magnetometer (VSM) and results showed superparamagnetic behavior of the obtained nanoparticles. Photocatalytic activity of NiMoO4 was studied. The photocatalytic activity of NiMoO4 was enhanced with the addition of TiO2. The catalysts NiMoO4, TiO2 and NiMoO4–TiO2 nanocomposites (NC) were tested for photocatalytic degradation (PCD) of 4-chlorophenol (4-CP). It was found that PCD efficiency of NiMoO4–TiO2 NC was higher than that of pure NiMoO4 and TiO2. © 2017 The Nonferrous Metals Society of China

Author Keywords
magnetic properties; monoclinic structure; nanostructure; NiMoO4; optical properties; photo-catalysis; sol–gel synthesis; TiO2

Index Keywords
Crystalline materials, Energy dispersive X ray analysis, Magnetic properties, Magnetism, Nanomagnetics, Nanoparticles, Nanostructures, Photocatalysis, Scanning electron microscopy, Sols, Spectroscopy, Synthesis (chemical), Transmission electron microscopy, X ray analysis, X ray diffraction; Diffuse reflectance spectroscopy, Energy dispersive x-ray analysis (EDX), Fourier transform infrared spectra, Gel synthesis, Monoclinic structures, NiMoO4, Photoluminescence measurements, TiO2; Optical properties

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Jawahar Thomas, A.[a] , Sundaramoorthy, S.[b] , Chokkalingam, M.P.[a]

Reuse of advanced treated sewage for seawater intrusion barrier - A case study
(2017) *International Journal of Civil Engineering and Technology*, 8 (8), pp. 1556-1562. Cited 2 times.

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Abstract
It is well known that potable water is one of the very much essential domestic needs for people. The need is increasing day by day as the population increases. Although several methods are available to treat sewage for production of potable water, each method has its own merits and limitations. This paper describes a case study made for Chennai city, India to convert sewage in to useful water. Orange County model (California) has been adopted for reuse of advanced treated sewage. The disposal of R O reject can be a deep sea disposal because the feed to R O itself is sterile. The cost of this additional treatment will be just about Rs. 20 per 1000 liters at best. Over a period of time, nearly all the treated sewage can be recovered from inland as extracted water and from a location where it is needed because the aquifer is spread across the metropolitan region vastly. © IAEME Publication.

Author Keywords
Energy dissipation; Ogee spillway; Roller bucket; Stepped spillway

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Arunya, A.[a] , Sarayu, K.[b] , Ramachandra Murthy, A.[b] , Iyer, N.R.[b]

Enhancement of durability properties of bioconcrete incorporated with nano silica
(2017) *International Journal of Civil Engineering and Technology*, 8 (8), pp. 1388-1394. Cited 22 times.

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Abstract
Bacterial concrete, the so called Smart bio material is an eco-friendly concrete in which selective cementation takes place by microbiologically induced CaCO3 .This method is introduced to remediate even micro cracks, voids and pores. Based on experimental investigation carried out the paper presents the results to enhance the mechanical and durability properties by means of introducing Enterobacter sp. in the concrete. The bacterium used in this study has the ability to precipitate calcite is the calcite precipitating bacteria which is readily mixed in the concrete. The precipitated calcite contains crystalline structure that has the ability to readily adhere to the concrete and completely arrests the rise of micro cracks and pores. In addition it has the ability to continuously grow upon itself when it comes in contact with any medium which is highly insoluble in water. The presence of nano-silica in the concrete enhances the C-S-H formation. The strength contribution in the specimen is due to the presence of organic substances. It is available as microbial biomass that is required for the biomineral precipitation. The Organic source adopted here is the yeast extract. A successful attempt has been made on the biomineralization process to enhance the compressive strength, split tensile strength and durability properties of concrete by using the Enterobacter sp. This biological treatment shows promising prospect in increasing strength aspects of the concrete. © IAEME Publication.

Author Keywords
Bacterial concrete; CaCO3 precipitation; Mechanical & Durability studies; N2 source; Nano silica

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Chockalingam, M.P.[a] , Palanivelraja, S.[b]

Retrospective analysis of a theoretical model used for forecasting future air quality near the north Chennai thermal power plant

(2017) *International Journal of Civil Engineering and Technology*, 8 (8), pp. 1457-1467. Cited 21 times.

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Abstract
The trend of gathering of Baseline Air Quality data commenced in Chennai as early as 1981, as an academic exercise, undertaken by some post-graduate students of the Centre for Environmental Studies in Anna University, Chennai (1,2,3,4). The study revealed that the baseline air quality data were only at moderate levels, in respect of the three major air pollutants, namely, Sulphur Dioxide (SO2), Nitrogen Dioxide (NO2), and Suspended Particulate Matter (SPM), in Ennore-Manali Industrial area. All these pollutants measured for the respective averaging times, were below the National Ambient Air Quality Standards prescribed for each pollutant, respectively. Therefore, it was possible to convince the Department of Environment & Forests, Government of India, New Delhi, that the Environmental Clearance be given, for the proposed establishment of the 3x210 MW coal-fired thermal power plant in the Ennore Island location, with the financial assistance from the Asian Development Bank to the Tamil Nadu Electricity Board. The present status of air quality in the same area needs to be assessed in the light of the Revised National Ambient Air Quality Standards, especially in view of the newly introduced parameters, namely, PM10 and PM2.5, which were not in force in the year 1986. There are a few more industries which have come up after 1986, and which have relevance to emission of air pollutants, namely, SO2, NO2, and SPM (inclusive of PM10 and PM2.5), having adverse effects on human health. © IAEME Publication.

Author Keywords
Analysis of air quality

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Prasanna, K.[a] , Anandh, K.S.[a] , Kiruthiga, K.[b]

Study on high performance concrete with replacement of fine aggregate by manufactured sand
(2017) *International Journal of Civil Engineering and Technology*, 8 (8), pp. 1502-1514. Cited 2 times.

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Abstract
Being cheapest in earlier days the natural sand used in concrete without any alternate even though natural sand containing organic impurities, clay and silt content more than permitted level. Due to excessive mining the river basin environment got affected, the demand for fine aggregate increased and the prevailing market unable to meet the need. Nowadays crushed sand also called as manufactured sand being used as an alternate to natural sand partially or fully. Even though manufactured sand used in normal construction activities, it is not used in high rise structures involving special concretes. Hence it is necessary to study the properties of special concrete with various replacement proportions of fine aggregate by manufactured sand. This will safeguard environment river basin and at the same time unwanted accumulation of crusher dust will put into better use than being used as mere filling material. Experiments conducted on M60 grade concrete with fine aggregate replacement proportion 0%. 25%, 50%, 75% and 100%. The properties such as compressive strength, split tensile strength and ultrasonic pulse velocity are determined from cubes and cylinders cast with manufactured sand procured from kundrathur and river sand taken from Araniar basin. The replacement of 75% natural sand by manufactured sand recommended as this proportion gives comparatively better results in special concrete such as high performance concrete. Hence the manufactured can be used in high performance without any doubt which will also improve the environment as well as sustainability of construction industry. © IAEME Publication.

Author Keywords
High performance concrete; Manufactured sand; River sand

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Formation of functional nanofibrous electrospun polyurethane and murivenna oil with improved haemocompatibility for wound healing

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Abstract
Electrospinning is an emerging tool and promising method to fabricate polymer nanofibers. The aim of this work was to fabricate electrospun polyurethane mats reinforced with murivenna oil for wound dressings. The scanning electron microscopy (SEM) micrographs showed the fiber diameter of nanocomposites in the range of 740 ± 160 nm and found to be decreased compared to pure polyurethane. Surface of nanocomposites was analyzed by Fourier transform infrared spectroscopy (FTIR) insinuated the interactions between PU and murivenna oil by the formation of hydrogen bond and changes in the characteristics peaks. Contact angle of the PU incorporated murivenna oil showed a decrease in its value compared to pure PU indicating the increased wettability and hydrophilic nature. The thermal degradation and stability of fabricated composites was found be enhanced compared to pure PU. The surface morphology through atomic force microscopy (AFM) analysis showed a change in surface roughness due to presence of murivenna oil in the polymer matrix. In blood compatibility results, both activated partial thromboplastin time (APTT) and prothrombin time (PT) were delayed due to improved surface properties and the addition of murivenna oil in the PU matrix. Compared to pure PU, the hemolysis assay of the PU incorporated murivenna oil showed a significant decrease in the percentage of lysis of red blood cells indicating better blood compatibility. Following the results, it was confirmed that fabricated novel scaffolds having better physicochemical and enhanced blood compatibility properties may be utilized for wound dressing. © 2017 Elsevier Ltd

Author Keywords
Murivenna oil; Nanocomposites; Polyurethane; Surface roughness; Wound healing dressings

Index Keywords
Atomic force microscopy, Biomaterials, Blood, Fourier transform infrared spectroscopy, Hydrogen bonds, Nanocomposites, Nanofibers, Polyurethanes, Scanning electron microscopy; Activated partial thromboplastin time, Blood compatibility, Haemocompatibility, Murivenna oil, Polymer nanofibers, Prothrombin time, Wound dressings, Wound healing; Surface roughness

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Documents

Akila, V.[a] , Sheela, T.[b]

Preserving data and key privacy in Data Aggregation for Wireless Sensor Networks

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Abstract
Reliable and trustful data aggregation is needed for most application in Wireless Sensor Networks. In this paper, we propose a new approach to attain data and key privacy protection in data aggregation called Preserving Data and Key Privacy in Data Aggregation for Wireless Sensor Networks (PDKP).Existing privacy preserving protocol provide more computational and communicational overhead in the sensor nodes. It increases the consumption of energy among the nodes. In our scheme, the encrypted content of the data is shared without revealing the data and key to other nodes by using simple technique. It preserves the key and data from an adversary with less computational and communication overhead. The base station can identify the distrustful groups related to the set of group aggregates and the retransmission of data is performed only for the abnormal data sensing intermediate nodes. It preserves the various security issues such as data freshness, data integrity, data confidentiality in data aggregation. Our simulation result showed that implementation of PDKP reduces the communication overhead and increases energy efficiency. © 2017 IEEE.

Author Keywords
Data Aggregation; Data Integrity; Data Privacy; Homomorphic Encryption; Wireless Sensor Networks

Index Keywords
Cryptography, Energy efficiency, Sensor nodes, Wireless sensor networks; Communication overheads, Consumption of energy, Data aggregation, Data confidentiality, Data integrity, Ho-momorphic encryptions, Intermediate node, Privacy-preserving protocols; Data privacy

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A novel imputation method for effective prediction of coronary Kidney disease

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Abstract

Kidney disease is become a popular disease in around the world. The prediction of kidney disease is highly complex task while handling huge dataset. The kidney disease dataset contain patients information such as age, blood Pressure levels, albumin, sugar, counts of red blood cells etc., in the dataset there may be some missing values in some features that values may be important to predict kidney disease. Due to such missing values in the dataset will decrease the accuracy of kidney disease prediction. Several methods were proposed to fill up these missing values. An existing classification framework used a data preprocessing method but here the data cleaning process has been made in order to fill the missing values and to correct the erroneous ones. A recalculation process is performed on the chronic Kidney disease (CKD) stages and the values were recalculated and filled in for unknown values. Though this method is efficient, the influence of expert in the field of healthcare dataset values for CKD is needed. So to avoid this need and improve the preprocessing as a layman, Weighted Average Ensemble Learning Imputation (WAELI) is proposed. In this proposed work the single value imputation model used expectation-maximization (EM) and Random Forest (RF) which predict the missing values effectively in small dataset. For huge dataset the multiple value imputation model predict the missing values with the help of RF, Classification And Regression Tree, C4.5 are used to estimate the missing value. Hence the accuracy of kidney disease prediction will be improved by using WAELI. Then introducing priority assigning algorithm to assign priority for each features in the dataset then higher priority features are carried over for classification process. This makes classification process more efficient and time consumption for classification will be reduced. © 2017 IEEE.

Author Keywords

C4.5; CART; CKD EPI; EM; Priority assigning algorithm; RF; WAELI

Index Keywords

Autocorrelation, Blood pressure, Decision trees, Forecasting, Maximum principle; C4.5, CART, CKD EPI, Classification and regression tree, Classification framework, Classification process, Expectation Maximization, WAELI; Classification (of information)

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Sathish Kumar, P.J.[a] , Jagadeesh Kannan, R.[b]

Symptoms based predict treatment medicine suggestion system using data mining techniques
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Abstract
As extensive measure of information is created in medicinal associations (healing centers, therapeutic focuses) yet as this information is not appropriately utilized. Here, information mining is the way toward dissecting diverse parts of information and amassing it into helpful data. As of late, Machine Learning systems have been effectively used in an alternate applications incorporating to help with therapeutic finding. It is exceptionally easy and on time to prepare for patients to break down illness in view of clinical and lab side effects with suitable information and gives more proficient outcome for particular ailment. At that point classification is an information mining assignment by and large utilized as a part of therapeutic information mining. In this manuscript study of the execution measure of a machine learning strategy, neural system and Naive Bayes Classifier calculation for grouping side effects based anticipation for drug treatment is executed. Utilizing Naive Bayes, the general speed and precision of the calculation expanded and remove high quality information set from an unstructured content. The Naive Bayes is a standout amongst the best order calculations. In numerous basic leadership frameworks, positioning execution is a fascinating and attractive idea than just arrangement. So to augment conventional Naive Bayes, and to enhance its execution, community oriented channel and preprocessing idea is consolidated. The manifestations bringing about diabetes and treatment drug are recognized and are connected to the expectation display in view of which the forecast is finished. It is utilizing two manifestations based dataset preparing. Gathering dataset after the application of preprocessing for expels commotion and neural system procedure for preparing and testing of dataset. The examination module breaks down the research center test reports of the manifestations levels of the patient and gives appropriate consciousness messages to the patient through outcomes. The objective here is to find new and helpful examples to give significant and valuable data about diabetes to the patient. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Dataset; Machine learning; Naive Bayes technique; Neural network; Preprocessing algorithm; Symptoms (query)

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Mitthra, S.[a] , Rajkumar, K.[b] , Mahalaxmi, S.[b]

Evaluation of polymerization shrinkage, polymerization shrinkage stress, wear resistance, and compressive strength of a silorane-based composite: A finite element analysis study

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Abstract
Background: Understanding the mechanical properties is important in predicting the clinical behavior of composites. Finite element analysis (FEA) evaluates properties of materials replicating clinical scenario. Aim: This study evaluated polymerization shrinkage and stress, wear resistance (WR), and compressive strength (CS) of silorane in comparison with two methacrylate resins. Settings and Design: This study design was a numerical study using FEA. Materials and Methods: Three-dimensional (3D) models of maxillary premolar with Class I cavities (2 mm depth, 4 mm length, and 2.5 mm width) created and restored with silorane, nanohybrid, and microhybrid; Groups I, II, and III, respectively. Loads of 200-600 N were applied. Polymerization shrinkage was first determined by displacement produced in the X, Y, and Z planes. Maximum stress distribution due to shrinkage was calculated using AN SYS software. 3D cube models of composite resins were simulated with varying filler particle size. Similar loads were applied. WR and compressive stress were calculated: K W L/H and load/cross-sectional area, respectively. Statistical analysis done using one-way ANOVA, Kruskal-Wallis, and Tukey's honestly significant difference test (P < 0.05). Results: Polymerization shrinkage (0.99%) and shrinkage stress (233.21 Mpa) of silorane were less compared to microhybrid (2.14% and 472.43 Mpa) and nanohybrid (2.32% and 464.88 Mpa). Silorane (7.92×/1011 μm/mm3) and nanohybrid (7.79×/1011) showed superior WR than microhybrid (1.113×/1017). There was no significant difference in compressive stress among the groups. Conclusion: Silorane exhibited less polymerization shrinkage and shrinkage stress compared to methacrylates. Silorane and nanohybrid showed greater WR compared to microhybrid. CS of all groups was similar.

Author Keywords
Compressive strength; finite element analysis; polymerization shrinkage; silorane; wear resistance

Index Keywords
silorane; compressive strength, dental procedure, finite element analysis, materials testing, polymerization; Compressive Strength, Dental Stress Analysis, Finite Element Analysis, Materials Testing, Polymerization, Silorane Resins

Chemicals/CAS
Silorane Resins

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Cost optimization in new product development, aligned with development process and product strategy
(2017) *International Journal of Mechanical Engineering and Technology*, 8 (7), pp. 692-702. Cited 1 time.

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Abstract
Cost optimization is one of the essential elements for any company, to be competitive and successful in global market. This paper explains various methodologies of Cost optimization and its effectiveness for each type of products. It also proposes the right timing to do Cost optimization, to fetch maximum benefits. The word Cost optimization might look very simple exercise, however efficiency of this activity depends on how well it is linked with company's Development process and Product strategies. This paper describes different phases of New Product Development as per Advanced Product Quality Planning and the level of product cost frozen at every stage. Cost as seen by Customers and Company is studied to understand the differences of Importance given by customers. It is further analyzed in deep, to explain the importance of synergy between Cost optimization and Company strategy on Product development. Advantages and Challenges of different ways of Cost optimization analyzed and a recommendation made on what and how the Cost optimization can be synergized with Development process and Product strategy with which Cost optimization efficiency can be ensured. © IAEME Publication.

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Cost Optimization; Localization decision tree; New Product Development Risk mitigation

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Fabrication and characterization of chitosan nanoparticles and collagen-loaded polyurethane nanocomposite membrane coated with heparin for atrial septal defect (ASD) closure
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Abstract
Atrial septal defect (ASD) constitutes 30–40% of all congenital heart diseases in adults. The most common complications in the treatment of ASD are embolization of the device and thrombosis formation. In this research, an occluding patch was developed for ASD treatment using a well-known textile technology called electrospinning. For the first time, a cardiovascular occluding patch was fabricated using medical grade polyurethane (PU) loaded with bioactive agents namely chitosan nanoparticles (Cn) and collagen (Co) which is then coated with heparin (Hp). Fourier transform infrared spectrum showed characteristic vibrations of several active constituents and changes in the absorbance due to the inclusion of active ingredients in the patch. The contact angle analysis demonstrated no significant decrease in contact angle compared to the control and the composite patches. The structure of the electrospun nanocomposite (PUCnCoHp) was examined through scanning electron microscopy. A decrease in nanofiber diameter between control PU and PUCnCoHp nanocomposite was observed. Water uptake was found to be decreased for the PUCnCoHp nanocomposite against the control. The hemocompatibility properties of the PUCnCoHp ASD occluding patch was inferred through in vitro hemocompatibility tests like activated partial thromboplastin time (APTT), prothrombin time (PT) and hemolysis assay. It was found that the PT and APTT time was significantly prolonged for the fabricated PUCnCoHp ASD occluding patch compared to the control. Likewise, the hemolysis percentage was also decreased for the PUCnCoHp ASD patch against the control. In conclusion, the developed PUCnCoHp patch demonstrates potential properties to be used for ASD occlusion. © 2017, Springer-Verlag GmbH Germany.

Author Keywords
Atrial septal defect; Blood compatibility; Cardiac patch; Electrospinning; Nanofibers; Textile technology

Index Keywords
chitosan nanoparticle, collagen, heparin, nanocomposite, nanofiber, polyurethan, polyurethane loaded with chitosan nanoparticle and collagen coated with heparin, unclassified drug; Article, blood compatibility, blood vessel graft, carbohydrate synthesis, cell adhesion, cell proliferation, contact angle, controlled study, electrospinning, fluid intake, heart atrium septum defect, hemolysis, hemolysis assay, human, infrared spectroscopy, partial thromboplastin time, priority journal, prothrombin time, scanning electron microscopy, thrombosis

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Cellulose dissolution and regeneration using various imidazolium based protic ionic liquids
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Abstract
A new series of six protic ionic liquids (PILs) comprising substituted imidazolium cations paired with lactate or glycolate anions were synthesized for cellulose dissolution. All the six synthesized PILs were able to dissolve about 5 wt% of cellulose. Especially, 1-ethyl imidazolium lactate showed highest dissolution power since 5 wt% of cellulose solution was obtained within 20 min at 80 °C. The effects of dissolution temperature on cellulose dissolution time were also investigated. As the dissolution temperature increases, dissolution time reduces significantly. The regeneration of cellulose with higher yield was achieved by adding anti-solvent like deionized water to the cellulose solution. Both the initial and regenerated cellulose samples were characterized by X-ray diffraction (XRD), thermogravimetric analysis (TGA) and scanning electron microscope (SEM) analysis. The results showed that the crystalline structure of initial cellulose (cellulose I) gets converted to cellulose II. In addition, all regenerated cellulose possessed nanostructure and lower thermal decomposition temperature than the initial cellulose and had new vistas in the industrial applications. © 2016 Elsevier B.V.

Author Keywords
Cellulose; Dissolution; Protic ionic liquids; Regeneration

Index Keywords
Decomposition, Deionized water, Dissolution, Ionic liquids, Liquids, Scanning electron microscopy, Thermogravimetric analysis, X ray diffraction; Cellulose dissolutions, Cellulose solutions, Crystalline structure, Dissolution temperature, Protic ionic liquids, Regenerated cellulose, Regeneration, Thermal decomposition temperature; Cellulose

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Parameswaran, V.[a b] , Nallamuthu, N.[c] , Devendran, P.[c] , Nagarajan, E.R.[d] , Manikandan, A.[e]

Electrical conductivity studies on Ammonium bromide incorporated with Zwitterionic polymer blend electrolyte for battery application

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Abstract
Solid polymer blend electrolytes are widely studied due to their extensive applications particularly in electrochemical devices. Blending polymer makes the thermal stability, higher mechanical strength and inorganic salt provide ionic charge carrier to enhance the conductivity. In these studies, 50% polyvinyl alcohol (PVA), 50% poly (N-vinyl pyrrolidone) (PVP) and 2.5% L-Asparagine mixed with different ratio of the Ammonium bromide (NH4Br), have been synthesized using solution casting technique. The prepared PVA/PVP/L-Asparagine/doped-NH4Br polymer blend electrolyte films have been characterized by various analytical methods such as FT-IR, XRD, impedance spectroscopy, TG-DSC and scanning electron microscopy. FT-IR, XRD and TG/DSC analysis revealed the structural and thermal behavior of the complex formation between PVA/PVP/L-Asparagine/doped-NH4Br. The ionic conductivity and the dielectric properties of PVA/PVP/L-Asparagine/doped-NH4Br polymer blend electrolyte films were examined using impedance analysis. The highest ionic conductivity was found to be 2.34×10−4 S cm−1 for the m.wt. composition of 50%PVA:50%PVP:2.5%L-Asparagine:doped 0.15 g NH4Br at ambient temperature. Solid state proton battery is fabricated and the observed open circuit voltage is 1.1 V and its performance has been studied. © 2017 Elsevier B.V.

Author Keywords
Dielectric studies; Impedance spectroscopy; L-Asparagine; NH4Br; PVA-PVP blend polymer

Index Keywords
Amino acids, Blending, Dielectric properties, Electric batteries, Electrolytes, Ionic conductivity, Ionic strength, Open circuit voltage, Polymer blends, Polymer films, Scanning electron microscopy, Solid electrolytes, Spectroscopy; Dielectric studies, Electrical conductivity, Electrochemical devices, Impedance spectroscopy, L asparagines, Poly (vinyl alcohol) (PVA), Solution-casting technique, Zwitterionic polymers; Polyelectrolytes

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Balaji, V.[a] , Ravi, S.[b] , Chandran, P.N.[c]

Evaluation of cryogenic CO2 as a coolant and optimization of surface roughness in conventional milling of HCHCR (AISI D3) die steel and CVD tin coated insert using taguchi technique

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Abstract

The present investigation comprised of experimental study of conventional milling of AISI D3 Steel and Tin coated inserts by using cryogenic CO2 as a coolant. The main objective of the analysis was to use the Taguchi technique to detect the impact of dynamic parameter viz. Cutting speed, feed, depth of the cut on the roughness of the work piece material. The goal was to comparatively study under dry and wet conditions and observe the effect of cryogenic CO2 as a coolant with CVD TiN coated as a insert tool. Finally cutting temperature, roughness, Material Removal Rate (MRR) and tool wear were measured. Finally SEM observation was made to analyze the tool wear and the data was complied into MINITAB -17 for Taguchi analysis. Mainly surface roughness and MRR were investigated employing Taguchi design. © Informatics Publishing Limited & Indian Society for Surface Science and Technology. All rights reserved.

Author Keywords

Cryogenic milling Co2; Methodology; Surface roughness; Taguchi technique

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Selvam, R.[a] , Ravi, S.[b] , Raja, R.[a]

Study of thermal behavior of silicon carbide reinforced polyester matrix nanocomposite

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Abstract
SiC reinforced polyester nano-composites have been investigated to explore its thermal behavior and the possibilities of its performance improvement. This has been accomplished through addition of small amount of nano sized particles to the composite and by subjecting it to conduct of subsequent experimentations. Nano-composites find applications in the manufacture of special and process equipments. In this study, the composite is fabricated using a weight ratio of 30% for SiC which is reinforced with the remaining polymer matrix. Studies were done to understand the morphology and thermal behavior by conducting different tests and analysis such as thermal conductivity test, TGA and FE- SEM analysis. © 2017, Informatics Publishing Limited & Indian Society for Surface Science and Technology. All rights reserved.

Author Keywords
Distribution; Morphology; Thermal conductivity; Thermogravimetry

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Escalin Tresa, L.[a] , Sundararajan, M.[b]

Advanced image compression technique for medical imaging using mpeg h.264
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Abstract
Fast and accurate transmission of diagnostic images is vital in providing successful medical outcomes. Image compression algorithms play a key role in this process. This article deals with the medical image compression applications since the improvement in image compression filed is in particular related to the need of active and powerful techniques for the storage and transmission of images. To gain the maximal competencies of storage and transmission, special compression algorithms should be compared to find an efficient technique for medical image compression. The proposed unbelievable excellent and efficient image compression methodology with strong regenerative compressed data without loss, based on SBIC (Successive Blocks Interframe Coding), is a superior method for compressing MRI (Magnetic Resonance Imaging), CT (Computed Tomography) and US (Ultrasound) images. This conclusion is based on mathematical analysis of the test data plus visual analysis of regenerated test images. The compression ratio of these medical images using the proposed algorithm produced a 70-80% compression ratio improvement over JPEG-LS, JPEG and JPEG2000 methods without degradation of the tested images. Conclusion faster image transfer and reduced storage costs plus increased efficiencies in healthcare delivery systems. The results were evaluated in terms of PSNR (Peak Signal to Noise Ratio), MSE (Mean Square Error), MAE (Maximum Absolute Error) and RMSE (Root Mean Square Error). © Copyright 2017 American Scientific Publishers All rights reserved.

Author Keywords
Block Comparison; Hybrid Compression; Image Compression; Lossless Compression; Medical Image Compression; Neighbourhood Similarity; Successive Blocks Interframe

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Role of anatomical landmarks in identifying normal and transitional vertebra in lumbar spine magnetic resonance imaging

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Abstract
Study Design: Retrospective study. Purpose: Identification of transitional vertebra is important in spine imaging, especially in presurgical planning. Pasted images of the whole spine obtained using high-field magnetic resonance imaging (MRI) are helpful in counting vertebrae and identifying transitional vertebrae. Counting vertebrae and identifying transitional vertebrae is challenging in isolated studies of lumbar spine and in studies conducted in low-field MRI. An incorrect evaluation may lead to wrong-level treatment. Here, we identify the location of different anatomical structures that can help in counting and identifying vertebrae. Overview of Literature: Many studies have assessed the vertebral segments using various anatomical structures such as costal facets (CF), aortic bifurcation (AB), inferior vena cava confluence (IC), right renal artery (RRA), celiac trunk (CT), superior mesenteric artery root (SR), iliolumbar ligament (ILL) psoas muscle (PM) origin, and conus medullaris. However, none have yielded any consistent results. Methods: We studied the locations of the anatomical structures CF, AB, IC, RRA, CT, SR, ILL, and PM in patients who underwent whole spine MRI at our department. Results: In our study, 81.4% patients had normal spinal segmentation, 14.7% had sacralization, and 3.8% had lumbarization. Vascular landmarks had variable origin. There were caudal and cranial shifts with respect to lumbarization and sacralization. In 93.8% of cases in the normal group, ILL emerged from either L5 alone or the adjacent disc. In the sacralization group, ILL was commonly seen in L5. In the lumbarization group, ILL emerged from L5 and the adjacent disc (66.6%). CFs were identified at D12 in 96.9% and 91.7% of patients in the normal and lumbarization groups, respectively. The PM origin was observed from D12 or D12-L1 in most patients in the normal and sacralization groups. Conclusions: CF, PM, and ILL were good identification markers for D12 and L5, but none were 100% accurate. © 2017 by Korean Society of Spine Surgery.

Author Keywords
Costal; Ligaments; Lumbar vertebrae; Magnetic resonance imaging

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Effect of fluoxetine on the hippocampus of wistar albino rats in cold restraint stress model
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Abstract
Introduction: Stress has been known to be a potential modulator of learning and memory. Long term stress can lead to depression. Fluoxetine is a selective serotonin reuptake inhibitor group of drug used in the treatment of depression. Aim: The present study was conducted to evaluate the potential of Fluoxetine on cold restraint induced stress in the hippocampus of Wistar rats. Materials and Methods: A total of 18 male wistar albino rats were divided randomly into 3 groups (n=6). Group 1 was the control group which were kept in normal laboratory conditions. Group 2 was the negative control group which were given cold restraint stress for period of four weeks. Group 3 was the experimental group, where the animals were pretreated with fluoxetine 10 mg/kg for a period of one week followed by cold restraint stress for 30 minutes and cotreated with fluoxetine 10 mg/kg for a period of four weeks. The whole study was done for a period of five weeks followed by behavioural studies and subsequently sacrificed with removal of brain for various histological, Immunohistochemical (IHC), neurochemical and antioxidant analysis. The values were expressed as Mean±SEM. One-way analysis of variance followed by Tukey's multiple comparisons test was used for the comparison of means. A probability of 0.05 and less was taken as statistically significant using Prism Graphpad software version 6.01. Results: The results show there was significant improvement in the Morris water maze test after treatment with fluoxetine in Group 2. Similar results were also noted in the levels of neurotransmitters and antioxidant levels in brain and also in the number of cells counted in IHC and histological studies by H&E when Group 3 was compared with Group 2. The treatment reversed the damage in Group 2 which was comparable with the control group. Conclusion: The results revealed that administration of fluoxetine 10 mg/kg given orally has a potential antistressor effect by improving the neurogenic and neuroprotective effect on the cold restraint stress induced hippocampal damage. © 2017, Journal of Clinical and Diagnostic Research. All rights reserved.

Author Keywords
Neurogenesis; Neuroprotective; Water maze

Index Keywords
fluoxetine, monoamine, neurotransmitter, sodium chloride, water; animal experiment, animal tissue, antioxidant activity, Article, autoinjector, behavior, blood sampling, cell counting, controlled study, corticosterone blood level, enzymatic assay, high performance liquid chromatography, hippocampus, histology, immobilization stress, immunohistochemistry, male, Morris water maze test, nonhuman, oxidative stress, rat, staining, veterinary surgeon

Chemicals/CAS
fluoxetine, 54910-89-3, 56296-78-7, 59333-67-4; sodium chloride, 7647-14-5; water, 7732-18-5

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An insight into the putative role of victuals like honey and its polyphenols in breast cancer
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Abstract
Diet plays a crucial role in cancer advancement as well as prevention. Breast cancer is the second leading cause of cancer death among women. Recent research links breast cancer with diet and some evidence for the preventive effect of diet against breast cancer was also documented. The growth of cancer cells is influenced by natural sweetener honey and its multitude of phenolic phytochemical components. Honey has been used medicinally by ancient Greeks and Egyptians and also traditionally exploited in Ayurveda and Chinese medicine. In this paper, the anti-cancer properties of honey and its phytochemical's action against breast cancer have been summarized. They result in apoptosis by enhancing reactive oxygen species level, activating mitochondrial pathway, initiation of pro-apoptotic and anti-apoptotic proteins, induction of p53 pathway that finally cause DNA fragmentation. However, there is a necessity for more proteomic and genetic-based experiments to understand its molecular mechanism to promote honey and its phenolic markers as plausible candidates for breast cancer treatment. Further, there is a need for quality check of honey available in the market, which warrants significant investigation by researchers in the food industry to ensure their attributes.

Author Keywords
Anti-cancer; Apoptosis; Breast cancer; Honey; Phenolic

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Abstract
The good features of subset are selected correctly, then, the entire set gives compatible results. For this purpose, feature subset selection is used in the highdimensional data. The proposed Fast Clustering Algorithm is used for selecting the subset of features. A Fast clustering algorithm renders efficiency and effectiveness to discover the subset of features. Fast clustering algorithm work can be done in two steps. The first step is to moving out irrelevant features from the dataset, the irrelevant features are removed by the features having the at value above the predefined threshold. And the second step is to eliminating the redundant features from the dataset, the redundant features is removed by constructing the Minimum Spanning Tree and separate the tree having the edge distance more than its neighbor to form the separate clusters, from the clusters features that are strongly associated with the target features are selected to form the subset of features. The Fast Clustering Algorithm is more efficient than the existing features subset selection algorithms RELIEF, FCBF, INTERACT, CFS, FOCUS. © 2017 IAEME Publication.

Author Keywords
Feature Redundancy.; Feature Relevance; Feature Subset Selection; Minimum Spanning Tree

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Clinical and functional outcomes of implant prostheses in fibula free flaps

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Abstract
Introduction: Functional reconstruction of jaw defects due to surgical resection is a challenge in maxillofacial surgery. The fibula free flap in combination with dental implants has exhibited growing popularity for such reconstructions. This study aimed at evaluating the clinical and functional outcome of dental implants inserted in fibula free flaps and dental implants used for orofacial reconstruction following ablation of tumors. Materials and methods: A clinical follow-up study of 10 patients was conducted after oral surgery, who received vascularized fibula bone grafts and endosseous implants for functional jaw reconstruction during a 12-year period. The follow-up protocol included a clinical examination and radiological evaluation and interview using a questionnaire. Information on postoperative recovery after the surgical reconstruction phase and implant placement, type of diet, swallowing problems, speech intelligibility, lip competence, and perceived facial appearance was collected and analyzed. Results: The survival rate of fibula free flap was 100%. The survival and success rates of implants placed in the fibula flaps at the end of the follow-up period were 100 and 94% respectively. Conclusion: Implants placed in fibula bone grafts have been shown to integrate normally. Surgical reconstruction with vascularized fibula bone grafts followed by placement of dental implants after jaw resection can provide good clinical and functional outcomes for oral rehabilitation with a prosthesis. © 2017, Jaypee Brothers Medical Publishers (P) Ltd. All rights reserved.

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Bone grafts; Dental implants; Fibula free flap; Jaw reconstruction; Prosthesis

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Harmonic elimination in single phase supply with non linear loads using shunt active power filter controlled with fuzzy logic controller using simulation approach

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Abstract

Due to the wide extension of power electronics equipment in modern electrical systems, the increase of the harmonics disturbance in the alternating currents has became a major concern due to the adverse effects on all equipments. The equipment will develop harmonic pollution source of the system, which generate many disturbances, and interrupt the optimal operation of electrical equipments. These equipments draw non-linear currents from the source as compare to traditional loads such as motors and resistive heating elements. This work, proposed a solution to eliminate the harmonics introduced by the nonlinear loads. The analysis and simulation using Matlab Simulink of active power filter (SAPF) compensating the reactive power and harmonics produced by nonlinear loads in steady and in transients states. Hence the simulation approach for SAPF is used to diminish the harmonics and gives improved power factor with reduced THD using Mat lab Simulink in order to develop new fuzzy logic controller based SAPF. © 2016 IEEE.

Author Keywords

Fuzzy logic Controller (FLC); Harmonics; MATLAB SIMULINK; Point OF Common Coupling (PCC); Shunt Active Power Filters (SAPF); Total Harmonic Distortion (THD)

Index Keywords

Active filters, Bandpass filters, Computer circuits, Electric fault currents, Equipment, Fuzzy filters, Fuzzy logic, Harmonic analysis, Integrated circuits, MATLAB; Fuzzy logic controllers, Harmonics, MATLAB/ SIMULINK, Point of common coupling, Shunt active power filter (SAPF), Total harmonic distortion (THD); Controllers

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Cloud security and compliance - A semantic approach in end to end security
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Abstract
The Cloud services are becoming an essential part of many organizations. Cloud providers have to adhere to security and privacy policies to ensure their users' data remains confidential and secure. Though there are some ongoing efforts on developing cloud security standards, most cloud providers are implementing a mishmash of security and privacy controls. This has led to confusion among cloud consumers as to what security measures they should expect from the cloud services, and whether these measures would comply with their security and compliance requirements. We have conducted a comprehensive study to review the potential threats faced by cloud consumers and have determined the compliance models and security controls that should be in place to manage the risk. Based on this study, we have developed an ontology describing the cloud security controls, threats and compliances. We have also developed an application that classifies the security threats faced by cloud users and automatically determines the high level security and compliance policy controls that have to be activated for each threat. The application also displays existing cloud providers that support these security policies. Cloud consumers can use our system to formulate their security policies and find compliant providers even if they are not familiar with the underlying technology. © 2017 IAEME Publication.

Author Keywords
Cloud computing; Cloud security; Cloud security models; Security compliance models

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Manufacturing and characterization of novel electrospun composite comprising polyurethane and mustard oil scaffold with enhanced blood compatibility

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Abstract
The objective of this work is to characterize and investigate the blood compatibility of polyurethane (PU)/mustard oil composites fabricated using electrospinning technique. The fabricated scaffold was characterized using scanning electron microscopy (SEM), Fourier transform infrared spectroscopy (FTIR), atomic force microscopy (AFM), thermogravimetric analysis (TGA) and contact angle measurements. The activated partial thromboplastin time (APPT), prothrombin time (PT) and the hemolytic assay were done to investigate the blood compatibility of the developed composites. The SEM results revealed that the fiber diameter of the composites (761±123 nm) was reduced compared to pristine PU control. The interaction between PU and mustard oil was confirmed by FTIR as evident through the shifting of peaks. The fabricated composites depicted hydrophobic behavior as insinuated by the increase in contact angle measurements. PU/mustard composites displayed improved crystallinity as confirmed by TGA. Atomic force micrographs suggested that developed PU/mustard oil composites showed an increase in the surface roughness (Ra) compared to pure PU. The Ra of pure PU was observed to be 723 nm but for the fabricated PU/mustard oil composite the Ra was found to be 1298 nm (Ra). The hemolytic index value for pure PU and fabricated composites was observed to be 2.73%and 1.15% indicating that developed composites showed a non-hemolytic behavior signifying the safety of the composites with red blood cells. Hence the newly developed composites with improved physicochemical and blood compatibility properties may be considered as a potential candidate for fabricating cardiac patches and grafts. © 2017 by the authors. Licensee MDPI, Basel, Switzerland.

Author Keywords
Cardiac patches; Composite; Electrospun; Mustard oil; Polyurethane

Index Keywords
Angle measurement, Atomic force microscopy, Biomaterials, Blood, Composite materials, Contact angle, Fabrication, Fourier transform infrared spectroscopy, Polyurethanes, Scanning electron microscopy, Surface roughness, Vegetable oils; Activated partial thromboplastin time, Atomic force micrographs, Cardiac patches, Electrospinning techniques, Electrospun composite, Electrospuns, Mustard oil, Surface roughness (Ra); Thermogravimetric analysis

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Accuracy of diffusion weighted images and MR spectroscopy in prostate lesions - Our experience with endorectal coil on 1.5 T MRI

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Abstract
Introduction: Prostatic cancer is most commonly seen in individuals greater than 65 years of age. The incidence rates are constantly increasing. Aim: To assess the accuracy of the non-contrast sequences {Diffusion Weighted Imaging (DWI) and Magnetic Resonance Spectroscopy (MRS)} in the multiparametric Magnetic Resonance Imaging (mp-MRI) in identifying and differentiating benign and malignant prostate lesions using endorectal coil on 1.5 T MRI. Materials and Methods: Twenty-six patients with clinical indications for prostate lesions were evaluated using endorectal coil on 1.5 T MRI. DWI and MRS were obtained in all the lesions. Signal change on T2 weighted images, Apparent Diffusion Coefficient (ADC) values and choline + creatinine to citrate ratios (Cho+Cr/Ci) of the lesions were obtained for all the patients. All the patients underwent Transrectal Ultrasound (TRUS) guided biopsy within one week of MRI study. Signal change on T2 weighted images, DWI and Cho+Cr/Ci ratios were correlated with the histopathological findings using appropriate statistical analysis (Wilson score). Results: Of the 26 patients, seven had benign pathology and 19 had malignant pathology on the histopathological examination. Sensitivity and specificity (89.5% and 85.7% respectively) of the diagnosis of malignancy basedon DWI were quite good. Positive and negative predictive values were also very much acceptable (94.4% and 75% respectively). Though, MRS had good sensitivity and Positive Predictive Value (PPV) (84.2% and 76.2% respectively), specificity and Negative Predictive Value (NPV) were poor (28.6% and 40% respectively). Accuracy of imaging diagnosis based on combining T2, DWI and MRS was same as that of results based on T2 signal alone (80.8%) and had higher sensitivity and lower specificity than DWI alone (94.7% and 42.9% respectively). Receiver Operating Characteristic (ROC) curves were calculated for ADC values and Cho+Cr/Ci ratios. The Area Under the Curve (AUC) for ADC is 0.74 and for Cho+Cr/Ci is 0.70 Conclusion: Comparing the accuracy of the non-contrast sequences T2, DWI and MRS in identifying and differentiating benign and malignant lesions, giving weightage to the MRS in mp-MRI reduces the negative predictive value. The diagnosis of malignancy based on diffusion restriction was quite good and it can be the workhorse for prostate cancer detection as a shortened mp-MRI. © 2017, Journal of Clinical and Diagnostic Research. All rights reserved.

Author Keywords
Benign; Cancer; Multiparametric magnetic resonance imaging

Index Keywords
choline, creatinine; adult, aged, area under the curve, Article, chemiluminescence immunoassay, clinical article, diagnostic accuracy, diffusion weighted imaging, histopathology, human, human tissue, incidence, male, middle aged, morphological adaptation, nuclear magnetic resonance imaging, nuclear magnetic resonance spectroscopy, predictive value, prospective study, prostate cancer, prostate lesion monitor, receiver operating characteristic, sensitivity and specificity, transrectal ultrasonography, very elderly

Chemicals/CAS
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Preparation and Characterization Studies of Nanostructured CdO Thin Films by SILAR Method for Photocatalytic Applications

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Abstract
This work reports the preparation of cadmium oxide (CdO) thin films with different molar concentrations on glass substrate by simple and low cost SILAR (Successive Ionic Layer Adsorption and Reaction) method. The characterization, XRD pattern confirmed the presence of polycrystalline CdO in the deposited thin films with the cubic structure. The surface morphology and elemental composition of prepared thin films have been examined by scanning electron microscopy equipped with energy dispersive X-ray (EDX) analysis system. The optical property of the films was analyzed by UV–visible spectroscopy. The band gap of the deposited thin films was estimated by Tauc's plot and it was found to be 2.6–2.8 eV. The prepared thin films were examined for the decomposition of the Methylene Blue (MB) dye which was visualized by UV-Visible spectroscopy, by decreasing the intensity of absorbance and concentration. © 2017, Springer Science+Business Media New York.

Author Keywords
CdO; Electron microscopy; Photodegradation; SILAR; Thin films

Index Keywords
Aromatic compounds, Electron microscopy, Energy gap, Infrared spectrophotometers, Optical properties, Oxide films, Photodegradation, Scanning electron microscopy, Substrates, Thin films, Ultraviolet visible spectroscopy; Characterization studies, Elemental compositions, Energy dispersive x-ray, Photocatalytic application, SILAR, Successive ionic layer adsorption and reactions, UV visible spectroscopy, Visible spectroscopy; Film preparation

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Neuroprotective effect of Demethoxycurcumin, a natural derivative of Curcumin on rotenone induced neurotoxicity in SH-SY 5Y Neuroblastoma cells

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Abstract
Background: Mitochondrial dysfunction and oxidative stress are the main toxic events leading to dopaminergic neuronal death in Parkinson's disease (PD) and identified as vital objective for therapeutic intercession. This study investigated the neuro-protective effects of the demethoxycurcumin (DMC), a derivative of curcumin against rotenone induced neurotoxicity. Methods: SH-SY5Y neuroblastoma cells are divided into four experimental groups: untreated cells, cells incubated with rotenone (100nM), cells treated with DMC (50nM)+rotenone (100nM) and DMC alone treated. 24h after treatment with rotenone and 28h after treatment with DMC, cell viability was assessed using the MTT assay, and levels of ROS and MMP, plus expression of apoptotic protein were analysed. Results: Rotenone induced cell death in SH-SY5Y cells was significantly reduced by DMC pretreatment in a dose-dependent manner, indicating the potent neuroprotective effects of DMC. Rotenone treatment significantly increases the levels of ROS, loss of MMP, release of Cyt-c and expression of pro-apoptotic markers and decreases the expression of anti-apoptotic markers. Conclusions: Even though the results of the present study indicated that the DMC may serve as a potent therapeutic agent particularly for the treatment of neurodegenerative diseases like PD, further pre-clinical and clinical studies are required. © 2017 The Author(s).

Author Keywords
Apoptosis; Demethoxycurcumin; Neurodegenerative diseases; Oxidative stress; Rotenone

Index Keywords
caspase 3, caspase 6, caspase 8, caspase 9, cytochrome c, demethoxycurcumin, protein BAD, protein Bax, protein bcl 2, protein bcl xl, reactive oxygen metabolite, rotenone, curcumin, cytochrome c, demethoxycurcumin, insecticide, neuroprotective agent, plant extract, reactive oxygen metabolite, rotenone; apoptosis, Article, BAD gene, Bax gene, Bcl 2 gene, Bcl xL gene, caspase 3 gene, caspase 6 gene, caspase 8 gene, caspase 9 gene, cell structure, cell survival, cell viability, controlled study, Cyt c gene, dose response, drug effect, drug potency, gene, gene expression, human, human cell, mitochondrial membrane potential, MTT assay, neuroblastoma cell, neuroprotection, neurotoxicity, oxidative stress, protein depletion, protein expression, protein secretion, analogs and derivatives, cell death, chemistry, Curcuma, dopaminergic nerve cell, drug effects, metabolism, Neurotoxicity Syndromes, Parkinson disease, phytotherapy, tumor cell line; Cell Death, Cell Line, Tumor, Cell Survival, Curcuma, Curcumin, Cytochromes c, Dopaminergic Neurons, Humans, Insecticides, Membrane Potential, Mitochondrial, Neuroprotective Agents, Neurotoxicity Syndromes, Oxidative Stress, Parkinson Disease, Phytotherapy, Plant Extracts, Reactive Oxygen Species, Rotenone

Chemicals/CAS
caspase 3, 169592-56-7; caspase 6, 182372-15-2; caspase 8; caspase 9, 180189-96-2; cytochrome c, 9007-43-6, 9064-84-0; demethoxycurcumin, 24939-17-1; protein bcl 2, 219306-68-0; protein bcl xl, 151033-38-4; rotenone, 83-79-4; curcumin, 458-37-7; Curcumin; Cytochromes c; demethoxycurcumin; Insecticides; Neuroprotective Agents; Plant Extracts; Reactive Oxygen Species; Rotenone

Manufacturers
Sigma Aldrich, India

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Arathi, M.S.[a] , Prabavathy, G.[b] , Vinutha, J.[c] , Venkatesan, V.[d]

Morphometric study of human placenta in different gestational age groups
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Abstract
Introduction and Aim: The placenta is the most accurate record of the infant's prenatal experiences. The fetus, cord and the placenta constitute genetically identical parts of a unit that share the uterine environment. The present study is aimed to document the morphological features of placenta in both term and preterm pregnancies and to correlate baby weight and placental volume. Materials and Methods: A total number of 51 placentae of various trimesters, both preterm and term along with the clinical history of mother and details of baby from Department of Obstetrics and Gynaecology, Sree Balaji Medical College and Hospital, Chennai was collected. Results: Of the 51 placentae collected, 27 were from term and 3 from pre-term pregnancies. Remaining 21 included placentae from post-abortion and medical termination of pregnancies-of which 9 were from the first trimester, and 12 were from the second trimester. Morphological analysis of placentae of II and III trimesters were concordant with those reported in the literature. Conclusion: Morphometry is an indirect and non-invasive approach to the study of the physiology and pathology of gestation in the human. Morphometry is a good adjuvant to histopathology.

Author Keywords
Fetus; Morphology; Placenta; Placental volume.

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Shanmuganathan, P.[a] , Murthy, A.R.[b] , Rajasulochana, P.[a] , Vishwalingam, K.[a]

Exploitation and optimization of a microbial fuel cell for the treatment of whey wastewater and the power generation

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Abstract
The dairy industry like most other agro-industries generates strong wastewaters with high biological and chemical oxygen demands representing the high organic content. The let out of untreated wastewater may cause serious problems in terms of organic load on the local municipal sewage treatment systems. The study examined the mediator-less microbial fuel cell (MFC) for the treatment of whey wastewater with simultaneous current generation in the presence of E. coli. The maximum current generated using whey wastewater was 3.019–6.99 W/m2/d with a constant resistance of 10 Ω with 0.1 N potassium permanganate as catholyte with carbon and graphite as electrodes respectively. The graphite electrodes were able to produce more current when compared to the carbon electrodes. During the study a biomass concentration of 3.042 g/l with a CO2 production of 13–20 mg/l as NaCO3 and H2 production of 20–25 ml/d respectively were obtained. The distance between the electrode and the Proton Exchange Membrane (PEM) and the distance between the electrodes in case of the dual electrodes also played an important role in the power generation. SEM image evidences the bio-film formation on the electrodes that supported the power density and a COD removal of 91–98% was also obtained. This phenomenon could be utilized to design an inexpensive autonomous system consisting of graphite or carbon electrodes, an electrical load and a recordable voltmeter to track energy generation due to E. coli fermentations. In the near term, these fuel cells could be utilized as a research tool for metabolic studies where the current response of microbial fuel cells would be extremely useful.
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Current generation; Hydrogen production; Microbial fuel cells; Whey wastewater treatment

Index Keywords
chemical oxygen demand, exploitation, fuel cell, hydrogen, membrane, optimization, power generation, wastewater treatment

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Maxillary second molar with fused root and six canals- a case report.

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Abstract
One of the known aberrations in root canal morphology of maxillary second permanent molars is the presence of collateral mesiobuccal canals. This case report describes the endodontic management of a maxillary second molar that had a single fused root with six canals that was successfully managed with the aid of dental operating microscope. Six canal orifices were located namely MB1 (Mesiobuccal), MB2, MB3, DB1 (Distobuccal), DB2 and palatal. During the cleaning and shaping, instrument separation occurred at the apical third of the palatal canal which was removed with ultrasonics. After cleaning and shaping, the canals were obturated with resin sealer and laterally condensed gutta-percha. The patient was recalled for periodic review. After two years of follow up the patient remained asymptomatic. Cone Beam Computed Tomography (CBCT) evaluation revealed satisfactory periapical status. © 2017, Journal of Clinical and Diagnostic Research. All rights reserved.

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Additional canals; Cone Beam Computed Tomography; Dental operating microscope; Endodontic management; Root canal morphology

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adult, Article, case report, ceramic prosthesis, cone beam computed tomography, dental caries, dental restoration, endodontic procedure, female, follow up, human, maxilla, molar tooth, percussion, periodontal ligament, pulpitis, tooth pain, tooth periapical disease, tooth radiography, tooth root canal, young adult

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"Association of periodontopathic anaerobic bacterial co-occurrence to atherosclerosis" – A cross-sectional study
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Abstract
Background Epidemiological studies have shown a link between periodontitis and atherosclerosis. Hence the present study was chosen to assess the presence of eight anaerobic periodontal pathogens and their virulence genes in subgingival plaque (SGP) and atheromatous plaque (AP) of patients who underwent Coronary artery bypass graft surgery (CABG). Methods SGP and AP collected from 65 CABG patients were screened for the presence of periodontal bacterial pathogens by Polymerase chain reaction. The samples positive for Porphyromonas gingivalis, Treponema denticola and Tannerella forsythia were screened for virulence genes. Chronic periodontitis patients (ChP) without any systemic disease (n = 59) and healthy subjects free of both periodontitis and systemic disease were included as control groups (n = 100). Results and discussion Statistical significance was observed for the prevalence of 16S rRNA of P. gingivalis, T. forsythia, T. denticola and P. nigrescens both in SGP and AP. Nine different periodontal bacterial co-occurrences were observed in SGP and AP of CABG patients. Besides, the prevalence of these nine different bacterial co-occurrence was high in SGP OF CABG patients compared to ChP without systemic disease. Among the nine different bacterial co-occurrence, only four were observed in SGP of ChP without systemic disease in spite of high prevalence of these anaerobic bacterial species. While, bacterial co-occurrences was completely absent among healthy subjects. Significant odds and risk ratio to atherosclerosis were observed for P. gingivalis, T. forsythia, T. denticola and P. nigrescens. Among the virulence genes, significance to atherosclerosis was observed for P. gingivalis type II fimA and T. forsythia bspA. Conclusion The results of this study strongly correlate periodontal bacterial co-occurrence and periodontal bacterial adhesion factor to atherosclerosis. © 2017 Elsevier Ltd

Author Keywords
Anaerobic bacteria; Atherosclerosis; PCR; Periodontitis; Virulence genes

Index Keywords
RNA 16S, adhesin, bacterial DNA, ribosome DNA, RNA 16S, virulence factor; 16S rRNA gene, adult, aged, anaerobic bacterium, Article, atherosclerosis, atherosclerotic plaque, bacterial gene, bacterial virulence, bacterium adherence, bacterium identification, chronic periodontitis, controlled study, coronary artery bypass graft, coronary artery bypass surgery, coronary artery disease, cross-sectional study, disease association, gingiva disease, human, human tissue, major clinical study, nonhuman, nucleotide sequence, nucleotide sequence, organisms by habitat, pathophysiology, periodontal pathogen, polymerase chain reaction, Porphyromonas gingivalis, prevalence, Prevotella nigrescens, risk assessment, subgingival plaque, Tannerella forsythia, Treponema denticola, virulence gene, anaerobic bacterium, classification, genetics, isolation and purification, microbiology, middle aged, pathogenicity, tooth plaque; Adhesins, Bacterial, Adult, Aged, Bacteria, Anaerobic, Cross-Sectional Studies, Dental Plaque, DNA, Bacterial, DNA, Ribosomal, Humans, Middle Aged, Plaque, Atherosclerotic, Polymerase Chain Reaction, RNA, Ribosomal, 16S, Virulence Factors

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Static analysis of slotted springs

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Abstract

Slotted springs provide linear and repeatable spring elements that fit within confined volume and remain in line when they stroke. With cross slot configuration, they do not tilt or rotate when exercised. Product design stays within fatigue limits and features inherently square ends. Single-piece construction can include mounting flanges, attachment threads, and other fittings. © 2016 IEEE.

Author Keywords

Femap with NX-Nastran; Slotted Springs; Static Analysis

Index Keywords

Automation, Process control, Product design; Confined volume, Fatigue Limit, NASTRAN, Slot configuration, Spring element; Static analysis

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Jayakanth, J.J.[a] , Ramasubramanian, S.[a] , Chandrasekaran, M.[a] , Manavalan, S.[b]

Investigation of solar water heater by using flat plate collector and evacuated tubes
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Abstract
Collection, storage and utilization of solar energy by solar water heating by flat plate collector and evacuated tube is cheapest and effective renewable energy technologies. This solar water heater design uses a nonconventional source of energy which can be used for house hold applications. The cost of production will be comparatively low in cost and high in capacity. The G.I. sheet collector boxes are replaced by copper tube, stainless steel water tank, thick costly PUF insulations and toughened glass etc. Pebbles are used as a medium of heat storage this increases the capacity of solar water heater by using this method natural source of energy can be used instead of depending on electric water heaters. © Published under licence by IOP Publishing Ltd.

Index Keywords
Dust collectors, Engineering research, Heat storage, Renewable energy resources, Solar collectors, Solar energy, Solar water heaters, Stainless steel, Water heaters, Water tanks; Cost of productions, Electric water heaters, Flat-plate collector, Natural sources, Renewable energy technologies, Solar water heating, Source of energy, Toughened glass; Heating

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Ramasubramanian, S.[a] , Manavalan, S.[b] , Gnanavel, C.[a] , Balakrishnan, G.[c]

Processing of Neem and Jatropha Methyl Esters -Alternative Fuels from Vegetable Oil

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Abstract
Biodiesel is an alternative fuel for diesel engine. The methyl esters of vegetable oils, known as biodiesel are becoming increasingly popular because of their low environmental impact and potential as a green alternative fuel for diesel engine. This paper deals with the manufacturing process of Biodiesel from jatropha and neem oil. Biodiesel was prepared from neem oil and jatropha oil, the transestrified having kinematic viscosity of 3 & 2.6 centistokes, methanol ratio is 6:1 & 5.1respectively. The secondary solution is preheated at 65 C & 60 C and reaction temperature is maintained at 60C & 55 C and reaction time is 60 minutes approximately with NaOH catalyst and low viscosity oil is allowed to settle 24 hours. The average yield of neem and jatropha methyl esters was about 85%. These methyl esters shows excellent alternative under optimum condition for fossil fuels. © Published under licence by IOP Publishing Ltd.

Index Keywords
Biodiesel, Diesel engines, Engineering research, Engines, Environmental impact, Esters, Fossil fuels, Fuel oils, Fuels, Vegetable oils, Viscosity; Average yield, Jatropha methyl esters, Jatropha oil, Low viscosity oil, Manufacturing process, Methyl esters, Optimum conditions, Reaction temperature; Alternative fuels

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Documents

Kamatchi, S.[a] , Sundararajan, M.[b]

Earlier diagnose of sinusitis in frontal and maxillary cavities using near infrared radiations
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Abstract
Earlier diagnose of sinusitis in patients, still a challenging task to physicians. However, various imaging techniques such as CT, PET, and X-ray detect the sinusitis in severe stage. In this paper, we propose a novel method for sinusitis detection with Near Infrared (NIR) Diode and detector. The NIR diode transmits the optical light to the frontal and maxillary cavity regions. The detector observed the reflected light from the regions and analyzed for earlier detection of sinusitis. The reflected signals from the regions have a change in the optical path length proportional to the moisture content in the cavities. Optical path length and amplitude changes in the reflected signals measured with FFT spectral response and analyzed with LSSVM. The LSSVM correlates the optical path length and sinusitis measured in the laboratory. From simulations and Hardware implementation results of the 150 samples, we detect the sinusitis in the earlier stage and able to achieve an accuracy of about 91% in sinusitis detection. © 2017 American Scientific Publishers All rights reserved.

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FFT; LSSVM; NIR; Optical Path Length; Reflected Signals; Sinusitis Detection

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Constructive training implementation methodologies for corporate employees
(2017) *International Journal of Mechanical Engineering and Technology*, 8 (3), pp. 89-96. Cited 2 times.

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Abstract
Every organization needs to have well trained and experienced people to perform the activities that have to be done. Thus employees' training is not only an activity that is desirable but also an activity that an organization must commit resources to if it is to maintain a viable and knowledgeable work force. The concept of Training has changed from the time it got evolved. The delivery methodology is extremely important, as the success of the training is directly related to the methodology handled in the training program. © IAEME Publication.

Author Keywords
Training benefits; Training methodology& training delivery methods; Training purpose

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Image compression technique using successive blocks interframe coding
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Abstract
A powerful technique for compressing images is very essential because the raw images needs huge amount of disk space which seems to be a disadvantage for transmission and storage. Though many compression techniques available in the field; a technique is needed which should be faster, more memory efficiency and simple that meets the requirements of the compression vs. quality. In this paper, we proposed a lossless method of image compression and decompression using a technique called Successive Blocks Interframe Coding (SBIC). This technique is simple in implementation and utilizes less memory. An algorithm has been refined and executed to compress and decompress the given images using SBIC technique in MATLAB R2014b simulation tool. The experimental results shows that the SBIC technique is most powerful and gives a good compression ratio without any data loss; while decompresses it reproduces the original image without any loss of data with the same 100% original file quality. © 2005 – ongoing JATIT & LLS.

Author Keywords
Block comparison; Hybrid compression; Image compression; Inter pixel redundancy; Lossless compression; Neighborhood similarity; Successive blocks interframe

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Protic Ionic Liquid Assisted Synthesis and Characterization of Ferromagnetic Cobalt Oxide Nanocatalyst

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Abstract
Cobalt oxide (Co3O4) nanocatalyst was synthesized by sol-gel method using the protic ionic liquid namely 1-butylimidazolium glycolate as solvent and stabilizer. The obtained Co3O4 nanocatalyst was characterized by powder X-ray diffraction (XRD), Fourier transform infrared, High resolution scanning electron microscopy (HR-SEM), Energy dispersive X-ray (EDX), High resolution transmission electron microscopy (HR-TEM), Selected area electron diffraction, UV–Visible diffuse reflectance spectroscopy, Photoluminescence spectroscopy, Brunauer–Emmett–Teller surface area and Vibrating sample magnetometer (VSM). Powder XRD results showed the well-crystalline cubic structure of synthesized Co3O4 with size of 19.29 nm. Also, the sphere-like morphology of Co3O4 nanocatalyst was confirmed by HR-SEM and HR-TEM images. Furthermore, the synthesized Co3O4 nanocatalyst possessed optical band gap values of 1.75 and 2.46 eV and hence acted as a semiconducting material. In addition, the presence of small hysteresis loop in Magnetic measurement (VSM) confirmed the ferromagnetic nature of Co3O4 nanoparticles. Moreover, the synthesized Co3O4 nanocatalyst found to be used in photo-catalytic degradation of methylene blue and exhibited 94.61% efficiency. © 2016, Springer Science+Business Media New York.

Author Keywords
Cobalt oxide; Nanocatalyst; Protic ionic liquid; Semiconductor; Sol-gel; Stabilizer

Index Keywords
Aromatic compounds, Cobalt, Electron diffraction, Electron microscopy, Energy gap, Ferromagnetic materials, Ferromagnetism, Ionic liquids, Liquids, Magnetic materials, Nanomagnetics, Photoluminescence spectroscopy, Scanning electron microscopy, Semiconductor materials, Sol-gel process, Sol-gels, Stabilizers (agents), X ray diffraction; Cobalt oxides, Diffuse reflectance spectroscopy, High-resolution scanning electron microscopies, Nano-catalyst, Protic ionic liquids, Selected area electron diffraction, Synthesis and characterizations, Vibrating sample magnetometer; High resolution transmission electron microscopy

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Suguna, S.[a] , Shankar, S.[b] , Jaganathan, S.K.[c] , Manikandan, A.[d]

Novel Synthesis of Spinel MnxCo1−xAl2 O 4 (x = 0.0 to 1.0) Nanocatalysts: Effect of Mn2+ Doping on Structural, Morphological, and Opto-Magnetic Properties

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Abstract
In this present study, Mn2+doped CoAl2O4 (MnxCo1−xAl2O4; x = 0.0 to 1.0) spinel nanoparticles were synthesized by microwave combustion method using nitrates of Co, Mn, and Al as the starting materials and urea was used as the fuel. The effects of Mn2+ doping on structural, morphological, opto-magnetic and catalytic properties were studied. Powder X-ray diffraction analysis was confirmed the formation of cubic spinel aluminate structure. Debye-Scherrer's formula was used to estimate the average crystallite size of the samples and was found to be in the range of 18.26 to 21.47 nm. It was observed that the calculated lattice parameter value is increased from 8.215 to 8.247 Å with increasing the Mn2+ content due to the higher ionic radius of Mn2+ ion. High resolution scanning electron microscopy (HR-SEM) and transmission electron microscopy (HR-TEM) analysis confirmed the nano-sized particle-like morphology of the samples. Energy dispersive X-ray (EDX) results showed the pure form of spinel aluminate structure. The band gap energy (Eg) of undoped CoAl2O4 was estimated to be 3.58 eV from UV-visible diffuse reflectance spectroscopy (DRS), and the Eg values increased with increase of Mn2+ ions due to the decrease of grain size. The magnetic hysteresis (M-H) loop showed the superparamagnetic nature of the samples, and the saturation magnetization values increased with increasing Mn2+ ions, which was confirmed by vibrating sample magnetometer (VSM). All compositions of the samples were successfully tested as catalyst for the conversion of benzyl alcohol into benzaldehyde and observed good catalytic activity. © 2016, Springer Science+Business Media New York.

Author Keywords
Aluminates; Catalytic properties; Magnetic properties; Nanocatalysts; Powder X-ray diffraction; Scanning electron microscopy

Index Keywords
Aluminum, Aluminum compounds, Catalyst activity, Coal combustion, Crystallite size, Electron microscopy, Energy gap, High resolution transmission electron microscopy, Ions, Magnetic properties, Magnetism, Particle size, Saturation magnetization, Scanning electron microscopy, Structural properties, Synthesis (chemical), Transmission electron microscopy, Urea, X ray diffraction analysis; Aluminates, Catalytic properties, High-resolution scanning electron microscopies, Lattice parameter values, Nanocatalysts, Powder X ray diffraction, UV-visible diffuse reflectance spectroscopy, Vibrating sample magnetometer; Manganese

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Boopalan, K.[a] , Nalini, C.[b] , Rajesh, A.[c]

Mining opinions about traffic status using twitter messages
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Abstract
In this paper, we have described system for mining opinions from traffic status tweets. The opinions are categorized as positive (p) and negative (n). We collected a corpus of around 5000 traffic related tweets using twitter API. These tweets were then cleansed from unwanted contents and processed. The processed tweets were converted into a bag of words and manually labeled as "p" or "n" appropriately. This labeled dataset was then split into training and test set in the ratio of 80:20. Various classifier algorithms were trained on this set and validated. Based on the performance of the algorithms the top 7 among them were chosen to form an ensemble model. This ensemble model was then used to classify the test set. We obtained an F-measure of 87.15 which indicates that our system is quite competitive in mining opinions about traffic status from tweets. © IAEME Publication.

Author Keywords
Opinion mining; Sentiment analysis; Text mining; Traffic analysis; Web mining

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Information Retrieval Topics in Twitter Using Weighted Prediction Network
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Meikandaan, T.P.[a] , Ramachandra Murthy, A.[b]

Study of damaged RC beams repaired by bonding of CFRP laminates
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Abstract
This paper summarizes the results of experimental studies of damaged reinforced concrete beams repaired by bonding of carbon fibre reinforced polymer (CFRP) composite laminates to the beam. Two sets of beams have to be test in this study: control beams (without CFRP laminates) and damaged and then repaired beams with different amounts of CFRP laminates by varying different parameters (damage degree, CFRP laminate width, concrete strength class).All beams have to be tested under simply supported condition.The test has to be done under two point loading using the Universal testing machine over a span of 1500 mm. The tests were carried out under displacement control. The most investigated parameter in this experimental study is damage degree (ratio between pre-cracked load and load capacity of control beam). To evaluate the strength of damaged RC beams with externally bonded CFRP laminates have the target of this project. The experimental failure modes are peeling off and interfacial de-bonding. These failure modes depend only on the laminate width. © IAEME Publication.

Author Keywords
Carbon fibre reinforced polymer; Concrete beams; Deflection; Flexural strengthening

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Flexural behaviour of RC beam wrapped with GFRP sheets

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Abstract
Repair and strengthening of R.C beam is now becoming more and more important in the field of structural strengthening and retrofitting. The present paper reviews the study of Glass Fiber Reinforced Polymer (GFRP) flats under flexural behavior in reinforced concrete beams. In this study, experimental investigation on the flexural behavior of RC Beam has been studied by wrapping Glass Fiber Reinforced Polymer (GFRP) sheets. Reinforced Concrete Beam externally bonded with GFRP sheets were tested to failure using a symmetrical two point static loading system. Six Reinforced Concrete Beams have been cast for this experimental test. All cast beams are weak in flexural and having same reinforcement detailing. Three beams are used as control beams and three beams are strengthened using full bottom of glass fiber reinforced polymer (GFRP) sheets. The experimental result shows, that full bottom GFRP sheet wrapping in 70% preloaded beam can increase flexural capacity of the beam by 14%(on ultimate load) as compared to Controlled Beams. © IAEME Publication.

Author Keywords
Concrete beams; Deflection; Flexural strengthening; Glass fibre reinforced polymer

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Retrofittng of reinforced concrete beams using GFRP overlays
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Abstract
For strengthening and rehabilitating of RCC beams, the utilization of externally bonded fiber reinforced polymer sheets has been found effective. To increase the load carrying capacity of the structural beam as well as to increase the service life of the beam retrofitting with FRP sheets especially GFRP sheets found most suitable and economical. This paper is intended for experimental studies of damaged reinforced concrete beams repaired by bonding of Glass fiber reinforced polymer (GFRP) overlays to the beam. The three sets of beams has to be tested in this study: control beams (without GFRP overlays) and damaged and then repairing beams with GFRP overlays by varying different parameters (damage degree, GFRP overlay width,). All beams have to be tested under simply supported condition. The testing has to be done under two point loading using the load frame over a span of 1500 mm. The tests were carried out under displacement control. The most investigated parameter in this experimental study is to determine increase in load carrying capacity of strengthened beam. To evaluate the strength of damaged RC beams with externally bonded GFRP laminates was the target of this project. © IAEME Publication.

Author Keywords
Composite materials; GFRP overlays; Load tests; RC beams flexural and shear strengthening; Strengthening

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Performance evaluation of security and privacy challenges in cloud computing services
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Abstract
Cloud computing is an emerging technology which has become an important portion of many organization to store their data. Cloud provides services to customers in a cost effective manner. But still many consumers hesitate to invest in cloud because of many security issues addressed in cloud computing. There are many security control measures developed by many organizations but there exists confusion among the cloud users. This paper defines what the threats are so far identified in cloud computing. The security issues include problems from both the cloud service providers and the organization. There must be proper mapping of standards to appropriate security model. This ensures confidentiality of data. The various standards adopted to overcome all those threats are also explained here. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Cloud computing; Cloud service providers; Compliance; Confidentiality; Data breach; Security; Threats

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Improved energy efficient multi-hop WSN using novel routing mechanism with hull convex function
(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (6), pp. 118-125.

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Abstract
Wireless sensor networks (WSNs), recently emerges as an essential means for computing applications. The main concern associated over the pervasive computing is its unbalanced consumption of energy in multi-hop environments. The uneven dissipation of energy in many-to-one traffic pattern, reduces the network throughput. The information from the nodes of the multi-hop sensor networks are necessarily routed to the sinks. Hence, the energy consumption for an individual transmission depends prominently on the adjacent hop node. The conventional research in such energy aware routing approaches aims at reducing the consumption of energy in networks, which maximizes the lifetime of the network. The paper investigates the energy consumption in the multi-hop networks by proposing a novel traffic mechanism with a cluster based approach that aims on two goals: limiting the consumption of nodes' energy and improving the fairness. To achieve such aim, we further consider this as a nonlinear problem and the optimal solution is obtained through a convex function. The simulated results proved the effectiveness of the proposed method over multi-hop WSNs. © 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved.

Author Keywords
Convex property; Energy efficiency; Multi-hop networks; Traffic mechanism

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A prediction of chronic kidney disease using feature based priority assigning algorithm
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Abstract
Kidney disease is one of most dangerous disease spreading all over the world due to the change in our life style, including food habits, environment, etc. so it is essential to choose any remedy to avoid as well as predict the disease in early stage which helps to save the life. The prediction of kidney disease can be done efficiently using Priority assigning algorithm. It is done with the help of Attribute selection method. Attribute (Feature Selection) selection to support kidney disease detection. It is made by eliminating the attributes of less importance and also to select the important attribute to be present in the dataset. But existing algorithm does not suit for imbalanced dataset or large number of distinct values. In this paper, a new algorithm called priority assigning algorithm has been introduced in order to assigns high priority for more important features. This makes the classification process efficient and kidney disease can be predicted efficiently. © Research India Publications.

Author Keywords
ANN; Data mining; MFPT; PLS-DA; SVM; WAELI; WAELI-FPA

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Abstract
The Chronic Kidney disease is the most important health issues concerning the people as a whole. Chronic diseases lead to morbidity and increase of death rates in India and other low and middle income countries. The chronic diseases account to about 60% of all deaths worldwide. 80% of chronic disease deaths worldwide also occur in low and middle income countries. In India, probably the number of deaths due to chronic disease found to be 5.21 million in 2008 and seems to be raised to 7.63 million in 2020 approximately 66.7%. Data mining is the process of extraction of hidden information from the large dataset. Major data mining techniques such as clustering, classification, association analysis, regression, time series and sequence analyses were used to predict kidney diseases. The techniques that were introduced so far had minor drawbacks in the quality of preprocessing or at any other stages. In this paper, the various data mining techniques are surveyed to predict kidney diseases and major problems are briefly explained. © Research India Publications.

Author Keywords
Challenging issues of CKD; Chronic Kidney Disease (CKD); Data mining and Machine Learning (ML) algorithms; Risk factors of CKD

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Documents

Kalaivany, S.[a] , Nalini, T.[b]

Schmidt-samoa public key encryption based on enhanced boosting algorithm for secure cloud data confidentiality
(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (Special issue 14), pp. 1725-1734. Cited 3 times.

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Abstract
A cloud storage system utilized to store huge volume of data in storage server. The cloud system is utilized to give huge number of storage servers, which offers long term storage services through the internet. The cloud third party system does not give data confidentiality. In cloud constructing centralized storage system create hackers easily stole the cloud data. Therefore, the general cloud data encryption schemes give the data confidentiality. Thus, in this work Schmidt-Samoa Public Key Encryption (SSPKE) method based on Enhanced Boosting Algorithm (EBA) with Data hiding Architecture is proposed. Additionally in this work use multi-party protocol access control for manipulate and access the user's data without affecting the sensitive cloud data confidentiality. The experimental results shows that the promising result in term of considering different kinds of metrics such as overall processing time, server response time and data decomposition rate. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Cloud storage system; Data confidentiality; Data encryption; Enhanced boosting algorithm; Schmidt-samoa public key encryption

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Documents

Suresh Kumar, R.G.[a] , Nalini, T.[b]

Building a dynamic virtual machines using KBR agent for data security in hybrid cloud

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Abstract
Cloud computing plays a key role towards the world for data sharing. In order to outsource the data in a secure manner the encryption scheme plays an important role in the cloud because sensitive information present in the cloud potentially causes privacy problems. Most of the encryption techniques will split the file in different hunk then the file is encrypted and store on multiple cloud where rather storing complete file on single cloud system. But if any one of the sliced file is corrupted it's difficult to rearrange the original file format. The proposed KBR agent will store the keys and data with high security in DVM with low budget for the client requirement. The proposed model KBR agent is creating Dynamic Virtual Machines (DVM) based on the Threshold keys and storing those secret keys in the DVMs which perform the high security on keys data and the integrity is maintained by storing the encrypted data in CSP (Cloud Service Provider). © Medwell Journals, 2017.

Author Keywords
Cloud computing; CSP; DVM; Encryption; Secret keys; Security

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Srinivasan, S.[a] , Sivakumaran, T.S.[b]

Performance evaluation of positive output multiple lift-push-pull switched capacitor LUO converters with PI and Fuzzy controllers

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Abstract
The micro-power-consumption technique requires high power density DC/ DC converters and power supply sources. In this work, a PI and Fuzzy Logic Controllers for an Elementary circuit of Positive Output (P/O) Push-Pull Switched Capacitor Luo Converter has been developed for high power density applications with high sustainability under enormous line and load disturbances. The proposed converter combines both switched-capacitor and voltage lift techniques. Referable to the time-varying and switching nature of the power electronic converters, their dynamic behavior becomes highly non-linear. Conventional controllers are incapable of providing excellent dynamic performance and hence the fuzzy logic controller can be used as a feedforward controller for controlling power electronic converters. The control algorithm is developed to ensure tracking of the reference voltage and rejection of system disturbances by successive measurements of the converter output voltage at certain time instants within a conduction period. The simulation of PI and Fuzzy logic controls have been carried out using MATLAB/ Simulink software to evaluate the controller's performances. Further, the simulation results show Fuzzy controller performs effectively for the preferred converter. © 2019, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
DC-DC Converter; Luo Converter; PI and Fuzzy controller

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Geetha, R.[a] , Sivakumaran, T.S.[b]

Performance of PI controller for fourth order resonant power converter with capacitive output filter
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Abstract
An efficient loop approach of the fourth order (LCLC configuration) resonant converter has been contrived and exposed in this paper. The PI controller has been used for self-supporting loop response and the attitude of considered converter has been estimated mutually the closed loop and the uncover loop condition. The consistent state-transient responses of nominal clog, sudden horizon and load disturbances have been obtained to confirm the controller performance. The proposed control is proposed to provide transcend voltage process for dynamic load conditions. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
LCLC configuration; PI controller; Resonant power converter; State space analysis

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Sathyapriya, B.[a] , Srinivasan, K.R.[b] , Lakshmanan, P.[c] , Selvi, P.[d]

Facial nerve injury following TMJ surgery and its management by electrical stimulation - a case study
(2017) *Biomedical and Pharmacology Journal*, 10 (4), pp. 1855-1861.

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Abstract
The temporomandibular (TMJ) joints are multipart structures containing muscles, ligaments, bones and neurovascular bundle. Surgery for TMJ disorders represents a significant risk of facial nerve damage that can result in facial weakness affecting patients' mental health, ability to communicate and self-image. This case report examined the effect of electrical stimulation in the treatment of facial palsy. A 15 year old male patient with a left sided facial palsy came with the history of TMJ surgery exactly at 7th day after surgery. The patient was functionally assessed by House Brackmann method, neurologically evaluated by strength duration (SD) curve and graded by Sunderland's classification of peripheral nerve injury. The SD curve was plotted at 0 week and then at 1st and 2nd week after subjecting the patient to electrical stimulation, facial massage and 'Y' shaped facial adhesive strap. The prognosis of the patient shows the shift of the SD curve to the left which indicates near normal complete re-innervations after treating with electrical stimulator for a month. It was concluded that electrical stimulation may improve the facial paralysis and decrease the psychosocial influence on the patient. © 2017 Published by Oriental Scientific Publishing Company.

Author Keywords
Electrical stimulation; Facial paralysis; Strength Duration curve; Temporomandibular disorders

Index Keywords
adolescent, Article, case report, clinical article, clinical assessment, disease severity, electrostimulation, face asymmetry, face surgery, facial nerve paralysis, human, jaw disease, male, muscle contraction, nerve function, peripheral nerve injury, prognosis

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A gift of mother nature – curcumin an alternative chemo-preventive drug

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Abstract
India is the world capital for Oral cancer. The chemo preventive actions of many natural compounds were known to our fore-fathers in prehistoric era. These natural compounds are potent, less toxic and have greater biocompatibility. Natural compounds have been extensively studied over decades for various diseases including cancers. Curcumin is one of the important natural chemo preventive drug used for various cancers. It plays very important role in apoptosis, reduction of inflammation in tumour microenvironment. In this article we tried to elucidate the action of “Curcumin” in OSCC and potentially malignant disorders. Here we highlight Curcumin can be a promising therapeutic drug. © 2017 Published by Oriental Scientific Publishing Company.

Author Keywords
Chemoprevention; Curcumin; Natural compounds; OSCC

Index Keywords
caspase 3, collagen type 1, collagen type 3, curcumin, natural product, nicotinamide adenine dinucleotide adenosine diphosphate ribosyltransferase, placental growth factor, protein Bax, protein bcl 2; apoptosis, areca nut, Article, biocompatibility, burning sensation, chemoprophylaxis, down regulation, human, leukoplakia, lipid peroxidation, mouth cancer, mucosa inflammation, myofibroblast, nonhuman, physician, tumor microenvironment

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Enhanced peptide delivery and sustainable release of Pleurocidin using N-succinyl chitosan nanoparticle
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Abstract
Chitosan is a natural polymer that can be modified into chemically different types. In order to imply biomedical applications, the chitosan dissolved in aqueous medium. Therefore, in the present study, functionally substituted chemical groups such as O-carboxymethyl chitosan (CMC), N-succinyl chitosan (NSC), quaternary ammonium chitosan (QAC) and tripoly phosphate chitosan (TPC) were synthesized. The peptide derived from Clarias batrachus was used as a drug that is successfully entrapped with NSC nanoparticles and were characterized by FTIR, AFM, SEM, Zeta sizer, fluorescent imaging and SDS-PAGE. In addition, antimicrobial activity was examined. The results of NSC obtained particle size (~64 nm) with highest solubility and 80% of antimicrobial activity against multidrug resistant pathogen Klebsiella pneumonia. Finally, the release profile indicates that the NSC nanoparticles deliver the peptide with 75% sustainable release and good availability up to 96 h. The current research was the first to report the characterization of peptide with NSC nanoparticles by SDS-PAGE, in which the antimicrobial activity was enhanced up to 80%, the particle sizes were obtained ~64 nm from SEM and AFM, and NSC-peptide exhibited 75% of sustainable release and good availability up to 96 h. © 2009-2016 OAHOST.

Author Keywords
Antimicrobial activity; Chitosan; Clarias batrachus; Encapsulation; N-succinyl chitosan; Peptide delivery

Index Keywords
chitosan nanoparticle, ciprofloxacin, n succinyl chitosan nanoparticle, o carboxymethyl chitosan nanoparticle, pleurocidin, polypeptide antibiotic agent, quaternary ammonium chitosan nanoparticle, tripoly phosphate chitosan nanoparticle, unclassified drug; antimicrobial activity, Article, atomic force microscopy, drug delivery system, drug solubility, fluorescence imaging, in vitro study, infrared spectroscopy, Klebsiella pneumoniae, limit of quantitation, minimum inhibitory concentration, nonhuman, particle size, polyacrylamide gel electrophoresis, scanning electron microscopy, sustained drug release

Chemicals/CAS
ciprofloxacin, 85721-33-1

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Abstract
Calliandra haematocephala commonly known as powder puff has wide range of therapeutic properties like anti inflammatory, anticonvulsant, immunomodulatory and blood purifier. Previous Studies showed the antibacterial activity of the flowers and bark of Calliandra haematocephala, So this study is designed to evaluate the antibacterial activity of the ethanolic extract of the leaves of "Calliandra haematocephala" against selected gram positive and gram negative strains. The leaves of Calliandra haematocephala was subjected to soxhlet extraction using organic solvent of ethanol. The antibacterial activity of Calliandra haematocephala extract was done using standard disc diffusion method using Muller Hinton agar (MHA) against ten strains of bacteria (Three gram positive and Seven gram negative strains). Ampicillin is the standard positive control and 20µl of varying concentrations (1000 µg, 750µg and 500 µg) of the extract sample were tested. The antibacterial effect was determined by measuring the diameter of the zone of inhibition. The ethanolic extract of Calliandra haematocephala showed the moderate antibacterial activity against gram negative bacterial strains like Salmonella typhi (12mm) Serratia marcescens (9mm), Shigella flexneri (8mm) and gram positive bacterial strains like Staphylococcus aureus (9mm), Bacillus subtilis (10mm), Micrococcus leteus (10mm) as measured by the zone of inhibition produced by the plant extract when compared with the control drug Ampicillin. However it showed maximal activity against Pseudomonas aeroginousa (12mm). In our study the ethanolic extract of Calliandra haematocephala has shown to have good antibacterial activity against both gram negative and positive bacteria in high concentration. © 2017 Oriental Scientific Publishing Company. All rights reserved.

Author Keywords
Aar disc diffusion; Antibacterial activity; Calliandra haematocephala; Zone of inhibition

Index Keywords
ampicillin, antibiotic agent, Calliandra haematocephala extract, plant extract, unclassified drug; antibacterial activity, Article, Bacillus subtilis, bacterial strain, Calliandra haematocephala, controlled study, disk diffusion, Enterococcus faecalis, Escherichia coli, Gram negative bacterium, Gram positive bacterium, in vitro study, medicinal plant, Micrococcus leteus, nonhuman, plant leaf, Pseudomonas aeruginosa, Salmonella enterica serovar Typhi, Serratia marcescens, Shigella flexneri, Soxhlet extraction, Staphylococcus aureus, Vibrio parahaemolyticus, zone of inhibition

Chemicals/CAS
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Documents

Senthamilselvan[a] , Wahidabanu[b c d]

Analysis of EDFC and ADFC algorithms for secure communication in Vanet

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 2017 (Special Issue 18), pp. 1171-1187.

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Abstract
In this paper, we propose a novel decentralized implementation of fountain codes in sensor networks, such that data can be encoded in a completely distributed fashion. In our proposed algorithms, a sensor disseminates its data to a random subset of sensors in the network, while each sensor only encodes data that it has received. As the collector collects a sufficient number of encoded data blocks by visiting more and more sensors, it is able to decode all original data with an efficient decoding process designed for fountain codes. The salient and original contribution of this paper is a solution to disseminate data from one sensor to others in an efficient and scalable fashion with the help of Exact Decentralized Fountain Codes (EDFC) as well as Approximate Decentralized Fountain Codes (ADFC). As has been well known, conventional shortest-path routing algorithms require each sensor to maintain a routing table with a size proportional to the total number of sensors in the network with their respective locations. Be that as it may, we have observed that our decentralized implementation of fountain codes does not require the support of a generic layer of routing protocols. In this paper, we propose a decentralized algorithm using fountain codes to guarantee the persistence and reliability of cached data on unreliable sensors. With fountain codes, the collector is able to recover all data as long as a sufficient number of sensors are alive. We have proposed two algorithms based on random walks. Our theoretical analysis and simulation-based studies have shown that, the first algorithm maintains the same level of fault tolerances the original centralized fountain code, while introducing lower overhead than naive random-walk based implementation in the dissemination process. Our second algorithm has lower level of fault tolerance than the original centralized fountain code, but consumes much lower dissemination cost. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Adaptive traffic control scheme; ADFC; Broadcast; Content distribution; Data dissemination; EDFC; Vehicular networks

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Sathya, N.[a] [b] , Muthukumaravel, A.[c]

Two phase hybrid AI-heuristics for multiple travelling salesman problem
(2017) *International Journal of Applied Engineering Research*, 12 (22), pp. 12659-12664.

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Abstract
A multiple Vehicle Routing Problem (mVRP), which consists of determining a set of routes for m vehicles who all start from and return back to a home city (depot). Given a set of cities, let there are m vehicles located at a single depot node. The remaining cities that are to be visited are called intermediate nodes. SP Routing concept is the primary component in the performance of any network. The Shortest path between any two nodes is required in most of the real world oriented network problems. The objective of this paper is to develop efficient optimization algorithms to solve diverse real world SP routing network problems of high complexity, to find the shortest possible balanced routes for multiple salespersons and to find clustering based simple straight-forward hierarchical SP routing in solar powered WSNs. © Research India Publications.

Author Keywords
Complexity; Multiple salespersons; mVRP; Nodes; Optimization algorithms; Solar powered WSNs; SP routing

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Hema Shankari, K.[a b] , Thirumalai Selvi, R.[c]

Analysation of the performance of proprietary and non- proprietary tool for industry based regression testing using efficient genetic algorithm

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (5), .

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Abstract
The paper addresses research in the area of regression testing with emphasis on automated tools as well as prioritization of test cases. The uniqueness of regression testing and its cyclic nature is pointed out. The difference in approach between industry, with business model as basis, and academia, with focus on data mining, is highlighted. Test Metrics is discussed as a prelude to our formula for prioritization; a case study is further discussed to illustrate this methodology. An industrial case study is also described in the paper, where the number of test cases is so large that they have to be grouped as Test Suites. In such situations, a genetic algorithm proposed by us can be used to reconfigure these Test Suites in each cycle of regression testing. The comparison is made between a proprietary tool and an open source tool using the above mentioned metrics. Our approach is clarified through several tables. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
APFD metric; Genetic algorithm; Regression testing; RFT tool; Selenium tool; Test case prioritization

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Venkatakrishnan, C.J.[a] , Bhuminathan, S.[b] , Chandran, C.R.[c] , Poovannan, S.[d]

Dental implants in patients with osteoporosis – A review

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Abstract
Osteoporosis is a systemic skeletal disease affecting the bone strength which deteriorates the bone mass, strength and affects the micro-architecture of the bone thus increasing the bone turn over and bone fragility. Osteoporosis also affects the jaw bones and Bisphosphonates are the first line of therapy. Hence, Osteoporosis is considered as a questionable condition for dental implant placement. However literature states that patients with osteoporosis do not appear to be at a significant risk of implant failure. Patients with Osteoporosis are not a contraindication for dental implants. This paper presents a review on Dental implants in patients with Osteoporosis. © 2017, Oriental Scientific Publishing Company. All rights reserved.

Author Keywords
Bone density; Dental implants; Implant stability; Osteoporosis

Index Keywords
bisphosphonic acid derivative; bone density, bone microarchitecture, bone necrosis, bone remodeling, bone strength, human, osseointegration, ossification, osteoclast activity, osteoporosis, osteotomy, prognosis, prosthesis complication, Review, treatment planning

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Venkatakrishnan, C.J.[a] , Bhuminathan, S.[b] , Chandran, C.A.R.[c]

Dental implant insertion torque and bone density – Short review

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Abstract
Clinical success in implant practice is influenced by both the volume (quantity) and the density (quality) of bone at the implant site. Bone quality and quantity differ from site to site and from patient to patient. Factors that are important to the success of dental implant treatment include material, biocompatibility, and design issues related to the dental implant; patient factors, such as general health, local tissue health, and quality and quantity of bone; and procedural issues, such as insertion torque (IT), timing of loading, healing duration, biomechanical loading, and prosthetic design. Osteoporotic patients require particular attention to their implant site bone quality as an indication of prognosis and may require modified surgical technique Insertion Torque (IT). © 2017, Oriental Scientific Publishing Company. All rights reserved.

Author Keywords
Bone density; Cone beam computed tomography (CBCT); Dental implants; Insertion torque; Osteoporosis; Primary stability

Index Keywords
biocompatibility, bone density, cone beam computed tomography, fracture healing, hardness, human, mechanotransduction, osseointegration, preoperative evaluation, prognosis, prosthesis design, Review, tooth implantation

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Abstract
In the current scenario for dental practice we face patients who are much more aware of dental implants and its benefits. Restoring patient's teeth with implants improves the quality of life of the individual and helps him lead a healthy life. Patient selection and implant site preparation is as important as other factors that determine the success or failure of dental implants. © 2017, Oriental Scientific Publishing Company. All rights reserved.

Author Keywords
Bone augmentation; Dental implants; Implant stability; Osseointegration; Site preparation

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augmentation index, bleeding, bone graft, dental practice, edema, human, incidence, inferior alveolar nerve, osseointegration, osteolysis, osteotomy, quality of life assessment, Review, risk factor, surgical technique, wound healing, zygoma

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Surface, thermal and hemocompatible properties of novel single stage electrospun nanocomposites comprising polyurethane blended with bio oil™

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Abstract
In this work, the physicochemical and blood compatibility properties of prepared PU/Bio oil nanocomposites were investigated. Scanning electron microscope (SEM) studies revealed the reduction of mean fiber diameter (709 ± 211 nm) compared to the pristine PU (969 nm ± 217 nm). Fourier transform infrared spectroscopy (FTIR) analysis exposed the characteristic peaks of pristine PU. Composite peak intensities were decreased insinuating the interaction of the bio oil™ with the PU. Contact angle analysis portrayed the hydrophobic nature of the fabricated patch compared to pristine PU. Thermal gravimetric analysis (TGA) depicted the better thermal stability of the novel nanocomposite patch and its different thermal behavior in contrast with the pristine PU. Atomic force microscopy (AFM) analysis revealed the increase in the surface roughness of the composite patch. Activated partial thromboplastin time (APTT) and prothrombin time (PT) signified the novel nanocomposite patch ability in reducing the thrombogenicity and promoting the anticoagulant nature. Finally the hemolytic percentage of the fabricated composite was in the acceptable range revealing its safety and compatibility with the red blood cells. To reinstate, the fabricated patch renders promising physicochemical and blood compatible nature making it a new putative candidate for wound healing application. © 2017, Academia Brasileira de Ciencias. All rights reserved.

Author Keywords
Atomic force microscopy; Bio oil™; Nanocomposite; Polyurethane; Wound healing

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nanocomposite, polyurethan; artificial membrane, chemistry, human, infrared spectroscopy, materials testing, scanning electron microscopy, surface property, ultrastructure; Humans, Materials Testing, Membranes, Artificial, Microscopy, Electron, Scanning, Nanocomposites, Polyurethanes, Spectroscopy, Fourier Transform Infrared, Surface Properties

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Folic acid decorated chitosan nanoparticles and its derivatives for the delivery of drugs and genes to cancer cells
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Abstract
Nanotechnology offers a number of nanoscale implements for medicine. Among these, nanoparticles are revolutionizing the field of drug and gene delivery. Chitosan is a natural polymer which provides a profitable tool to an innovative delivery system due to its inherent physicochemical and biological characteristics. Chitosan nanoparticles are promising drug and gene delivery carriers because of small size, better stability, low toxicity, inexpensiveness, simplicity, easy fabrication and versatile means of administration. Chitosan can also be easily modified chemically due to the presence of reactive functional hydroxide and amine groups. Folic acid is commonly engaged as a ligand, for targeting cancer cells, as its receptor, that transports folic acid into the cells through endocytosis and is over-expressed on the surface of several human epithelial cancer cells. Integrating folic acid into chitosan-based drug delivery inventions directs the systems with a well-organized targeting ability. The present review outlines several illustrations of this versatile system based on folate decorated chitosan, which have shown potential as auspicious delivery systems published over the past few years. In addition, it is probable to formulate chitosan nanocarriers that exhibit manifold usage beyond targeted delivery, such as nanotheranostics and cancer stem cell therapy.

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5-fluorouracil; Cancer; Chitosan; Doxorubicin; Drug delivery; Folic acid; Gene delivery

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Significance and issues of steganographic paradigm in network security
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Abstract
Steganographic techniques and concepts are well developed in the past few decades. Steganography provides a stronger form of information security than cryptography by making the communication undetectable by passive observers. This adds stealth as a parameter to the existing security paradigm of confidentiality, integrity and availability also known as CIA triad or the more recent Parkerian hexad. This paper presents a discussion on the significance and implementation issues in bringing steganographic security to common network security issues of confidentiality, integrity and authentication using digital image steganographic techniques The issue of selecting the best image steganographic technique and security key design are discussed in detail. Experiments are conducted with USC Signal and Image Processing Institute database. The computational efficiency of the methods for real-Time implementation is addressed. Shortcomings in the state of art steganography and future research directions are presented.

Author Keywords
Authentication; Confidentiality; Digital Images; Integrity; Network Security; Steganography

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Detecting and classifying ecg abnormalities using a multi model methods.

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Abstract
Heart Abnormalities can be diagnosed accurately by examining and investigating the ECG signals carefully. Numerous techniques were proposed in the earlier research works in the area of arrhythmia detection by utilizing traditional methods of classification. Also, in the earlier researches Chaos theory and non-linear analysis are applied to characterizing the ECG signals. In this paper, the proposed method detects and analyses the abnormalities with respect to P, Q, R and S peak values. The entire proposed work is divided into three phases, whereas in the first phase, the data acquisition is applied to the real time ECG data. In the second phase, preprocessing is applied to the ECG signal data. In the third phase, features are extracted from ECG signals and finally from the extracted features, the abnormal peaks are classified to identify the abnormality of the ECG signals. The data acquisition is achieved from the relevant database, then preprocesses the data using Base Line Correction (BLC), inflection point detection using Powerline interference, Feature Extraction by GLCM method and finally features are classified and detecting the abnormality using the SVM classifier. The data set used in this paper is taken from the world-famous MIT-BIH Arrhythmia database and other international ECG signal databases. © 2018, Scientific Publishers of India. All rights reserved.

Author Keywords
Base line correction; ECG signal; Feature extraction; Morphological operation; Signal processing; SVM classifier

Index Keywords
Article, ECG abnormality, kernel method, P wave, Q wave, QRS complex, R wave, signal processing, statistical model, support vector machine, T wave

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Neela Mohan, C.[a] , Renuga, V.[a] , Manikandan, A.[b]

Influence of silver precursor concentration on structural, optical and morphological properties of Cu1-xAgxInS2 semiconductor nanocrystals

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Abstract
Near-Infrared (NIR)-emitting Cu1-xAgxInS2 (x = 0.0, 0.2, 0.4, 0.5, 0.6, 0.8 and 1.0 mmol) semiconductor nanocrystals were synthesized from CuCl, AgNO3 and InCl3 precursors by varying the concentrations of silver precursor (0 ≤ x ≤ 1.0) using 1-dodecanethiol as capping agent by hot injection method. In CuInS2 host lattice, the incorporation of Ag+ ions can be identified by the change of color from black (CuInS2) to dark brown (AgInS2). The absorption band-edge of the synthesized nanocrystal has shifted to blue-shift by changing the silver composition in Cu1-xAgxInS2 nanocrystals. The optical band gap (Egop) of synthesized nanocrystals increased with incremental change of silver ion concentrations. The structural, morphological and elemental compositions of the synthesized nanocrystals were studied using X-ray diffraction (XRD), High-resolution transmission electron microscope (HR-TEM) and Energy dispersive x-ray (EDX) spectroscopic analysis. © 2017

Author Keywords
Cu1-xAgxInS2 nanocrystals; Hot-injection method; HR-TEM; NIR-region; XRD

Index Keywords
Energy gap, Infrared devices, Metal ions, Nanocrystals, Spectroscopic analysis, X ray diffraction; Elemental compositions, Energy dispersive x-ray, Hot injection, Morphological properties, NIR regions, Precursor concentration, Semiconductor nanocrystals, Silver ion concentration; Silver

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TRR-AODV based performance enhancement in mobile ad hoc network

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Abstract
MANET's are network formed by a group of mobile nodes. They communicate with each other without any specialized or centralized infrastructure. Each node can act both as a router and a host. The mobile nodes in the network are self configurable. In MANET congestion is one of the major issues which degrade the performance of the whole network. Congestion occurs when there is an increase in traffic in the network. Congestion leads to dropping of packet which in turn leads to a data loss. Many congestion control mechanisms have been proposed, but they incurred delay which in turn deteriorates the performance of the network. This paper proposes a methodology to reduce congestion problems in MANET. There are some protocols which are congestion adaptive and some are congestion aware. This proposed concept is based on congestion aware protocol. The routing path is selected based on the transmission and the reception rate of the node which is calculated before communication. This avoids data loss due to congestion. The proposed algorithm is simulated using NS2. The simulated result gave improved throughput, end to end delay and route availability. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
AODV; Data loss; End to end delay; Throughput; TRR-AODV

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A study on collective bargaining and its dependence on trade union recognition

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Abstract
Trade union plays significant role in shaping the worker's life in India. But in developed countries like India, unions are losing its membership in recent decades. This downward trend is prevalent in certain group of workers like female workers, young workers and those who are working in private sector particularly in a smaller organisation. Worker being weaker segment they can get their rights only through collective representation i.e. collective bargaining. Collective bargaining is the backbone for harmonious industrial relations. Right to collective bargaining is available only to recognized trade union. Recognition of trade union means accepting or conferring right to negotiate on behalf of workers. In Bharat petroleum corporation cases, the court of India held that there is no provision regarding recognition, the right cannot be enforced by writ petition, to be conferred by the management. In views of the above to bestow workers fundamental right and ensure industrial peace, there should be a legislation of recognition of trade union. © IAEME Publication.

Author Keywords
Collective bargaining; Recognition; Settlements; Union recognition

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Analysis of a spur gear with NX NASTRAN

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Abstract
A wheel with teeth cut is known as a tooth wheel or gear. In this paper a spur gear is taken into consideration. In this emerging world of technology, new software's are introduced. That makes design, modeling and analysis easier. So, here a simple machine element, a spur gear is modeled using a modeling software Pro-E. After the modeling is carried out to find the maximum stress in the fillet regions of the spur gear tooth for various modules. This is to be analyzed using analysis software FEMAP with NX-NASTRAN. This is an old meshing software which is used for accurate meshing and analysis. FEMAP 9.2 was used. The software analyzed results were compared with the theoretical results.

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Controllable synthesis of Graphene/ZnO-nanocomposite for novel switching
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Abstract
A facile solvo-thermal route is employed in the synthesis of Graphene/ZnO-nanocomposite. Analysis of Graphene/ZnO-nanocomposite synthesized and performed using spectroscopes and electron microscopic in various investigations like: X-ray diffraction (XRD), FTIR, FT-Raman spectroscopy, Scanning electron microscope (SEM), Transmission electron microscope (SEM), Atomic Force Microscopy (AFM), dielectric contacts and loss investigations. Crystalline structure was examined by XRD patterns, while the morphology was investigated was carried out using typical electron microscopic investigations of FE-SEM and HR-TEM equipped with Electron Dispersion Spectroscopy (EDS) analogous to the detection of chemical elements in hybrid composite. The thickness of thin film and surface topography were confirmed by AFM. The UV–visible absorption spectroscopy, while calculating optical band gap energy (Eg) of Graphene/ZnO-nanocomposite was found to be 3.15 eV. The photoluminescence spectrum was also used to determine the optical properties. Hence, the FTIR and Raman spectrum was used in identifying the functional groups. At various frequencies and at an ambient condition of temperatures, the dielectric studies like: dielectric constant, dielectric loss and AC conductivity properties were investigated. We reported the smartest applied methodologies for the designing of ZnO nanostructures homogeneous dispersion with graphene for this hybrid nanocomposite. A range of remarkable characteristics is then presented, organized into sections describing the optical switching of phase transition with temperature. In this article, we provide an overview idea of the most recent progresses in Graphene/ZnO-nanocomposite doping-induced to control the novel switching operation for the first time. This optimization puts the Graphene/ZnO hybrid structure of the high impact level applications in nanoelectronics and optoelectronics. © 2017 Elsevier B.V.

Author Keywords
Dielectric studies; Graphene; Nanocomposite; Raman spectroscopy; ZnO

Index Keywords
Absorption spectroscopy, Atomic force microscopy, Chemical detection, Chemical elements, Dielectric losses, Dispersions, Electrons, Energy gap, Film thickness, Fourier transform infrared spectroscopy, Nanocomposites, Optical properties, Photoluminescence spectroscopy, Raman spectroscopy, Scanning electron microscopy, Semiconductor doping, Surface topography, Topography, Transmission electron microscopy, X ray diffraction, Zinc oxide; Controllable synthesis, Detection of chemicals, Dielectric studies, FT- Raman spectroscopy, Homogeneous dispersions, Optical band gap energy, Photoluminescence spectrum, Visible absorption spectroscopy; Graphene

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Thomas, A.J.[a] , Sundaramoorthy, S.[b c] , Chokkalingam, M.P.[a] , Saktheeswaran, S.[d]

Concept note on ZLD of city sewage-a tale of two cities - Orange County and Chennai - Explored
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Abstract
Habitations whether small or mega are inherent with mythologies and realities. The classical example is River Ganga. Human dead sometimes partly burnt are consigned to it and still it is revered for a holy dip. The National Cancer Registry Programme (NCRP) of the Indian Council of Medical Research (ICMR) observes that "We know that the incidence of cancer was highest in the country in areas drained by the Ganga. We also know why" (Anitban Ghosh, Times of India, Oct 17, 2012) and DS Bhargava, a retired hydrology professor who has spent a lifetime on experiments on Ganga saying "organic material usually exhausts a river's available oxygen and starts putrefying, but in the Ganges, an unknown substance, or "X factor" acts on organic materials and bacteria and kills them and oxygen levels at 25 times higher than any other river in the world". But it is not the case in other rivers. The Yamuna river sewage pollution is so high that the Agra city water treatment plant (WTP) with this river as source has a sewage treatment technology (STT) as pre-treatment before the WTP. The day may not be far off before this STT-WTP becomes a standard practice given that the country is still struggling with only 33 % of urban population with sewerage and that too not all of this sewage treated and almost all rural faeces getting dispersed into the environment. It is time to implement the zero liquid discharge (ZLD) in sewage than the minuscule industrial wastes. Such a ZLD in sewage is proven in Orange County in USA. The imminent candidate for its replication appears to be the Chennai habitation to save potential water famine there. © IAEME Publication.

Author Keywords
City sewage; RO technology; ZLD technologies

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Charlesbabu, J.[a] , Gopalakrishnan, K.[b] , Elango, M.[c] , Vasudevan, K.[d]

Preparation and characterization of Cd-doped ZnO thin films by spin coating method
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Abstract
Cd-doped ZnO thin films were deposited on a glass substrate via spin coating techniques. The structural properties of the thin film were studied by X-ray diffractometry. X-ray diffraction data showed that the grown films were oriented in (100) direction with hexagonal wurtzite phase. The average calculated grain size ranged from 10 to 12 nm. The lattice constants of the as-prepared ZnO films were calculated using standard formulae, and the values are arrived as a = 3.25 Å and c = 5.20Å , which confirm the hexagonal of the materials. The Scanning Electron Microscope (SEM) images reveal the polycrystalline structure of pure ZnO film. The minimum thickness is found to be 0.7 μm and the maximum is 1.4 μm. The FT-IR spectroscopy shows some absorption bands at 1427.32 cm-1 corresponding to the stretching vibration of C–O band. Various absorption band peaks in the range of 3350–3450 cm-1 correspond to O–H species. From the UV spectral analysis, the band gap of ZnO film coated over a glass substrate is found to be 3.4 eV, the band gap of pure ZnO film is calculated as 3.44 eV, and that of Cd-doped ZnO film for 2, 4, and 6 wt% was 3.43, 3.429, and 3.423 eV respectively. © 2017 Taylor & Francis Group, LLC.

Author Keywords
Cd-doped ZnO thin film; FT-IR; SEM; Spin coating technique; X-ray diffractometry

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Feature extraction techniques based on color and shape-A survey
(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (5), pp. 180-184.

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Abstract
Extraction of most important features of any image plays an important part in distribution of images which should have scrupulous and fault less image content. The perceptible feature of image is its shape. one image comprises several parts of an object. The major grindstone in image processing is to analyze, organize and classify the shape and color of an object1. Images which are totally retrieved in terms of its feature play a critical part in different domains. Many features such as shape and structure of the image is done using various image processing techniques. In this paper, analysed various feature extraction techniques are discussed. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

Author Keywords
Edge detection; Feature extraction; Image classification; Image enhancement; Object recognition; Shape detection

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An eco-friendly new construction methodology supporting high market feasibility

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Abstract
An Eco-Friendly new construction methodology supporting high market feasibility. A new construction methodology is developed by using wood and straw bale as the main raw material as an alternate to cement products. By doing so, anyone can own a building within a matter of hours since it facilitates lower cost estimation apart from being eco-friendly and possessing a longer lifetime. The thermal performance ranking is also very high. After subjecting straw bale into several tests including load bearing, thermal behaviour, life cycle assessment and energy performance, straw bale construction is found to be the best solution where wood provides additional strength to the building. © Medwell Journals, 2017.

Author Keywords
Cost estimation load bearing; Life cycle assessment thermal performance; Straw bale; Wood

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Potential exploitation of broadcasting system using multiple smart directional antennas -help of sensor network
(2017) *International Journal of Mechanical Engineering and Technology*, 8 (6), pp. 678-687. Cited 1 time.

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Abstract
In wireless telecommunication, the network consists of a broadcast server with a set of clients. It sends a group of information to the clients in a desired closed loop path. According to the information send by the broadcasting server the clients access it this should be happen in a cyclic path. In olden days we use fixed directional antennas for transmitting the signal from one place to another. Due to some drawback over the existing one we use multiple directional antennas at the Broadcast Server has been shown to increase performance. In many cases however, such broadcasting systems fail to exploit the full potential of the multiple antennas as they do not take into account the geographical distribution of clients within the coverage area of the system. This letter proposes an adaptive smart antenna [4] based wireless push system where the beam width of each smart antenna is altered based on the current placement of clients within the system area. Coupled with a modification of the broadcast schedule, the proposed approach significantly increases the performance observed by the system clients. © IAEME Publication.

Author Keywords
Broadcasting-Server; Channel-State Information; MIMO; MISO; Multiple-Access Channel

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Ponnuraja, C.[a] , Lakshmanan, B.C.[b] , Srinivasan, V.[c] , Prasanth, B.K.[d]

Decision tree classification and model evaluation for breast cancer survivability: A data mining approach
(2017) *Biomedical and Pharmacology Journal*, 10 (1), pp. 281-289. Cited 2 times.

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Abstract
Data mining is the foremost technique in health care industry which helps in uncovering data patterns in large volume of data. The breast cancer is one of the most prevalent cancers in the world that has enough potential to be studied by data mining techniques. . While taking treatment decision for Breast Cancer multiple factors are to be considered. SEER Breast Cancer data is analyzed to extract an accurate model of patients survival using data mining technique like decision tree algorithm, classification and pattern recognition. Evolving from breast cancer insights, decision tree algorithm can employ multiple factors in resolving prediction, classification, pattern recognition, and pattern completion. SEER data set pertained to patients suffering from breast cancer is used to extract an accurate model to identify the survival of patients by data mining techniques. To achieve better prediction of the breast cancer patients' survivability, only seven features are identified from the available features as important for the analysis. After feature identification, pre-processing of the data is done, like deletion of records with insufficient/missing information, and then all the identified features are being used in Decision Tree algorithm. The objective is to compare predictive results classifying breast cancer patients (both male and female) with decision tree algorithm using age categorization. By means of this algorithm, we predict the risks of female breast cancer patients' mortality rate as 95.1% in the age group 42-52 years along with other risk factors. The prediction and risks factors for male are also achieved equally. Decision tree algorithm concludes with a path for highest survival rate (96.4%) and the highest death rate (95.1%). The result is cross validated using logistic regression. Female and male breast cancer patients in the age group (42-52) and (<42) are identified as high risk groups respectively. The proposed approach helps the clinicians with high risk group reference and to plan for the patient's treatment accordingly.

Author Keywords
Breast Cancer; CHAID; Data Mining; Decision Tree; SEER

Index Keywords
age, Article, breast cancer, cancer survival, data mining, death, decision tree, gender, human, mortality rate, risk factor, survival rate

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Diagnosing sinusitis using fractional B-spline wavelet with near infrared spectroscopy
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Abstract
This paper presents an efficient multiresolution, signal analysis wavelet technique to diagnose sinusitis. We describe the properties, construction and Applications of Fractional BSpline Wavelet Transform (FrSWT) with a strong mathematical background from the B-spline family. Diagnosis of sinusitis is a quite critical issue at the clinical level as the disease shares its symptoms with several other diseases also. An early screening algorithm is required to validate the diagnosis. We compared FrSWT output for spatially varying inhomogeneous turbid medium with previously obtained Empirical Wavelet Transform output, thereby differentiating healthy and sinusitis patient in an effective manner. FrSWT algorithm validates the output to diagnose sinusitis using wavelet technique.

Author Keywords
B-Spline; Empirical Wavelet Transform (EWT); Fractional B-spline Wavelet Transform (FrSWT); Multiresolution; Sinusitis; Wavelet

Index Keywords
algorithm, Article, Fractional Spline Wavelet Transform, human, mathematical model, near infrared spectroscopy, operator, paranasal sinus, signal processing, simulation, sinusitis, support vector machine, turbidity, wavelet analysis

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Resources for creating employee retention strategies in it industry
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Abstract
For an organization to do well and earn profits it is essential that the high potential employees stick to it for a longer duration and contribute effectively. The employees who spend a considerable amount of time tend to be loyal and committed towards the management and always decide in favour of the organization. When you meet someone, there is hardly any attachment in the beginning, but as the friendship matures, a sense of loyalty and trust develops. In the same way, when an individual spends a good amount of time in an organization, he gets emotionally bonded to it and strives hard for furthering the brand image of the organization. The management can't completely put a full stop to the process of employees quitting their jobs but can control it through proper employee retention strategies by using the following resources in the IT industry to a large extent. © IAEME Publication.

Author Keywords
Employee retention strategies; Resources for creating employee retention strategies

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A study on employee retention strategies with special reference to Chennai it industry

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Abstract
It's every manager's nightmare: One of your best employees resigns out of the blue. Right away, you've got a number of challenges to tackle. Not only do you have to find a replacement for such a talented team member no small feat when skilled professionals are in high demand, as they are today but you also have to consider the impact this departure will have on the rest of your staff. Whenever someone walks out the door, people notice, and some will start wondering if they should follow suit. That's why employee retention should be on every company's radar. In fact, creating effective employee retention strategies is one of your most important jobs as a manager. © IAEME Publication.

Author Keywords
Chennai it industry; Employee retention strategies; Impact of existing retention strategies

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A study on recognition of trade union and its necessity

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Abstract
Trade union plays significant role in shaping the worker's life in India. But in developed countries like India, unions are losing its membership in recent decades. This downward trend is prevalent in certain group of workers like female workers, young workers and those who are working in private sector particularly in a smaller organisation. Worker being weaker segment they can get their rights only through collective representation i.e. collective bargaining. Collective bargaining is the backbone for harmonious industrial relations. Right to collective bargaining is available only to recognized trade union. Recognition of trade union means accepting or conferring right to negotiate on behalf of workers. In Bharat petroleum corporation cases, the court of India held that there is no provision regarding recognition, the right cannot be enforced by writ petition, to be conferred by the management. In views of the above to bestow workers fundamental right and ensure industrial peace, there should be a legislation of recognition of trade union. © IAEME Publication.

Author Keywords
Collective bargaining; Recognition; Settlements; Union recognition

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Rare earth element (REE) lanthanum doped zinc oxide (La: ZnO) nanomaterials: Synthesis structural optical and antibacterial studies

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Abstract
Lanthanum (La) doped zinc oxide (ZnO) nanomaterials (LaxZn1-xO, x = 0.0, 0.03, 0.05, 0.07 M) were synthesized via co-precipitation method using zinc acetate, lanthanum nitrate as precursors, octylamine as capping and reducing agent. The structures, morphologies, optical activity and antibacterial properties of LaxZn1-xO were investigated by powder X-ray diffraction (XRD), Fourier transform infrared (FT-IR) spectroscopy, High resolution scanning electron microscopy (HR-SEM), Energy dispersive X-ray (EDX), UV–Visible, Photoluminescence (PL) spectroscopy. The antibacterial activities of LaxZn1-xO were tested by modified disc diffusion method. The XRD results showed that the La3+ ions were successfully incorporated into the ZnO host, and the products were well-crystalline. The average size of undoped and doped La-doped ZnO was found to be in the ranges from 15.64 to 10.18 nm. In addition, the sphere-like nanoparticles morphology of LaxZn1-xO was confirmed by HR-SEM images. The band gap of La-doped ZnO nanoparticles were varied with the La3+ ions doping concentration. In addition, increasing the doping concentration of La3+ ions in ZnO increases the defects in ZnO lattice and hence resulting red-shift in UV emission, which indicate the presence of narrow band-gap in doped nanoparticles. © 2017 Elsevier B.V.

Author Keywords
Antibacterial activity; Chemical route; La-doped ZnO; Nanomaterials; Optical; Structural

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Energy gap, Fourier transform infrared spectroscopy, Ions, Lanthanum oxides, Nanoparticles, Nanostructured materials, Photoluminescence spectroscopy, Precipitation (chemical), Scanning electron microscopy, X ray diffraction, Zinc, Zinc compounds, Zinc oxide; Anti-bacterial activity, Chemical routes, Doped ZnO, Optical, Structural; Lanthanum

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Rare earth element (REE) lanthanum doped zinc oxide (La: ZnO) nanomaterials: Synthesis structural optical and antibacterial studies

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Abstract
Lanthanum (La) doped zinc oxide (ZnO) nanomaterials (LaxZn1-xO, x = 0.0, 0.03, 0.05, 0.07 M) were synthesized via co-precipitation method using zinc acetate, lanthanum nitrate as precursors, octylamine as capping and reducing agent. The structures, morphologies, optical activity and antibacterial properties of LaxZn1-xO were investigated by powder X-ray diffraction (XRD), Fourier transform infrared (FT-IR) spectroscopy, High resolution scanning electron microscopy (HR-SEM), Energy dispersive X-ray (EDX), UV–Visible, Photoluminescence (PL) spectroscopy. The antibacterial activities of LaxZn1-xO were tested by modified disc diffusion method. The XRD results showed that the La3+ ions were successfully incorporated into the ZnO host, and the products were well-crystalline. The average size of undoped and doped La-doped ZnO was found to be in the ranges from 15.64 to 10.18 nm. In addition, the sphere-like nanoparticles morphology of LaxZn1-xO was confirmed by HR-SEM images. The band gap of La-doped ZnO nanoparticles were varied with the La3+ ions doping concentration. In addition, increasing the doping concentration of La3+ ions in ZnO increases the defects in ZnO lattice and hence resulting red-shift in UV emission, which indicate the presence of narrow band-gap in doped nanoparticles. © 2017 Elsevier B.V.

Author Keywords
Antibacterial activity; Chemical route; La-doped ZnO; Nanomaterials; Optical; Structural

Index Keywords
Energy gap, Fourier transform infrared spectroscopy, Ions, Lanthanum oxides, Nanoparticles, Nanostructured materials, Photoluminescence spectroscopy, Precipitation (chemical), Scanning electron microscopy, X ray diffraction, Zinc, Zinc compounds, Zinc oxide; Anti-bacterial activity, Chemical routes, Doped ZnO, Optical, Structural; Lanthanum

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Effect of slanted perforation in tabs for subsonic and transonic jets
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Abstract
Jet from convergent nozzle under correctly expanded condition was controlled by two tabs kept opposite to each other with straight perforation and slanted perforation at different angles of 10°, 20° and 30°. This jet was compared with uncontrolled jet and jet with solid tab. It was found that jet with tab of slanted perforation 30° was having a lesser potential core as compared to jet with solid Tab. Further it was found that the effectiveness of the tab with slanted perforation increased with increasing slanted perforation angle. The streamwise vortices introduced by the slanted perforation in tabs were inclined towards the centreline of the jet and thereby causing the disturbance in potential core region of the primary jet and resulting in faster decay of the jet. © Springer India 2017.

Author Keywords
Jet; Mixing; Slanted perforation; Subsonic; Tab

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Statistical features-based comparison of analysis and synthesis of normal and epileptic electroencephalograms for various wavelets

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Abstract
An electroencephalogram (EEG) is an electrical signal in microvolts captured noninvasively from the brain, which provides important and unique information about the brain. The frequency of an EEG signal lies between 0 and 100 Hz. Decomposition of an EEG signal into various bands such as alpha, beta, delta, theta, and gamma is essential in seizure-related studies. EEGs play a key role in the diagnosis of epileptic seizures and neurological disorders. In this paper, multiple wavelet families for decomposition and reconstruction are explored and are compared based on risk functions and reconstruction measures. While dealing with the wavelets it is a difficult task to choose the correct/accurate wavelet for the given biosignal analysis. Various statistical properties were studied by the authors to check the suitability of various wavelets for normal and diseased EEG signal decomposition and reconstruction. The methodology was applied to 3 groups (63 subjects) consisting of both sexes and aged between 1 and 80 years: 1) normal healthy subjects, 2) patients with focal seizures, and 3) patients with generalized seizures. Our result shows that the Haar and Bior3.7 wavelets are more suitable for normal as well as diseased EEG signals, as the mean square error, mean approximate error, and percent root mean square difference of these wavelets are much smaller than in other wavelets. The signal-To-error ratio for Haar and Bior3.7 was much higher than in any other wavelet studied.

Author Keywords
Decomposition; Electroencephalogram; Epilepsy; Reconstruction; Statistical features; Wavelet

Index Keywords
Bioelectric phenomena, Decomposition, Diagnosis, Electroencephalography, Errors, Image reconstruction, Mean square error, Neurology, Risk assessment, Signal processing, Wavelet decomposition; Analysis and synthesis, Decomposition and reconstruction, Electro-encephalogram (EEG), Epilepsy, Neurological disorders, Root mean square differences, Statistical features, Wavelet; Biomedical signal processing

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Optimal test suite selection using improved cuckoo search algorithm based on extensive testing constraints
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Abstract
Software engineering deals with the development of software systems and to reduce the cost and improve the development process. Software metric is a quantitative measure of a degree to which a software system or process some property. It is consider as the major basis as it depends on the software quality. In this paper we propose a method for estimation of software quality based on the software metrics. We make reuse of software in order to reduce effort, time and cost and thus it increases the productivity and quality of software programs. In order to develop better quality software, we have considered as software metrics like reusability, fault proneness and change proneness. In our proposed method test cases are optimized by using Particle Swarm Optimization algorithm (PSO). Then the optimized test cases are prioritized by using Improved Cuckoo Search algorithm (ICSA). Finally, the optimized result will be evaluated by software quality measures. © Research India Publications.

Author Keywords
Cuckoo search; Particle swarm optimization; Quantitative measure; Software metrics

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Thanigai Arul, K.[a] , Manikandan, E.[b c d] , Murmu, P.P.[e] , Kennedy, J.[c e f] , Henini, M.[c g]

Enhanced magnetic properties of polymer-magnetic nanostructures synthesized by ultrasonication
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Abstract
Polymer based nickel (Ni) and cobalt (Co) co-doped ferrites were prepared by adept ultrasonication route. Different concentrations of polymer [polyvinyl alcohol (PVA)] (0.2 g and 0.5 g) was added as a surfactant to the magnetic particles. The phase purity of Ni-Co ferrites (spinel structure) was confirmed by X-ray diffraction (XRD). Enhanced saturation magnetization of polymer based magnetic nanoparticles due to shape anisotropy and size. 0.2 wt% doped ferrite showed superparamagnetic characteristics with blocking temperature above room temperature. Hence, ultrasonication route is a rapid and effective technique for tailoring size and morphology of magnetic nanostructure that could be useful in magnetic-sensor applications. © 2017 Elsevier B.V.

Author Keywords
Magnetic nanostructures; Magnetization; Nanocomposites; Polymers; Ultrasonication

Index Keywords
Ferrites, Magnetism, Magnetization, Nanocomposites, Nanoparticles, Nanostructured materials, Nanostructures, Nickel, Polymers, Saturation magnetization, X ray diffraction; Blocking temperature, Magnetic nano-particles, Magnetic nanostructures, Magnetic particle, Poly (vinyl alcohol) (PVA), Sensor applications, Superparamagnetics, Ultra-sonication; Nanomagnetics

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Akila, V.[a] , Sheela, T.[b] , Macriga, G.A.[b]

Efficient packet scheduling technique for data merging in wireless sensor networks
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Abstract
Wireless Sensor Networks (WSNs) has become a popular research topic due to its resource constraints. Energy consumption and transmission delay is crucial requirement to be handled to enhance the popularity of WSNs. In order to overcome these issues, we have proposed an Efficient Packet Scheduling Technique for Data Merging in WSNs. Packet scheduling is done by using three levels of priority queue and to reduce the transmission delay. Real-time data packets are placed in high priority queue and Non real-time data packets based on local or remote data are placed on other queues. In this paper, we have used Time Division Multiple Access (TDMA) scheme to efficiently determine the priority of the packet at each level and transmit the data packets from lower level to higher level through intermediate nodes. To reduce the number of transmission, efficient data merge technique is used to merge the data packet in intermediate nodes which has same destination node. Data merge utilize the maximum packet size by appending the merged packets with received packets till the maximum packet size or maximum waiting time is reached. Real- time data packets are directly forwarded to the next node without applying data merge. The performance is evaluated under various metrics like packet delivery ratio, packet drop, energy consumption and delay based on changing the number of nodes and transmission rate. Our results show significant reduction in various performance metrics © 2013 IEEE.

Author Keywords
dataaggregation; packet scheduling; time divisionmultiple access; wireless sensor networks

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Cloud Information Accountability (CIA) framework ensuring accountability of data in cloud and security in end to end process in cloud terminology

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Abstract
A major feature of the cloud services is that users' data are usually processed remotely in unknown machines that users do not own or operate. While enjoying the convenience brought by this new emerging technology, users' fears of losing control of their own data (particularly, financial and health data) can become a significant barrier to the wide adoption of cloud services. To address this problem, in this paper, we put forward a novel highly decentralized information accountability framework to keep track of the actual usage of the users' data in the cloud. In particular, we propose an object-centered approach that enables enclosing our logging mechanism together with users' data and policies. Though the Cloud Service Provider (CSP) gives the privacy and veracity of the data; this tracks the actual usage of the user's data in the cloud by using novel extremely decentralized framework data and policies. A object-centered approach that enables enclosing our logging mechanism together with users' data and policies. By leveraging the JAR programmable aptitude to both creates a dynamic and peripatetic object. The privacy protection technologies, information accountability focuses on keeping the data usage transparent and perceptible. Our proposed CIA framework provides end-to end accountability in a highly distributed trend. One of them an innovative feature of the CIA framework lies in its ability of maintaining lightweight and powerful accountability that combines aspects of access control, usage control and authentication, and security issues. © IAEME Publication.

Author Keywords
Accountability; Cloud computing; Cloud service provider; Data sharing; Framework

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Abhishek, G.[a] , Senthilkumar, C.B.[b]

Effectiveness of the mentors in the growing corporate companies

(2017) *International Journal of Civil Engineering and Technology*, 8 (3), pp. 118-126.

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Abstract
In the present corporate scenario, the employees belonging towards the organization is becoming very less. Gone are those days where an employee stays in an organization till their retirement. But in the present era, sustaining in the same job for few years is becoming very difficult. That is due to people need fast growth, high attention, more income & at times no proper guidance. The new entrants in the organization are also in the same path. They are not guided properly by the seniors in the organization. Thus the Mentors come into picture. © IAEME Publication.

Author Keywords
Benefits of mentoring; Identification of mentors; Protégées and process of implementation

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Suganthi, S.[a] , Kumar, C.B.S.[b]

Converting challenges to opportunities which women employees do in the corporate sector
(2017) *International Journal of Civil Engineering and Technology*, 8 (3), pp. 273-281. Cited 1 time.

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Abstract
Every organization needs well-equipped employees in the team. But getting the right people in the right job is the biggest challenge. Mostly women employees are good at handling the new tasks in a very efficient way. But due to the ego clashes or personality differences, the women employees are not able to see a biggest growth. Only very few women executives are able to flourish well in the competitive corporate world. This article in on how the successful women have embraced the challenges & made big in the organization they work. © IAEME Publication.

Author Keywords
Benefits of women employees; Successful women employees; Women challenges

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Jayaraman, A.R.[a] , Kannan, P.[b] , Jayanthini, V.[c]

An interesting case report of hematohidrosis

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Abstract
Hematohidrosis or hematidrosis is a rare condition in which a human being sweats blood. Psychogenic cause is found to be the most frequent cause among other causes such as systemic disease and vicarious menstruation. This is a case report of a 10-year-old girl with oozing of blood from intact skin of scalp. Underlying intense fear secondary to psychosocial stressor was identified and a provisional diagnosis of mixed anxiety and depressive disorder was made. Pharmacotherapy and psychotherapy were followed by complete remission. It was inferred from this experience that hematohidrosis is a treatable condition if the underlying cause is correctly identified. © 2017 Indian Psychiatric Society | Published by Wolters Kluwer - Medknow.

Author Keywords
Blood sweat; hematidrosis; hematohidrosis

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Ilanthamizhan, C.[a b c] , Manikandan, A.[d] , Antony, S.A.[a c]

Facile synthesis, structural, morphological and electrochemical properties of bismuth sulfide (Bi2S3) nanostructures

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Abstract
Bismuth sulfide (Bi2S3) nanowires were synthesized successfully by a facile sonochemical method from Bi(DTC)3 as a single source precursor. The structural, vibrational, morphological properties and the functional groups of the samples were confirmed by powder X-ray diffraction (XRD), Fourier transform infrared (FT-IR), scanning electron microscopy (SEM), energy dispersive X-ray (EDX) analysis and Raman spectroscopy techniques. The formation of pure phase of Bi2S3 and nanowires like morphology was confirmed by powder XRD and SEM analysis. The purity and elemental composition of Bi2S3 nanowires were confirmed by EDX analysis. The electrochemical properties of Catechol (CC) at the modified electrode were studied with the presence of Bi2S3 nanowires modified GCE electrode in aqueous solution with different scan rate and concentration. A novel method for determination of catechol using cyclic voltammetry (CV) was investigated. The homogeneous rate constants were estimated by comparing the experimental CV responses with the digital simulated results. Copyright © 2017 American Scientific Publishers All rights reserved.

Author Keywords
Bismuth sulfide; Electrochemical applications; Nanostructures; Sonochemical method; X-ray diffraction

Index Keywords
Cyclic voltammetry, Electrochemical electrodes, Electrochemical properties, Layered semiconductors, Nanostructures, Nanowires, Phenols, Rate constants, Scanning electron microscopy, Solutions, Sonochemistry, Sulfur compounds, X ray diffraction; Bismuth sulfide, Electrochemical applications, Energy dispersive x-ray, Fourier transform infrared, Morphological properties, Powder X ray diffraction, Single-source precursor, Sonochemical method; Bismuth compounds

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Synthesis and enhanced field emission of zinc oxide incorporated carbon nanotubes
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Abstract
Zinc oxide (ZnO) nanostructures were successfully incorporated into carbon nanotubes (CNTs) using an arc discharge method. Studies of the morphologies of ZnO incorporated CNTs (ZnO-CNTs) revealed that ZnO nanoparticles were attached on the exterior of CNTs. X-ray diffraction, Raman spectra and cathodoluminescence (CL) spectra revealed the existence of ZnO. The ID/IG ratios from Raman spectroscopy for the CNTs and ZnO-CNTs were 0.44 and 0.51, respectively, suggesting an increased degree of disorder of the CNT walls after the incorporation of ZnO. The deep red CL emission peak at 747 nm originated from ZnO defect emission in ZnO incorporated CNTs. X-ray photoelectron spectroscopy results revealed that sp3-hybridized C[sbnd]O bonds at 286.2 eV in ZnO-CNTs had higher intensities than CNTs, indicating presence of more C[sbnd]O bonds in ZnO-CNTs. A low turn-on field of ~ 1.5 V μm− 1 at a current density of 0.1 μA cm− 2, low threshold field of ~ 2.9 V μm− 1 at a current density of 1 mA cm− 2, high field enhancement factor (5741), and stable emission current were obtained from ZnO-CNTs. The simplicity of synthesis, coupled with the promising emission results, make ZnO-CNTs a promising candidate for low-cost, compact CNT cold cathode materials. © 2016 Elsevier B.V.

Author Keywords
Carbon nanotube; Field emission; Nanocomposites; Optical property; ZnO nanoparticle

Index Keywords
Cold cathode tubes, Field emission, Field emission cathodes, II-VI semiconductors, Metal nanoparticles, Nanocomposites, Optical properties, X ray diffraction, X ray photoelectron spectroscopy, Yarn, Zinc oxide, ZnO nanoparticles; Arc-discharge method, Cathodoluminescence spectra, Cold cathode material, Defect emission, Degree of disorder, Enhanced field emission, Stable emissions, Zinc oxide (ZnO) nanostructures; Carbon nanotubes

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Investigation of Phase Transition in Some Ferroelectrics Calcium and Zinc Doped Diammonium Dibromodichlorinate
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Abstract
Single crystals such as diammonium dibromodichloro calcinate(II), (NH4)2CaBr2Cl2, and diammonium dibromodichloro zincate(II), (NH4)2ZnBr2Cl2, abbreviated as DADBDC-Ca and DADBDC-Zn, respectively, were grown successfully by solution growth method. Single crystal X-ray diffraction, thermal analysis, AC conductivity; Fourier transform infra-red (FT-IR) spectroscopy, Differential scanning calorimetry were used to characterize the grown crystals. The surface morphology and chemical composition of the compound were analyzed by SEM and EDX studies. The cell parameters and crystallinity of the grown crystals were determined using single crystal and powder X-ray diffraction analysis. FT-IR spectra are used to confirm the presence of various functional groups in the sample. The phase transition of the sample was analyzed by differential scanning analysis. The electrical conductivity for the grown crystals has been calculated through impedance at various temperatures. It can be foreseen that the transition temperature reveals the ferroelectricity of the compound. The ferroelectric characteristics of the grown crystals have been studied by PE loop tracer. © 2016, Springer Science+Business Media New York.

Author Keywords
AC conductivity; Ferroelectric; PE loop tracer; Phase transition; XRD

Index Keywords
Calcium, Chemical analysis, Differential scanning calorimetry, Ferroelectric materials, Ferroelectricity, Phase transitions, Thermoanalysis, X ray diffraction analysis, Zinc; Ac Conductivity, Differential scanning analysis, Electrical conductivity, Ferroelectric characteristics, Fourier transform infra reds, Loop tracers, Single crystal x-ray diffraction, Single-crystal and powder; Single crystals

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Electrical Impedance Studies on Sodium Ion Conducting Composite Blend Polymer Electrolyte

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Abstract
Sodium ion conducting polymer blend thin films are of technologically interesting due to the tuned physical and electrical properties with wide variety of applications like sodium sulphur batteries, thermoelectric generators, electrochemical sensors, etc. sodium ion conducting composite blend polymer electrolyte films, based on poly vinyl alcohol (PVA) and poly(vinyl pyrrolidone) (PVP) complexed with NaCl were prepared by solution casting technique. The prepared films were characterized by various methods. The complexation of the salt with the polymer blend was identified by X-ray diffraction and Fourier transforms infrared spectroscopy. DSC was used to analyze the thermal behavior of the samples and the glass transition temperature is low for the highest conducting polymer material. The Frequency and temperature dependent of electrical conductivities of the films were studied using impedance analyzer in the frequency range of 1 Hz–1 MHz. The higher electrical conductivity of 50 PVA:50 PVP:15 wt% NaCl concentration has been found to be 1.747 × 10−3 Scm−1 at room temperature. The electrical permittivity of the polymer films have been studied for various temperatures. © 2016, Springer Science+Business Media New York.

Author Keywords
FT-IR; Ionic conductivities; Polymer electrolytes; Thermal analyses; XRD

Index Keywords
Composite films, Conducting polymers, Conductive films, Electric conductivity, Electrolytes, Film preparation, Fourier transforms, Glass transition, Infrared spectroscopy, Ionic conductivity, Ions, Metal ions, Polymer blends, Polymer films, Secondary batteries, Thermoanalysis, Thermoelectric equipment, Thin films, X ray diffraction; Electrical conductivity, Electrical permittivity, Fourier transforms infrared spectroscopies, Polymer electrolyte, Polymer electrolyte films, Solution-casting technique, Temperature dependent, Thermoelectric generators; Polyelectrolytes

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Opinion mining feature extraction using domain relevance
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Abstract
The feature extraction of opinions from online user reviews is a task to identify on which features user is going to write a review. There are number of existing approaches for opinion feature identification but, they are extracting features from a single review corpus. These techniques ignore the nontrivial disparities in distribution of words of opinion features across two or more corpora. This proposed work discusses a novel method for opinion feature identification from online reviews by evaluation of frequencies in two corpora, one is domain-specific and other is domain-independent corpus. This disparity is measured using domain relevance. The first task of this proposed work is to extract candidate features in user reviews by applying a set of syntactic dependence rules. The second task is to measure intrinsic domain relevance and extrinsic domain relevance scores on the domain-independent and domain-dependent corpora, respectively. The third task is to extract candidate features that are less generic and more domain-specific, are then conformed as opinion features. © Springer Science+Business Media Singapore 2017.

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Candidate features; Domain-dependent; Domainindependent; Extrinsic domain relevance; Intrinsic domain relevance; Opinion feature

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Extraction; Candidate features, Domain-dependent, Domainindependent, Extrinsic domain relevance, Intrinsic domain relevance, Opinion feature; Feature extraction

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Trust calculation in adhoc networks

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Abstract
Ad hoc wireless network (AWN) is a collection of mobile hosts forming a temporary network on the fly, without using any fixed infrastructure. Quality of service (QoS) is the performance level of a service offered by the network to the user. The goal of QoS provisioning is to achieve a more deterministic network behavior, so that information carried by the network can be better delivered and network resources can be better utilized. QoS provisioning is very challenging in adhoc network lack of central coordination, mobility of hosts, dynamically varying network topology, and limited availability of resources. Here we have proposed a framework for providing QoS in Ad hoc network by considering the challenges and requirement. The QoS framework is based on the interaction between the routing protocol and the interaction between the network and the MAC layers. In our frameworks we are using multipath and multi topology routing in order to give better packet delivery ratio.
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Index Keywords
calculation, coordination, trust

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Sriram, M.[a] , Suresh, R.M.[b]

Univariate analysis for information agglomeration
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Abstract
Among the growing range of knowledge mining techniques in varied application areas, outlier detection has gained importance in recent times. Police investigation the objects during a information set with uncommon properties is important; intrinsically outlier objects typically contain helpful info on abnormal behavior of the system or its elements delineated by the information set. Outlier detection has been popularly used for detection of anomalies in pc networks, fraud detection and such applications. although variety of analysis efforts address the matter of police investigation outliers in information sets, there square measure still several challenges faced by the analysis community in terms of characteristic an appropriate technique for addressing specific applications of interest. These challenges square measure primarily attributable to the big volume of high dimensional information related to most data processing applications and conjointly attributable to the performance necessities. during this paper, we have a tendency to applied boxplot- a applied math tool to spot and eliminate the univariate outliers for information agglomeration method. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Boxplot; Clustering; Data processing; Fuzzy C-means; K-means; Outlier detection; Univariate outliers

Index Keywords
human, information processing, univariate analysis

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Knowledge based mostly internet service

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Abstract
Web services self delineated package entities which might be publicized, situated and used across the net employing a set of standards like SOAP, WSDL and UDDI. So as for internet services to be ready to work well along, they need to participate during a set of shared organizing principles called service orientated design (SOA).service orientated implies that the design is delineated and arranged to support internet service's dynamic, machine-driven description, publication, discovery and use. The amount of services revealed over the net is growing at associate degree explosive speed. Therefore it's troublesome for service requesters to pick satisfactory internet services, which give similar practicality. The quality of service is taken into account the foremost necessary criterion for service filtering. During this paper service description models think about the service qos data associate degreed gift an overall web service choice and ranking for fulfilling service requester's useful and non useful necessities. The service choice methodology relies on particle swarm optimisation technique. By mistreatment this multi objective particle swarm optimisation technique, variety of qos values are often optimized at an equivalent time and it ultimately Improve the service performance. This methodology will considerably improve the matter resolution speed and cut back the choice complexness. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Checking qos; Choice and ranking framework

Index Keywords
filtration, Internet, model, velocity

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Faru, M.N.[a] , Sivakumar, D.[b]

A novel approach for self adaptive multi-agents resource allocation in cloud environments
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Abstract
The creation of virtualization and Cloud Computing technologies assures a number of features such as improved flexibility, stabilized energy efficiency and lower operating costs for IT domain. However, highly erratic workloads make it demanding to offer quality-of-service assurance in the mean while promising competent resource utilization. To evade breach of service-level agreements (SLAs) or unproductive resource usage, resource allocations need to be tailored endlessly during operation to reflect dynamic application workloads. In this paper, we present a novel approach to selfadaptive multi-agent resource allocation in cloud environments based on online architecture-level performance models. We present a comprehensive setup of a delegate enterprise application, the new Virtenterprise_Cloudapp benchmark, adopted in a virtualized cluster environment. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Agents framework; Cloud computing; Resource allocation; Virtualization

Index Keywords
cloud computing, model, resource allocation

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Sriram, M.[a] , Suresh, R.M.[b]

Improvised NAT aware IDS/IPS through pattern mining

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Abstract
Network Security is that the major concern all told the networks within the organization to guard the sensitive information, applications and network resources from unauthorized access. Network Address Translation (NAT) may be a technology that permits multiple computers on a local area network to share one public information science address for accessing the net. Without it, the IPv4 protocol's restricted variety of accessible addresses would be pushed to its limits. However, NAT poses a giant drawback for security and particularly for networks protected by intrusion detection systems (IDS) and intrusion bar systems (IPS). NAT give how to handle information science address depletion incrementally. However, IDS/IPS should be re-examined to operate properly inside NAT. The experiments have shown that utilizing a NAT-aware IDS/IPS system permits to spot the $64000 attacker/victim, launch the adequate response actions with relevance the attacker/victim characteristics and improve the protection of the network. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Intrusion bar systems; Intrusion detection systems; Network address translation

Index Keywords
Article, computer analysis, computer network, computer security, computer system, data mining, information processing, information science, intrusion bar systems, intrusion detection systems, machine learning, network address translation, software

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Sriram, M.[a] , Suresh, R.M.[b]

Virtualization in grid computing

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Abstract
Cluster and grid computing have become extremely popular, significantly for scientific and engineering applications. Higher information measure of laptop Networks has any boosted development of cluster computing. Native and geographically distributed readying of computing resources is that the most outstanding differentiating issue between a cluster and grid computing primarily based setups. Cluster essentially needs readying of multiple nodes at one location connected via a high speed switch, whereas grid computing relies on access to remote computing resources, which can be a cluster. desegregation software system with multi-layer integration has been the most thrust of analysis and development within the field of cluster and grid computing. we have a tendency to introduced the construct of virtual workspaces which might be organized, managed and deployed in an exceedingly Grid surroundings. Since clusters underlie most vital Grid deployments these days, during this paper. we have a tendency to extended the notion of virtual workspaces to incorporate virtual clusters. we have a tendency to describe changes to Grid design and judge virtual cluster creation and management, the impact of death penalty in virtual clusters on applications furthermore because the chance of running many virtual clusters on one physical cluster. The study focuses on the impact within the space of virtual cluster and virtual workspaces in virtual machines by supporting virtualization. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Grid computing; Virtual cluster; Virtual machine; Virtual space; Virtualization

Index Keywords
desegregation, machine, punishment, running, software, velocity

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Akila, V.[a b] , Sheela, T.[a b]

An efficient TDMA technique with priority queues in wireless sensor networks

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Abstract
Wireless Sensor Networks have limited power capabilities and also it has to serve real time applications which usually to be delivered before a deadline without collision. Hence it is essential to avoid collisions, reduce energy consumption and have real time behaviour. We propose a hybrid technique priority queues in combination with TDMA technique to achieve this goal. In this priority queue, each node except the node at the last level has three levels of priority queues. Real-time packets are placed in the highest priority queue. It can preempt the packets in the other queues. It can be processed with minimum delay. Non Real-time remote packets and local packets are placed in the second and third priority queue. Leaf nodes have one real-time packets queue and other for non-real-time local packets. A new approach to TDMA can enhance the parallelism in signal transmission and utilize the unused time slot using inter and intra level approach and also using the concept of local clock synchronization. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Priority queues; Time division multiple access; Wireless sensor networks

Index Keywords
algorithm, Article, artificial neural network, Code Division Multiple Access, controlled study, disaster, energy consumption, Frequency Division Multiple Access, motion, sensor, signal transduction, Time Division Multiple Access, wireless sensor network

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Bommy, M.[a] , Rajesh, A.[b]

Hybrid multipath routing protocols for route discovery in mobile ad hoc networks
(2016) *International Journal of Pharmacy and Technology*, 8 (4), pp. 23479-23487.

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Abstract
In mobile ad hoc networks, frequent mobility during the transmission of data causes route failure which results in route rediscovery. In this, we propose hybrid multipath routing protocol for effective local route recovery in Mobile Ad hoc Networks (MANET). In this protocol, each source and destination pair establishes multiple paths in the single route discovery and they are cached in their route caches. Hybrid multipath routing protocol provides feature of fault tolerance at the time of failure of node, failure of link and breakage of route and also balance load at the time of large volume traffic and finally increase quality of service aspects of multi path routing protocols. The proposed protocol overcomes the problem of stale routes in multipath routing protocols and also shows significant improvement in packet delivery ratio and reduced end to end delay. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Fault tolerance; Link failure; MANET; Multipath routing protocol

Index Keywords
Article, communication protocol, computer network, controlled study, data processing, hybrid multipath routing protocol, local area network

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Sheik Faritha Begum, S.[a] , Rajesh, A.[b]

Modified load-balanced clustering algorithm with distributed self-organization for wireless sensor networks
(2016) *International Journal of Pharmacy and Technology*, 8 (4), pp. 23349-23356. Cited 5 times.

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Abstract
Wireless sensor networks are powered by limited battery resources. Thus energy efficiency is one of the most important issues and designing power-efficient is critical for prolonging the lifetime. clustering techniques can reduce energy consumption and prolong sensor network lifetime. We proposed a Modified load balanced clustering algorithm for wireless sensor nodes on the basis of residual energy. The algorithm not only realizes load balance among sensor node, but also achieves selection of cluster head based on residual energy. Simulation results indicate our algorithm is more energy-efficient compared to previous algorithms. Our algorithm is to exploit efficiently the network energy, by reducing the energy consumed for cluster formation and also to avoid the formation of forced cluster head. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Cluster; Forced head selection; Life time; Load balancing; Residual energy; Wireless sensor networks

Index Keywords
algorithm, Article, modified load balanced clustering algorithm, sensor, simulation, wireless communication, wireless sensor network

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Vijayan, D.S.[a] , Revathy, J.[b]

Experimental investigation on the static performance of GFRP strengthened prestressed concrete beams
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Abstract
The strengthening or retrofitting of existing concrete structures has been traditionally accomplished by using conventional techniques and materials. In this context, the advanced composites have the potential to be a promising solution for strengthening the deteriorated structures. This paper mainly focuses on the behaviour of fibre reinforced polymer (FRP) strengthened unbonded post-tensioned prestressed concrete beams. A total of four unbonded posttensioned beams were cast and tested under four point bending system. The PSC beams were strengthened with Uni-Directional Cloth Glass Fibre Reinforced Polymer plates for different grades of concrete. The parameters such as load and deflection at various stages were investigated. The experimental test results showed that the GFRP strengthened post-tensioed prestressed concrete beam showed a higher load carrying capacity of 54.4% when compared to that of the control beam. A flexural type of failure was observed in all the tested beams. The strengthened beam was failed by debonding of FRP from concrete surface. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
FRP; GFRP; Post-tensioned; Prestressed beam; Strengthening

Index Keywords
cement, glass fiber, glass fibre reinforced polymer, polymer, steel, unclassified drug; Article, elasticity, experimental study, laboratory test, load carrying capacity, mechanical stress, physical parameters, tensile strength, weight bearing

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Prakash, P.[a] , Deny, J.[b] , Sankaranarayanan, S.[c]

Automatic detection of exudates and microaneurysms from non-dilated diabetic retinopathy retinal mages
(2016) *International Journal of Pharmacy and Technology*, 8 (4), pp. 23393-23400.

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Abstract
Exudates are one of the earliest and most prevalent symptoms of Diabetic Retinopathy(DR), which is a serious complication of diabetes mellitus and a major cause of blindness worldwide. Certain areas of the retina with such conditions are to be photocoagulated by laser to stop the disease progress and prevent blindness. Outlining these areas is dependent on outlining the exudates, the blood vessels, the optic disc and the macula and the region between them. The earlier the detection of exudates in fundus images, the stronger the kept sight level. So, early detection of exudates in fundus images is of great importance for early diagnosis and proper treatment. In this paper, a robust and computationally efficient approach for the localization of the different features and lesions in a fundus retinal image is presented. Since many features have common intensity properties, geometric features and correlations are used to distinguish between them. First, the blood vessels are removed based on Mathematical Morphology and the exudates are segmented by using column wise neighborhood filter. We proposed a new constraint for optic disk detection by using circular fitting method based on brightest point. After filtering the optic disc, the borders are removed to detect the exudates. We also show that many of the features such as the blood vessels, exudates and microaneurysms can be detected quite accurately using this technique. The performance of the proposed system is carried out on DRIVE Database. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Circular fitting; Diabetic retinopathy (DR); Exudates; Fundus image; Mathematical morphology

Index Keywords
Article, correlation analysis, diabetic retinopathy, eye fundus, eye photography, filtration, image analysis, image display, image processing, image reconstruction, mathematical analysis, microaneurysm, optic disk, retina blood vessel, retina exudate

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Kancharla, V.S.[a] , Nalini, T.[b]

Survey paper on big data and scope of existing frameworks
(2016) *International Journal of Pharmacy and Technology*, 8 (4), pp. 25153-25157.

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Abstract
Nowadays Big Data plays a vital role in managing and handling a large volume of data that both structured and unstructured. It is a collection of data sets which are not handled by the traditional database management application and tools. An objective of the Big Data is to capture, to search, to share, to transfer, to analyze, and to visualize the unstructured data. It mainly focuses on large volume of data from various resources with different velocity. Big data is not merely a data, rather it has become a complete subject, which involves various tools, techniques and frameworks. There are plenty of programming models exits for handling the huge amount of data in an efficient manner. The technologies used for big data to handle the massive data are Hadoop, Spark, Hive, HBase and Flink. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Hadoop; HBase and Flink; Hive; Spark

Index Keywords
data base, human, model, velocity

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Magesh Kumar, S.[a] , Sathish Kumar, P.J.[a] , Parthipan, V.[b]

Authenticated reliable information sharing in cloud environment
(2016) *International Journal of Pharmacy and Technology*, 8 (4), pp. 23683-23689.

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Abstract
Hybrid cloud is the combination of public cloud and private cloud as per the security of information in the private cloud is very essential. Proposed scheme of security is to provide two different set of keys to the private and public cloud users, with that keys private cloud users are given privilege to access public cloud too. The keys will be changed whenever the change in user occurs. Initially public cloud users and private cloud users are segregated in a tree structure for easy and secure key transaction and information transaction. A lattice cluster model structure is developed for transacting secure keys between users before transacting data by this effective and secure transfer of data takes place between the users. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Hybrid cloud; Lattice model; Multicast key

Index Keywords
model

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  Secure Information Transaction in Hybrid Cloud Computing,
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Sriram, M.[a] , Suresh, R.M.[b] , Jacob Evanson Solomon, E.[c]

Object tracing victimization FFT

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Abstract
Detection and recognition of matter info in a picture or video sequence is very important for several applications. The enhanced resolution and capabilities of digital cameras and quicker mobile process afford the event of attention-grabbing system. The Fourier rework of functions varied with time, usually presents attention-grabbing info on the frequency content of the phenomena. so as to find numbers in a picture, a straightforward and effective technique is employed. Here initial the amount is portrayed in 8x8 matrix format. Then the fourier rework was taken for that by victimization Cooley–Tukey algorithmic rule victimization radix 2. Then for scrutiny between 2 numbers, the Cross coefficient of correlation was taken. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
8x8 matrix format; Cross correlation; Taking fourier rework; Variety illustration; Variety recognition

Index Keywords
attention, molecular recognition, videorecording

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A study on physico-chemical parameters of Thenga-pattanam estuary, south west coastal zone, Kanyakumari district

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Abstract
Thengapattanam estuary is located in the south west coast of India 10 km from Marthandam. It is one of the minor estuary in Kanyakumari district, Tamil Nadu formed by the confluence of Tampirabarani river (locally known as Kuzhithuraiar) with Arabian sea in between Thengapattanam and Eraiummanthurai (7°53' N latitude and 77°07' E longitude). The present study has been undertaken to enlighten the influence of domestic sewage, agricultural run off and coconut retting wastes on the water quality parameters of this estuary during October 2014 to August 2015. The study area recorded maximum rainfall during northeast monsoon and minimum during summer season. Air and surface temperature showed summer peaks and monsoonal troughs. Temperature variations were associated with the seasonal changes of other physico-chemical parameters. Salinity was high during summer season and low during monsoon season. But maximum salinity was recorded at mouth region (station 5). The pH remained alkaline throughout the study period in all the stations. DO concentration showed a wide range of variation. It reached its peak during the monsoon season BOD was high during summer season and low during monsoon. Concentration of nutrients nitrite, nitrate, phosphate, etc., showed significant spatial and temporal variations and high values were observed at the polluted stations.

Author Keywords
Nutrients; Physico-chemical parameters; Thengapattanam estuary

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Comparison of widal and typhoid immunoglobulin M and immunoglobulin G in rapid and early diagnosis of enteric fever

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Abstract
Objective: Typhoid fever is one of the major public health problems in developing countries including India. A simple, reliable, rapid, and early diagnostic test has been one of the important needs of the clinicians. The present study was carried out to compare the Widal test and typhoid immunoglobulin M (IgM) and immunoglobulin G (IgG) rapid test in diagnosing of Salmonella typhi infection. Methods: A total of 100 cases having clinical suspicion of typhoid fever and 40 controls (20 healthy persons and 20 non-typhoidal febrile patients) were studied. Participants were investigated by blood culture, clot culture, Widal test, and typhoid IgM and IgG rapid test, and the results were compared. Results: Typhoid IgM and IgG test was positive for IgM in 70 cases and IgG for 6 cases of typhoid fever compared to Widal test which showed only 58 positive cases. The sensitivity, specificity, positive, and negative predictive value of typhoid IgM was found as 70%, 90%, 94.59%, and 54.55%, respectively. On the other hand, corresponding values for Widal test were 58%, 85%, 90.63%, and 44.74%, respectively. Conclusion: In the present study, the typhoid IgM and IgG yielded remarkable high sensitivity and specificity to diagnose typhoid fever in the first week of illness, so it is recommended to use the test in small and less equipped laboratories as a complementary test to Widal. © 2016 The Authors. Published by Innovare Academic Sciences Pvt Ltd.

Author Keywords
Blood culture; Typhoid fever; Typhoid immunoglobulin M/Immunoglobulin G; Widal

Index Keywords
immunoglobulin G, immunoglobulin M; Article, blood culture, child, clot culture, controlled study, cross-sectional study, diagnostic test, diagnostic test accuracy study, early diagnosis, groups by age, human, intermethod comparison, major clinical study, nonhuman, predictive value, preschool child, Salmonella enterica serovar Typhi, sensitivity and specificity, typhoid fever, typhoid rapid test, Widal test

Chemicals/CAS
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Association of rs1801582 and rs1801334 PARK2 Polymorphisms with risk of Parkinson's disease: A case-control study in South India and Meta-Analysis

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Abstract

Background Parkinson's disease (PD) is a multi-factorial autosomal recessive disease that affects basal ganglia of the human brain. Methods A case–control study of 70 PD and 70 controls in South Indian population was performed to screen rs1801582 and rs1801334 polymorphisms in PARK2 gene using ARMS-PCR and DNA sequencing methods. Additionally, we have performed a systematic meta-analysis of both the polymorphisms from the previously reported genetic association studies in PD. Results The genotypic frequency (GG) of rs1801582 was higher in cases [57.5% (40/70)] compared to controls [48.57% (34/70)], whereas the frequency of rs1801334 (GG) in PD [57.14% (40/70)] was lower than in controls [58.57% (41/70)]. Though, there were frequency variations in the polymorphisms, it does not attain minimal statistical significance. In meta-analysis, significant association was noticed between PD and rs1801582 for allelic OR = 0.78, (95% CI [0.70–0.86]), homozygote OR = 0.61, (95% CI [0.43–0.86]), dominant OR = 0.75, (95% CI [0.62–0.90]) and recessive OR = 0.67, (95% CI [0.48–0.94]) models. However, no association was noticed for rs1801334 in all the genetic models. Conclusion Overall, our investigation suggests that rs1801582 is significantly associated with PD susceptibility, whereas rs1801334 have no association in the studied populations. Hence, larger studies are required to obtain conclusive outcomes. © 2016 Elsevier B.V.

Author Keywords

Genotyping; Meta-analysis; PARK2 gene; Parkinson's disease; SNP

Index Keywords

adult, agar gel electrophoresis, Article, controlled study, DNA sequence, female, gene, genetic polymorphism, genotype, human, India, major clinical study, male, meta analysis (topic), PARK2 gene, Parkinson disease, polymerase chain reaction, priority journal, risk factor

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Thanigai Arul, K.[a] , Manikandan, E.[a b c e] , Ladchumananandasivam, R.[d] , Maaza, M.[b e]

Novel polyvinyl alcohol polymer based nanostructure with ferrites co-doped with nickel and cobalt ions for magneto-sensor application

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Abstract
Uniform nanosheet-like structures were synthesized by the polymer based co-precipitation route. Different concentrations of polyvinyl alcohol (pure (0 g), 0.2 g and 0.5 g) were added to nickel (Ni) and cobalt (Co) ion co-doped ferrite magnetic nanoparticles. X-ray diffraction confirmed a spinel structure phase of the Ni − Co ferrites. Enhanced average crystallite size (6.7%) of the Ni − Co ferrites was found on polymer incorporation. The molecular functional group of polyvinyl alcohol and Ni − Co ferrites was confirmed by infrared and Raman spectroscopy techniques. On adding polymer, the spherical morphology of the Ni − Co ferrites was tailored to nanosheets (200 nm × 300 nm). Therefore, the polymer based co-precipitation technique is an inexpensive, simple and effective route to engineer the morphology of the magnetic nanostructure and could be useful for gas sensor and magnetic sensors. © 2016 Society of Chemical Industry. © 2016 Society of Chemical Industry

Author Keywords
FTIR; Nanocomposites; Polyvinyl alcohol; Raman spectroscopy; XRD

Index Keywords
Cobalt, Coprecipitation, Crystallite size, Ferrites, Fourier transform infrared spectroscopy, Magnetism, Nanocomposites, Nanomagnetics, Nanoparticles, Nanosheets, Nanostructures, Polymers, Polyvinyl alcohols, Raman spectroscopy, X ray diffraction; FTIR, Infrared and Raman spectroscopy, Magnetic nano-particles, Magnetic nanostructures, Molecular functional group, Nickel and cobalts, Sensor applications, Spherical morphologies; Nickel

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Synthesis and analytical applications of photoluminescent carbon nanosheet by exfoliation of graphite oxide without purification

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Abstract
We report synthesis and structural, chemical and optical properties of graphene nanosheet prepared by facile method. The surface morphology of the graphene nanosheet was revealed using AFM studies. Raman fingerprints for single-bilayer, and few-layer graphene reflect changes in the electronic structure and electron–phonon interactions and allow unambiguous, high throughput, identification of graphene layers. Strong blue shifts were absorbed in the PL spectra that attributed to the quantum confinement effect. FTIR and, XPS results confirm the formation of carbon sheets. The topological features, structural, optical properties of single sheet were closely match with predictions of first principles atomistic modeling. Furthermore facile method of material synthesis described in this article can be used to fabricate innovative 2D nanocrystalline materials with unique properties for broad range of applications. © 2016, Springer Science+Business Media New York.

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Photoluminescence of well-aligned ZnO doped CeO2 nanoplatelets by a solvothermal route

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Abstract
The nanocrystalline ZnO:CeO2 nanoplatelets have been prepared by solvothermal route synthesis and the materials are annealed at 450 ºC. The overall architectural change of crystal structure of pure and doped materials are analyzed by corresponding XRD patterns. From the XRD results, it is clear that the parent cubic structure is sustained during the formation of nanomaterial. In the case PL analysis it is found that, the PL spectrum is very much blue shifted which is purely due to the doping of ZnO on CeO2. The morphological investigation and energy-dispersive X-ray spectroscopy (EDX) analysis of ZnO doped CeO2 nanomaterials are characterized by Field emission scanning electron microscopy (FESEM). Sensing studies confirmed that the compounds were made up of CeO2 and ZnO bonds which implied that the prepared compounds are composed by CeO2 and ZnO. Further room temperature sensing properties were also investigated. © 2016 Elsevier B.V.

Author Keywords
Electron microscopy; Energy storage and conversion; Microstructure; Nanocomposites; Optical materials and properties

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Interrelation between handedness and postural lateral preferences in a selected Indian population

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Abstract
Handedness is one of the example of many forms of behavioural lateralization seen in humans. Left handedness has existed in a small subset of the human population, approximately 8%, since the origin of man. The prevalence of left handedness is usually reported to be consistent among human populations. Sinistrality is more common in males than in females. Hand clasping, arm folding and foot overlapping are bilateral limb postures which are subject to lateral preferences. Arm folding refers to the preferential tendency for individuals to fold one forearm over the other, whereas hand clasping refers to the preferential tendency for individuals to clasp the hands together and foot overlapping refers to the preferential tendency for individuals to fold one leg over the other. Applying chi-square test we analyzed the relationship between handedness the marker of laterality with hand clasping, arm folding and foot overlapping in left and right handers.

Author Keywords
Arm folding; Foot overlapping; Hand clasping; Handedness

Index Keywords
arm movement, body posture, chi square test, female, foot, forearm, human, human experiment, Indian, left handedness, male

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Facile synthesis of mercaptosuccinic acid-capped CdTe/CdS/ZnS core/double shell quantum dots with improved cell viability on different cancer cells and normal cells

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Abstract
Water-soluble, mercaptosuccinic acid (MSA)-capped CdTe/CdS/ZnS core/double shell quantum dots (QDs) were prepared by successive growth of CdS and ZnS shells on the as-synthesized CdTe/CdSthin core/shell quantum dots. The formation of core/double shell structured QDs was investigated by ultraviolet-visible (UV–Vis) absorption and photoluminescence (PL) spectroscopy, PL decay studies, X-ray diffraction (XRD), and X-ray photoelectron spectroscopy (XPS). The core/double shell QDs exhibited good photoluminescence quantum yield (PLQY) which is 70% higher than that of the parent core/shell QDs, and they are stable for months. The average particle size of the core/double shell QDs was ~3 nm as calculated from the transmission electron microscope (TEM) images. The cytotoxicity of the QDs was evaluated on a variety of cancer cells such as HeLa, MCF-7, A549, and normal Vero cells by 3-(4,5-dimethyl-2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide (MTT) cell viability assay. The results showed that core/double shell QDs were less toxic to the cells when compared to the parent core/shell QDs. MCF-7 cells showed proliferation on incubation with QDs, and this is attributed to the metalloestrogenic activity of cadmium ions released from QDs. The core/double shell CdTe/CdS/ZnS (CSS) QDs were conjugated with transferrin and successfully employed for the biolabeling and fluorescent imaging of HeLa cells. These core/double shell QDs are highly promising fluorescent probe for cancer cell labeling and imaging applications. © 2016, Springer Science+Business Media Dordrecht.

Author Keywords
Cancer; CdTe/CdS/ZnS; Core/shell; Cytotoxicity; Metalloestrogen; Quantum dots

Index Keywords
Cadmium sulfide, Cadmium telluride, Cytology, Cytotoxicity, Diseases, Fluorescence imaging, II-VI semiconductors, Lanthanum compounds, Nanocrystals, Particle size, Photoluminescence, Photoluminescence spectroscopy, Shells (structures), Transmission electron microscopy, X ray diffraction, X ray photoelectron spectroscopy, Zinc sulfide; Absorption and photoluminescence, Cancer, Cdte/cds/zns, Core/shell, Core/shell quantum dots, Mercaptosuccinic acids, Metalloestrogen, Photoluminescence quantum yields; Semiconductor quantum dots; 3 (4,5 dimethyl 2 thiazolyl) 2,5 diphenyltetrazolium bromide, cadmium sulfide, cadmium telluride, quantum dot, tellurium derivative, thiomalic acid, transferrin, unclassified drug, zinc sulfide; A549 cell line, Article, cancer cell, cell labeling, cell viability, cell viability assay, chemical parameters, controlled study, HeLa cell line, human, human cell, light absorption, MCF 7 cell line, particle size, photoluminescence, photoluminescence quantum yield, priority journal, transmission electron microscopy, Vero cell line, X ray diffraction, X ray photoelectron spectroscopy

Chemicals/CAS
3 (4,5 dimethyl 2 thiazolyl) 2,5 diphenyltetrazolium bromide, 298-93-1; cadmium sulfide, 1306-23-6; thiomalic acid, 70-49-5; transferrin, 82030-93-1; zinc sulfide, 12169-28-7, 1314-98-3

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Chitosan coated Ag/ZnO nanocomposite and their antibiofilm, antifungal and cytotoxic effects on murine macrophages

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Abstract
In the present study, chitosan coated Ag/ZnO (CS/Ag/ZnO) nanocomposite was synthesized and characterized by UV–Vis spectroscopy (UV–Vis), X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR) and Scanning electron microscopy (SEM). The CS/Ag/ZnO nanocomposite exhibited antibacterial activity against Gram positive (B. licheniformis and B. cereus) bacteria at 8 μg mL−1 compared to Gram negative (V. parahaemolyticus. and P. vulgaris) bacteria. CS/Ag/ZnO nanocomposite effectively inhibited the biofilm growth of Gram positive bacteria compared to Gram negative bacteria at 30 μg mL−1. The hydrophobicity index and EPS (extracellular polysaccharide) production of both Gram positive and Gram negative bacteria was decreased after treatment with 30 μg mL−1 of CS/Ag/ZnO nanocomposite. CS/Ag/ZnO nanocomposite showed effective control of fungal C. albicans biofilm (92%) at 50 μg mL−1. The inhibition of bacterial and fungal biofilms was clearly visualized under light and confocal laser scanning microscopy (CLSM). CS/Ag/ZnO nanocomposite was observed to be non toxic to RAW264.7 murine macrophages and no changes in the morphology of macrophages was observed under phase contrast microscopy. The study concludes that CS/Ag/ZnO nanocomposite is the promising candidate to be used as biomaterial against bacterial and fungal infections without any toxicity risk. © 2016 Elsevier Ltd

Author Keywords
Antibacterial; Antifungal; Biofilm; CS/Ag/ZnO composite; Cytotoxicity

Index Keywords
bacterial polysaccharide, chitosan coated silver zinc oxide nanocomposite, nanocomposite, unclassified drug, antiinfective agent, biomaterial, chitosan, drug carrier, nanocomposite, silver, zinc oxide; animal cell, animal tissue, Article, Bacillus cereus, Bacillus licheniformis, biofilm, Candida albicans, cell structure, controlled study, cytotoxicity, hydrophobicity, in vitro study, macrophage, minimum inhibitory concentration, mouse, nonhuman, priority journal, Proteus vulgaris, synthesis, Vibrio parahaemolyticus, animal, bacterium, cell survival, chemistry, drug effects, infrared spectroscopy, macrophage, metabolism, microbial sensitivity test, physiology, RAW 264.7 cell line, scanning electron microscopy, spectrophotometry, ultrastructure, X ray diffraction; Animals, Anti-Infective Agents, Bacteria, Biocompatible Materials, Candida albicans, Cell Survival, Chitosan, Drug Carriers, Macrophages, Mice, Microbial Sensitivity Tests, Microscopy, Electron, Scanning, Nanocomposites, RAW 264.7 Cells, Silver, Spectrophotometry, Spectroscopy, Fourier Transform Infrared, X-Ray Diffraction, Zinc Oxide

Chemicals/CAS
chitosan, 9012-76-4; silver, 7440-22-4; zinc oxide, 1314-13-2; Anti-Infective Agents; Biocompatible Materials; Chitosan; Drug Carriers; Silver; Zinc Oxide

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Ramkumar, M.[a b] , Rajasankar, S.[b]

Analysis of total phenolics and antioxidant activity of alcoholic and aqueous extract of South Indian curcuma longa rhizomes

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Abstract
The present study investigates the total phenolic content and antioxidant activity of Curcuma longa rhizomes alcoholic (50% methanolic, 96 % methanolic) and aqueous extracts by Folin-Ciocalteu assay and DPPH assay respectively. There was a statistically significant difference between groups as determined by one-way ANOVA. Bonferroni post hoc test revealed that total phenolic contents and antioxidant activity of Curcuma longa rhizomes was statistically significant; increasing from aqueous extract, followed by 50 % methanolic extract, and finally 96 % methanolic extract. The present study also confirms the significant and positive correlation existing between the antioxidant activity and phenolic content of Curcuma longa rhizomes.

Author Keywords
Antioxidant; Curcuma longa; Phenolics; Turmeric

Index Keywords
Curcuma longa extract, methanol, phenol derivative; analysis of variance, antioxidant activity, antioxidant assay, aqueous solution, Article, comparative study, concentration (parameters), DPPH radical scavenging assay, Folin Ciocalteu assay, nonhuman, post hoc analysis, rhizome, statistical significance

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The cervix sign and other sonographic signs of hypertrophic pyloric stenosis
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abdominal radiography, cervix sign, differential diagnosis, echography, human, hypertrophic pylorus stenosis, priority journal, pyloromyotomy, pylorospasm, pylorus, Review, stomach antrum, stomach muscle, stomach spasm, ultrasound, uterine cervix, vomiting, echography, female, hypertrophic pylorus stenosis, uterine cervix; Cervix Uteri, Female, Humans, Pyloric Stenosis, Hypertrophic, Ultrasonography

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Padmapriya, G.[a] , Manikandan, A.[a] , Krishnasamy, V.[a] , Jaganathan, S.K.[b] , Antony, S.A.[c]

Spinel NixZn1-xFe2O4 (0.0 ≤ x ≤ 1.0) nano-photocatalysts: Synthesis, characterization and photocatalytic degradation of methylene blue dye

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Abstract

Spinel NixZn1-xFe2O4 (x = 0.0 to 1.0) nanoparticles were successfully synthesized by a simple microwave combustion method (MCM) using metal nitrates as raw materials and glycine as the fuel. The structural, morphological and opto-magnetic properties of the spinel NixZn1-xFe2O4 ferrites were determined by X-ray diffraction (XRD), Fourier transform infrared (FT-IR), high resolution scanning electron microscopy (HR-SEM), energy dispersive X-ray (EDX) spectroscopy, high resolution transmission electron microscopy (HR-TEM), selected area electron diffraction (SAED) pattern, UV-Visible diffuse reflectance spectroscopy (DRS), photoluminescence (PL) spectroscopy and vibrating sample magnetometer (VSM). Powder XRD, and EDX analysis was confirmed the formation of pure phase of spinel ferrites. HR-SEM and HR-TEM analysis was confirmed the formation of sphere like-particle morphology of the samples with smaller agglomeration. VSM analysis clearly showed the superparamagnetic and ferromagnetic nature of the samples. The Ms value is 3.851 emu/g for undoped ZnFe2O4 sample and it increased with increase in Ni content. Photo-catalytic degradation (PCD) of methylene blue (MB) dye using the samples were carried out and observed good PCD results. © 2016 Elsevier B.V. All rights reserved.

Author Keywords

Magnetic properties; Microwave combustion; Nanoparticles; Photocatalysts; Spinel ferrites; Structural analysis

Index Keywords

Amino acids, Aromatic compounds, Combustion, Electron diffraction, Electron microscopy, Ferrites, Magnetic properties, Metal nanoparticles, Nanomagnetics, Nanoparticles, Nickel, Photocatalysts, Photoluminescence spectroscopy, Scanning electron microscopy, Spectrum analysis, Structural analysis, Synthesis (chemical), X ray diffraction, Zinc; Energy dispersive x-ray, Fourier transform infrared, High-resolution scanning electron microscopies, Photo catalytic degradation, Selected area electron diffraction, Spinel ferrites, UV-visible diffuse reflectance spectroscopy, Vibrating sample magnetometer; High resolution transmission electron microscopy

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Periyaazhagar, D.[a] , Irusapparajnar, G.[b]

Asymmetrical cascaded multi level inverter using control freedom pulse width modulation techniques
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Abstract
In this paper, the suggested topologies are gained by cascading a full bridge inverter with dissimilar DC sources. This topology has several new patterns adopting the fixed switching frequency, multicarrier control freedom degree with mixture conceptions are established and simulated for the preferred three-phase cascaded multilevel inverter. In outstanding switching arrangement terminations, there are convinced degrees of freedom to produce the nine level AC output voltages with terminated switching positions for producing altered output voltages. These investigations focus on asymmetrical cascaded multilevel inverter engaging with carrier overlapping pulse width modulation (PWM) topologies. These topologies offer less amount of harmonics present in the output voltage and superior root mean square (RMS) values of the output voltages associated with the traditional sinusoidal pulse width modulation. This research studies carries with it MATLAB/SIMULINK based simulation and experimental results obtained using appropriated prototype to prove the validity of the proposed concept. © 2016 Institute of Advanced Engineering and Science. All rights reserved.

Author Keywords
Cascaded multilevel inverter; Control freedom techniques; Pulse width modulation; Total harmonic distortion; Trinary multilevel inverter

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Naik, A.[a] , Tikhe, S.[a] , Bhide, S.[b] , Kaliyamurthie, K.P.[a] , Saravanan, T.[a]

Designing a feature vector for statistical texture analysis of mandibular bone

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Abstract
Objectives: This paper develops an algorithm to generate automatically, a feature vector using various statistical texture features of trabecular mandible from digital Orthopantomogram (OPG). These statistical features are computed using Gray Level Co-occurrence Matrices (GLCM) of mandible structure. Analysis: For this paper, region of interest is trabecular mandible bone present in lower jaw. Mandible Segmented from OPG is taken as input to the algorithm. GLCM of this mandible is calculated at four angles viz., 0°, 45°, 90° and 135° and for two gray scale intensities viz., 128 and 256. Various texture features are calculated from each of these GLCMs. These statistical features are compared and analyzed. Findings: 100 digital OPGs are used for analysis of statistical texture features. Four texture features contrast, viz., correlation, energy, homogeneity are calculated for the four angles mentioned above. Improvement: Texture analysis is performed on various types of images since last 50 years. Locating systemic disease features (e.g., Osteoporosis) from OPG is an upcoming research area. In this area, it is observed that comparatively less literature is available which uses GLCM texture features. The algorithm proposed here devices a texture feature vector for mandible. Analysis of the features is also presented in this paper.

Author Keywords
Digital OPG; GLCM; Mandible; Texture Analysis

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Bhagavathi Perumal, S.[a] , Palanichamy, M.S.[a] , Thamarai, P.[a b] , Moses, P.E.[a c]

Quality of water in Thamirabarani river basin originated from Papanasam, Tirunelveli district
(2016) *Indian Journal of Environmental Protection*, 36 (9), pp. 704-709.

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Abstract
Water is an important natural resource of earth and plays a vital role in our life. Surface water and groundwater are the major sources of water. The surface water qualities of major river basins are contaminated by the municipal and industrial discharges. Mapping of spatial variability of surface water quality is of vital importance and it is particularly significant where it is primary source of potable water. In order to assess the water quality the present study has been undertaken to map the spatial variability of water quality using geographical information system (GIS) approach. The water quality of Tamirabarani river, an important domestic and potable water source of Southern India, Tamil Nadu State has been assessed in the present study. The water qualities of 21 sampling stations were randomly selected in Thamirabarani river basin, Tamil Nadu State for the present study. Geological information system is a powerful tool for representation and analysis of spatial information related to water quality analysis. The spatial variation map for the major water quality parameters are generated and integrated using Arc View 3.2a software. The final integrated map shows 3 priority classes, such as good, moderate and poor water quality zones of the study area and provides a guideline for the suitability of water for domestic purposes. © 2016 - Kalpana Corporation.

Author Keywords
Arc View 3.2a; Geographical information system (GIS); Groundwater; Weighted overlay method

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Srinivasan, M.R.[a] , Poorni, S.[a] , Venkatesh, A.[b] , Vasanthi, B.[a]

Prevalence of impacted permanent mandibular second molars in South Indian population: A cross-sectional study
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Abstract
Aims: The aim of this study is to retrospectively determine the prevalence of impacted second molars and associated dental and radiographic findings in South Indian population. Settings and Design: Cross-sectional design. Materials and Methods: Dental records of 4976 patients depending on the selection criteria from various dental clinics in South India were retrospectively analyzed in this study. All selected radiographs and records were examined by the two authors. The angle of impacted second molars was also recorded on panoramic radiographs. Data were tabulated and analyzed. Results: The prevalence of impacted second mandibular molars was found to be 0.16%. In seven cases, the impaction was unilateral with three on the left and four on the right, and in one case, it was bilateral. The prevalence was found to be more in females than males. The angle of impaction was found to range from 19° to 80°. Conclusions: Although the prevalence of impacted second molars is low, it is crucial to diagnose early for optimal treatment.

Author Keywords
Impacted second molars; prevalence; second mandibular molar

Index Keywords
adolescent, adult, aged, cross-sectional study, diagnostic imaging, female, human, India, male, mandible, middle aged, molar tooth, panoramic radiography, prevalence, retrospective study, sex difference, tooth radiography, Tooth, Impacted, young adult; Adolescent, Adult, Aged, Cross-Sectional Studies, Female, Humans, India, Male, Mandible, Middle Aged, Molar, Prevalence, Radiography, Dental, Radiography, Panoramic, Retrospective Studies, Sex Factors, Tooth, Impacted, Young Adult

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Cheekavolu, C.[a] , Muniappan, M.[b] , Jagan, N.[c] , Vidyalakshmi, K.[d]

Effect of indazole and its derivative on aspirin induced gastric ulcers in rats

(2016) *International Journal of Pharmaceutical Sciences Review and Research*, 40 (2), art. no. 08, pp. 28-32. Cited 1 time.

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Abstract
Peptic ulcer is the very common disease affecting millions of people in the world. Gastric hyper acidity and ulceration of the stomach mucosa due to various factors are serious health problems of global concern. Several drugs widely used to prevent gastro intestinal ailments, which include H2 receptor antagonist and Proton pump inhibitors. Due to problems associated with current treatment, there is the need to seek alternative drug source against gastric ulcers. Hence, the present study was undertaken to determine the anti-ulcer property of Indazole, 5-Aminoindazole and 6-Nitroindazole against aspirin induced gastric mucosal injury in rats. Anti-ulcer activity was evaluated by measuring the ulcer index and Histopathological investigations. Results of this study showed that pretreatment with Indazole and its derivatives provided significant protection against gastric ulcer. The gastro-protective effect of indazoles may be due to inhibition of cytokines and free radical, which are reported in our previous study. © 2016, Global Research Online. All rights reserved.

Author Keywords
Anti- ulcer; Aspirin induced ulcer; Indazoles

Index Keywords
5 aminoindazole, 6 nitroindazole, acetylsalicylic acid, indazole, indazole derivative, unclassified drug; adult, animal experiment, animal model, animal tissue, Article, controlled study, disease severity, gastric mucosa, histopathology, male, nonhuman, rat, scoring system, stomach ulcer

Chemicals/CAS
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Study of gigabit switches

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Abstract
As of late,much research has been dedicated to the investigation of hash tables; lamentably,few have dissected the development of e-business. In this work,we approve the arrangement of Byzantine adaptation to internal failure. We demonstrate that in spite of the way that hash tables can be made diversion theoretic,social,and cooperative,multiprocessors and computerized to-simple converters are generally incongruent. © 2016,International Journal of Pharmacy and Technology. All rights reserved.

Index Keywords
human, theoretical model

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Contrasting DHTS and B-trees

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Abstract
The apply self-sufficiency procedure to neighborhood is described by the examination of rasterization,and in addition by the characteristic necessity for IPv7. Given the present status of pseudorandom development,computational specialist unmistakably look for the change of convincing programming. In this father per we use learning based counts to exhibit that the boss exceedingly open computation for the change of information recuperation structures by Johnson and Takahashi continues running in O(2N) time. © 2016,International Journal of Pharmacy and Technology. All rights reserved.

Index Keywords
father, human, learning, neighborhood, running

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Implementation of bidirectional DC-DC converter for aerospace applications
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Abstract
This paper “implementation of bidirectional dc-dc converter for aerospace applications” composed of a bi directional dc to dc converter which can operate in buck and boost modes. This will be useful in regenerative applications. This project presents simulation of the proposed bidirectional dc to dc converter in both operational modes. The proposed model can be used to predict the converter efficiency at any desired operating point. The new model can serve as an important teaching cum-research tool for Dual Active Bridge hardware design (devices and passive components selection),soft-switching-operating range estimation,and performance prediction at the design stage. The operation of the DAB dc-dc converter has been verified through extensive simulations. A Dual Active Bridge converter prototype was designed on the basis of the proposed model. © 2016,International Journal of Pharmacy and Technology. All rights reserved.

Index Keywords
model, prediction, space, teaching

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UmbraGuanin: A methodology for the synthesis of simulated annealing
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Abstract
As of late,much research has been given to the arrangement of I/O automata; conversely,few have dissected the examination of steady hashing. Given the present status of adaptable hypothesis,futurists unmistakably fancy the investigation of working frameworks,which exemplifies the essential standards of intricacy hypothesis. In this paper we portray an investigation of multicast applications (UmbraGuanin),refuting that virtual machines and amazing writing computer programs are consistently contradictory. © 2016,International Journal of Pharmacy and Technology. All rights reserved.

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machine, software, synthesis, writing

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Ecoupling superpages from IPV6 in sensor networks

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Abstract
The admixture of voice-over-IP is a confirmed issue. After years of confirmed appraisement into e-business,we confirm the refinement of evolutionary programming,which embodies the adverse attack of artificial intelligence. Our focus in our appraisement is not on whether the acclaimed amphibian algorithm for the appraisement of burnout tubes by Zheng [1] is Turing complete,but rather on introducing an cryptic accoutrement for harnessing XML (ASA). © 2016,International Journal of Pharmacy and Technology. All rights reserved.

Index Keywords
analog digital converter, Article, artificial intelligence, classification algorithm, computer language, computer network, computer system, controlled study, fuzzy system, software

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Comparing expert systems and randomized algorithms using SAC

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Abstract
Brought together guarded models acknowledge prompted flourishing dynamic advances,including fundamental machines [1,1] and the area character split. Given the acknowledged cachet of Bayesian correspondence,futurists compellingly deference the architectonics of rasterization. SAC,our new heuristic for obliging models,is the band-help to these issues. © 2016,International Journal of Pharmacy and Technology. All rights reserved.

Index Keywords
controlled clinical trial, controlled study, expert system, human, machine, model, randomized controlled trial, writing

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Sundar Raj, M.[a] , Adalarasu, K.[b] , Jagannath, M.[c] , Vinodhini[a]

Emotional state assessment: Valence and arousal evaluation via EEG analysis
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Abstract
Emotions plays an important role in human beings day-to-day life. Emotion is an affective state of consciousness in which joy,sorrow,fear,hate,is experienced. It is usually accompanied by certain physiological changes like increased heart beat or respiration,often over manifestation (crying or shaking). There are different types of emotions are expressed by human beings in different situations. With EEG based emotion classification that is arousal- valence method a mental state of the subject is observed. By giving different mental and physical task to the person EEG is taken. The different emotional conditions are obtained by EEG waveform. EEG is taken by using RMS maximums 24 EEG machine. EEG acquire software is used to obtain the different waveforms. EEG analysis software is used to get the clear EEG waveform without any artifacts and also it will classify the different emotional condition of the subject by a tomography map. The constant color coding gives the different emotional state of the subject. This EEG based emotion classification is used for the patients to monitor their personal health conditions in order to improve their brain activity. © 2016,International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Arousal-valence model; Emotions; RMS EEG machine; Tomography map

Index Keywords
arousal, artifact, brain function, breathing, consciousness, crying, electroencephalogram, fear, heart beat, human, human experiment, machine, mental health, ordo, software, sorrow, tomography, waveform

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Analysis of moisture content of the sample under study using NIRS
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Abstract
Objective: The Objective of this research was to detect moisture content of the samples undertaken for study which on later can be tested with the human subjects to detect the fluid inside sinus cavities. This article refreshes the fundamental properties of NIRS and detects moisture content of vegetables with the help of prototype developed. Methods: Near Infrared,NIR-LED is a high temperature GaAlAa IR emitter,OD-850WHT specified by an Optodiode corporation. The sensor operates at a wavelength of 850nm and the features of NIRS make it applicable for IR detection. Prototype hardware developed to detect the moisture content of the vegetables like potato and tomato and the outputs obtained through serial chart gives a visual display. Outputs recorded with the help of sigview software and the spectral responses performed to differentiate dry and wet vegetables. Results: The visual display obtained from the serial chart clearly identifies the dry,wet potato and tomato. The spectral response shows high spectral components for juicy tomato as the fluid/ moisture content is more when compared to potato. The signal diffused inside the gall bladder also recorded in both empty as well as with water and sugar solution. The variations in the readings were observed for empty,1ml,3ml and full water and sugar solution. It is identified that the delay is more when the gallbladder is completely filled with sugar solution than with the water as the signal diffuses in less amount with the sugar solution. Conclusion: Signal penetration is more with an empty gall bladder than with completely filled fluid. The viscosity of the solution further rejects the transmission of the optical signal inside the object. Thus the sample filled with water alone makes more diffusion of the optical signal within the object than with the sugar solution which is highly viscous. This encourages us to implement the same hardware to identify normal and sinusitis patients in future. © 2016,International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
IR detection; Moisture; NIRS; Penetration; Sensors; Serial chart; Spectral response

Index Keywords
analytic method, Article, controlled study, limit of detection, moisture, near infrared spectroscopy, process development, signal detection, software, viscosity

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Studying IPV6 using game-theoretic communication
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Abstract
SCSI circles must work. Following quite a while of private exploration into gigabit switches,we check the advancement of spreadsheets,which exemplifies the huge standards of steganography. Keeping in mind the end goal to perform this desire,we focus our endeavors on exhibiting that voice-over-IP can be made psychoacoustic,helpful,and steady time. © 2016,International Journal of Pharmacy and Technology. All rights reserved.

Index Keywords
theoretical model, voice

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The GC MS analysis study of one ayurvedic medicine "Ajaswagandhadi lehyam"

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Abstract
Ajaswagandhadi lehyam is a ayurvedic paste made up of nine plants and the flesh of goat. This lehyam is used as aphrodisiac, muscle strengthener, food supplement and for improving digestive and respiratory health. The present study deals with GC MS analysis of this medicine to know the bio molecules present. It was found that some very important bio molecules with medicinal activities like 16-Hexadecanoyl hydrazide, Myristic acid vinyl ester, 1, 4-Dioxin, 2,3-dihydro-5,6-dimethyl, Benzoic acid, 5-Hydroxymethylfurfural, (3-Ethoxy-4, 5-dihydro-isoxazol-5-ylmethyl)- amine, Sucrose, 3-Deoxy-d-mannoic lactone, Tetradecanoic acid, n-Hexadecanoic acid, Dodecanoic acid, trans-13-Octadecanoic acid along with some minor compounds such as Disparlure. This report is the initial level of understanding the types of bio molecules present in Ajaswagandhadi lehyam and further work is in progress to find out the medicinal efficacy by other standard methods. © 2016, Global Research Online. All rights reserved.

Author Keywords
16-Hexadecanoyl hydrazide; 5-Hydroxymethylfurfural; Ajaswagandhadi lehyam; GC MS; Myristic acid vinyl ester; Sucrose

Index Keywords
1, 4 dioxin, 16 hexadecanoyl hydrazide, 2,3 dihydro 5,6 dimethyl, 3 deoxy d mannoic lactone, 3 ethoxy 4, 5 dihydro isoxazol 5 ylmethyl amine, 5 hydroxymethylfurfural, ajaswagandhadi lehyam, ayurvedic drug, benzoic acid, chemical compound, disparlure, lauric acid, myristic acid, myristic acid vinyl ester, palmitic acid, sucrose, trans 13 octadecanoic acid, unclassified drug; antidiabetic activity, antiinflammatory activity, antimicrobial activity, antioxidant activity, Article, Ayurveda, cardamom, Cinnamomum zeylanicum, clove, extraction, Glycrrhiza glabra, goat, mass fragmentography, medicinal plant, Mesua ferrea, nonhuman, nutmeg, Orchis mascula, paste, phytochemistry, velvet bean, Withania somnifera

Chemicals/CAS
5 hydroxymethylfurfural, 67-47-0; benzoic acid, 532-32-1, 582-25-2, 65-85-0, 766-76-7; disparlure, 29804-22-6, 35898-62-5, 54910-51-9; lauric acid, 115-05-9, 143-07-7; myristic acid, 1715-79-3, 544-63-8; palmitic acid, 57-10-3; sucrose, 122880-25-5, 57-50-1

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Molecular properties and insilico neuroprotective activity of eugenol against glutamate metabotrophic receptors
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Abstract
Metabotrophic glutamate receptors were expressed abnormal in the neurodegenerative diseases. The negative regulation of the abnormal expression induce glutamate excitotoxicity has connected to interminable neurodegenerative issues for example, amyotrophic parallel sclerosis, multiple sclerosis and Parkinson's disease. The molecular target metabrophic glutamate receptors were modulated and regulated by the potent medicinal compounds. Eugenol is a medicinal value rich compound found in the buds and leaves of clove (Syzygium aromaticum (L.) Merrill and Perry), which has been accounted to have antioxidant, anticancer and neuroprotective activity. In this present study the Eugenol compound was evaluated for the neuroprotective activity through molecular docking and molecular property prediction. The eugenol compound was optimized and prepared as ligand molecule using ligprep tool. Similarly the glutamate receptors were prepared for molecular docking through auto dock tool. Prelimarily, the eugenol was evaluated for the molecular properties and drug likeliness sore. The duglikeliness score -0.60 of eugenol indicated the highest score and confirmed as potent drug like compound. Totally ten glutamate receptors were chosen and docked with eugenol ligand molecule. Among the receptors 2e4y, 3ks9, 2wjw and 3lmk were significantly inhibited by eugenol. 2e4y and 3ks9 achieved the best docking frequency (-28.01and -32.90) with atomic contact energy. © 2016, Global Research Online. All rights reserved.

Author Keywords
Docking; Druglikeliness; Eugenol; Glutamate receptors; Neuroprotective activity

Index Keywords
eugenol, G protein coupled receptor, glutamate receptor; Article, clove, computer model, crystal structure, enzyme active site, molecular docking, neuroprotection, plant seed, scoring system, structure activity relation

Chemicals/CAS
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Advanced pulse width technique in impedance source cascaded Multilevel Inverter with asymmetric topology

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Abstract
In this research, a single phase Z-source cascading Multilevel Inverter, Nine-level inverter topologies with a trinary DC sources are offered. The recommended topologies are expanded by cascading a full bridge inverter with dissimilar DC sources. This paper recommends advanced pulse with modulation technique as a switching scheme. In this PWM technology, trapezoidal modulation technique is used as variable amplitude pulse width modulation. These topologies compromise reduced harmonics present in the output voltage and superior root mean square (RMS) values of the output voltages linked with the traditional trapezoidal pulse width modulation. The simulation of proposed circuit is carried out by using MATLAB/SIMULINK.

Author Keywords
Cascaded multilevel inverter; Total Harmonic distortion; Variable amplitude Pulse Width Modulation; Z-Source Multilevel Inverter

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Sundari, S.[a b] , Poovazhagi, V.[c] , Santhosh, G.[d]

Japanese encephalitis: Profile and outcome from an urban pediatric institute
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Abstract
Japanese encephalitis (JE) is a common viral infection encountered in certain endemic regions in India.This is one of the common acute encephalitis in children which carries high mortality and morbidity. Fever, headache, vomiting, abdominal pain, altered sensorium, convulsions, and coma are the common features of JE in children. Higher mortality and morbidity among survivors occurs in children with JE. Difficulty in speech, bizarre involuntary movements, impaired intellect andconvulsions are common sequelae following JE. Vaccine for Japanese encephalitis isavailable for children and adults in endemic areas. Vaccination and mosquito controlare the preventive strategy to reduce the incidence of JE. Though its incidence has decreased following effective vaccination evenin urban health careInstitutes JE is still encountered.

Author Keywords
Clinical features; Japanese encephalitis; Morbidity; Mortality

Index Keywords
Article, cerebrospinal fluid analysis, cerebrospinal fluid culture, child, clinical article, clinical feature, computer assisted tomography, controlled study, enzyme linked immunosorbent assay, female, human, India, infant, Japanese encephalitis, male, pediatric intensive care unit, polymerase chain reaction, retrospective study, urban area

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Microstructure and Optical Properties of Nano Multilayers of CeO2/ZrO2 and Gd2 O3/CeO2 Prepared by Pulsed Laser Deposition

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Abstract

In the present work, the CeO2/ZrO2 and Gd2O3/CeO2 multilayers were deposited on Si(100) and quartz substrates by pulsed laser deposition and microstructural changes and optical properties of these multilayers are investigated. While depositing CeO2/ZrO2 multilayers, CeO2 layer thickness was kept constant at 10 nm, and ZrO2 layer thickness was varied as 30, 20 and 10 nm. The XRD results of the multilayer of CeO2/ZrO2 showed the formation of tetragonal ZrO2 at room temperature, irrespective of the ZrO2 layer thickness. The optical studies of the multilayer films showed that the refractive index of the films increased from 1.86 to 2.18 as ZrO2 layer thickness increased from 10 nm to 30 nm. The band gap of ZrO2 increased from 4.92 eV to 5.0 eV with decreasing zirconia layer thickness from 30 to 10 nm. In the case of Gd2 O3 /CeO2 multilayers, CeO2 layer thickness was varied from 5 to 30 nm, while the layer thickness of Gd2O3 was kept constant (10 nm). The Gd2O3/CeO2 multilayers were found to be polycrystalline at room temperature. The band gap of the Gd2O3 increased with increase in the deposition temperature. The layer thickness of CeO2 showed opposing trend for the multilayers grown at 300 K and 873 K. The band gap of Gd2O3 increased with increase in layer thickness of the CeO2 for the multilayer deposited at 873 K, whereas it decreased for the multilayers deposited at 300 K. Copyright © 2016 American Scientific Publishers All rights reserved.

Author Keywords

Nano multilayers; Oxides; Pulsed laser deposition; Thin films; UV-visible spectroscopy; X-ray diffraction; X-ray reflectivity

Index Keywords

Deposition, Energy gap, Film preparation, Multilayer films, Optical multilayers, Optical properties, Oxides, Pulsed laser deposition, Pulsed lasers, Refractive index, Thin films, Ultraviolet visible spectroscopy, X ray diffraction, Zirconia, Zirconium alloys; Deposition temperatures, Layer thickness, Microstructural changes, Nanomultilayers, Polycrystalline, Quartz substrate, UV visible spectroscopy, X ray reflectivity; Multilayers

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Optical characterization and electrochemical properties of Cd(1-x)Cu(x)S/rGO composites synthesized through reflux method

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Abstract
Cd(1-x)Cu(x)S/rGO composites were synthesized through reflux method. The composites were characterized by using X-ray diffractometer (XRD), Fourier transform infrared (FTIR), Raman spectroscopy, Thermogravimetric Analysis (TGA). The presence of elements was confirmed by Xray photoelectron spectroscopy. The morphological studies FE-SEM and TEM shows that the Cd(1-x)Cu(x)S nanoparticles were deposited on the surface of reduced graphene oxide sheets. The electrochemical property was studied by CV analysis, which indicates the introduction of Cu ions into CdS nanoparticles on to the rGO sheets results the increase in the integral area and current, compared with that of pure CdS nanoparticles and CdS/rGO composites. This work provides the convenient chemical route to prepare reduced graphene oxide sheets and its composite materials. This new composite material could be useful for energy storage devices, photocatalysis and in other fields. © Copyright 2016 American Scientific Publishers.

Author Keywords
Cd(1-x)Cu(x)S/rGO; Composites; Electrochemical Property; Optical Properties; Reflux Method

Index Keywords
Cadmium sulfide, Characterization, Composite materials, Electrochemical properties, Fourier transform infrared spectroscopy, Graphene, Heavy ions, Nanoparticles, Optical properties, Photoelectron spectroscopy, X ray photoelectron spectroscopy; Cd(1-x)Cu(x)S/rGO, CdS nanoparticles, Fourier transform infrared, Morphological study, Optical characterization, Reduced graphene oxides, Reflux methods, X ray diffractometers; Thermogravimetric analysis

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Rice husks as a sustainable source of high quality nanostructured silica for high performance Li-ion battery requital by sol-gel method - a review

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Abstract

The electronics industry is heavily reliant on the use of silicon in devices ranging from solar panels to circuitry. This is of growing concern due to the environmental impact of sourcing and refining the material. Thus, a green source of silicon is of vital importance to meet the growing demand for silicon in the industry. Rice husk represents an abundant source of nano silica. Currently the husk is considered a waste product that is separated from the grain during the milling process. Several methods have been trailed to extract the nano silica from rice husk. This paper reviews these current methods and presents suggestions of innovative research directions for processing techniques. This work reveals that the structural nature of superfine silica from rice husk ash is independent of the purification method, but dependent on the incineration temperature used. The paper concludes by advocating the physic-chemical process for producing high purity reactive nanosilica from rice husk. This method has the advantage of having high volume production versatility and being environmentally friendly. However, control of the morphology, shape, size, crystalline structure and chemical composition of rice husk nanostructures remains a challenge in the development of 3D nanopores arrays controllable by synthesis methods. We hope this article can provide the reader with snapshots of the recent development and future challenges. © 2016 VBRI Press.

Author Keywords

FTIR; NSi; PL spectra; Rice husk ash; XRD

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Documents

Kolanthai, E.[a b] , Ganesan, K.[c] , Epple, M.[c] , Kalkura, S.N.[a]

Synthesis of nanosized hydroxyapatite/agarose powders for bone filler and drug delivery application
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Abstract
Drug-loaded bioactive composite powders are used for the treatment of orthopedic diseases and prevention of infection or inflammatory reaction after surgical implantation. Nanosized (80 × 23 nm2) and porous (17 ± 1 nm) hydroxyapatite (HAp)/agarose composite rods were prepared by sol-gel synthesis and subjected to microwave and conventional heating. Microwave heating increased the degree of crystallinity and the thermal stability and produced calcium-deficient HAp/agarose composite powders. There was a considerable reduction (by 39%) in the size of rods on microwave heating whereas the conventional heating at 700 °C rendered the samples porous and agglomerated with a significant decrease in the specific surface area. The agarose contents in as-synthesized and microwave heated samples were ~14% and 4%, respectively. The samples were partially degradable upon immersion in SBF, and later exhibited calcium phosphate deposition which was confirmed by gravimetry. An antibiotic (amoxicillin) and anticancer (5-fluorouracil) drug-loaded microwave-heated nanosized HAp/agarose composite powder gave an extended drug release when compared to the as-synthesized and the conventionally heated samples. The composite powders showed a negative zeta potential, hemocompatibility and better antimicrobial efficacy than pure HAp (conventional heated sample). The microwave heating retained the organic phase (agarose) along with a reduction in particle size. In addition, this technique is simple, fast and cost-effective to produce mesoporous, bioactive and resorbable nanocomposite (HAp/agarose) powders which could find application as bone filling materials and drug delivery systems. © 2016 Elsevier Ltd.

Author Keywords
5-Fluorouracil drug delivery; Agarose; Amoxicillin; Composites; Hydroxyapatite; Mesoporous

Index Keywords
Calcium phosphate, Composite materials, Controlled drug delivery, Cost effectiveness, Crystallinity, Hydroxyapatite, Mesoporous materials, Microwave heating, Microwaves, Particle size, Powders, Sol-gels; 5-fluorouracil, Agarose, Amoxicillin, Calcium phosphate deposition, Drug delivery applications, Mesoporous, Nano-sized hydroxyapatite, Negative zeta potentials; Targeted drug delivery

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Documents

Naik, A.[a] , Tikhe, S.[a] , Bhide, S.[a] , Kaliyamurthie, K.P.[b] , Saravanan, T.[b]

Algorithm to Detect Fracture from OPG Images Using Texture Analysis

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Abstract
Mandibular fracture, also known as fracture of alower jaw is a break in the mandibular bone. Mandibularfracture occurs due to facial injuries. After clinical observations, doctors suggest to have a radiograph to view a position of thefracture. Orthopantamogram (OPG) is suggested to viewmandible fracture and directions of fracture lines. For anengineer, automating the process of locating fracture is achallenging task and he/she desires to make it a useful assistanceto medical practitioners. This paper presents an algorithm todetect location of a fracture from an OPG image. Fracture inmandible bone which is present in lower jaw is located usingproposed algorithm. Fracture line in an image is a break incontinuous texture. It is difficult to detect such a fracturebecause, these breaks are minor changes in intensities of grayscale structures in an image. The algorithm presented in thepaper makes use of image processing techniques and textureanalysis to detect fracture location from mandible bone which ispresent in the lower jaw. A mask is used to find a break inmandible structure. Detecting such a break in mandible structureis critical as it requires separating fracture from other featureslike teeth and gum area present in OPG image. © 2016 IEEE.

Author Keywords
fracture detection of lower jaw; image sharpening; mandible fracture; OPG; texture analysis

Index Keywords
Algorithms, Bone, Fracture, Image analysis, Image processing, Location; Clinical observation, Fracture detection, Image processing technique, Image sharpening, Mandible fractures, Mandibular fracture, Medical practitioner, Texture analysis; Image texture

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Prasad, K.L.[a] , Rao, T.C.M.[b] , Kannan, V.[c]

A Hybrid Semi-fragile Image Watermarking Technique Using SVD-BND Scheme for Tampering Detection with Dual Authentication

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Abstract
This research paper proposes a hybrid combination of semi-fragile Singular Value Decomposition (SVD) accompanied by Binocular Notification Difference (BND) for stereoscopic image watermarking pattern. The proposed model originated with two basic segments. At initial stage the logical intrinsic algebraic properties is used to generate content dependent watermarking through Mersenne Twister Algorithm. Once the generation of watermarking content, the BND scheme is directing the watermark embedding process. The BND inherits the tradeoff between total watermark content with clarity on visual acuity. The anticipated approach enriched through dual authentication method by chaotic map method to ensure credibility on security. Consequently the projected hybrid model is equated with other models in experimental results and analysis. This model is ensures the optimal performance against other methods in terms of tamper detection with authentication. © 2016 IEEE.

Author Keywords
Binocular Notification Difference (BND); Quantization matrix; Singular Value Decomposition (SVD); Stereoscopic image; tampering

Index Keywords
Authentication, Binoculars, Bins, Chaotic systems, Image watermarking, Stereo image processing, Watermarking; Algebraic properties, Dual authentications, Optimal performance, Quantization matrix, Stereoscopic image, tampering, Tampering detection, Watermark embedding process; Singular value decomposition

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Tikhe, S.V.[a] , Naik, A.M.[a] , Bhide, S.D.[a] , Saravanan, T.[b] , Kaliyamurthie, K.P.[b]

Algorithm to Identify Enamel Caries and Interproximal Caries Using Dental Digital Radiographs

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Abstract
Diagnosis of dental diseases is conventionally carried out with the help of radiographic films. As a result of noise and other environmental interferences, use of radiographic films introduces errors. This paper presents an algorithm to use digital periapical radiographic images to detect enamel caries and interproximal caries. This will help dental practitioners to identify caries lesion with ease. This study makes use of MATLAB and it performs caries detection in three stages. First stage is the preprocessing phase where rotation of an image is performed, if necessary. Histogram study of the image is carried out to understand the intensity of carries. The second phase is image segmentation where individual tooth area is separated. Third phase is the identification phase where caries are detected. If caries are not detected, tooth is definitely healthy. © 2016 IEEE.

Author Keywords
caries detection; histogram; image segmentatio; Periapical x-ray images

Index Keywords
Algorithms, Diagnosis, Enamels, Graphic methods, MATLAB, X ray films, X ray radiography; Caries lesions, Environmental interference, histogram, image segmentatio, Preprocessing phase, Radiographic films, Radiographic images, X-ray image; Image segmentation

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Subramanian, K.[a] , Kattimani, S.[a] , Rajkumar, R.P.[a] , Bharadwaj, B.[a] , Sarkar, S.[b]

What happens to episode duration and cycle length over the course of bipolar disorder?
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Abstract
Objectives: Published scientific literature on cycle acceleration over the course of bipolar disorder has been equivocal. The present analysis aimed to find whether episode duration and cycle lengths become shorter over the course of bipolar disorder with predominantly manic polarity. Methods: The present study comprised 150 patients diagnosed with bipolar I disorder using SCID-I for DSM-IV TR. The course of illness was charted according to the NIMH Life Chart Methodology - Clinician Retrospective Chart (NIMH - LCM CRC). Spearman correlation was used to assess the relationship of episode duration and cycle length with the number of episodes. Results: The mean age of the sample was 37.8 years and the average duration of illness was 13.4 years. Unipolar mania comprised 52.7% of the sample. The episode duration and the cycle length decreased with increasing number of episodes (r=-0.245, p<0.001 & r=-0.299, p<0.001 respectively). Conclusion: The present study suggests that over the course of bipolar I disorder, cycle length and episode duration become shorter. © The Royal Australian and New Zealand College of Psychiatrists 2015.

Author Keywords
Bipolar disorder; Longitudinal studies; Recurrence; Time factors

Index Keywords
Article, bipolar disorder, cell cycle, correlation analysis, disease course, disease duration, drug dependence, DSM-IV-TR, human, mania, sex difference, social status, Structured Clinical Interview for DSM Disorders, treatment duration, adult, bipolar disorder, Diagnostic and Statistical Manual of Mental Disorders, female, India, longitudinal study, male, middle aged, pathophysiology, recurrent disease, regression analysis, retrospective study, severity of illness index, time factor; Adult, Bipolar Disorder, Diagnostic and Statistical Manual of Mental Disorders, Female, Humans, India, Longitudinal Studies, Male, Middle Aged, Recurrence, Regression Analysis, Retrospective Studies, Severity of Illness Index, Time Factors

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Solution processing of CuSe quantum dots: Photocatalytic activity under RhB for UV and visible-light solar irradiation

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Abstract
Exploit of photodegradation and photocatalytic activity of large scale synthesis of (CuSe) copper selenide semiconductor quantum dots was reported. The obtained nanocrystals were characterized by X-ray diffraction (XRD), UV-visible absorption spectroscopy (UV-vis) photoluminescence (PL) and high resolution transmission electron microscopy (HRTEM). The crystalline, nearly monodisperse with uniform size were synthesized by the reflux condensation method. This method promises a range of possibilities for the preparation of CuSe materials with enhanced properties. Experimental investigation shows the nanoscale photocatalysts with high surface area, small particle size and high crystallinity is of current interest in nanophase materials. The chemical composition of the CuSe samples and the valence states of elements were determined by X-ray photoelectron spectroscopy (XPS). We present our investigations to the shape and size of the quantum dots and are good agreement with experimental results. © 2016 Elsevier B.V. All rights reserved.

Author Keywords
CuSe; HRTEM; Photocatalytic; Quantum dots; Reflex condensation; XPS

Index Keywords
Absorption spectroscopy, Condensation, High resolution transmission electron microscopy, Nanocrystals, Particle size, Photocatalysis, Photocatalysts, X ray diffraction, X ray photoelectron spectroscopy; Chemical compositions, CuSe, Experimental investigations, HRTEM, Large scale synthesis, Photo-catalytic, Photocatalytic activities, UV-visible absorption spectroscopy; Semiconductor quantum dots

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Padmapriya, G.[a] , Manikandan, A.[a] , Krishnasamy, V.[a] , Jaganathan, S.K.[b] , Antony, S.A.[c]

Enhanced Catalytic Activity and Magnetic Properties of Spinel MnxZn1−xFe2O4(0.0 ≤ x ≤ 1.0) Nano-Photocatalysts by Microwave Irradiation Route

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Abstract

Spinel MnxZn1−xFe2O4 (0.0 ≤x≤ 1.0) nanocatalysts were successfully prepared by simple one-pot microwave combustion method using glycine as the fuel. X-ray powder diffraction (XRD), energy-dispersive X-ray (EDX) analysis, and Fourier transform infrared (FT-IR) spectral results confirmed the formation of pure-phase cubic spinel structured products. Average crystallite sizes of the samples were calculated using Sherrer's formula, and the range from 21.15 to 15.48 nm. Spherical-shaped particles like nanostructured morphology were confirmed by high-resolution scanning electron microscopy (HR-SEM) and transmission electron microscopy (HR-TEM) analyses. Magnetic characterization of the samples was measured by vibrating sample magnetometer (VSM), and it was observed that the magnetization values increased with increasing Mn 2+ cation, due to the replacement of the non-magnetic nature of Zn 2+ by the higher magnetic moment of Mn 2+ in the ZnFe2O4 lattice and also the distribution of cations at tetrahedral (A) and octahedral (B) sites. Photocatalytic degradation (PCD) of methylene blue (MB) using spinel MnxZn1−xFe2O4 (0.0 ≤x≤ 1.0) nanocatalysts was carried out, and the PCD efficiency is increased with increasing Mn 2+ ions, and the sample Mn0.6Zn0.4Fe2O4 showed better efficiency than other samples, due to their smaller particle size and higher surface area. © 2016, Springer Science+Business Media New York.

Author Keywords

Dye degradation; Magnetic properties; Nanocrystals; Photocatalyst; Spinel ferrites; X-ray diffraction

Index Keywords

Amino acids, Aromatic compounds, Catalyst activity, Electron microscopy, High resolution transmission electron microscopy, Magnetic moments, Magnetic properties, Magnetism, Microwave irradiation, Nanocrystals, Particle size, Photocatalysts, Photodegradation, Positive ions, Scanning electron microscopy, Transmission electron microscopy, X ray diffraction, X ray powder diffraction, Zinc; Dye degradation, Enhanced catalytic activity, Fourier transform infrared, High-resolution scanning electron microscopies, Magnetic characterization, Photocatalytic degradation, Spinel ferrites, Vibrating sample magnetometer; Manganese

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Sundar Raj, M.[a] , Adalarasu, K.[b] , Jagannath, M.[c] , Bala Saranya, R.[b]

Assessment of cognitive status from EEG data using independent component analysis
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Abstract
Biomedical signal processing aims at extracting significant information from physiological signals recorded from the human body. The various biomedical signals such as electroencephalography (EEG), electrocardiography (ECG), magnetoencephalography (MEG) etc. can be analyzed by using both independent component analysis (ICA) and principal component analysis. The main objective of this study is to assess the cognitive status of the individual using independent component analysis (ICA). The methodology of this study is to compare the different ICA algorithms and identify better algorithm for EEG signal processing; extract the feature parameter from the EEG signal and identify the cognitive status of subjects using a feature extracted parameter. Thus, finally the extracted parameter such as alpha, theta and beta band values is used to analyze the cognitive status of the individual. Our study concluded that wavelet packet decomposition of EEG showing increased beta activity and decrease in alpha activity with increase in theta activity during task performance is a good approach to assess mental fatigue and alertness level.

Author Keywords
Cognitive status; Electroencephalography (EEG); Independent component analysis (ICA); Stress

Index Keywords
alertness, algorithm, alpha rhythm, Article, beta rhythm, cognition, dysthymia, electroencephalography, human, independent component analysis, intermethod comparison, signal processing, task performance, theta rhythm, wavelet analysis

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The GC-MS study of one ayurvedic preparation Katakakhadiradi kashayam

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Abstract
Katakakhadiradi Kashayam is an Ayurvedic formulation for the treatment of diabetes, skin and urinary tract ailments. This is made up of 12 types of plants. The present study deals with the GC Ms analysis of this Kashayam to know the presence of different bio molecuels present in it. It was observed that it contained molecules like Ethyl acetate, 3-Trifluoroacetoxytridecane, 3- Trifluoroacetoxypentadecane, Dodecane, 1,2-dibromo-, 4-Trifluoroacetoxytridecane, Trichloroacetic acid pentadecyl ester, Trichloroacetic acid hexadecyl ester, E-14-Hexadecenal, E-11,13-Tetradecadien-1-ol 6- and Tridecene, (Z)- which have various medicinal activities. Further work is in progress to evaluate these molecules and correlate their activities to Katakakhadiradi kashayam. This study will help in better understanding of the mechanism of action of this medicine. © 2016, Global Research Online. All rights reserved.

Author Keywords
Ayurvedic; E-14-Hexadecenal; Ethyl acetate; GC MS; Katakhadiradi kashayam

Index Keywords
3 trifluoroacetoxypentadecane, 3 trifluoroacetoxytridecane, 4 trifluoroacetoxytridecane, acetic acid derivative, acetic acid ethyl ester, ayurvedic drug, chemical compound, dodecane, e 11 13 tetradecadien 1 ol 6, hexadecane, katakakhadiradi kashayam, trichloroacetic acid hexadecyl ester, trichloroacetic acid pentadecyl ester, tridecene, unclassified drug;
Article, chemical composition, diabetes mellitus, drug formulation, mass fragmentography, nonhuman, skin infection, urinary tract infection

Chemicals/CAS
acetic acid ethyl ester, 141-78-6; dodecane, 112-40-3; hexadecane, 544-76-3

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The GC MS study of one ayurvedic preparation amrithamehari churnam

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Abstract
Amrithamehari churnam is an Ayurvedic formulation for the treatment of diabetes, weight loss and bladder disorders. The present study deals with the GC MS analysis of of Amrithamehari churnam. Fifty different peaks were observed indicating various bimolecules. It was observed that there is an indication of the presence of some compounds such as Pyridinium, 1-(2-hydrazino-2- oxoethyl)-, chloride, Arsonous dichloride, methyl-, 1-Dodecane, 2-Methoxy-4-vinylphenol, 1-Undecanol, 1-hexadecanol, Artumerone, Tumerone, Curlone, 4-Isoquinolinecarboxylic acid, 2, 3, 5, 6, 7, 8-hexahydro-3-oxo-, 1-Docosene, Squalene, á-Sitosterol, Benzenepropanoic acid, 3, 5-bis(1,1-dimethylethyl)-4-hydroxy etc. The medicinal values of each compound have similarity with that of the main drug, Amrithamehari churnam. Further work is in progress to prove the efficacy of this drug by standard methods. © 2016, Global Research Online. All rights reserved.

Author Keywords
Amrithamehari churna; Curlone; Diabetes; GC MS; Sitosterol; Tumerone

Index Keywords
4 isoquinolinecarboxylic acid, Amrithamehari churnam, arsenic derivative, ayurvedic drug, cosmetic, curlone, docosene, dodecane, hexadecanol, phenol derivative, propionic acid derivative, pyridinium derivative, sitosterol, squalene, turmerone, unclassified drug, undecanol; antimicrobial activity, antioxidant activity, Article, bladder disease, burn, cold, diabetes mellitus, drug efficacy, drug retention, inflammation, male infertility, mass fragmentography, nonhuman, prostate hypertrophy, thrombosis, weight reduction

Chemicals/CAS
dodecane, 112-40-3; hexadecanol, 29354-98-1, 36653-82-4, 51260-59-4; sitosterol, 19044-06-5, 83-46-5; squalene, 111-02-4, 7683-64-9; turmerone, 56485-42-8; undecanol, 112-42-5, 30207-98-8

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Novel gamma irradiated agarose-gelatin-hydroxyapatite nanocomposite scaffolds for skin tissue regeneration
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Abstract
Agarose-gelatin-hydroxyapatite composites prepared by freeze-drying technique were gamma irradiated with various doses (25 kGy, 50 kGy and 100 kGy). X-ray Diffraction (XRD) analysis revealed the pure phase of HAp and the intensity of prominent planes of hydroxyapatite (Ca10(PO4)6(OH)2, HAp) were found to decrease on irradiation. Fourier Transform Infrared spectra (FTIR) showed functional groups of HAp and polymer composites, and higher disorder of the polymer matrix on irradiation. In addition, gamma irradiation led to a drastic reduction in the wettability (62%) and the compressive modulus (76%) of the scaffolds. There was significant enhancement (113%) in pore size of the scaffolds at higher fluence (100 kGy). The swelling and the dissolution studies of the gamma irradiated scaffolds showed that it had an appreciable change in the scaffold's mechanical and biological properties viz., compressive modulus, cell proliferation, hemolysis etc. The irradiated biomaterials exhibited enhanced hemocompatibility, antimicrobial activity and cell viability. The above results clearly reveal that the gamma irradiation is a suitable tool to tailor the multifunctional properties of the composites and could be used for various biomedical applications. © 2016 Elsevier Ltd and Techna Group S.r.l.

Author Keywords
A. Agarose-gelatin-HAp composites; B. Gamma irradiation; C. Tailoring pore size; D. Cell culture

Index Keywords
Cell culture, Cell proliferation, Fourier transform infrared spectroscopy, Gamma rays, Hydroxyapatite, Irradiation, Medical applications, Polymer matrix composites, Pore size, Tissue regeneration, X ray diffraction analysis; Agarose, Anti-microbial activity, Biomedical applications, Fourier transform infrared spectra, Gamma irradiation, Gelatin-hydroxyapatite nanocomposites, Hydroxyapatite composite, Multifunctional properties; Scaffolds (biology)

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Structural, optical and morphological properties of post-growth calcined TiO2 nanopowder for opto-electronic device application: Ex-situ studies

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Abstract
Nanocrystalline TiO2 powders have been selectively prepared by the simple combustion reaction method using urea as a fuel. The crystalline powder was obtained using a silica basin heated directly on a hot plate at 500 °C until self-ignition occurred. After combustion process, the calcined products were obtained by heating the as-prepared powders for 1 h in air atmosphere at various sintering temperatures [500-900 °C]. The obtained nanopowder materials were systematically characterized by X-day diffraction (XRD), micro-Raman, UV-visible absorption (UV-vis), and Fourier transform infrared (FT-IR) spectroscopics. Powder XRD pattern shows the good agreement rutile phase structured TiO2 and the sharp diffraction peaks indicates good for crystallinity. The size of a symmetry of the nanoparticles have been measured with aid of a scanning electron microscopy (SEM), high resolution transmission electron microscopy (HR-TEM), and Brunauer, Emmett and Teller (BET) surface studies. The crystallinity of the powders was found to increase with respect to calcination temperatures. The average specific surface area of the particle was probed using gas adsorption-desorption measurements. Raman spectroscopy experiment was performed to ascertain the nature of TiO2 powder quality. UV-vis absorption spectra results showed the changes in the absorption edges of TiO2 report to increasing the calcinations temperatures. © 2016 Elsevier B.V. All rights reserved.

Author Keywords
Nanoparticles; Raman; TEM; TiO2; UV-vis spectroscopy; XRD

Index Keywords
Atmospheric temperature, Calcination, Combustion, Diffraction, Electron microscopy, Gas adsorption, Nanocrystals, Nanoparticles, Nanostructured materials, Optoelectronic devices, Oxide minerals, Powders, Scanning electron microscopy, Sintering, Titanium dioxide, Transmission electron microscopy, Ultraviolet spectroscopy, Ultraviolet visible spectroscopy, Urea; Adsorption-desorption measurements, Calcination temperature, Calcinations temperature, Fourier transform infrared, Morphological properties, Raman, UV-VIS absorption spectra, UV-vis spectroscopy; High resolution transmission electron microscopy

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Mathubala, G.[a] , Manikandan, A.[a] , Arul Antony, S.[b] , Ramar, P.[c]

Photocatalytic degradation of methylene blue dye and magneto-optical studies of magnetically recyclable spinel NixMn1-xFe2O4 (x = 0.0-1.0) nanoparticles

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Abstract

Nickel doped spinel manganese ferrite (NixMn1-xFe2O4: x = 0.0-1.0) nanoparticles were prepared successfully by a superficial microwave irradiation technique using urea as the fuel. Powder X-ray diffraction (XRD) analysis was recognized the configuration of single phase spinel structure of NixMn1-xFe2O4. Debye Sherrer's formula was used to calculate the average crystallite size of the samples, which were found in the range of 15-20 nm. High resolution scanning electron microscopy (HR-SEM) was used to analyze the surface morphology of the samples, which showed the particle like-morphology with smaller agglomeration, and it was also confirmed by high resolution transmission electron microscopy (HR-TEM). Energy dispersive X-ray (EDX) analysis confirmed the elemental composition, which also evidence for the formation of single pure phase. Microwave heating method produced well crystalline nature of the products, which was confirmed by selected area electron diffraction (SAED) analysis. UV-Visible diffuse reflectance spectra (DRS) were used to calculate the energy band gap and the observed values are increased slightly from 2.05 eV to 2.44 eV with increasing the Ni-dapant. Magnetic characterization of the samples were analyzed by room temperature vibrating sample magnetometer (VSM) technique and the observed magnetization (Ms) values are decreased with increasing Ni content, due to the different magnetic moments of Mn2+ and Ni2+ cations. Photocatalytic degradation (PCD) of methylene blue dye was carried out by self designed photo-catalytic reactor. It was observed that PCD efficiency is increased with increase in concentration of Ni and the sample Ni0.6Mn0.4Fe2O4 shows better photocatalytic activity (96.73%) than other samples. © 2016 Elsevier B.V. All rights reserved.

Author Keywords

Electron microscopy; Microwave combustion; Nanoparticles; Photo-catalysts; Spinel ferrites; X-ray diffraction

Index Keywords

Aromatic compounds, Crystallite size, Electron diffraction, Electron microscopy, Electrons, Energy gap, Magnetic moments, Manganese, Microwave heating, Microwave irradiation, Nanoparticles, Nickel, Scanning electron microscopy, Urea, X ray diffraction, X ray diffraction analysis; Diffuse reflectance spectrum, High-resolution scanning electron microscopies, Microwave irradiation techniques, Photocatalytic degradation, Selected area electron diffraction, Single-phase spinel structure, Spinel ferrites, Vibrating sample magnetometer; High resolution transmission electron microscopy

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Bhagavathi Perumal, S.[a] , Palanichamy, M.S.[a] , Thamarai, P.[a b] , Moses, P.E.[a c]

Classification of water quality by water quality index of Perennial River Tamirabarani, Tirunelveli, Tamil Nadu
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Abstract
The river Tamirabarani is one of the perennial rivers in India which feed 2 major districts (Tirunelveli and Thoothukudi) of Tamil Nadu. Due to high anthropogenic activities, urbanization practices, irrigational and livestock activities along the river bank habitations increases pollution threat. The present study was carried out to assess the quality of water and to classify the river stretches using multiplicative aggregation function. The results showed water quality deterioration during the month of April whereas remaining periods showed the quality upto fair level. Excellent quality of water was recorded at 21.53 %, very good quality at 28.47 %, good quality at 33.33 %, fair quality at 13.89 % and marginal quality at 2.78 % of sampling sites during the study tenure. Correlation study between physico-chemical properties also reveals significant negative relationship with the water quality index (WQI) scores. The index function makes easy interpretation of results which in-turn increases the effectiveness of management strategies to bringing back the originality of the river. © 2016 - Kalpana Corporation.

Author Keywords
Correlation; Sub index; Tamirabarani; Urbanization; Water quality index

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Sonochemical synthesis of Bi2S3 nanowires using single source precursor and their electrochemical activity

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Abstract
A single source precursor was used for the synthesis Bi2S3 nanowires under ultrasonic agitation in presence of hexadecylamine as shape directing agent. The formation of Bi2S3 nanowires were isolated and characterized by X-ray diffraction, FT-IR, Raman, and FE SEM to study the crystal structure and morphology analysis respectively. The electrochemical behavior of catechol (CC) was studied using Bi2S3 nanowires modified glassy carbon electrode (GCE) in phosphate buffer saline (PBS). An enhanced oxidation peak current was noted for the Bi2S3 nanowires modified GCE, the present method was utilized for the electrochemical detection of dihydroxyphenol in aqueous medium. Copyright © 2016 American Scientific Publishers.

Author Keywords
Bismuth Sulfide Nanowires; Catechol; Electro Chemical Application; Sonochemical Synthesis

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Carbon, Chemical detection, Crystal structure, Electrodes, Glass membrane electrodes, Phenols, Sonochemistry, Ultrasonic applications, X ray diffraction; Bismuth sulfide nanowires, Catechol, Chemical applications, Crystal structure and morphology, Electrochemical activities, Electrochemical behaviors, Modified glassy carbon electrode, Sonochemical synthesis; Nanowires

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Wall pressure measurements in a convergent-divergent nozzle with varying inlet asymmetry

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Abstract
In this paper, flow separation of a convergent-divergent (C-D) nozzle is placed downstream of a supersonic flow delivered from Mach 2.0 nozzle is investigated. Static pressure measurements are conducted using pressure taps. The flow characteristics of straight and slanted entry C-D nozzle are investigated for various NPR of Mach 2.0 nozzle. The effect of asymmetry at inlet by providing 15°, 30°, 45° and 57° cut is analyzed. Particular attention is given to the location of the shock within the divergent section of the test nozzle. This location is examined as a function both NPR of Mach 2.0 nozzle and test nozzle inlet angle. Some of the measurements are favorably compared to previously developed theory. A Mach number ratio of 0.81 across the flow separation region was obtained. © 2016 by De Gruyter.

Author Keywords
flow separation; Mach number ratio; slanted entry nozzle; supersonic free jet; wall pressure measurements

Index Keywords
Aerodynamics, Fighter aircraft, Flow separation, Mach number, Nozzles, Pressure measurement, Supersonic aerodynamics; Convergent-divergent nozzle, Flow charac-teristics, Inlet angles, Pressure taps, Separation regions, Static pressure measurements, Supersonic free jets, Wall pressure measurement; Wall flow

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Synergetic hypoglycemic and hypolipidemic effect of herbal formulation of flax seed, fenugreek and jamun seeds in streptozotocin- nicotinamide induced diabetic rats

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Abstract
The present study was designed to investigate the synergism in hypoglycemic and hypolipidemic effect of hydro alcoholic extract of Herbal Formulation of Flax seed, Fenugreek and Jamun seeds (FFJ) and their individual drugs in diabetic animals. Due to the sedentary life style there is a drastic increase in chronic metabolic diseases such as diabetes mellitus. Even though many synthetic allopathic drugs are in use, most of the affected individuals search for the effective Herbal formulations because of their high efficacy, less or no side effects. Anti diabetic activity was evaluated in Streptozocin-Nicotinamide induced diabetic wister rats. The hydro alcoholic extract of herbal formulation of FFJ (1:1:1) and their individual drugs are given by oral route at doses of 200mg/kgbw for 30 days. The animal weight and food consumption were measured for every 15 days. On 31st day blood were collected by retero orbital puncture and Blood glucose, insulin, blood lipids, Haemoglobin(Hb), Glycosylated Hb(HbA1c), were measured on 31st day. Diabetic rats treated with Herbal Formulation of FFJ (1:1:1) and their individual drugs shown significant (P<0.05) reduction in the food consumption, blood glucose, blood lipid except HDL cholesterol, glycosylated Hb level and increased body weight, serum insulin level and Hb level and when compared to diabetic group. The percentage changes occur in Herbal Formulation FFJ treated group was greater than their individual drugs treated groups. This study concluded the formulation of FFJ was found to have greater antidiabetic effect compared to individual drugs of FFJ. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Diabetic; Glycosylated Hb; Nicotinamide; Streptozotocin

Index Keywords
antidiabetic agent, fenugreek extract, Flax extract, glucose, hemoglobin A1c, insulin, low density lipoprotein cholesterol, metformin, plant extract, Syzygium cumini extract, triacylglycerol, unclassified drug, very low density lipoprotein cholesterol; animal experiment, animal model, antidiabetic activity, Article, cholesterol blood level, controlled study, diabetes mellitus, drug activity, drug effect, drug formulation, drug potentiation, food intake, glucose blood level, hypolipidemic activity, insulin blood level, nonhuman, plant seed, rat, sedentary lifestyle, triacylglycerol blood level, weight gain, Wistar rat

Chemicals/CAS
glucose, 50-99-7, 84778-64-3; hemoglobin A1c, 62572-11-6; insulin, 9004-10-8; metformin, 1115-70-4, 657-24-9

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Differential behaviour of selenium analogs against anticancer drug induced apoptosis of lymphocytes in human peripheral blood

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Abstract
Sensitising cancer cells and at the same time desensitizing normal cells is a double task in cancer management. Agents which can combat the debilitating side effects of cancer therapeutics and simultaneously synergize with anticancer agents in specifically targeting cancer cells are needed. Selenium, a proven anticarcinogen, gains due importance in terms of its efficacy to combat the side effects of cancer therapy. This study is a comparative analysis of the chemoprotective effects of selenium compounds, methyl selenol (generated from organic selenomethionine (5mmol/L ; METase 40U/L)) and sodium selenite (inorganic form)(30μM) in peripheral blood human lymphocytes exposed to cisplatin and mitomycin. Biochemical alterations occurring in many cells during apoptosis include loss of plasma membrane phospholipid asymmetry, DNA fragmentation, and activation of caspase-3. The present study demonstrated that the selenium metabolite and selenite are efficient in protecting lymphocytes undergoing DNA damage and exerted their activity by reducing caspase 3 expression. Interestingly organic methylselenol (MeSe) was found to offer more protective effects compared to inorganic selenite (SeL), by reducing the induction of apoptosis by the cytotoxic agents. This suggests that MeSe and to a lesser extent selenite might have potential for assessment in clinical trials and could be considered as strong candidates in pharmacogenomics or in the nutriprotective arena.

Author Keywords
Anticancer drugs; Apoptosis; DNA; Lymphocytes; Selenomethionine

Index Keywords
antineoplastic agent, antioxidant, caspase 3, selenium; apoptosis, cell culture, cell proliferation, chemistry, DNA damage, drug effects, enzyme linked immunosorbent assay, flow cytometry, human, lymphocyte, metabolism, pathology; Antineoplastic Agents, Antioxidants, Apoptosis, Caspase 3, Cell Proliferation, Cells, Cultured, DNA Damage, Enzyme-Linked Immunosorbent Assay, Flow Cytometry, Humans, Lymphocytes, Selenium

Chemicals/CAS
caspase 3, 169592-56-7; selenium, 7782-49-2; Antineoplastic Agents; Antioxidants; Caspase 3; Selenium

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Electromagnetic Properties and Humidity-Sensing Studies of Magnetically Recoverable LaMgxFe1−x O 3−δ Perovskites Nano-photocatalysts by Sol-Gel Route

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Abstract
Nanostructured perovskite mixed metal oxides, LaMgxFe1−xO3−δ (x= 0.0, 0.2, 0.4, 0.6, 0.8, and 1.0), were synthesized successfully by a simple sol-gel route. The formation of single-phase perovskite oxides structure was confirmed by powder X-ray diffraction (XRD) analysis. The average crystallite size of the samples was evaluated using Sherrer's formula. The presence of functional groups and metal oxide bonds was confirmed by Fourier transform infrared (FT-IR) analysis. Brunauer-Emmett-Teller (BET) surface adsorption studies showed better surface area of the compositions, which was further, evidenced by scanning electron microscopy (SEM) analysis. Room temperature vibrating sample magnetometer (VSM) analysis was confirmed that the superparamagnetic nature and the magnetization values decreased with increase in Mg-dopant. The samples were subjected to dc electrical conductivity studies at room temperature. The dc resistance measurements as a function of relative humidity (RH) at 5, 31, 51, 79, and 98 % were carried out on sintered discs at 25 ◦C under static conditions, which sensitivity factor Sf (R5% / R95%) were calculated for LaMgxFe1−xO3−δ. The temperature-dependent conductance was also carried out in the range of 100–300 ◦C as suggested, and the activation energy was determined. Sample LaMgFe-4 (x= 0.6) possessed the highest humidity-sensing factor (12,926.03 ± 387), while LaFeO3 (x= 0) possessed the lowest sensitivity factor (41.66 ± 3). The response and recovery characteristics were studied for LaMgFe-4, which exhibited a very good narrow hysteresis loop. The photocatalytic degradation (PCD) of methylene blue (MB) dye was investigated under UV-visible light and the sample LaMgFe-4 showed better PCD efficiency than other samples, due to the smaller particle size and higher surface area. © 2016, Springer Science+Business Media New York.

Author Keywords
Humidity sensor; Magnetic nanocrystals; Magnetic properties; Perovskite oxides; Photocatalyst

Index Keywords
Activation energy, Aromatic compounds, Crystallite size, Humidity sensors, Lanthanum compounds, Magnetic materials, Magnetic properties, Metal analysis, Metals, Organic polymers, Particle size, Perovskite, Photocatalysts, Scanning electron microscopy, Sol-gel process, Sol-gels, X ray diffraction analysis; DC electrical conductivity, Electromagnetic properties, Fourier transform infrared, Magnetic nanocrystals, Perovskite oxides, Photocatalytic degradation, Powder X ray diffraction, Vibrating sample magnetometer; Iron compounds

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Assessment of biopolymer stabilized silver nanoparticle for their ecotoxicity on Ceriodaphnia cornuta and antibiofilm activity

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Abstract
Sodium alginate (biopolymer) stabilized silver nanoparticles (SA-AgNPs) were synthesized and characterized by UV-vis spectroscopy, XRD, FTIR, SEM, EDAX and TEM. UV-vis spectra recorded the absorbance peak at 407 nm due to its surface plasmon resonance. XRD measurements indicated the crystalline nature of particle with various Bragg's reflection peaks at (111), (200) (220), (311) and (222) planes. FTIR spectra showed the possible functional groups at 3443, 1616, 1384, 1092, 1209, 835 and 774 cm-1. SEM and TEM showed that the particles were spherical in shape and the size was in the range of 23 ± 2 nm. EDAX analysis showed that the weight percentage and elemental silver in the composition was 57.80. The ecotoxicity of SA-AgNPs was assessed on the freshwater crustacean, Ceriodaphnia cornuta. SA-AgNPs caused 100% mortality of C. cornuta at 40 µg L-1, whereas AgNO3 caused100% mortality of C. cornuta at 10 µg L-1. The accumulation of Ag+ by C. cornuta was increased at increasing concentration and reached 3.4 µg/g dry weight at 50 µg L-1. C. cornuta exposed to AgNO3 showed blackening of intestine at 5 and 10 µg L-1. On the otherhand, the visible uptake, ingestion and accumulation of SA-AgNPs in the intestine of C. cornuta were clearly visualized under CLSM after treated with 10, 20 40 and 50 µg L-1. The abnormal swimming, reduced heart rate and thoracic limb movement of C. cornuta were also observed after exposure to 50 µg L-1of SA-AgNPS. The synthesized SA-AgNPs were tested for its antibiofilm activity against Gram positive (Listeria monocytogenes) and Gram negative (Vibrio parahaemolyticus) bacteria. SA-AgNPs effectively inhibited the biofilm growth of L. monocytogenes and V. parahaemolyticus at 75 µg mL-1. © 2016 Elsevier Ltd. All rights reserved.

Author Keywords
Antibiofilm; Bioaccumulation; Biopolymer; Ceriodaphnia cornuta; Ecotoxicity; Silver nanoparticle

Index Keywords
Bioaccumulation, Biochemistry, Biomolecules, Biopolymers, Fourier transform infrared spectroscopy, Listeria, Metal nanoparticles, Nanoparticles, Surface plasmon resonance, Synthesis (chemical), Ultraviolet visible spectroscopy; Anti-biofilm, Bragg's reflections, Ceriodaphnia cornuta, Ecotoxicity, Listeria monocytogenes, Silver nanoparticles, V. parahaemolyticus, Vibrio parahaemolyticus; Silver

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Synthesis and characterization studies of NiO nanorods for enhancing solar cell efficiency using photon upconversion materials

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Abstract
We report the effect of calcination on the structural and optical properties of nanocrystalline NiO nanoparticles were successfully synthesized by virtue of a single source precursor method at mild reaction conditions between nickel nitrate and sodium hydroxide. Composition, structure and morphology of the products were analyzed and characterized by X-ray powder diffraction (XRD). The ultra-violet visible (UV-vis) absorption peaks of NiO exhibited a large blue shift and the luminescent spectra had a strong and broad emission band centered at 328 nm. The intense band gap was also observed, with some spectral tuning, to give a range of absorption energies from 2.60 to 3.41 eV. The various functional groups present in the NiO nanorods were identified by FTIR analysis. High resolution transmission electron microscopy (HRTEM) and the chemical composition of the samples the valence states of elements were determined by X-ray photoelectron spectroscopy (XPS) in detail. The electrochemical response of NiO proved that the nano-nickel has a high level of functionality due to its small size and higher electrochemical activity without any modifications. The above studies demonstrate the potential for the utilization of NiO nanoparticles as a promising material for opto-electronics applications. © 2016 Elsevier Ltd and Techna Group S.r.l. All rights reserved

Author Keywords
C. Thermal properties; Nanostructures; Optical materials; Photoluminescence spectroscopy; Raman spectroscopy and scattering; Sol-gel growth

Index Keywords
Characterization, Colloid chemistry, Energy gap, Fourier transform infrared spectroscopy, High resolution transmission electron microscopy, Nanocrystals, Nanoparticles, Nanorods, Nanostructures, Nickel, Optical materials, Optical properties, Photoluminescence spectroscopy, Photons, Sol-gels, Solar cells, Synthesis (chemical), X ray powder diffraction; Electrochemical activities, Electrochemical response, Mild reaction conditions, Raman spectroscopy and scattering, Sol-gel growth, Structural and optical properties, Structure and morphology, Synthesis and characterizations; X ray photoelectron spectroscopy

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Civil construction work: The unseen contributor to the occupational and global disease burden

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Abstract
Background: Construction industry is the second largest employment giving industry in India with many semi-skilled or unskilled workers taking up the occupation for livelihood without any training and proper guidance. Aim: To evaluate the pathogenic association of cement exposure to occupational contact dermatoses as evidenced by immune markers and to correlate their pulmonary functions with years of exposure to cement. Setting and Design: This was a cross-sectional study conducted among randomly selected cement workers. Methods and material: Evaluation of socioeconomic status (SES) and years of exposure of cement workers was done using a questionnaire. Clinical examination of skin lesions and strip patch test with application of potassium dichromate on unexposed skin was performed. Results were interpreted after 48 hours. Absolute eosinophil count (AEC) and IgE levels measured, and spirometric evaluation was performed. Statistical Analysis: Analysis of variance and Pearson's correlation test were used for data analysis. $P < 0.05$ was considered to be statistically significant. Results: Clinically, skin lesions were noticed in 51%, elevated AEC in 47%, and raised Anti IgE in 73%. Two participants developed positive reactions to the skin strip patch test. Duration of exposure to cement and SES were compared with clinical skin lesions. Spirometry result was normal in 81%, obstruction in 8%, restriction in 10%, and mixed pattern in 1%. Forced expiratory volume at 1.0 second, forced expiratory flow (25-75%), and (PEFR) Peak Expiratory Flow Rate were markedly reduced with years of exposure. Workers who had greater skin lesions and with increase in exposure had increased AEC and IgE levels, although statistically not significant. Conclusions: Exposure to cement and poor SES is strongly correlated to increased prevalence of skin lesions and reduced pulmonary functions. © 2016 Indian Journal of Occupational and Environmental Medicine. Published by Wolters Kluwer - Medknow.

Author Keywords
AEC; cement exposure; IgE antibodies; occupational contact dermatoses; PFT; socioeconomic status

Index Keywords
cement, dichromate potassium, immunoglobulin E antibody; adult, Article, cement industry, clinical examination, construction work, construction worker, contact dermatitis, cross-sectional study, eosinophil count, female, forced expiratory flow, forced expiratory volume, forced vital capacity, global disease burden, human, major clinical study, male, occupational eczema, occupational health, patch test, peak expiratory flow, pruritus, social status, spirometry

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Mathubala, G.[a] , Manikandan, A.[a] , Arul Antony, S.[b] , Ramar, P.[c]

Enhanced photocatalytic activity of spinel CuxMn1-xFe2O4 nanocatalysts for the degradation of methylene blue dye and opto-magnetic properties

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Abstract

Copper doped spinel manganese ferrite (CuxMn1-xFe2O4: x = 0.0-1.0) nanoparticles were prepared successfully by a facile microwave irradiation technique using urea as the fuel. Powder X-ray diffraction (XRD) analysis showed that all samples have pure cubic spinel phase, and the average crystallite size is found to be in the range of 14.55 to 19.27 nm. The surface morphology of the samples were analyzed by high resolution scanning electron microscope (HR-SEM) analysis, and was found that nanoparticles like morphology of the powders. Energy dispersive X-ray (EDX) analysis showed that the all composition have pure spinel phase. The magnetic properties were investigated at room temperature by using the vibrating sample magnetometer (VSM) and the magnetic hysteresis (M-H) loops confirmed the ferromagnetic behavior for all the samples with magnetization (Ms) values are decreased with increasing in the Cu2+ ions. Photocatalytic degradation (PCD) of methylene blue dye was carried and it was observed that PCD efficiency is increased with increasing the concentration of Cu up to x = 0.6, and the sample Cu06Mn04Fe2O4 shows better activity (98.54%) than other samples. Copyright © 2016 American Scientific Publishers All rights reserved.

Author Keywords

Electron Microscopy; Magnetic Nanoparticles; Microwave Irradiation; Photo-Catalysts; Spinel MnFe2O4 Ferrites; X-ray Diffraction

Index Keywords

Aromatic compounds, Crystallite size, Electron microscopy, Irradiation, Magnetic properties, Magnetism, Microwave irradiation, Nanoparticles, Scanning electron microscopy, Urea, X ray diffraction, X ray diffraction analysis; Energy dispersive x-ray, High-resolution scanning electron microscopes, Magnetic nano-particles, Microwave irradiation techniques, Photocatalytic activities, Photocatalytic degradation, Powder X ray diffraction, Vibrating sample magnetometer; Nanomagnetics

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One-pot combustion synthesis and characterization studies of spinel CoAl2O4 nano-catalysts
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Abstract
Spinel CoAl2O4 nanoparticles were synthesized via Opuntia dillenii plant extract microwave heating method. Opuntia dillenii plant extract-assisted combustion method makes straightforward synthesis, which is alternative process of spinel nanoparticles preparation. The synthesized spinel CoAl2O4 nanoparticles was successfully characterized by powder XRD pattern, FT-IR spectra, EDX analysis, HR-SEM analysis, and VSM techniques. XRD pattern, FT-IR and EDX results established the development of spinel and single cubic phase CoAl2O4 nanocrystals. The formation of spherical shaped nanoparticles was confirmed by HR-SEM technique. VSM measurements revealed that CoAl2O4 sample have superparamagnetic behavior. It was found that CoAl2O4 nanoparticle is highly active towards the selective oxidation of benzyl alcohol into benzaldehyde at a low temperature with very high yield, due to the higher surface area and number of active sites. Copyright © 2016 American Scientific Publishers All rights reserved.

Author Keywords
Magnetic Properties; Nanoparticles; Opuntia dillenii Extract; Spinel CoAl2O4

Index Keywords
Coal, Combustion synthesis, Magnetic properties, Microwave heating, Nanomagnetics, Nanoparticles, Plant extracts, Synthesis (chemical), Temperature; Number of active sites, Opuntia dillenii Extract, Selective oxidation, Shaped nanoparticles, Spinel CoAl2O4, Spinel nanoparticles, Superparamagnetic behavior, Synthesis and characterizations; Coal combustion

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Moortheswaran, S.[a] , Manikandan, A.[b] , Sujatha, S.[a] , Jaganathan, S.K.[c] , Antony, S.A.[a]

Selective catalytic oxidation of benzyl alcohol and characterization studies of spinel MnAl2O4 nanoparticles by a facile synthesis route

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Abstract
Spinel MnAl2O4 nanoparticles were prepared effectively by simplistic, economical microwave heating method (MHM) using Opuntia dillenii extract as reducing agent. The samples were successfully characterized by powder XRD pattern, EDX spectra, FT-IR analysis, HR-SEM analysis, and VSM instrumentation techniques. Powder XRD, EDX and FT-IR results demonstrated that the products contain a pure single-phase spinel structure lacking of other secondary phase impurities. HR-SEM results confirmed the spherical shaped nanoparticle morphology of the sample. Magnetic characterization property was confirmed by VSM analysis. VSM hysteresis loop established the superparamagnetism of the sample and the magnetization (Ms value of MnAl2O4 is 0.023 emu/g. It was found that MnAl2O4 nanoparticle is highly active towards the selective oxidation of benzyl alcohol into benzaldehyde at a low temperature with very high yield, due to the higher surface area and number of active sites. Copyright © 2016 American Scientific Publishers All rights reserved.

Author Keywords
Magnetic Property; Nanocatalyst; Nanocrystals; Opuntia dillenii Extract; Spinel MnAl2O4

Index Keywords
Magnetic materials, Magnetic properties, Microwave heating, Nanocrystals, Nanoparticles, Synthesis (chemical), Temperature; Characterization studies, Instrumentation techniques, Magnetic characterization, Nano-catalyst, Opuntia dillenii Extract, Selective catalytic oxidation, Single-phase spinel structure, Spinel MnAl2O4; Catalytic oxidation

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Sol-gel synthesis and characterization studies of NiMoO4 nanostructures for photocatalytic degradation of methylene blue dye

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Abstract
Nanostructured nickel molybdate (NiMoO4) nanoparticles (NPs) were successfully synthesized by using nickel nitrate and ammonium molybdate as the precursors and citric acid as the fuel by a simple modified sol-gel method. The prepared samples were characterized by powder X-ray diffraction (XRD), Fourier transform Infrared (FT-IR) spectra, high resolution scanning electron microscope (HR-SEM), energy dispersive X-ray (EDX), UV-Visible diffuse reflectance spectra (DRS), photoluminescence (PL) spectra and vibrating sample magnetometer (VSM) techniques. Powder XRD, FT-IR and EDX results were confirmed that the resultant powders was pure and single phase crystalline with monoclinic structure. HR-SEM images show that the morphology of the obtained powder consist nanostructued particles-like morphology. VSM results showed ferromagnetic behavior of the samples. Photo-catalytic activity of NiMoO4 NPs was tested for the photo-catalytic degradation (PCD) of methylene blue (MB) and it was found that higher PCD efficiency. Copyright © 2016 American Scientific Publishers All rights reserved.

Author Keywords
Nanostructures; NiMoO4; Optical Properties; Photo-Catalyst; Sol-Gel Synthesis

Index Keywords
Aromatic compounds, Catalyst activity, Nickel, Optical properties, Scanning electron microscopy, Sol-gel process, Sol-gels, Synthesis (chemical), X ray diffraction; Diffuse reflectance spectrum, Fourier transform infrared, High-resolution scanning electron microscopes, NiMoO4, Photo catalytic degradation, Photoluminescence spectrum, Sol - Gel synthesis, Vibrating sample magnetometer; Nanostructures

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Rajmohan, S.[a b c] , Jeseentharani, V.[b] , Manikandan, A.[d] , Pragasam, J.[c]

Co-precipitation synthesis method, characterizations and humidity sensing applications of perovskite-type mixed oxide La1-xCoxVO3-δ nanocomposites

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Abstract
Perovskite-type mixed oxide La1-xCoxVO3-δ (x = 00, 0.2, 0.4, 0.6, 0.8 and 1) composites were successfully synthesized by a simple co-precipitation method. Powder X-ray diffraction (XRD), Fourier transform infrared (FT-IR) and Energy dispersive X-ray (EDX) analysis were confirmed that all compositions crystallized with orthorhombic LaVO3 perovskites structure without any other secondary phase impurities. The lattice parameters values decreased with increase in Co2+ dopant, due to the smaller ionic radius. High resolution scanning electron microscope (HR-SEM) images revealed that the prepared nano-composites are high crystalline with particle size distribution in 80-95 nm range. BET surface area studies revealed that the sample La0.8Co0.2VO3-δ have higher surface area than other samples, due to their smaller particle size. The samples were subjected to humidity sensing studies by solid-state electrical conductance studies. The studies revealed that La0.8Co0.2VO3-δ is a good candidate for humidity sensors with a higher Sf of 9245.68. The higher Sf of La0.8Co0.2VO3-δ is due to the larger surface area. Copyright © 2016 American Scientific Publishers All rights reserved.

Author Keywords
Co-Precipitation; Humidity Sensor; Perovskites; X-ray Diffraction

Index Keywords
Coprecipitation, Nanocomposites, Particle size, Particle size analysis, Perovskite, Precipitation (chemical), Scanning electron microscopy, X ray diffraction; Coprecipitation method, Coprecipitation synthesis, Electrical conductance, Energy dispersive x-ray, Fourier transform infrared, High-resolution scanning electron microscopes, Perovskites structure, Powder X ray diffraction; Humidity sensors

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Tharunya, S.[a] , Manuel, A.[b] , Shunmuganathan, K.L.[c]

A multi- Agent based intelligent query processing system for hadoop with foundation for intelligent physical agents-os using cooperating agent in cloud environment

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Abstract
The cloud provides a flexible environment for customers to host and process their information. Many applications dealing with massive data and complex queries are routed to the cloud. The response time depends on query optimization and resource scheduling. There are several techniques to optimize the query and resource scheduling but the information about the query is not stored i.e., the frequent queries will recursively do the same set of procedures. Hence, to reduce the time consumed by redundant query processing procedure we introduce agents in Hadoop framework (JobTracker). As JobTracker is a single point of failure i.e., if this goes down, all running jobs are halted. Therefore, we introduce agents in place of JobTracker to intellectually process the query and assign the task to TaskTrackers. Here we use FIPA-OS (Foundation for Intelligent Physical Agents) toolkit enabling rapid development interacting agent based system in the JADE (Java Agent Development Environment) platform. Copyright © 2016 American Scientific Publishers All rights reserved.

Author Keywords
Agents; Execution plan; Hadoop; JADE; Mapreduce

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Agents, Multi agent systems, Scheduling; Development environment, Execution plans, Flexible environments, Foundation for intelligent physical agents, Hadoop, Intelligent query processing, JADE, Map-reduce; Query processing

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Kuppusamy, M.[a] , Kamaldeen, D.[a] , Pitani, R.[b] , Amaldas, J.[c]

Immediate effects of Bhramari pranayama on resting cardiovascular parameters in healthy adolescents

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Abstract
Introduction: In yoga, Pranayama has a very important role in maintaining sound health. There is some strong scientific basis on constant physiological changes produced when pranayama is practiced for long duration. Still, there exists a dearth of literature on the effect of Bhramari pranayama (Bhr.p) on physiological systems. Aim: To assess the immediate effect of Bhramari pranayama (Bhr.P) practice on the resting cardiovascular parameters in healthy adolescents. Materials and Methods: Sixty apparently healthy adolescents of both sex participated in the study. They were randomly divided into Bhr.P (n-30) and control (n-30) group. Informed consent was obtained after explaining the detailed procedure of the study. Bhr.P group practiced Bhramari pranayama for 45 min (5 cycles) and control group was allowed to do normal breathing (12-16 breath /min). Heart rate (HR) was assessed by radial artery palpation method and blood pressure was recorded in supine position after 5 minutes of rest by sphygmomanometer. Results: The HR reduced significantly (p-0.001) in Bhr.P group. BP indices, Pulse Pressure (PP), Mean Arterial Pressure (MAP), Rate Pressure Product (RPP) and Double Product (DoP) significantly decreased after Bhr.p practice compared with control. Pre and Post inter group analysis also showed that significant reduction in HR and BP indices in Bhr.P group. Conclusion: Present study showed that Bhr.P practice produces relaxed state and in this state parasympathetic activity overrides the sympathetic activity. It suggests that Bhramari pranayama improves the resting cardiovascular parameters in healthy adolescents. © 2016, Journal of Clinical and Diagnostic Research. All rights reserved.

Author Keywords
Blood pressure; Breathing; Heart rate; Vagal tone

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Simulation of soil water retention curve using artificial neural networks with pseudocontinuous pedotransfer functions

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Abstract
Artificial neural networks for estimating the soil water retention curve have been developed considering measured data and require a large quantity of soil samples because only retention curve data obtained for the same set of matric potentials can be used. In order to preclude this drawback, we present two ANN models which tested the performance of ANNs trained with fitted water contents data. These models were compared to a recent new ANN approach for predicting water retention curve, the pseudocontinuous pedotransfer functions (PTFs), which is also an attempt to deal with limited data. Additionally, a sensitivity analysis was carried out to verify the influence of each input parameter on each output. Results showed that fitted ANNs provided similar statistical indexes in predicting water contents to those obtained by the pseudocontinuous method. Sensitivity analysis revealed that bulk density and porosity are the most important parameters for predicting water contents in wet regime, whereas sand and clay contents are more significant in drier conditions. The sensitivity analysis for the pseudocontinuous method demonstrated that the natural logarithm of the matric potential became the most important parameter, and the influences of all other inputs were reduced to be not relevant, except the bulk density. © Research India Publications.

Author Keywords
Artificial neural networks (ANNs); Fitted and predicted water contents; Pseudocontinuous pedotransfer functions (PTFs); Sensitivity analysis; Soil water retention

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Prevalence and clinical relevance of Schmorl's nodes on magnetic resonance imaging in a tertiary hospital in Southern India

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Abstract
Introduction: Schmorl's Nodes (SN), which appear as defects in superior and inferior endplates of vertebrae, are commonly seen around the thoracolumbar junction. They may be asymptomatic or symptomatic. Their prevalence varies with respect to age, gender, regions involved and other associated disc or vertebral findings. Aim: SN is quite a common finding on the Magnetic Resonance Imaging (MRI) of the spine. The purpose of the study is to evaluate the prevalence of SN in the patients who underwent MRI whole spine in the radiology department, ascertain its clinical relevance and to compare the prevalence of SN in the study population with the prevalence in rest of the Indian and global population described already in the literature. Materials and Methods: Clinical history and MRI images of the patients who underwent whole spine MRI study in the Radiology Department during the period of 6 months from June to December 2015 were retrospectively reviewed. The prevalence of SN, their location and associated imaging findings were studied. Results: Of the 509 patients in the study, 47 had SN at one or more levels with prevalence of 9.2%. Maximum cases were seen in the 4th decade with least cases in the extremes of age. Twenty five patients had SN at thoracic levels. Twenty five patients had SN at lumbar levels. Twenty eight patients had SN at one intervertebral disc level. Other 19 patients had SN at multiple levels. Of the total 103 SN found, 57 were seen in the superior endplates and 46 in the inferior endplates. All SNs were in central position, except for one. Twelve of the 47 patients had disc degeneration at the same level as SN. Forty two of the 47 patients (89%) with Schmorl's nodes had associated spinal disc degenerative disease at the same or different levels. Modic type II endplate changes were demonstrated at the same level in 10 of the 47 patients with SN. Thirty eight of the 47 patients presented with history of backache. Only 9 of these patients had come with history of trauma; of these only four had wedge compression fracture at the level of SN. Conclusion: Schmorl's nodes in the studied South Indian population appear to show one of the lowest prevalence described on MRI, so far. Maximum number of SN occurred in the lower thoracic spine followed by the proximal lumbar spine. Schmorl's nodes are commonly associated with degenerative disc disease of the spine, though not at the same level. © 2016, Journal of Clinical and Diagnostic Research. All rights reserved.

Author Keywords
Backache; Herniation; India; Intervertebral disc; MRI

Index Keywords
adolescent, adult, aged, Article, backache, compression fracture, female, human, India, intervertebral disk hernia, lumbar spine, major clinical study, male, middle aged, nuclear magnetic resonance imaging, retrospective study, schmorl nodes, tertiary care center

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Fundamental study of LaMgxCr1−xO3−δ perovskites nano-photocatalysts: Sol-gel synthesis, characterization and humidity sensing

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Abstract
Nanocrystalline perovskite oxides, LaMgxCr1−xO3−δ (x=0.0, 0.2, 0.4, 0.6, 0.8 and 1) were prepared by sol-gel method. The samples were characterized by powder X-ray diffraction (XRD), scanning electron microscopy (SEM), Fourier transform infrared (FT-IR) spectroscopy and nitrogen adsorption/desorption isotherms at 77 K, respectively, to identify the structural phases, surface morphology, vibrational stretching frequencies and BET surface area of the samples. Also, it was investigated the humidity sensing characteristics of the samples. The composites were sintered at 800 °C for 5 h and subjected to dc electrical conductivity studies at room temperature. The resistance measurements as a function of relative humidity (RH) in the range of 5-98% were done and the humidity sensing factors (Sf =R5%/R98%) calculated. The activation energy of the compounds were determined from the temperature-dependent electrical conductance experiments in the temperature range of 120-300 °C. LaMgCr-3 (x=0.4) had the highest humidity sensing factor 21407±431, while LaCr-1 (x=0) the lowest sensitivity factor 27.27±2. The response and recovery characteristics were studied for LaMgCr-3, which exhibited good linearity and a very narrow hysteresis loop. The photocatalytic activity of LaMgxCr1−xO3−δ was investigated by using the photo-decomposition of 4-chlorophenol (4-CP) under UV-visible light. The sample LaMgCr-3 (x=0.4) showed the highest photocatalytic degradation efficiency (93.05%) than other samples, due to their smaller size of particles with higher surface area. © 2015, Korean Institute of Chemical Engineers, Seoul, Korea.

Author Keywords
Catalyst; Ceramics; Humidity Sensors; Perovskites Oxides; Sol-gel Method

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Effective ammonia detection using n-ZnO/p-NiO heterostructured nanofibers

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Abstract

Metal-oxide heterostructures are very important materials for developing various toxic gas/chemical detection sensor systems. However, the major factors, such as sensitivity, selectivity, stability, response, and recovery times of the sensors, still need to be optimized for practical technological applications. Low-dimensional materials have shown tremendous potential to solve majority of the critical issues due to their surface chemistry than that of their bulk form. In this paper, the role of nanostructured n-ZnO/p-NiO heterostructure as room temperature (RT) ammonia sensor has been investigated. Toward this paper, the electrospinning method was employed to prepare heterostructure metal-oxides blended with polyvinyl alcohol (n-ZnO/p-NiO) nanofibers. The systematic characterizations of the obtained n-ZnO/p-NiO heterostructure were performed using X-Ray diffractometer, scanning electron microscope, and photoluminescence spectrophotometer. Furthermore, the RT ammonia sensing characteristics were investigated. © 2016 IEEE.

Author Keywords

Electrospinning; Gas sensor; Metal oxide heterostructures; NH3

Index Keywords

Ammonia, Characterization, Chemical sensors, Electrospinning, Heterojunctions, Metallic compounds, Metals, Nanofibers, Scanning electron microscopy, Spinning (fibers), Surface chemistry, Toxic materials; Ammonia detection, Detection sensors, Electrospinning method, Low-dimensional materials, Metal oxides, NH3, Technological applications, X ray diffractometers; Zinc oxide

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Treating your own students: Ethical challenges for mental health professionals
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Design and development of embedded image capturing & processing system
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Abstract
An embedded image capturing and processing system can capture an image and also Selection of Raspberry Pi board module and its peripherals are because it can run the image capturing and recognition algorithm in a easy and effective manner when compared with other embedded platforms. © 2016 SPB Pharma Society. All Right Reserved.

Author Keywords
Face recognition; Image capturing; Image database; Raspberry Pi

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article, facial recognition, nonhuman, raspberry

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N-bit CMOS comparator using parallel prefix tree

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Abstract
It provides new comparator model gives large range experience, with faster operation by converting Digital CMOS cells. This comparator make use of N-bit scalable parallel prefix constructs strategic advantage of comparison from the MSB towards the LSB by bit by bit comparing as there are equal by setting the status bit. The advantages of these comparators are high speed and low power for a wide range. The design uses the standard VLSI design that can be varied for logical derivations of delay as the role of bandwidth range. HSPICE model for 32 bit comparator shows defective case input and output delay of 0.86ns at most power wastage of 7.7mW. © 2016 SPB Pharma Society . All Rights Reserved.

Author Keywords
ALU; Comparator.; N Bit CMOS

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article, velocity

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Face recognition system using embedded system

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Abstract
Face recognition is most widely used in this world to verify a person's identity because this method is intrusive and more accurate than any other biometric measurement. The other biometrics are extracted by non-intrusive method ie., a physical contact is needed in this case. Here an embedded based system is designed to capture and process the images for face recognition. A test plat form is designed and tested with the developed system which shows that this system has a 91% accuracy in recognize the face when the threshold is fixed between 2000 and 3500. © 2016 SPB Pharma Society . All Rights Reserved.

Author Keywords
Bio metrics; Camera; Eigen features; Face database; Face recognition; Raspberry Pi Board.

Index Keywords
adult, article, biometry, facial recognition, human, identity, nonhuman, raspberry

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Sarathkumar, S.[a] , Vijaikumar, S.[b] , Thanigaiarasu, S.[b]

Analysis and design optimization of electrodes setup for MPD thruster
(2016) *Journal of Chemical and Pharmaceutical Sciences*, 9 (2), pp. E1-E5.

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Abstract
Magneto Plasma Dynamic thruster is one of the developing fields in the history of propulsion. It comes under the concept of electric propulsion which involves production of plasma with the help of electrical components in order to produce the thrust required to move the satellite or a spacecraft. The main reason for using the electric propulsion is to increase the range of the spacecraft or a satellite; moreover it could replace large amount of chemical propellant hence providing space for more payload. It gives more opportunity for Δv missions. Significant amount of thrust can be produced with the help of the experimental setup. It has got the following blocks: High current power supply, ignition circuit, thruster which converts electrical energy into kinetic energy and measuring unit. The voltage source along with the high voltage transformer and capacitor banks were the notable components in this unit. The Thruster Electrode setup and measuring units are two important and crucial setup which requires more analysis and prepare design. Hence this paper mainly focuses on the thrust production for various thruster electrodes parameter. © 2018 SPB Pharma Society. All rights reserved.

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Electrode; Energy; Thruster.

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Article, current density, electric potential, force, magnetic field, power supply, space flight

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Kiruthiga, K.[a] , Vignesh, P.[b]

Assessment of risks in the purchase process of construction companies

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Abstract
This paper is apprehensive with the measurement of risk in the purchase progression of a construction company. Risk has been defined as a measure of the probability, the severity, and the exposure of all hazards of an action. Risk management is at the core of any production or group. This is central to any business regardless of size, activity, or sector. Construction industries can lose considerable sums of money as a result of breakdown to identify and calculate risk in time. Industries may even sacrifice their opportunity to take improvement of potentially useful opportunities arising in the course of their activities if risks are not recognized in good time. Risk management is, therefore, as much about looking ahead to identify further opportunities as it is about avoid or mitigating losses. © 2016 SPB Pharma Society. All Right Reserved.

Author Keywords
Data analysis; Interpretation; Likert-scale; Purchase process; Supply chain administration

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article, building industry, data analysis, Likert scale, money, probability, risk assessment, risk management

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Chockalingam, M.P.[a] , Palanivelraja, S.[b]

Retrospective analysis of a theoretical model used for forecasting future air quality near the North Chennai thermal power plant

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Abstract
The trend of gathering of Baseline Air Quality data commenced in Chennai as early as 1981, as an academic exercise, undertaken by some post-graduate students of the Centre for Environmental Studies in Anna University, Chennai (1,2,3,4). The study revealed that the baseline air quality data were only at moderate levels, in respect of the three major air pollutants, namely, Sulphur Dioxide (SO2), Nitrogen Dioxide (NO2), and Suspended Particulate Matter (SPM), in Ennore-Manali Industrial area. All these pollutants measured for the respective averaging times, were below the National Ambient Air Quality Standards prescribed for each pollutant, respectively. Therefore, it was possible to convince the Department of Environment & Forests, Government of India, New Delhi that the Environmental Clearance be given, for the proposed establishment of the 3x210 MW coal-fired thermal power plant in the Ennore Island location, with the financial assistance from the Asian Development Bank to the Tamil Nadu Electricity Board. The present status of air quality in the same area needs to be assessed in the light of the Revised National Ambient Air Quality Standards, especially in view of the newly introduced parameters, namely, PM10 and PM2.5, which were not in force in the year 1986. There are a few more industries which have come up after 1986, and which have relevance to emission of air pollutants, namely, SO2, NO2, and SPM (inclusive of PM10 and PM2.5), having adverse effects on human health. © 2016 SPB Pharma Society. All Right Reserved.

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Analysis; Power Plant; Retrospective; Theoretical

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coal, nitrogen dioxide, sulfur dioxide; air quality, air quality standard, Article, coal power, forecasting, geothermal energy, India, industrial area, suspended particulate matter, theoretical model, thermal power plant

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nitrogen dioxide, 10102-44-0; sulfur dioxide, 7446-09-5

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Sundararaj, M.[a] , Harish, S.[a] , Elangovan, S.[a] , Sridhar, B.T.N.[b]

Analysis of base-jet exit shape on the wake axis mean velocity and velocity fluctuation behind circular cone
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Abstract
Length of the basejet stagnation point obtained from the time averaged mean velocity distribution along the wake axis of a circular cone under isothermal conditions is presented. At low subsonic speed of 25m/s (Re= 0.6666 x 105), all the experiments were executed. Air at atmospheric temperature was injected at three different base-jet injection ratios as 0.5, 1.0, and 1.5 from the base of the cone. Constant Temperature hot-wire Anemometer was used to measure velocity. Circular, square and hexagonal cross section shape base jets of size one percentage of base area (AR = 0.01) were used in the experiments. Some notable conclusions made from the experimental results are, as the basejet momentum ratio increased the jet stagnation point length also increased logarithmically. At constant momentum ratio, the effect of corner vortices generated (loss in momentum) from the square jet causes decrease in length of jet stagnation point than an equivalent area ratio circular jet. Hence a square cross section basejet mixes early with primary jet than an equivalent area circular jet at constant momentum ratio. © 2016 SPB Pharma Society. All Right Reserved.

Author Keywords
And Hot-wire anemometer; Jet stagnation point; Separated flow; Subsonic wake Jet; Wind tunnel

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air temperature, airflow, Article, calibration, flow rate, model, moisture, pressure, wind

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Syedhaleem, M.[a] , Kumar, S.N.[b]

Numerical study of mixing in shear layers

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Abstract
This paper describes the numerical analysis of the mixing phenomena based on shear layers in a rectangular duct. The shear flow between two parallel streams of flows in the same rectangular duct divided into two zones is analyzed. Then, the effect of variation of velocities and flow directions in the above model is analyzed and discussed. Three different cases have been studied in this analysis. A simple rectangular duct is used where two flows of velocities in same and different proportions and along with same and different directions are studied. After going through sample simulations using various turbulence models, the numerical analysis was carried out using the SST k – ω model as it gave better results. The results indicate that asymmetry in velocity and direction leads to better mixing. The case where the two flows having velocities 5 m/s and 10 m/s were simulated with their direction being different, the estimated turbulent kinetic energy was highest for this case with a maximum value of 3 m2/s2. © 2018 SPB Pharma Society. All rights reserved.

Author Keywords
Layers; Numerical

Index Keywords
article, case report, clinical article, human, shear flow, simulation, velocity

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Kiruthiga, K.[a] , Prashanth, R.[b]

Study on time space management in work zones from tambaram to chengalpet in NH45

(2016) *Journal of Chemical and Pharmaceutical Sciences*, 9 (2), pp. E130-E134.

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Abstract
Time Space Management is the management of the flow of traffic with respect to the time duration in the work zones along the highway. Time space management is highly important as it enables in easy understanding of the highway and allowing easy movement of traffic along work zones without traffic jams and loss of precious time. Model analysis is done to prioritize the major risk factors involved in the practices carried out in the work zones. The various risk involved in the road repair process is properly studied with the help of the results collected from the various road contractors and engineers. Based on the findings the average by the mean, mode and the range. The various factors which were found out were formulated with the social sciences method. The tool is highly reliable and enables us in prioritize the various risk based factors and finding out a suitable solution for carrying out of road repair in the work zone. The traffic inflow into the NH45 was carried out in the basis of the classification of time periods as traffic varies with time. The findings comprises of the various high risk factors and a model is formulated for the easier carrying out of work in work zone. © 2016 SPB Pharma Society. All rights Reserved.

Author Keywords
Model analysis; Social sciences method; Time space management; Traffic flow pattern

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article, highway, human, risk factor, sociology

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Arunachalam, A.R.[a] , Chandrasekar, A.[b]

An effective waste tracking system for hospitals

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Abstract
The hospital facilities and Common Treatment Facility (CTF) which goes under the Pollution Control Board, are utilizing various desktop PCs, inconsistent correspondence interface, and intruded on force give and net office to stay records of the transfer of waste from doctor's facilities to CTF. The doctor's facilities ought to pay immense amount of money to the CTF to arrange their produced waste, however hospital facilities aren't willing to pay the aggregate amount to the CTF. Thus the hospital facilities offer fix amount to the people worried inside of the transfer of waste transportation and demand them to toss the squanders publically junk. Because of this offense, Government has set up a demonstration in 1998 expressing that the waste produced using the hospital centers should exclusively be arranged at the bio medicinal normal treatment office and not out in the open ranges". Individuals who don't take after the principle are unfree for measure of 5years with a fine amount of one hundred thousand rupees. Keeping in mind the end goal to moderate the above said issue, we are thinking of an android application that will track the wastage development from clinics to CTF which can maintain a strategic distance from the transfer of wastage in broad daylight junk zones alongside other non-Biomedical squanders. © 2016 SPB Pharma Society. All Right Reserved.

Author Keywords
Biomedical; CTF; Pollution

Index Keywords
adult, article, female, government, human, human experiment, male, money, pollution control, sunlight, thinking, writing

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Sundararaj, M.[a] , Elangovan, S.[a] , Sridhar, B.T.N.[b]

Effect of circular exit shape base jet injection ratio on the velocity distribution along the wake axis of an elliptic cone

(2016) *Journal of Chemical and Pharmaceutical Sciences*, 9 (2), pp. E52-E55.

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Abstract
Time averaged mean velocity and velocity fluctuation along the wake axis of an elliptic cone with base-jet injection is presented. At subsonic free-stream velocity of 25m/s (Re= 0.6666 x 105), all the experiments were executed in a table top wind tunnel. From the base of the cone air at atmospheric temperature was injected from a circular exit shape base-jet at three different base-jet injection ratios (IR) as 0.5, 1.0 and 1.5. Constant Temperature hot-wire Anemometer (DANTECH-CTA) was used to measure velocity. Circular exit shape base-jets of three different sizes (AR = 0.005, 0.01 and 0.015) were used in the experiments. Some notable conclusions made from the experimental results are, at lower base-jet injection velocity effect on the location of wake axis parameters is insignificant, due to insufficient momentum of the base-jet to encounter the recirculating fluid. Irrespective of the jet size the rate of expansion of a jet injected from an elliptic cone is greater than that of circular cone. © 2018 SPB Pharma Society. All Rights Reserved.

Author Keywords
And Hot-wire anemometer; Jet stagnation point; Separated flow; Subsonic wake Jet; Wind tunnel

Index Keywords
air analysis, air temperature, Article, distribution parameters, elliptic cone, geometry, jet injection, structure analysis, temperature measurement, velocity, wind

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Arunachalam, A.R.[a] , Chandrasekar, A.[b]

Implementation of antivirus based on distributed computing in GRID architecture
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Abstract
Distributed computing (an electronic enlisting), is used to pass on encouraged organizations over the web. The essential issue in the dispersed processing is that it depends on upon the fundamental client server auxiliary arranging. Answer for this issue in vicinity is the fuse of two perfect models. In the present circumstance, the antivirus presented in the client structure utilizes the system resources paying little mind to the way that it is in the unmoving state. Presenting the Antivirus programming in each one of the clients will be a Resource Hungry Process. So the System's benefits can't be utilized properly in addition. Here we propose disseminated figuring based utilization of antivirus in system auxiliary building. © 2018 SPB Pharma Society. All rights reserved.

Author Keywords
Antivirus; Distributed Computing; Mobile Agent

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Gopalakrishnan, K.[a b] , Poonguzhali, S.[a b]

Study on characterization and application of Polyaniline (PANI) and Fly ash composites

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Abstract
The aim of this study is to produce useful composite materials from fly ash, a major Waste product of coal combustion from power plants. The synthesis, characterization of polyaniline (PANI) and flyash composites gives wide area of applications. The electrochemical analysis of the composites showed that the composites were conductive. The SEM of the composites was studied by Scanning Electron Microscopy (SEM) and showed that our methods gave composites with improved homogeneity as compared to other reported methods. © 2018 SPB Pharma Society. All rights reserved.

Author Keywords
Composites; Fly-ash; Polyaniline; Scanning Electron Microscope

Index Keywords
coal, polyaniline; Article, combustion, electric power plant, electrochemical analysis, fly ash, scanning electron microscopy

Chemicals/CAS
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An automatic emotion detection system from face image of a video using Bacterial Foraging Optimization
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Abstract
Recognition of human face emotions plays challenging and crucial role in designing some applications such as computer-aided learning and human-computer interaction system. It becomes more professional when recognizing face emotions from a sequence of images or video. Instead of directly classifying facial expressions into set of basic emotion classes, there are numerous methods to recognize the fundamental facial muscle behaviors and then interpret these in terms of capricious categories such as sad, surprise, neutral or happiness. The main intention of this paper is to develop an automatic emotion detection system with BFO (Bacterial Foraging Optimization) algorithm and Weiner Filter. Initially, detection of face spot in an image is performed and then parameters from the LBP (Local Binary Pattern) algorithm are used as features for the recognition system that is capable to successfully recognize faces related to the above mentioned emotion categories. Even though quite a lot of classification algorithms employs for face emotion recognition our paper takes the advantages of KNN algorithm since its classification accuracy is high. © 2016, Research India Publications.

Author Keywords
Automatic emotion detection; Bacterial Foraging Optimization; Face emotion recognition; Facial expressions; Feature extraction; LBP

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Prasad, K.L.[a] , Malleswara Rao, T.C.[b] , Kannan, V.[c]

A hybrid LWT-DWT digital image watermarking scheme using LSVR and QR-factorization

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Abstract
The digital image watermarking is an art of hiding secret image into source image. The robust approach of this watermarking practice is to trade-off image quality (invisibility) and embedding capacity. In this proposed article we present an efficient and hybrid approach that integrates features of lifted wavelet transform (LWT) and discrete wavelet transform (DWT) based on linear support vector regression (LSVR) and QR-factorization for watermarking. Initially, the QR-barcode (watermark image) grayed to achieve maximum watermarking capacity. The correlation feature of LWT is used to decompose image into non-overlapping blocks. The QR factorization is further decompose into Q and R matrices. The LSVR is obtain input samples from R-matrix for training and learning purpose. In the second segment, we implement the DWT based multi-channel fake-proof authenticity mechanism. Precisely the integrated hybrid approach produces less distortion rate. The experimental results is analyzed with other models and offers high reliability on watermark embedding and authenticity along with less computational cost. © 2016, Research India Publications.

Author Keywords
Authenticity; Discrete Wavelet Transform (DWT); Lifted Wavelet Transform (LWT); QR-barcode; Watermarking

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Prasad, K.L.[a] , Rao, T.C.M.[b] , Kannan, V.[c]

A novel semi-blind video watermarking using KAZE-PCA-2D Haar DWT scheme

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Abstract
In this research article the digital video watermarking technique is projected through a semi-blind pattern. The proposed method involves frame-spot matching model based on KAZE method at the initial stage, The KAZE method is deployed for matching the edge points of frame-spots with all video frames with the intention to detect the embedding and extract the respective regions. Then the frame entropy blocks are designated and converted by PCA (Principal Component Analysis) blocks. The QIM (Quantization Index Modulation) is employed to quantize the highest coefficient values on each PCA entropy chunks of every sub-band. The single shared secure key is employed to recover the watermarked content. The DWT (Discrete Wavelet Transform) is applied on every single video frame and disintegrate into group of sub-bands. During extraction this is simply reversed; however the KAZE frame-spot is harmonized through each frame edge points. The parameters like rotation, scaling and translation are assessed and the watermarked evidence can be effectively extracted. The proposed pattern is verified using a numerous of video structures and compared with other similar models such as SURF, SIFT, PCA-SIFT, KAZE and perceived high optimal results. The investigational outcomes demonstrated high imperceptibility and high strength against numerous outbreaks like JPEG encoding, addition of Gaussian noise, gamma modification, histogram equality and contrast rectification in both forms of ordinary videos and clinical videos. © 2015 IEEE.

Author Keywords
DWT; KAZE; PCA; Quantization Index Modulation; Semi blind watermarking

Index Keywords
Artificial intelligence, Computer graphics, Digital watermarking, Discrete wavelet transforms, Entropy, Gaussian noise (electronic), Modulation, Multimedia systems, Watermarking, Wavelet transforms; Coefficient values, Digital video watermarking, KAZE, PCA (principal component analysis), Quantization index modulation, Rotation , scaling and translations, Semi-blind, Video watermarking; Principal component analysis

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Is red blood cell distribution width (RDW) A novel renal biomarker for diabetic complications?
(2016) *International Journal of Pharmaceutical Sciences Review and Research*, 37 (2), art. no. 29, pp. 163-168.

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Abstract
Diabetic nephropathy manifests as slowly progressive albuminuria with worsening hypertension and renal insufficiency. Diagnosis is based on history, physical examination, urine analysis and urine albumin/creatinine ratio. Sustained microalbuminuria is the earliest warning sign of asymptomatic diabetic nephropathy patients and is a potent risk factor for the development of progressive renal disease. Urine albumin creatinine ratio (ACR) is an accepted and useful screening test for microalbuminuria. Red blood cell distribution width (RDW) is a measurement of anisocytosis obtained in standard automated complete blood counts and is found to be an important clinical marker for diabetes complications independent of traditional risk factors and disease duration. The aim of the current study is to determine the relation between the albumin creatinine ratio level and the red blood cell distribution width. We have taken 49 diabetic nephropathy patients with 49 diabetic controls. We concluded our study by saying that RDW was found to be significantly associated with diabetic nephropathy patients and hence it may be a useful renal biomarker for diabetic complications. © protected.

Author Keywords
Albumin creatinine ratio; Diabetic nephropathy; Red blood cell distribution width

Index Keywords
albumin, biological marker, creatinine; adult, aged, Article, clinical article, controlled study, diabetic nephropathy, disease duration, hematological parameters, human, kidney injury, macroalbuminuria, microalbuminuria, red blood cell distribution width, risk factor, urinalysis

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Vanangamudi, S.[a] , Vanangamudi, S.[b] , Pradeep Kumar, M.[c]

Investigation on feed force during turning of aluminum bar by using double point cutting tool
(2016) *International Journal of Pharmacy and Technology*, 8 (1), pp. 11265-11277.

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Abstract
Time takes very important role in the field of Manufacturing. Taking less time for machining the workpiece without affecting the functional parameters is the attractive feature. Mechanism, Metal cutting tool take very important role in reducing the time for Machining. It is very clear in the case of Crank and Slotted link mechanism of shaper Machine, the time is reduced for return stroke (idle stroke) of the tool. So the total time for machining on the workpiece can be reduced. Here a specially designed tool takes less time for turning long workpiece. A special tool namely double point cutting tool takes lesser time than the time taken by the usual single point cutting for turning long workpiece. The specially designed HSS double point cutting tool is made to have double cutting points with height difference of 0.5mm and distance difference of 6 mm. Turning is carried out with depth of cut as 0.5mm by the first point and as well as by second point of the double point cutting tool. Investigation on feed force is made by using HSS double point cutting tool during turning of Aluminum Bar for different speed and feed rate and it is presented in this Research article. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Aluminum bar; Double point cutting tool; Feed force; Feed rate; Machining time; Speed; Turning

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aluminum; Article, double point cutting tool, engineering, feed force, force, machine, mechanics, metallurgy, velocity

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Experimental Study of Double Point Cutting Tool on Feed force during turning of Mild Steel Bar
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Parametric study on surface roughness of aluminum bar after turning by using double point cutting tool
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Abstract
Man, Machine, Material and Method play very important role in the field of Manufacturing. The objective of this research paper is to reduce the time for turning a long workpiece and to study the surface roughness by choosing new Method of turning. Turning is the process of reducing the required diameter on the workpiece. Usually we use single point cutting tool for the same. Here this is the work where half of the total turning time is reduced by using a special tool namely double point cutting tool. The HSS double point cutting tool has two cutting points with height difference of 0.5 mm and the distance between them is 6 mm. Hence as the first point takes 0.5 mm depth of cut, the second point also takes 0.5 mm depth of cut as the tool proceeds for turning. So the half of the total turning time is reduced. Detailed study is made and presented on surface roughness after turning Aluminum bar of 50 mm diameter and 300 mm long work piece by using double point cutting tool for different speed and feed rate. © 2016, International Journal of Pharmacy and Technology. All rights reserved.

Author Keywords
Aluminum bar; Feed rate; HSS double point cutting tool; Speed; Surface roughness; Turning; Turning time

Index Keywords
aluminum; aluminum bar, Article, double point cutting tool, engineering, geometry, machine, parametric test, physical parameters, surface roughness, turning, velocity

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Beulah Hemalatha, S.[a] , Vigneshwaran, T.[b] , Jasmin, M.[a]

Survey on energy - Efficient methodologies and architectures of Network-on-Chip

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Abstract
The emergingtechnology requiresa large number of core to be integrated into a single chip.This had led to the development of System on Chip. SoC'shave paved way for large scale integration of electronics mounted on a single chip. SoC's are nowadays highly preferred for designing portable and compact devices with low power. The complex and complete integration of SoC has paved way for the concept of Network on Chip (NoC). NoC is a key challenge for power optimization as they are battery operated. In this paper survey provides a design of energy aware NoC with reduced power consumption and enhanced performance. A broad view of power optimization using voltage/frequency Island is provided. The paper also provides a detailed survey of the different data encoding techniques and their efficiency. The objective of this survey is to provide information regarding improved design for reducing power in NoCs. The survey also helps to arrive at a conclusion of the various power optimization techniques.

Author Keywords
Data encoding techniques; Network on Chip; System on chip; Voltage/frequency island

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Comparative study of clustering methods over Ill-structured datasets using validity indices

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Abstract
Objective: This paper discusses and compares the various clustering methods over Ill-structured datasets and the primary objective is to find the best clustering method and to fix the optimal number of clusters. Methods: The dataset used in this experiment has derived from the measures of sensors used in an urban waste water treatment plant. In this paper, clustering methods like hierarchical, K means and PAM have been compared and internal cluster validity indices like connectivity, Dunn index, and silhouette index have been used to validate the clusters and the optimization of clustering is expressed in terms of number of clusters. At the end, experiment is done by varying the number of clusters and optimal scores are calculated. Findings: Optimal score and optimal rank list are generated which reveals that the hierarchical clustering is the optimal clustering method. The optimum value of connectivity index should be minimum, silhouette should be maximum, dunn should be maximum. So by interpreting the results, the optimal number of clusters for the experimental dataset have been concluded as K=2 and the optimal method for clustering the given dataset is hierarchical. Applications: The experiment has been done over the dataset derived from the measures of sensors used in a urban waste water treatment plant.

Author Keywords
Clustering methods; Ill-structured datasets; Optimization; Validity indices

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Niranjana, G.[a] , Ponnavaikko, M.[b]

An improved hybrid algorithm for accurate determination of parameters of lung nodules with dirichlet boundaries in CT images

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Abstract
Background/Objectives: Segmentation of lung nodules with irregular boundaries in CT images remains a challenge. This work aims to advance the accuracy of segmentation using Random walker and watershed algorithm. Methods/Statistical Analysis: The input image is considered as a graph representing each pixel as a node. Two seed points which are userdefined (pre-labeled) pixels given as labels, one for the foreground and the other for the background. The gradient of the seed points are calculated. Then the probability of reaching the labeled pixels from each of the unlabeled pixels is obtained and a vector of probabilities is defined for each of the unlabeled pixels. Findings: The calculated vector of probabilities for each unlabeled pixel is combined and they can be assigned to one of the labels using the watershed algorithm to obtain tumor segmentation. We used 23 images for validating our method and our experiment compared the original random walker algorithm, random walker with improved weights and watershed segmentation results. Resulted images have maximum of DSC values as 0.92 for Random Walk, 0.94 for Random Walk with Improved Weight and 0.97 for Watershed combined. Applications/Improvements: Accurate segmentation of nodules with dirichlet boundaries in CT images using minimum number of seed points.

Author Keywords
CT Images; Dirichilet boundaries; Lung nodules; Segmentation

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Niranjana, G.[a] , Ponnavaikko, M.[b]

Statistical analysis of features and classifiers in identifying nodules and its T staging in lung CT images
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Abstract
Lung cancer is the most common disease with greater morality rate. Computed Tomography (CT) images are used for early diagnosis of lung cancer with the help of CAD system. Selection of effective feature set and proper classifier for medical images where machine learning techniques are used is a challenging task. Texture analysis of computed tomography (CT) images is one of the important preliminary stages in the detection and classification for lung cancer. The image texture is characterized by Haralick texture with variety of statistical measures. The extracted texture feature values are used by a CAD to differentiate its type as benign or malignant. This paper aims to compare experimental results of 18 features extracted by using Gray Level Co occurrence Matrix (GLCM) and analyses the different classifiers that can be used for classification of nodule as benign or malignant. Measuring the statistical parameters of the nodule is crucial for determining the T stage of the nodule. This paper also analysis the statistical parameters and reported the contribution of minimal feature set for classification and staging. GLCM features are used for classification and Geometric features used are used for T staging. For these analysis 23 images dataset of different types of cancer is used. © 2006-2016 Asian Research Publishing Network (ARPN).

Author Keywords
Classifier; Feature set; GLCM; Lung cancer; Nodule type; T staging

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Meenatchi, B.[a] , Renuga, V.[b] , Manikandan, A.[c]

Electrodeposition of Nickel on Glassy Carbon Electrode from Protic Ionic Liquids with Imidazolium Cation

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Abstract

The electrodeposition of nickel (Ni) on glassy carbon electrode was performed in a variety of six imidazolium based protic ionic liquids (PILs) like 2-methylimidazolium lactate ([Hmim][lactate]), 1-ethylimidazolium lactate ([Heim][lactate]), 1-butylimidazolium lactate ([Hbim][lactate]), 2-methylimidazolium glycolate ([Hmim][glycolate]), 1-ethylimidazolium glycolate ([Heim][glycolate]), 1-butylimidazolium glycolate ([Hbim] [glycolate]), respectively at various concentrations. While examining the course of the deposition process using cyclic voltammetry, the results demonstrate that all PILs possess high electrochemical stability with good electrochemical window ranging 1.61–3.6 V. In addition, [Hmim][lactate] and [Hmim] [glycolate] showed greater cathodic stability, due to the replacement of C-2 acidic proton in imidazolium cation with methyl group. The Ni electrodeposition is found to be proceeding via one step—two electron transfer process that involved the irreversible reduction of Ni (II) to Ni (0). Also, it was found that by increasing Ni (II) concentration, nickel electrodeposition becomes more facile. Moreover, it was observed that owing to their high ionic conductance, the Ni electrodeposition was more facile in [Hmim][lactate] and [Hmim][glycolate] with diffusion co-efficient 1.8 × 10−5 and 5.1 × 10−7, respectively. The electrodeposited Ni was characterized using scanning electron microscope (SEM) and energy dispersive X-ray (EDX) analysis. The distinctive uniform,sponge and gravel-like morphologies of Ni deposits were confirmed by SEM images and the EDX analysis endorse the presence of Ni element. © 2016, Springer Science+Business Media New York.

Author Keywords

Cyclic voltammetry; Electrochemical window; Electrodeposition; Protic ionic liquids

Index Keywords

Carbon, Cyclic voltammetry, Electrodeposition, Electron transport properties, Glass, Glass membrane electrodes, Ionic liquids, Nickel deposits, Positive ions, Scanning electron microscopy; Electrochemical stabilities, Electrochemical window, Energy dispersive x-ray, Glassy carbon electrodes, Irreversible reduction, Nickel electrodeposition, Protic ionic liquids, Two-electron-transfer process; Nickel compounds

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Kayalvizhi, S.[a] , Ponnavaikko, M.[b]

Optimized fast handover using TBU scheme for PMIPv6 based network mobility
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Abstract
The Internet Engineering Task Force proposed a host-based mobility management protocol, called Mobile IPv6 for mobile nodes to maintain continuous service when they move to a foreign network but causes long disruptions during handover. Hence a new scheme is proposed based on PMIPv6 and EfNEMO to mitigate packet loss, signaling problem and handover latency. This scheme ensures that the MN maintains the same Home Network Prefix in the localized domain and the current location of the MN is stored in Home agent and pre-registration of MN location is performed. This work is being carried out using the Network Simulation tool OMNeT++ 4. 0. © Research India Publications.

Author Keywords
Enhanced fast nemo; Home network prefix; Mobile nodes

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Meenatchi, B.[a] , Renuga, V.[b] , Manikandan, A.[c]

Size-controlled synthesis of chalcogen and chalcogenide nanoparticles using protic ionic liquids with imidazolium cation

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Abstract

Green synthesis of selenium (chalcogen) nanoparticles (SeNPs) has been successfully attained by simple wet chemical method that involves the reaction of six different protic ionic liquids with imidazolium cations and sodium hydrogen selenide (NaHSe) in the presence of poly ethylene glycol-600 (PEG-600) as an additional stabilizer. The obtained SeNPs were characterized using UV spectral (UV), Fourier transform infra-red (FT-IR), X-ray diffraction (XRD), thermogravimetric analysis (TGA), differential thermal analysis (DTA), scanning electron microscope (SEM) with energy dispersive X-ray (EDX) and high resolution transmission electron microscope (TEM) analysis. The results illustrate that the synthesized SeNPs are spherical in shape with size ranging 19-24 nm and possess good optical property with greater band gap energy, high thermal stability up to 330 °C, low melting point of 218-220 °C comparing to precursor selenium. Using the synthesized SeNPs, two chalcogenides such as ZnSe and CdSe semiconductor nanoparticles were synthesized and characterized using XRD, SEM with EDX and TEM analysis. The fabricated CdSe and ZnSe nanoparticles appeared like pebble and cluster structure with particle size of 29.97 nm and 22.73 nm respectively. © 2016, Korean Institute of Chemical Engineers, Seoul, Korea.

Author Keywords

Chalcogenides; Optical Property; Protic Ionic Liquids; Selenium Nanoparticles; Semiconductor

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Single phase Bunsenite NiO nanoparticles green synthesis by Agathosma betulina natural extract

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Abstract

This contribution reports on the synthesis and the main physical properties of p-type NiO nanoparticles synthesized for the first time by a completely green process using Agathosma betulina plant extract as an effective oxidizing/reducing agent. The surface/interface and volume room temperature properties by TEM, EDS, XRD, FTIR, Raman and photoluminescence as well as XPS are reported. Likewise, a standard blade made film of pressed n-type NiO nanoparticles onto p-type Silicon substrate of such nanoparticles exhibited a good photodiode response in the NIR spectral range. © 2015 Elsevier B.V.

Author Keywords

Agathosma betulina's extract; Green synthesis; Nanoparticles; Nickel oxide

Index Keywords

Nanoparticles, Nickel oxide, Plant extracts; Agathosma betulina's extract, Green synthesis, Natural extracts, NiO nanoparticles, P-type silicon, Room temperature properties, Spectral range, Surface/interface; Synthesis (chemical)

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Magnetically Recyclable Spinel MnxNi1−xFe2 O 4 (x= 0.0–0.5) Nano-photocatalysts: Structural, Morphological and Opto-magnetic Properties

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Abstract

Manganese doped nickel ferrite (MnxNi1−xFe2O4: x = 0.0–0.5) spinel nanoparticles (NPs) were successfully prepared by a facile microwave combustion method (MCM) using urea as the fuel. The prepared samples were characterized by different techniques. Powder X-ray diffraction (XRD) analysis was confirmed the formation of a single-phase NiFe2O4 spinel structure. The average crystallite sizes of the samples were in the range of 11.49 to 17.24 nm, which was confirmed by Sherrer's formula. The morphology of the samples showed a nanoparticle-like structure with smaller agglomeration, which was confirmed by high-resolution scanning electron microscopy (HR-SEM). The particle size diameter ranges from 15 to 20 nm, which was confirmed by high-resolution transmission electron microscopy (HR-TEM). Energy dispersive X-ray (EDX) analysis confirmed the elemental composition, which was also evidence for the formation of single pure phase. Selected area electron diffraction (SAED) analysis showed well crystalline nature. UV-visible diffuse reflectance spectra (DRS) and photoluminescence (PL) spectrum analysis was used to calculate the optical band gap, and the values are slightly increased (2.02 to 2.42 eV) with increasing the Mn-dopant, due to the decreasing of particle size, which may be due to the quantum confinement effect. Magnetic properties of the samples were analyzed by vibrating sample magnetometer (VSM) technique, which showed the magnetization (Ms) value of the samples are increased with increasing Mn content and reach a maximum value of 67.82 emu/g for Mn0.5Ni0.5Fe2O4 sample. Photo-catalytic activity of the samples was measured and showed the photocatalytic degradation (PCD) of methylene blue dye with good results. The catalyst was magnetically recycled and reused five consecutive cycles and showed good reproducibility without change of catalytic activity. © 2015, Springer Science+Business Media New York.

Author Keywords

Electron microscopy; Microwave combustion; Nanoparticles; Nickel ferrite; Photocatalysts; X-ray diffraction

Index Keywords

Aromatic compounds, Catalyst activity, Combustion, Doping (additives), Electron diffraction, Electron microscopy, Electrons, Energy gap, Ferrite, Magnetic properties, Magnetization, Manganese, Nanoparticles, Nickel, Particle size, Particle size analysis, Photocatalysts, Scanning electron microscopy, Spectrum analysis, Urea, X ray diffraction, X ray diffraction analysis; Diffuse reflectance spectrum, High-resolution scanning electron microscopies, Nickel ferrite, Photocatalytic degradation, Photoluminescence spectrum, Quantum confinement effects, Selected area electron diffraction, Vibrating sample magnetometer; High resolution transmission electron microscopy

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Physical properties of CdO nanoparticles synthesized by green chemistry via Hibiscus Sabdariffa flower extract
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Abstract
The first time synthesis of CdO nano-crystals by green chemistry process based on Hibiscus Sabdariffa flower extract and their main physical properties are reported. While it is shown that the natural extract acts as an effective chelating agent in facilitating the formation of the CdO nanoparticles, the structural analysis by X-rays diffraction analysis shows that the nano-crystals exhibit a pure single phase Monteponite. Their photoluminescence display a relatively an intense and narrow emission peak at 551 nm. Their direct and indirect bandgaps were found to be 2.7 and 2.1 eV. The investigation of their surface properties showed the existence of a double coordination: presence of CdO and CdO2 type bonds. The current-voltage characteristic of the CdO nanoparticles film/c-Si heterojunction solar cell under dark and illumination conditions showed that such a heterojunction has acceptable rectification characteristics with a forward current saturating at ~1 V. © 2015 Elsevier B.V. All rights reserved.

Author Keywords
Cadmium oxide; Green synthesis; Hibiscus Sabdariffa; Nanomaterials; Nanoparticles; Natural extract

Index Keywords
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Substance use disorder and the family: An Indian perspective
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Abstract
The substance use disorder not only impacts the patient himself/herself, but also affects family members. This is more relevant in a country like India where the familial ties are stronger withfamily members playing a significant role in the treatment process. This narrative review takes an overview of the inter-relationship between substance use disorder and the family. The domestic violence and adverse familial circumstances, both often arise as a consequence of substance use. Although the spouses of substance users experience greater rates of psychopathology and distress, children of patients with substance user disorders demonstrate higher levels of behavioral disturbances. Codependence often develops in the familial relationship, which perpetuates the substance use disorder. Substance use places quite a burden on the family, both psychologically as well as in terms of resources. Nonetheless, family members provide motivation, emotional support, and practical help during the treatment of substance use disorders and hence need to be engaged in the therapeutic process. Finally, the changing family structure and family dynamics in India might influence the in the future both the effect of substance use disorder on the family, and the familial resource availablefor treatment. © 2016 Medical Journal of Dr. D.Y. Patil University. All rights reserved.

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Alcohol; family; opioids; spouses; substance use; treatment

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Efficient and parallel data processing and resource allocation in the cloud by using Nephele's data processing framework

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Abstract

Cloud computing is a technology in which the Cloud Service Providers (CSP) provide many virtual servers to the users to store their information in the cloud. The faults occurring on the assignment and dismission of the virtual machines, the processing cost in the allocation of resources must also be considered. The parallel processing of the information on the virtual machines must be done effectively and in an efficient manner. A variety of systems were developed to facilitate Many Task Computing (MTC). These systems aim to hide the issues of parallelism and fault tolerant and they are used in many applications. In this paper, we introduced Nephele, a data processing framework to exploit dynamic resource provisioning offered by IaaS clouds. The performance evaluation of the virtual machines has been evaluated and the allocation and deallocation of job tasks to the specific virtual machines has also been considered. A performance comparison with the well known data processing framework hadoop has been done. Thus this paper tells about the effective and efficient manner of processing the data by parallel processing and allocating the correct resources for the desired task. It also helps to reduce the cost of resource utilization by exploiting the dynamic resource utilization. © 2016 SERSC.

Author Keywords

Allocation; CSP; De-allocation; Dynamic resource utilization; Hadoop; Many task computing; Nephele; Parallel processing

Index Keywords

Cloud computing, Resource allocation; Allocation, De-allocation, Dynamic resources, Hadoop, Many-task computing, Nephele, Parallel processing; Data handling

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A desirable strategy for resource allocation using virtual machine in cloud

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Abstract

Cloud computing is a facsimile of legalizing ubiquitous, expedient, on-demand network access to a shared pool of configurable computing resources that can be rapidly furnished and released with negligible management effort. It relies on sharing computing resources rather than having local servers or personal devices to handle applications. The resource allocation, still lack on sustaining tools that enable developers to compare different resource allocation strategies in cloud computing. In this paper we initiate the concept of “skewness” to measure the bumpy utilization of a server. By minimizing skewness, we can improve the overall utilization of servers in the face of multidimensional resource constraints. Here we use skewness metric to combine VMs with different resource characteristics suitably so that the capacities of servers are well utilized. © 2016 SERSC.

Author Keywords

Cloud computing; Resource allocation; Skewness; Virtual machine

Index Keywords

Cloud computing, Higher order statistics, Resource allocation, Ubiquitous computing; Computing resource, Configurable computing, Management efforts, Resource allocation strategies, Resource characteristic, Resource Constraint, Skewness, Virtual machines; Distributed computer systems

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Effective grade planning and instant cloud storage provisioning
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Abstract
The circulation of Cloud Service push the increasing demands of storage resources to the service vendors like Amazon, IBM, Google and etc,. Along with the talented business opportunities, this project brings new technique challenges such as effective grade planning and instant cloud storage provisioning. To ensure the correctness of user's data in the cloud, we suggest an effective and flexible distributed scheme in which we overcome the problem of secure Graded keyword search over encrypted cloud data. By utilizing the Graded search improves the system usability by enabling search result relevance ranking instead of sending undifferentiated results, and then it will further ensures the file retrieval accuracy and also improving the service quality for the capacity planning and instant cloud resource provisioning problem. Unlike most prior works, the new scheme further supports secure and efficient dynamic operations on data blocks. Extensive security and performance analysis shows that the proposed scheme is highly efficient and resilient against malicious data modification attack, and even server colluding attacks. Our Analytics method can significantly improve the service quality by reducing the resource provisioning time while maintaining a low cloud overhead. © Research India Publications.

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Gemination or fusion?: A case report

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Abstract
Gemination and fusion are the most commonly encountered anomalies in dental practice, and distinction between the two is always challenging. Fusion is when two tooth buds fuse to make a large tooth. Gemination, also called double tooth is an anomaly exhibiting two joined crowns and usually a single root. It represents an incomplete attempt of a single tooth germ to split. It is considered multifactorial in etiology, with genetic and environmental causes. It is extremely difficult to differentiate between fusion and germination especially when a supernumerary is attached with the adjacent tooth. This paper highlights the importance of diagnosing developmental anomalies of teeth and the proper treatment outcome of these abnormalities.

Author Keywords
Fusion; Gemination

Index Keywords
adult, Article, case report, computer assisted tomography, dental caries, female, human, root canal obturation, tooth crown, tooth malformation, tooth pain

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Tamilselvi, R.[a] , Rajan, R.M.[a] , Kumari, V.A.[b] , Kandaswamy, D.[c]

Efficacy of organic component on hardness and fracture toughness of human dentin using heat treatment - in vitro study

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Abstract

The study was performed to find the influence of organic matrix on hardness and fracture toughness of the human dentin. The mid-sagittal sections of the dentin were subjected to Vickers hardness testing after removal of organic component from dentin by heat treatment. The heat treatment temperature for human dentin was determined as 800°C by the rmogravimetric analysis in order to facilitate complete removal of organic component. The removal of proteins from dentin was confirmed by Fourier transform infrared spectroscopy. The significant difference in hardness and fracture toughness values was found among the heat treated and untreated dentin ($p<0.001$).This study confirms the role of organic component of dentin on mechanical properties. Thus, helps in research and development of novel reparative materials.

Author Keywords

Collagen; Fourier transform infrared spectroscopy; Fracture toughness; Hardness; Heat treatment; Human dentin; Thermo gravimetric analysis

Index Keywords

Article, controlled study, crack length, dentin, fracture toughness, hardness, heat treatment, human, human tissue, infrared spectroscopy, materials testing, physical parameters, premolar tooth, thermogravimetry

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Effects and molecular mode of action of noni (Morindacitrifolia) juice and its active components
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Abstract
Morindacitrifolia, also known as noni belongs to the family Rubiaceae has been in high demand in yurvedic medicine. It has been used long since in various cultures as a medicine for cure of various ailments. This review attempts to analyze the evidence for the claim as a therapeutic cure for many diseases. This review article is presented to compile all the updated information on its phytochemical and pharmacological activities. Studies indicate fruit juice possesses antioxidant, anti-inflammatory, apoptotic and anticancer, properties. Various effects like antibacterial, anti-fungal, anti HIV, antiboneresorption, antispasmodic, antipyretic, anti-diarrheal, anti-allergic, immunomodulation, cardiotonic, hypo-lipidemic, anti-microbial, gastro-protective have been studied. Clinical trials using this fruit juice for a variety of conditions should also be conducted. Currently the market is flooded with products with claim cure for all ailments. This review analyzes the beneficial effects of the use of Morinda Citrofolia. Evidence based result shows that consumption of noni could be beneficial both protective and curative.

Author Keywords
Alternative therapy; Ayurvedic drugs; Chronic ailments; Molecular mechanism

Index Keywords
acetylsalicylic acid, celecoxib, indometacin, Morinda citrifolia extract, placebo; absence of side effects, allergy, alloxan-induced diabetes mellitus, antibacterial activity, antidiarrheal activity, antifungal activity, antiinflammatory activity, antimicrobial activity, antineoplastic activity, antioxidant activity, antipyretic activity, antiviral activity, apoptosis, Article, blood pressure regulation, bone development, bone regeneration, breast cancer, carrageenan-induced paw edema, clinical trial (topic), controlled clinical trial (topic), cytokine release, drug efficacy, drug safety, evidence based medicine, fruit juice, human, Human immunodeficiency virus, hypolipemia, immune response, immunomodulation, infection, liver dysfunction, mesenchymal stem cell transplantation, nonhuman, osteoarthritis, osteolysis, osteoporosis, phytochemistry, signal transduction, skin cancer, solid tumor, spondylitis, stomach protection, streptozotocin-induced diabetes mellitus, teratoma, treatment duration, uterine cervix cancer, wound healing

Chemicals/CAS
acetylsalicylic acid, 493-53-8, 50-78-2, 53663-74-4, 53664-49-6, 63781-77-1; celecoxib, 169590-42-5; indometacin, 53-86-1, 74252-25-8, 7681-54-1

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Abstract
Internet is seen to have acquired the status of essential element in the lives of people. Applying the process of data mining for discovering knowledge out of data from web such as the web pages, hyperlinks, and web documents is called as web mining. Problem with the existing system is that execution time is more for the grouping process while the accuracy of retrieval of document from web is also not efficient. In addition to these two issues, the present system does not also focus on the role or domain-based search. Apart from these, search results retrieved are also not annotation result or according to users preference. The above stated are the primary issues with the present system which makes use of XML database. For overcoming the said issues, in our analysis, we have proposed a Partial Swarm Optimization (PSO) technique for grouping process. In addition to the process of clustering, this study also suggests three different types of processing that have been listed below: Registration using user role, Extracting XML data by making use of tokenization, Clustering process using enhanced annotation label. Among these, in the first procedure, role will be defined prior to retrieval of search result out of the XML database. Secondly, this will help extract data out of the XML database by tokenization, and finally, group the (SRR) Search Result Records. In the process of clustering, focus is on two vital factors, the first one being attributes- that is, keywords, and the second one happens to be user role. Moreover, the process of rating-based ranking has been included for retrieving user preference results. In our proposed system, the time for the process of clustering is better when compared with the present system. In the end, we have also proposed one ranking procedure for the user preference. © International Science Press.

Author Keywords
Annotation; Data keywords; Rating based rank; Role-PSO clustering; Tokenization; User role

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Documents

Niranjana, G.[a] , Ponnavaikko, M.[b]

Automatic detection of synchronous multiple primary lung cancer in lung ct images using pml techniques
(2016) *International Journal of Control Theory and Applications*, 9 (24), pp. 349-355.

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Abstract
Lung cancer growth is classified into 4 stages based on T, N and M descriptors. Stage I corresponds to the initial stage and stage IV corresponds to the final stage of the lung cancer. Identifying the stages of the lung cancer is vital as treatment as treatment is based on the stage. Stage IV is termed as Metasis stage where the cancer spreads from one organ to another organ in the human body. Synchronous multiple primary nodules may correspond to the metasis stage of the lung cancer. In this paper we are presenting scoring method, a pixel based machine learning (PML) technique for identifying possible metasis stage of the cancer with the property that the nodules extended from one lung region to another or having multiple malignant nodules. The proposed method is tested with 8 patients with a total of 86 nodules. We observed 87.2% of accuracy in the results. © International Science Press.

Author Keywords
Lung cancer; Metasis; Nodules; PML

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Singh, O.G.[a] , Suresh, A.S.S.[b] , Parasakthi[c]

Radiological assessment of age from wrist joint in young adolescents
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Abstract
It's a radiological study of age assessment of 100 cases of young adolescents (Boy = 50; Girl = 50) in the age range of 14-17yrs by taking A-P view X-rays of their right wrist joint including hands. There was not a single case of fusion of lower end of ulna in male under the age of 14yrs. Fusion of lower end of radius is late in both sexes and we don't find any fusion in boys up to the 16yrs of age. It was observed that there is considerable narrowing of the range of radiological age assessed using the x-ray of the hand, from 15 years - 19 years to 14 years - 17 years in both boys and girls. The present study emphatically reveals that an adolescent either boy or girl whose secondary ossification centres of base of first metacarpal, heads of second, third, fourth and fifth metacarpals, bases of phalanges have fused could have attained the age of 17 years. This finding is quite reasonably consistent with the age from the available date of birth certificates of these students.

Author Keywords
Carpal; Metacarpal; Ossification; Radiological assessment; Radius; Ulna; X-ray

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Shriram, R.[a d] , Martin, B.[b] , Sundhararajan, M.[c] , Daimiwal, N.[d]

Effect of source wavelength on second derivative of finger photoplethysmogram in healthy young female volunteers

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Abstract
Background: Non-invasive methods for screening and diagnosis are the field with fast growing interest which leads to various biological signal measurements like Photoplethysmogram (PPG) and pressure pulse. PPG monitoring is widely used in the healthcare as this single pulse study can provide wide physiological information non-invasively such as oxygen saturation, heart rate, blood pressure (continuous and cuff less), blood volume, arterial stiffness and respiration rate. First and second derivatives of PPG provide important information about the arterial stiffness and vascular health of the person. Aim: This paper explains the design and development of prototype with RED LED (660 nm) and IR LED (860 nm) as a source and OPT 101 as a detector. Second derivative related indices of PPG (for RED LED and IR LED) were calculated. Materials and methods: Study was carried out on 15 healthy female subjects without any known history of blood pressure and blood glucose; aged between 19-23 years. Results and conclusion: Amplitude of PPG obtained from RED LED is smaller than the amplitude of PPG obtained from IR LED. Comparative analysis of first and second derivative of the PPG obtained from RED light source and IR light source is discussed by the authors. It was observed that various parameters studied from second derivative are the 'Normalized Values', so effect of change in the amplitude of the PPG signal obtained from RED LED and IR LED get nullified in this study (P>0.05). Though IR source based reflective type of sensor related study can be useful in future for the brain vascular health assessment. © 2016, Scientific Publishers of India. All rights reserved.

Author Keywords
IR LED; Optical sensor; Photoplethysmogram; RED LED; Second derivative; Vascular aging

Index Keywords
adult, Article, comparative study, controlled study, female, finger, human, human experiment, information processing, infrared radiation, light emitting diode, non invasive measurement, normal human, photoelectric plethysmography, red light

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Daimiwal, N.[a] , Martin, B.[b] , Sundararajan, M.[c] , Shriram, R.[d]

Analysis of radio frequency reflectance type PPG sensor based on systolic amplitude and source wavelength
(2016) *Biomedical Research (India)*, 2016 (Special Issue 1), pp. S371-S375.

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Abstract
PPG (photoplethysmography) sensors are capable of measuring blood volumetric changes in the subcutaneous vessels. The transmission type of measurement is limited to only a few specific positions whereas the reflectance type of PPG sensor can be easily applied on various parts of the body surface. To determine the quality of reflectance type photoplethysmography signal, various parameters are analysed like the source-detector distance and the source wavelengths (660 nm and 860 nm). The experimental set up for light reflectance measurement is surface mount light-emitting diodes (LEDs) with two different wavelengths (660 nm and 860 nm) of light were tested in the experiment and by varying the distance between the source and the detector. The excitation signal used for LED is AC varying from range of 300 kHz and above and analysing the advantages as compared to DC excitation. Detector used is OPT101. The work in this paper analyses systolic amplitude (SA) using MATLAB for two wavelengths 660 nm and 860 nm. The sensors are designed for two distances, 1 cm and 1.5 cm respectively. Observations were taken for two different wavelengths with two different distances for 10 females in the age group 20 to 50 years. The results show that SA amplitude decreases as the source and detector distance increases. In Paired t-test using Minitab 17, the mean of SA of PPG signal acquired with a distance of 1 cm between the source and detector was observed to be greater than the mean of SA of PPG signal which was acquired with a distance of 1.5 cm ($p<0.1$). Systolic amplitude of 860 nm for oxy-Hb is greater than 660 nm for deoxy-Hb, so we concluded that the system can be used for measurement of concentration change in deoxy-Hb and oxy-Hb due to increase in blood during brain activity. © 2016, Scientific Publishers of India. All rights reserved.

Author Keywords
Average filter; OPT 101; Reflectance type PPG (Photoplethysmography); RF (Radio frequency); Systolic amplitude; Wavelength

Index Keywords
adult, Article, blood volume, concentration (parameters), controlled study, female, heart rate, human, light emitting diode, male, middle aged, photoelectric plethysmography, radio frequency identification device, Student t test, systolic amplitude, young adult

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Pandurangan, R.[a] , Logashanmugam, E.[b]

Watermarked wavelet transforms
(2016) *International Journal of Chemical Sciences*, 14, pp. 761-768.

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Abstract
For day today life photography is becoming very popular. In every fields of work, official or personal, the task of securing the image is challenging against the advancement of the technology. The concept of watermarking gives comfortable solution for the copyright protection. Different Wavelet transforms are considered with its mean square error and peak signal to noise ratio. The Haar, Biorthogonal, Daubechies wavelets are used for simulation to find better peak signal to noise ratio. Watermarking is done on these transforms and its robustness is found for the color image.

Author Keywords
Biorthogonal; Daubechies; Haar; Wavelets image watermarking

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Sriprasadh, K.[a] , Sathianandam, N.[b] , Sivasubaramanian, S.[c]

A supervised attributes clustering for "gene" expression in big data
(2016) *International Journal of Control Theory and Applications*, 9 (28), pp. 31-39.

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Abstract
Classifying the genes in line with the organic phenomenon information. Analysis: There are many techniques and algorithms are used for extracting the hidden patterns from the big information sets and finding the relationships between them. Clump (of information of knowledge of information) is one among the vital techniques in huge data. Clump algorithms are used for grouping the information things supported their similarity. Findings: Big Data is that the method of analyzing information from completely different views and summarizing it into helpful data. Polymer small array technique has involved nice attention in each the scientific and in industrial areas. The new supervised clump algorithmic program eliminates the redundancy between two or many attributes. Apply Min HASH clump algorithmic program to cluster the sequence of sequence information expressions. The simplest way to systematically sample information from large set of data and that could be a technique for quickly estimating of comparable two different information sets. Application /Improvements: This clump algorithmic program uses hash intersections to probabilistically cluster similar information. So as to seek out the duplications within the information it conjointly utilizes the similarity menstruation. Small array technology classifies the genes in line with the organic phenomenon information. a replacement quantitative live incorporates the data of sample genes and it measures the similarity between two teams of genes. This can be referred to as attribute based mostly clump. © International Science Press.

Author Keywords
Attribute based clustering; Big Data; Gene expression data; Microarray technology

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Boopalan, K.[a] , Rajesh, A.[b] , Nalini, P.[b]

Traffic prediction and forecasting using classification of twitter stream analysis
(2016) *International Journal of Control Theory and Applications*, 9 (28), pp. 319-324.

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Abstract
Web Usage Mining is that area of Web Mining which deals with the extraction of interesting knowledge from logging information produced by Web servers and apply that knowledge in specific field to enhance the usability of that field. In this paper we present a survey of the recent developments in this area that is receiving increasing attention from the Data Mining community. Also we have deployed the obtained knowledge towards the application area of traffic analysis in order to predict and forecast the traffic updates to the users. © International Science Press.

Author Keywords
Forecasting; Knowledge discovery; Prediction; Traffic analysis; Web mining

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Kotteeswaran, C.[a] , Rajesh, A.[b] , Khanna, V.[c]

Rewriting of DNA-RNA by applying indexed grammar with Cnf & GNF
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Abstract
The term RNA-Editing describes a wide range of innovative mechanisms used for modifying nucleotide cycles pertaining to RNA transcripts present in various organisms. The main proposal is to develop indexed insertion deletion system in bio-inspired computing. Methods: Two generic models of nucleotide modification are included in the phenomenon, insertion/deletion and replacement, described according to whether the cycle of modified RNA happens to be collinear with DNA cycle which encodes that. RNA editing may be mediated through a range of pathways which are evolutionarily and mechanistically not related. We are considering two basic types in string rewriting known as assisted insertion/ deletion and next, the assisted rewriting. Original str ings might be edited in accordance with the particular match with any given group of supplementary strings, knows as guides. Assisted insertion/deletion will consider pairing some string and guide in relation to a particular string correspondence. Assisted rewriting will consider pairing a guide and string in relation to some equivalence connection on an alphabet. Assisted insertion/deletion has been inspired by the RNA-editing, which is one biological process through which the authentic genetic data that is saved in DNA is changed prior to its ultimate expression. Findings: A correspondence related to slice cycles is established and we assist rewrite cycles within a Grammar that is Context Free (CFG). Due to their left-to-right arrangement, slice cycles happen to be very convenient in dealing when compared with assisted rewrite cycles pertaining to construction of finite automata which we will encounter in proofs for regularity. Our proposed method CNF and GNF having indexed grammar produces improved and satisfactory result in rewriting (insertion/deletion) procedure. © International Science Press.

Author Keywords
CFG; CNF; Deletion; DNA; Finite automata; GNF; Insertion; Regular languages; RNA; String rewriting

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Multi-objective clustering and optimization

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Abstract
This paper discusses the optimization of clustering over ill-structured datasets. The dataset used in this experiment has derived from the measures of sensors used in a urban waste water treatment plant. The objective of this experiment is to categorize the quality of water from the treatment plant. Water Quality is indicated by the following parameters: Suspended Solids(SS),Biological Oxygen Demand(DBO),Chemical Oxygen Demand(DQO), Sediment(SED),Conductivity(COND). In this paper K-means algorithm is used for clustering the data set. The optimization of clustering is discussed in terms of number of clusters which results in a natural categorization of the dataset based on the quality parameters of the water. K-Means was chosen for its simplicity and efficiency. Moreover K-Means algorithm is the best suitable algorithm for clustering numerical datasets. © International Science Press.

Author Keywords
Categorization; Clustering; K-means; Optimization; Water quality assessment; Water quality parameters

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Vellayappan, M.V.[a] , Jaganathan, S.K.[b c d] , Manikandan, A.[e]

Nanomaterials as a game changer in the management and treatment of diabetic foot ulcers
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Abstract
Nanoengineered biomaterials have tremendously improved the range of tools utilized for the control of as well as acceleration of healing of diabetic foot ulcers (DFU) over the last few decades. Despite nanoparticles and electrospun nanofibers being used extensively for the treatment of DFU, there has been no review available till now which addresses the utilization of the latest nanodelivery techniques along with modern electrospun nanofiber treatments for DFU. This review thoroughly summarizes the latest mindboggling findings of potential nanomaterials like polymeric and metallic nanoparticles and electrospun nanofibers for DFU treatment. In addition, a succinct insight into the potential of the aforementioned nanomaterials which can be exploited as therapeutic delivery agents for improving the regeneration of damaged dermal and epidermal tissues of DFU is underscored. Ultimately, current challenges and future prospects of nanoparticles and electrospun nanofibers for DFU treatment are highlighted. © The Royal Society of Chemistry.

Index Keywords
Diseases, Nanoparticles, Nanostructured materials, Tissue regeneration; Diabetic foot ulcer, Electrospun nanofibers, Epidermal tissues, Future prospects, Metallic nanoparticles, Therapeutic delivery; Nanofibers

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Assessment of the role of noni (Morinda citrifolia) juice for inducing osteoblast differentiation in isolated rat bone marrow derived mesenchymal stem cells

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Abstract
Background and Objectives: Morinda citrifolia (Noni), an important traditional medicinal plant still used in patients with bone fractures or dislocation to promote connective tissue repair and to reduce inflammation. However, the effects of Noni on bone metabolism and whether it influences the osteogenic differentiation is yet to be clarified. In this study, we investigated the effect of Morinda citrifolia (Noni) juice on the proliferation rate of rat bone marrow derived mesenchymal stem cells (BMSC) and the osteoblastic differentiation as shown by alkaline phosphatase (ALP), Runt-related transcription factor 2 (Runx2) and osteocalcin (OCN) mRNA expression in vitro. Methods and Results: Treatment with 200 μg/ml Noni juice enhanced the proliferation rate of the BMSC and also upregulated the osteogenic differentiation marker genes ALP and OCN, and Runx2 measured by RTPCR. Consistent with these results collagen scaffolds implanted in vivo, which were loaded with BMSC pre-exposed to Noni, showed increased bone density measured by computed tomography and histological analysis revealed neo-angiogenesis for bone formation. Conclusions: These results suggest that Noni stimulates osteoblastogenesis and can be used as adjuvant natural medicine for bone diseases such as osteoporosis.

Author Keywords
Alkaline phosphatase; Bone marrow derived mesenchymal stem cells; Morinda citrifolia; Osteocalcin; Runt-related transcription factor 2

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Identifying the impact of semantic similarity in semantic social media through evolving term for effective web mining

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Abstract
Objective: Computing semantic similarity is a significant objective in Information Retrieval (IR) due to the emerging web searching process and the demand of fast and efficient result provisioning. Methods: Exploiting static lexical resources leads most of the conventional semantic similarity measurement techniques to ignore temporal aspects of concepts. Later, to resolve the temporal constraint, the research works exploit independent sources like Newspaper articles, television documentaries, and books. However, these methods meet the data-sparsity problem, since the independent sources are too restrictive and exclude articles that are worthy of notice. Findings: In order to provide the precise result for recent trend concepts, this paper utilizes the social media as the robust and dynamic source, often reflect public opinion. This work introduces an ideNtifying nEw concept Evolution thRough semantIC Social media temPoral analYsis (NEOTERICSPY) model incorporating two phases, namely semantic relatedness measurement in a time series and examining temporal fluctuations between time series. Initially, the NEOTERIC-SPY measures the semantic relatedness of a word-pair using normalized distance measurement in a time series and facilitates the identification of temporal fluctuations. It reduces the word-pair list of a concept among the overall possible word-pairs and provides a good trade-off between the execution time and accuracy. Secondly, it identifies the new concepts using temporal correlation analysis of the semantic similarity measurement between the time series. It employs the weighing function of the temporal dynamics to find the recent changes than the ancient changes of the concepts. The experimental results show that the NEOTERIC-SPY approach significantly outperforms the conventional method and illustrates the consistent improvements of its performance. Application/ Improvements: The NEOTERIC-SPY leads the IR system to provide the desired information to the users in a short-time period, ensuring the precise result pertaining to the recent concept.

Author Keywords
Semantic Similarity; Social Media; Temporal

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Survey on analysing the cloud security discrepancies with performance measures
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Abstract
Security and privacy concernsare shown to be the primary obstacles to a wide adoption of clouds. The new concepts that clouds introduce, such as multi-tenancy, resource sharing and outsourcing, create new challenges to the security community. Security has become the greatest obstacle and booming revolution in Cloud Computing, which occupies the top concern in the minds of the researchers. In this paper provide a comprehensive method of cloud computing security and privacy concerns and identify cloud vulnerabilities, classify known securitythreats and attacks, and present the state-of-the-art practices to control the vulnerabilities, neutralize the threats, and calibrate the attacks.Cloud Computing is the master of IT services, providing platform for delivering the requirements on demand and paid based on the service accessed over the internet.It is the paradigm which cannot be resolved for its unimaginable activities; this allows users to make use of an application at any location or devices. Confidentiality, Integrity, Privacy of the data residing in cloud storage is the concern that is yet to be solved. So, a lot of research activities is been prompted by these issues, aiming to cover the pitfalls of the security leaks.This paper exaggerates the vulnerabilities that occur maintaining in the data integrity and a proposed model to protect the user data in a shared pool of computing resources and also we converse here on spotting the major vulnerabilities in this type of structures and the largest part of essential threats found in the literature related to vulnerabilities and threats with probable elucidation. © International Science Press.

Author Keywords
Cloud computing; Confidentiality; Data integrity; Privacy; Security

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Flexural response of fibre reinforced polymer laminated pre-stressed concrete beams

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Abstract
Objectives: To examine the effect of Glass Fiber Reinforced Plastic (GFRP) laminated on strength and deformation capacity of pre-stressed concrete beams under static loading condition. Methods/Statistical Analysis: In this study, 7 Pre-Stressed Concrete (PSC) beams were cast and laminated with GFRP. The beams were tested under monotonically increasing loading and manual readings were recorded. Sufficient data was obtained on the strength, deformation and failure characteristics of pre-stressed beams with and without GFRP laminates for beams tested under static loading. Findings: In all the pre-stressed concrete beams, 5mm UDCGFRP strengthened PSC beams showed an improved flexural strength. The test results inferred that strengthened pre-stressed concrete beams showed 93.15% increase in load carrying capacity than that of control specimens. All GFRP laminated pre-stressed concrete beams experience flexural failure.
Application/Improvements: The pre-stressed concrete beams laminated with glass fibre reinforced polymer were found to be very effective in load carrying capacity, deflection and ductility. It can be also be suitably adopted for rehabilitation and restoration of corrosion damaged, old infrastructures and seismic affected concrete structures.

Author Keywords
Fibre reinforced polymer; Flexural; Glass Fiber Reinforced Plastic (GFRP); Post-tensioned; Pre-stressed concrete; Strengthening

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Parthiban, P.[a] , Selvakumar, S.[b]

Big data analysis in the internet of things platform

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Abstract
Objectives: The implementation of an Industry neutral architecture for an analysis on Big Data in the Internet of Things Platform. Methods/Statistical Analysis: The Outside temperature, Light and Humidity from weather station is monitered in dashboardand analyzed in ThingSpeak - Internet of Things Platform. The analysis on weather station data is performed using Matlab in ThingSpeak - Internet of Things Platform. Findings:To do a real time analysis of weather station data using ThingSpeak - Internet of Things Platform. Real time tracking of the attributes include dew point, temperature and humidity from the Arduino Sensor device which is installed on Weather Station. Application/Improvements: Internet of Things Platform broad network access allows investors/stakeholders to visualize the output of Data Presentation (Data Analytics, Data Visualization, BI reporting), easily from multiple locations and platforms, which can facilitate enterprise decision making and here we recommend solutions for the security and privacy issues in the Internet of Things Platform.

Author Keywords
Analyzing; Big data; Internet of things; Internet of things security; ThingSpeak

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Meta path based Top-K Similarity join in heterogeneous information networks
(2016) *Journal of Chemical and Pharmaceutical Sciences*, 9 (4), pp. 2217-2220.

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Abstract
Heterogeneous information networks (HINs) has received growing attention in a newly emerging network model. Clustering, classification and similarity search are the data mining tasks explored in HINs. Similarity join operation is required for many problems which is attracting attention from various applications on network data which includes friend recommendation, link prediction and online advertising. Similarity join is studied in homogeneous network but not studied in heterogeneous networks. The heterogeneity of the HINs are ignored completely by the previous research on similarity join which takes different semantic meanings. A Meta-Path-based Similarity join (MPS-join) method to return the top k similar pairs of objects based on the user specified join path in a HIN is proposed and to prune expensive similarity computation by using BPLSH (Bucket Pruning based Locality Sensitive Hashing) indexing. When compared to the existing Link-based Similarity join (LS-join) method, this MPS-join method derives various similarity semantics. The experimental results on real data sets shows the efficiency and effectiveness of the proposed approach.

Author Keywords
Graph; Heterogeneous network; Similarity search and similarity join

Index Keywords
advertising, attention, classification, data mining, experimental model, friend, human, prediction, semantics

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Surface modification of titanium and its alloys for the enhancement of osseointegration in orthopaedics
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Abstract
Titanium (Ti) and Ti-based alloys are the best promising orthopaedic metal transplants. The Young's modulus of Ti and bone are nearer and so Ti implants are known as osseointegrated implants. However, the need for enhancing the osseointegration, corrosion resistance and biocompatibility cannot be ruled out in promoting the Ti as a golden standard. This review describes various surface modifications like acid etching, sand blasting, surface coating, alkali-heat treatment, plasma treatment and ion implantation of Ti-based implants which are the best solutions to promote biocompatibility, osseointegration and ultimately the longevity of implants. In addition, it gives an outline to accomplish the risky task in orthopaedics like recovering skeletal function by replacing the damaged bone for human being survival and it will assist the energetic collaboration of specialists in materials science, chemistry and biology for the quality enhancement.

Author Keywords
Corrosion resistance; Orthopaedics; Osseointegration; Surface modification; Titanium and its alloys

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Insozhan, N.[a] , Rajasekaran, S.[a b] , Karthikeyan, R.[a] , Siva Shankar, S.[a b]

PEGASIS: Energy harvesting in sensor networks

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Abstract
To collect the valuable information, we use sensor web which consists of nodes with limited battery power and wireless communication. This problem in sensor network is managing energy in an efficient manner. This paper proposes a new power efficient protocol named PEGASIS. This protocol works with neighboring nodes, which sense the data and randomly chosen nodes will take its turn to communicate with Base station. It assumes that BS is establishing from the sensor node at far distance. All nodes information has maintained by database, which stores the location of all other nodes. This makes the protocol robust to failures. We have compared the Energy Efficient level from existing mechanism to proposed mechanism. Finally our system is minimizing energy consumption and further to prolong network life and to achieve energy efficiency. © International Science Press.

Author Keywords
Chain formation; Data collection; Energy harvesting; PEGASIS

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Bhagavathi Perumal, S.[a] , Palanichamy, M.S.[a] , Thamarai, P.[a b] , Aneesha, D.C.[a c]

A study on the classification of water quality, pazhayar river basin, kanyakumari district, through aggregation of water quality index

(2016) *Indian Journal of Environmental Protection*, 36 (1), pp. 59-68.

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Abstract
The river Pazhayar originating from the slopes of Mahendragiri hills at an altitude of 800 m above M.S.L., flows towards south-western direction through Mahendragiri Estate, Palkulam, Bhuttapandi, Thazhikudi, Nagercoil town, Suchindram, etc., and joins the Arabian Sea near Manakudi. The basin contains number of water storage tanks/bunds. The catchment area of the river is 397 km2. The total length of the river is 40 km. There is one CWC Hydrological Observation Station at Ashramam on this river. The early kings also constructed about 11 check-dams along the course of the river. A Venad ruler, Boothala Sree Veera Udaya Marthandavarma, who ruled this area in 1517, constructed the Veerapuli dam and its canals. But, unfortunately, the dam was destroyed by a flood 40 years ago. Another major problem faced by the Pazhayar is pollution. Though the river water is free from pollution from Surulacode to Putheri, the stretch from Putheri to Suchindrum is highly polluted. Sewage from Putheri and Nagercoil also flows into the river. The sewage (household sewage, solid waste and liquid waste from hospitals) from Putheri area drain into the river at Putheri and sewage from Nagercoil is let into the river between Vadaserry - Ozhuginaserry - Edalakudi. A study was undertaken during the month of June 2015 to November 2015 (south west and north east monsoon period) and evaluates the water quality of Pazhyar river. The study involves the physical and chemical and analysis, like turbidity, electrical conductivity (EC), total dissolved solids (TDS), pH, total alkalinity (TALK), total hardness (TH), Ca, Mg, Na, K, Fe, Mn, Cl, F, NH3,NO2, NO3, BOD and DO of river. The results of the present study have been compared with the permissible standards prescribed by the standards, such as BIS, CES, CPHEEO, ICMR and WHO. The average value of the water quality index for Pazhayar river was 49.01 (during monsoon period) indicating that this river is under moderate pollution of water quality rating. Based on this report, appropriate steps to be taken to control the pollution in this river. © 2016 - Kalpana Corporation.

Author Keywords
Pazhayar river; Pollution; Water quality analysis; Water quality index

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Siva Shankar, S.[a] , Rengarajan, A.[b] , Rajesh Khanna, M.[c] , Rajasekaran, S.[a]

A robust image encryption in semantic content for high security

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Abstract
Steganography is the art of concealing the secret text or image into another image. In case of images, the embedded message must be strong to common image processing problems such as compression, gaussian noise, impulse noise, speckles noise, resizing etc. The main problem associate with steganography is the embedding of message resembles channel noise. To avoid this problem multi layer image encryption and decryption using compressed sensing method for image recovery has been proposed. Our proposed method allows hiding the message in to the significant portion of the cover image. A semantic content of an image is one which groups the pixels together by common semantic meaning. Then extract the embedded message using advanced signal recovery techniques in compressive sensing. Image retrieval is the key method of compressive sensing technique. It reproduce the source image or the given input image or text. Our proposed results show that image steganography technique gives better performance than other encryptions. © International Science Press.

Author Keywords
Compressed sensing; Embedding; Extraction; Semantic; Steganography

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Rajasekaran, S.[a] , Rengarajan, A.[b] , Jeejo Vetharaj, J.[c] , Punidha, R.[d]

Passive IP traceback (Pit): Discovery of spoofing locations using path backscatter analysis
(2016) *International Journal of Control Theory and Applications*, 9 (9), pp. 3973-3980.

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Abstract
To hide the locations of the hackers, spoofed source IP address is used. Development of IP traces back mechanisms are used to identify the true spot of the spoofers. Exact spoofers location was not identified till now, because no common IP Trace back mechanism was adopted. To overcome the difficulties of the earlier techniques, we implement Passive IP Traceback (PIT) mechanism.PIT detects path backscatter messages (ICMP messages) generated by intermediate devices in the network and traceback the spoofers using topology. We apply Pit on path backscatter data set to identify the locations of the spoofers. Also by employing the TTL field in IP packets, the geographical location details of routing device near to IP spoofers are found. ï¿½ International Science Press.

Author Keywords
Denial of service; IP spoofing; IP traceback; Network security; Time to live

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Nandhini, J.[a] , Nazreen Banu, A.[a] , Vinod, S.[a] , Insozhan, N.[a] , Rajasekaran, S.[b]

Random pattern security in automatic teller machine

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Abstract
One of the most commonly occurring problems in the recent years are the ATM (Automatic teller machine) frauds. People lose their money due to lack of awareness. The major reason for such kind of actions is the attacks made on the 4-digit pin (Personal Identification Number) which is being used as a password for authentication in ATM. The attacks such as shoulder surfing and recording attacks are becoming more common in ATM. The PIN number is not given proper security to overcome such attacks. The proposed method uses the pin entry methods which are resistant to such attacks. In our proposed method instead of using a single pin, a new pin is generated for every usage of the ATM by the user. © International Science Press.

Author Keywords
Improved black White (BW) method; Mobile application; Pattern matching; Personal identification number; Shoulder surfing attack

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Ganesh Kumar, D.[a] , Parthasarathy, V.[b] , Vimal, V.R.[b] , Rajasekaran, S.[c]

Dynamic signal transmission in wireless sensor network using sensible power management
(2016) *International Journal of Control Theory and Applications*, 9 (9), pp. 3805-3812.

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Abstract
The wireless sensor network usage has been increased to a greater extent nowadays. The usage of wireless sensor network is extended to a vast number of applications, such as health monitoring, pipeline structure alignment monitoring, weather monitoring, transportation management, Agriculture, manufacturing process, etc..,. The nodes which form the wireless sensor network are called as wireless sensor nodes. These nodes use limited battery resources for working and also it cannot be backed up by large power resources. Physical monitoring and changing of the batteries are not convenient at all times since the placement of these sensor nodes are not always accessible and the environment is also not suitable for humans for most of the cases. In such scenarios the usage of the limited power is an important factor in wireless sensor networks. In this paper, we proposed an SPM (Sensible power Management) algorithm to preserve the power by controlling the receiving and transmission of the signals to and fro from the nodes. The main aim of the algorithm is to analyze the need for transmission and the power needed for transmission and detect the false node, thereby preventing unwanted transmission. Identifying the need for transmission is a heavy computational process and our aim is to increase the life time of the nodes and also to reduce the computation time needed. This automatically leads to an increase in the life time of the wireless sensor nodes. © International Science Press.

Author Keywords
Dynamic transmission; Power management; Wireless sensor network; Wireless sensor nodes

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Systematic approach for utilization of IOT environment by the weak people

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Abstract
Internet of Things is the network of physical objects such as buildings, devices and other items embedded with sensors, electronic, software and network connectivity that enables these objects to collect and exchange data. Even though it is easy to handle devices at the IOT environment, weak people like children, physically disabled and old people struggles a lot to handle the devices properly in IOT environment. This paper proposes a systematic methodology to protect and handle the IOT environment by the weak people using intelligent systems and user centric system to collect the data from IOT environment and measure it to visualize the data, hence provides a user friendly IOT environment. © International Science Press.

Author Keywords
Embedded system; Intelligent systems; IOT; Sensors; User-centric systems

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An innovative web based learning framework to assist a non-formal education system
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Abstract
Nowadays, it is quite be difficult to offer the quality of education for learner in non-formal ways in India. Due to limited resource, budget problem and family burden, there are many people are not capable to adopt formal education systems. In literature, there is no proper work for non-formal based education system. However, current systems have low content classification accuracy as well poor performance in terms of content extraction from database. To overcome these issues, this paper presents an innovative web based learning framework to assist a non-formal education system. This system reduces the gap between education system and learner. It brings opportunities for learner to adapt standard education system with no age bar and time constraints. It will be easily accessible by utilization of centralized database. To evaluate the learner performance, this system also creates the user interface for teachers and board. To enhance the classification accuracy, information extraction and course content management, Effective Learning Content Monitoring Algorithm is presented. This approach also assists to user to re-ranked content indexed based on learner query. Based on experimental results, proposed approach perform good results in the terms of accuracy, information extraction and content management compare than existing approaches. © International Science Press.

Author Keywords
Content classification & content management; Content extraction; E-learning; Non-formal education systems

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Electrospinning applications from diagnosis to treatment of diabetes

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Abstract
Electrospinning is a facile, yet low cost and reproducible technique that can use both natural and synthetic polymers to address problems in diagnosis and treatment of diabetes. For the diagnosis of diabetes, effective continuous glucose monitoring of the blood glucose level can be achieved by using electrospun glucose biosensors. Electrospun nanofibers confer a high-surface area, micro-porosity, and potential to encapsulate drugs or biomolecules within nanofibers. Even though electrospinning has been used widely there is no review available till now with the applications of electrospinning specifically for the diagnosis and treatment of diabetes. In this critical review, recent advances of electrospinning to optimize the glucose sensing ability and a myriad of diabetic drug delivery techniques via electrospinning are discussed. Future perspectives of biodegradable nanofibers are also discussed in the last section, which highlights the current challenges, innovation and development of novel electrospun nanofibers for theranostics targeted to diabetics. © 2016 The Royal Society of Chemistry.

Index Keywords
Glucose, Glucose sensors, Nanofibers, Natural polymers, Spinning (fibers); Blood glucose level, Continuous glucose monitoring, Delivery techniques, Electrospun nanofibers, Future perspectives, Glucose biosensor, High surface area, Synthetic polymers; Electrospinning

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Abstract
Wavelet transform provides a fine means of classifying seizure EEG signals from the normal EEG signals. Stationary wavelet transform (SWT) is used to further improve the performance of discrete wavelet transform. EEG signal prediction and classification can be bolstered up by applying SWT. In this work the residues obtained from denoising the signal using SWT is considered. Its arithmetical factors like standard deviation mean and median absolute deviation, maximum norm and histogram are considered and analyzed. It can be vividly seen that the seizure EEG signal parameters are higher than the normal EEG wave pattern. The original wavelet used here is a novel wavelet named as eegwav which has a resemblance with the EEG wave pattern. © International Science Press.

Author Keywords
EEG signal; Neural networks; Seizure detection; Stationary Wavelet transform

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A novel mutation in the DNA binding domain of NFKB is associated with speckled leukoplakia
(2016) *Asian Pacific Journal of Cancer Prevention*, 17 (7), pp. 3627-3629. Cited 2 times.

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Abstract
Background: Activation and inactivation of nuclear factor of kappa light chain gene enhancer in B cells (NFKB) is tightly regulated to ensure effective onset and cessation of defensive inflammatory signaling. However, mutations within NFKB, or change in activation and inactivation molecules have been reported in a few cancers. Although oral squamous cell carcinoma is one of the most prevalent forms of cancer in India, with a development associated with malignant transformation of precancerous lesions, the genetic status of NFKB and relative rates of change in oral precancerous lesions remain unknown. Hence in the present study we investigated all twenty four exons of NFKB gene in two precancerous lesions, namely oral submucous fibrosis (OSMF) and oral leukoplakia (OL) to understand its occurrence, incidence and assess its possible contribution to malignant transformation. Materials and Methods: Chromosomal DNA isolated from twenty five each of OSMF and OL tissue biopsy samples were subjected to PCR amplification with intronic primers flanking twenty four exons of the NFKB gene. The PCR amplicons were subsequently subjected to direct sequencing to elucidate the mutation status. Results: Sequence analysis identified a novel heterozygous mutation, c.419T>A causing substitution of leucine with glutamine at codon 140 (L140Q) in an OL sample. Conclusions: The identification of a substitution mutation L140Q within the DNA binding domain of NFKB in OL suggests that NFKB mutation may be relatively an early event during transformation. To the best of our knowledge, this study is the first to have identified a missense mutation in NFKB in OL.

Author Keywords
Hyperactivation; NFKB expression; NFKB mutation; NFKB signalling pathway; Oral carcinoma

Index Keywords
DNA, DNA binding protein, immunoglobulin enhancer binding protein; cross-sectional study, exon, genetics, heterozygote, human, India, leukoplakia, mouth disease, mouth tumor, mutation, pathology, polymerase chain reaction, precancer, procedures, protein domain; Cross-Sectional Studies, DNA, DNA-Binding Proteins, Exons, Heterozygote, Humans, India, Leukoplakia, Oral, Mouth Neoplasms, Mutation, NF-kappa B, Oral Submucous Fibrosis, Polymerase Chain Reaction, Precancerous Conditions, Protein Domains

Chemicals/CAS
DNA, 9007-49-2; DNA; DNA-Binding Proteins; NF-kappa B

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A novel and hybrid secure digital image watermarking framework through sc-LWT-SVD

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Abstract
Background: In the recent internet world, the watermarking security dispute has incurring design challenges on watermarking techniques. This article has anticipated a robust and secure watermarking pattern, based on SC-LWT-SVD which is projected so as to challenge the numerous serious watermarking security disputes, i.e., copyright protection through encryption, unsanctioned interpretation, false positive recognition, and numerous prerogatives of tenure complications. Methods: Initially SC-LWT is accomplished to split the input values, in order to acquire approximate coefficients. The SVD is applied on LWT coefficients to originate singular constants. Findings: The proposed SC-LWT- SVD constructed watermarking arrangement is verified with numerous malicious and un-malicious outbreaks and the experimental outcomes illustrate that it comprehends the security prerequisites which resolves false positive detection and copyright protection. Furthermore, this pattern is deliberated to blind scheme. Application: The simulation model is accustomed to verify the viability of the anticipated pattern and its forcefulness in contradiction of numerous outbreaks and to link with some earlier systems.

Author Keywords
Digital Image Watermarking; False Positive Detection; LWT; Singular Value Decomposition (SVD); Sparse Coding

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A smart automated embedded based PCB-bare board testing machine design and development using flexible flying probe

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Abstract
Background/Objectives: To design an automated embedded based flexible flying probe for testing PCB bare board more accurately which is one of the toughest challenge in manual testing. Methods/Statistical Analysis: Embedded based flexible flying probe can precisely position a probe on test points with high accurateness achieved by means of microstepping motors and linear laser encoders. The probe is moved horizontally and vertically based on the command passed by stepper motor which in-turn get the information from the prototype in format of Gerber file. First the flying probe checks the connectivity between two points then if the connectivity is good it will check the next track. Findings: This novel invention of flying probes are developed from new-fangled and novel thought intended to produce fasten testing speed, improved access, and enhanced error coverage. During the testing process if the machine determines some problem in the connectivity, it read the problem and send the error report on the PC display. From the error report, we can identify the fault placed in the PCB. A log file with test results is generated & stored on the PC. Fault details are sent to display unit of PC. The PC displays the matching accuracy and fault detection. The experimental result was conducted on 3 different PCB Bare board and the testing result shows the 92% accuracy and 18% false detection rate. It is compared with the jig board tester which produces less result compared to the proposed technique. The chief confront of this proposal is low down equipment and dispensation cost, absolute testing accurateness and capability to position close to faults and faults that may source irregular breakdowns. Applications/Improvements: This machine can be used for testing any type of PCB board. This proposed work develops a smart flying probe to test PCB which will significantly decrease test times therefore increasing productivity.

Author Keywords
Automatic; Embedded; Flying probe; Micro stepping motors; Printed circuit board (PCB)

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Periyaazhagar, D.[a] , Irusapparajan, G.[b]

Comparative study on three phase cascaded inverter for various bipolar PWM techniques

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Abstract
This paper represents the comparison of carrier-based bipolar pulse width modulation technique such as phase disposition, phase opposition disposition, alternating phase opposition disposition, carrier overlapping and variable frequency for the choice of three phase nine level cascade multilevel inverters. In this paper, cascade multilevel inverter topology with a multiconversion cell consists of two unequal voltage sources and it produces nine level output voltages at load terminal. Simulation results are performed by using MATLAB/Simulink. It indicates that alternating phase opposition disposition pulse width modulation provides higher output voltage with less harmonic distortion for all pulse width modulation techniques. It is also observed that the carrier overlapping pulse width modulation technique provides higher fundamental RMS output voltage for all pulse width modulation techniques. Copyright © 2016 Inderscience Enterprises Ltd.

Author Keywords
Alternating phase opposition disposition; Carrier overlapping; Cascaded inverter; Crest factor; Form factor; Multilevel inverter; Phase disposition; Phase opposition disposition; Pulse width modulation; Total harmonic distortion; Variable frequency

Index Keywords
Electric inverters, Harmonic distortion, MATLAB, Voltage control; Alternating phase, Carrier overlapping, Cascaded inverters, Crest factors, Form factors, Multilevel inverter, Phase disposition, Phase opposition dispositions, Total harmonic distortion (THD), Variable frequencies; Pulse width modulation

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Multipoint search algorithm for automatic segmentation of tooth from digital intra oral periapical radiographs
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Abstract
Objectives: In the present study digitally recorded Intra Oral Periapical radiographs (IOPA) are investigated. Methods/Analysis: This paper presents an innovative algorithm for automatic segmentation of the digital IOPA radiograph in one or more qualified regions of interest. Segmentation of IOPA is done repetitively till all teeth in the image are extracted. These segmented images resulting from this algorithm will now have one tooth in one image. Findings: A radiograph with exactly one tooth in image is extremely useful for further study and analysis of individual tooth in many and diverse applications of computer assistance in processing of dental radiographs. The segmentation algorithm proposed in this paper, necessarily being a spatial segmentation method, separates regions of interest without any loss or alterations in the data. The algorithm works successfully on 76 digital IOPA radiographs out of 80 images in test data. Novelty/Improvements: The algorithm proposed in the paper is fully automatic and does not require any human intervention. The segmentation algorithm proposed separates one tooth with its perimeter region intact in one image. The number of output images generated are equal to number of teeth in input IOPA.

Author Keywords
Image processing; Image segmentation; Intraoral periapical radiograph; Vertical integral projection

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Naik, A.[a] , Tikhe, S.[a] , Bhide, S.[b] , Kaliyamurthie, K.P.[a] , Saravanan, T.[a]

Automatic segmentation of lower jaw and mandibular bone in digital dental panoramic radiographs
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Abstract
Objectives: Panoramic x-ray is a medical imaging technique used in dentistry. This paper aims to present fully automatic segmentation algorithm to extract lower jaw and mandible from panoramic x-ray. Methods/Analysis: Panoramic x-rays provide features of various diseases like advanced periodontal diseases, cysts, tumors, impacted teeth, fractures in lower or upper jaw, etc. Image processing techniques are applied on these images to detect diseases automatically. Segmentation is an inevitable step in automation to extract disease features. Majority existing literature use semi-automatic method for segmentation of panoramic x-ray. The algorithm proposed in this paper is fully automatic method of segmentation. Findings: Panoramic x-rays give entire view of mouth and facilitate assessment of hard tissue structures of the facial area rather than assessment of dental carries. Segmentation of panoramic x-rays is an inevitable step in automating diagnosis of oral disorders like, tumor, cysts, fracture, etc. In this paper, an algorithm is developed for automatic segmentation of lower jaw and then mandibular bone in dental digital panoramic x-ray. Dental digital panoramic x-ray is a good quality image which does not require noise removal. The segmentation algorithm uses novel strips method where input image is subdivided in number of strips. These strips are further processed to separate lower jaw and mandible from input image. The algorithm is fully automatic and does not involve human intervention at any level. Paper presents analysis of number of strips as 3, 5, 7 and 9. The algorithm presented in this paper gives 93% success for segmentation of lower jaw and 90% success in segmentation of mandible structure when strip count is 5. Applications/Improvement: Strip method focuses ROI and ignores components like teeth, spinal cord shadow, etc. Central strip is useful to segment lower jaw whereas side strips are useful to detect mandible edge points.

Author Keywords
Automatic segmentation; Digital dental panoramic X-ray; Lower jaw; Mandible; Orthopantomograph (OPG)

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The study of antioxidant activities of an Ayurvedic medicine Ayaskriti
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Abstract
Ayaskriti is an Ayurvedic preparation for the treatment of anemia, weight loss and skin related diseases. This is made of a number of plants and plant parts. The present study deals with antioxidant activities of Ayasriti, such as DDPH assay, FRAP assay and Hydrogen peroxide scavenging activity assay. It was found that all the three assays indicated that Ayaskriti has antioxidant activity. This is one step towards understanding the medicinal efficacy of this medicine.

Author Keywords
Anemia; Antioxidant; Ayaskriti; Ayurvedic; DDPH; FRAP; Hydrogen Peroxide Scavenging Assay

Index Keywords
antioxidant, ayaskriti, unclassified drug; Acacia catechu, Acacia leucophloea, Acacia polyacantha, Aconitum heterophyllum, Acorus calamus, Anogeissus latifolia, antioxidant activity, Aquilaria agallocha, Article, Ayurveda, Berberis aristata, Betula utilis, black pepper, Borassus flabellifer, Brassica alba, Butea monosperma, Calotropis procera, caraway, cardamom, Cassia fistula, Cleome gynandra, Clerodendrum serratum, Coleus forskohlii, cumin, Cyclea peltata, Dalbergia sissoo, Embelia ribes, Ferula foetida, ginger, Grewia tenax, Holarrhena antidysenterica, Marsdenia tenacissima, medicinal plant, Oroxylum, Phyllanthus reticulatus, Picrorhiza kurroa, Piper longum, Piper retrofractum, Plumbago zeylanica, Prosopis spicigera, Pterocarpus marsupium, Pterocarpus santalinus, Rubia cordifolia, Santalum album, Sapindus trifoliatus, Shorea robusta, Trachyspermum roxburghianum

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The study of antioxidant activities of an Ayurvedic medicine Kulathadi Kashayam

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Abstract
The present study deals with the antioxidant assays, namely, DDPH assay, FRAP assay and Hydrogen peroxide Scavenging Activity assay of one Ayurvedic formulation, Kulathadi Kashayam, which is a known medicine for gynecological disorders. The report suggests that all the three assays have clearly indicated that Kulathadi Kashayam has very good antioxidant potential which could be one of the reasons for its action as an effective medicine for gynecological disorders.

Author Keywords
DDPH; FRAP; Hydrogen Peroxide Scavenging Assay; Kulathadi Kashayam

Index Keywords
1,1 diphenyl 2 picrylhydrazyl, antioxidant, hydrogen peroxide, kulathadi kashayam, reactive oxygen metabolite, unclassified drug; antioxidant activity, Article, Ayurveda, bioassay, controlled study, drug efficacy, drug formulation, drug mechanism, fluorescence recovery after photobleaching, IC50, nonhuman, photochemistry

Chemicals/CAS
1,1 diphenyl 2 picrylhydrazyl, 1898-66-4; hydrogen peroxide, 7722-84-1

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Review on otomycosis

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Abstract
Otomycosis or fungal infection of the External Auditory canal and infrequently affecting the middle ear is a common condition encountered worldwide in ENT practice. It is more prevalent in hot, humid and dusty environment of tropics and subtropics. More predominant in males with a high incidence in the age group of 21-30years and is mostly unilateral. The common presenting symptoms are itching discharge, fullness, hearing impairment, tinnitus and pain. The predisposing factors generally are frequent instrumentation and use of unsterile oil for cleaning spread of fungal infection from elsewhere in the body. Though diagnosis is mostly clinical, confirmation is by 10% KOH staining and SDA culture for fungus. Most common isolates are Aspergillus and candida sp. Management is by preventing factors predisposing to otitis externa by patient education, and treatment is by, frequent suctioning and use of 1% cotrimazole antifungal drops. Eradication of disease is difficult in presence of mastoid cavity. Complications are more in the immunocompromised. © 2010 RJPBCS.

Author Keywords
1% cotrimazole drops; 10% KOH staining; Aspergillus; Candida sp; Immunocompromised; Otitis externa; Otomycosis; Predisposing factors; SDA (Sabourands dextrose agar) culture

Index Keywords
amphotericin B, clotrimazole, tolnaftate; Aspergillus flavus, Aspergillus fumigatus, Aspergillus niger, bleeding, Candida albicans, Candida parapsilosis, Candida tropicalis, disease eradication, drug treatment failure, external auditory canal, fungus culture, health education, hearing impairment, human, immunocompromised patient, middle ear, myringoplasty, necrosis, nonhuman, otalgia, otomycosis, pain severity, patient education, Review, Scedosporium apiospermum, tinnitus, Trichosporon asahii, ulcer

Chemicals/CAS
amphotericin B, 1397-89-3, 30652-87-0; clotrimazole, 23593-75-1; tolnaftate, 2398-96-1

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Recent trends in nano-based drug delivery systems for efficient delivery of phytochemicals in chemotherapy
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Abstract
The advent of nanotechnology has revolutionized various scientific inventions, out of which the debut of nanomedicine is outstanding. Especially, research has embarked on nano-drug delivery for treating cancer. Natural compounds present in plants, namely phytochemicals, have been extensively exploited for their anticancer properties. Despite their excellent anticancer abilities, phytochemicals are limited by their low water solubility and poor bioavailability. However, the field of nanotechnology has overcome these limitations. This review focusses on various methods of nano-drug delivery of phytochemicals against the killer disease, cancer. Common carriers that were employed ranged from micelles, with a polymeric base, to dendrimers, liposomes and nanoparticles. The phytochemicals were found to become more soluble when delivered by the nanocarriers and exhibited a remarkable effect on the cancer cells, compared to their free form. More interestingly, the half-maximal dose of the phytochemical was reduced significantly when it was delivered by the nanocarrier. On the whole, this review encourages the idea of "cancer-nanotechnology" after in-depth clinical studies on these phytochemical-loaded nanocarriers. Moreover, it will epitomize the nanocarriers as a crusader in improving cancer chemotherapy by reducing undesired effects and will invigorate site-specific drug delivery. © The Royal Society of Chemistry.

Index Keywords
Biochemistry, Chemotherapy, Liposomes, Medical nanotechnology, Nanotechnology; Anticancer abilities, Anticancer properties, Cancer Chemotherapy, Cancer nanotechnology, Common carriers, Drug delivery system, Natural compounds, Site-specific drug deliveries; Diseases

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One pot easy synthesis and optical characterization of Cd1-xCoxS/rGO composites starting from graphite oxide by co precipitation method and its electrochemical properties

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Abstract
Cd(1-x)Co(x)S/rGO nanocomposites were synthesized by an easy and simple one–pot co-precipitation method. The composites were characterized by using X-ray diffractometer (XRD), Fourier transform infrared (FTIR), Raman spectroscopy, Thermogravimetric Analysis (TGA). The presence of elements was confirmed by X-ray photoelectron spectroscopy. The morphological studies FE-SEM and TEM shows that the Cd(1-x)Co(x)S nanoparticles were deposited on the surface of reduced graphene oxide sheets. The electrochemical property was studied by CV analysis, which indicates the introduction of Co ions into CdS nanoparticles on to the rGO sheets results the increase in the integral area and current. This material could be useful for energy storage devices. © 2016, Sphinx Knowledge House. All rights reserved.

Author Keywords
Cd(1-x)Co(x)S/rGO; Co-precipitation; Composites; Electrochemical property; Optical properties

Index Keywords
cobalt, graphene oxide, graphite oxide, hydroxide, nanocomposite, nanocrystal, oxygen, silver chloride, unclassified drug; Article, chemical bond, electric current, electrochemistry, electrode, infrared spectroscopy, one pot easy synthesis, platinum wire, polarimetry, precipitation, proton nuclear magnetic resonance, Raman spectrometry, silver electrode, synthesis, thermogravimetry, transmission electron microscopy, X ray diffraction, X ray photoelectron spectroscopy

Chemicals/CAS
cobalt, 7440-48-4; hydroxide, 14280-30-9; oxygen, 7782-44-7; silver chloride, 7783-90-6

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Antioxidant study and GC MS analysis of an ayurvedic medicine 'Talisapatradi Choornam'

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Abstract
The present study deals with the antioxidant assay and GC MS analysis of one Ayurvedic medicine Talisapatradi Churnam. This medicine is used to treat respiratory and digestive disorders. The medicine was subjected to DPPH, FRAP and Hydrogen Peroxide scavenging assays and it was found that it has good antioxidant potential. The GC MS analysis results indicated the presence of twenty six bio molecules of which some of them like n-Hexadecanoic acid, Octadecanoic acid, piperine, Phenol, 2, 4-bis (1, 1- dimethylethyl), Glycerol 1-palmitate, 7, 9-Di-tert-butyl-1-oxaspiro(4,5)deca-6,9-diene-2,8-dione, Eicosane, 2-methyl- derivative, Octadecanoic acid esters, 2-(3,4-Methylenedioxyphenyl) cyclohexanone and 5-Isopropyl-2,8-dimethyl-9- oxatricyclo[4.4.0.0(2,8)]decan-7-one were present in higher quantities whereas some minor compounds like Heptadecane, 1,3- Benzodioxole, 5,5'-(tetrahydro-1H,3H-furo[3,4-c]furan-1,4-diyl)bis-, [1S-(1α,3aα,4β,6aα)]-, Octadecane, 3-ethyl-5-(2-ethylbutyl)-, Heneicosane, Heptadecane, 2,6,10,15-tetramethyl-, Isopropyl myristate, Hexadecane, 2,6,11,15-tetramethyl-, Diethyl Phthalate, β- Asarone and Geranyl-α-terpinene were also found. The study tries to correlate the medicinal activity of the medicine with the antioxidant activity and with some important bio molecules known for their similar medicinal roles. © 2016, Global Research Online. All rights reserved.

Author Keywords
Antioxidant; Ayurvedic; DPPH; FRAP; GC MS; Hydrogen peroxide; Talisapatradi churnam

Index Keywords
1,3 benzodioxole, 1s (1alpha,3alpha,4beta,6alpha)] octadecane, 2 (3,4 methylenedioxyphenyl) cyclohexanone, 2 methyl derivative, 2,4 bis (1, 1dimethylethyl) glycerol 1 palmitate, 2,6,10,15 tetramethyl isopropyl myristate, 2,6,11,15 tetramethyl diethyl phthalate, 3 ethyl 5 (2 ethylbutyl) heneicosane, 5 isopropyl 2,8 dimethyl 9 oxatricyclo[4.4.0.0(2,8)]decan 7 one, 5,5' (tetrahydro1h,3h furo[3,4 c]furan 1,4 diyl)bis octadecane, 7, 9 di tert butyl 1 oxaspiro(4,5)deca 6,9 diene 2,8 dione, alcohol, ayurvedic drug, beta asarone, eicosane, geranyl alpha terpinene, heptadecane, hexadecane, methanol, octadecanoic acid ester, palmitic acid, phenol, piperine, stearic acid, talisapatradi choornam, unclassified drug; Abies webbiana, antioxidant activity, antioxidant assay, Article, Bambusa arundinacea, black pepper, cardamom, Cinnamomum zeylanicum, DPPH radical scavenging assay, FRAP radical scavenging assay, ginger, hydrogen peroxide scavenging assay, mass fragmentography, medicinal plant, Piper longum

Chemicals/CAS
alcohol, 64-17-5; beta asarone, 5273-86-9; hexadecane, 544-76-3; methanol, 67-56-1; palmitic acid, 57-10-3; phenol, 108-95-2, 3229-70-7; piperine, 94-62-2; stearic acid, 57-11-4, 646-29-7

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Kavimani, M.[a] , Suba Anandhi, K.[b] , Jebakani, C.F.[c]

Anatomy of caecum in cadavers

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Abstract
Aim of this study to detail discussing the anatomy of caecum in adult cadavers. Anatomical and topographical variations of the caecum are known to occur. Anatomical variations in caecum also have been observed. The study was carried out on 50 adult cadavers over a period of 2 years. The anatomy of caecum was studied in detail. 50 embalmed cadavers (30 male and 20 female) were dissected to study position, shape, length and width of caecum. The study was done in the department of anatomy of madras medical college, Chennai. Out of 50 adult cadavers in 48 cases the caecum was found in right iliac fossa, but only in two cases it was situated in the sub-hepatic region. Out of 50 adult cadavers in 46 cases shape of caecum were normal adult type(Ampullary), 2 cases were of exaggerated variety, one case was of infantile type, and one case was of fetal type. The length of caecum in 30 adult males was 6.0 cm± 0.96 SD[range: 4.0-9.0 cm] and width was 6.1cm ± 1.0 SD[range:3.5-12.0 cm]. The length of caecum in 20 adult females was 5.9 cm± 0.37 SD [range: 5.5-6.5 cm] and width was 6.6cm ± 0.38 SD [range:5.5-6.7 cm]. The knowledge of anatomy of caecum is of significant importance during surgical and radiological procedure.

Author Keywords
Caecum; Exaggerated; Infantile

Index Keywords
adult, anatomical variation, anatomy, cadaver, cecum, clinical article, controlled study, female, fetus, human, iliac bone, male, medical school, surgery

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A genetic PSO algorithm with QoS-aware cluster cloud service composition
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Abstract
The QoS-aware cloud service composition is a significantly crucial concern in dynamic cloud environment. There is multi-nature services are clustered together and integrated with multiple domains over the internet. Because of increasing number private and public cloud sources and predominantly all cloud services offers similar services. However this differs in their functionalities depend on the QoS constraints. This drags more complexity in choosing a clustered cloud services with optimal QoS concert, an enhanced Genetic Particle Swarm Optimization (GPSO) Algorithm is anticipated to crack this crisis. With the intention to construct the QoS-aware cloud composition algorithm, all the parameters to be redefined such as price, position, response time and reputation. The Adaptive Non-Uniform Mutation (ANUM) approach is proposed to attain the best particle globally to boost the population assortment on the motivation of conquering the prematurity level of GPSO algorithm. This strategy also matched with other similar techniques to acquire the convergence intensity. The efficiency of the anticipated algorithm for QoS-aware cloud service composition is exemplified and evaluated with a Modified Genetic Algorithm (MGA), GN_S_Net, and PSOA the outcomes of investigational assessment signifies that our model extensively achieves than the existing approaches by means of execution time with improved QoS performance parameters. © Springer International Publishing Switzerland 2016.

Author Keywords
ANUM; Cloud composition; Cluster services; GPSO; QoS-aware

Index Keywords
Algorithms, Distributed database systems, Genetic algorithms, Optimization, Parameter estimation, Particle swarm optimization (PSO), Quality of service, Signal processing, Web services; ANUM, Cloud composition, Cluster services, GPSO, QoS-aware; Clustering algorithms

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Menon, V.[a] , Kattimani, S.[a] , Sarkar, S.[b] , Mathan, K.[a]

How do repeat suicide attempters differ from first timers? An exploratory record based analysis

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Abstract
Background: Evidence indicates that repeat suicide attempters, as a group, may differ from 1st time attempters. The identification of repeat attempters is a powerful but underutilized clinical variable. Aims: In this research, we aimed to compare individuals with lifetime histories of multiple attempts with 1st time attempters to identify factors predictive of repeat attempts. Setting and Design: This was a retrospective record based study carried out at a teaching cum Tertiary Care Hospital in South India. Methods: Relevant data was extracted from the clinical records of 1st time attempters (n = 362) and repeat attempters (n = 61) presenting to a single Tertiary Care Center over a 4 half year period. They were compared on various sociodemographic and clinical parameters. The clinical measures included Presumptive Stressful Life Events Scale, Beck Hopelessness Scale, Coping Strategies Inventory - Short Form, and the Global Assessment of Functioning Scale. Statistical Analysis Used: First time attempters and repeaters were compared using appropriate inferential statistics. Logistic regression was used to identify independent predictors of repeat attempts. Results: The two groups did not significantly differ on sociodemographic characteristics. Repeat attempters were more likely to have given prior hints about their act ($\chi 2$ = 4.500, P = 0.034). In the final regression model, beck hopelessness score emerged as a significant predictor of repeat suicide attempts (odds ratio = 1.064, P = 0.020). Conclusion: Among suicide attempters presenting to the hospital, the presence of hopelessness is a predictor of repeat suicide attempts, independent of clinical depression. This highlights the importance of considering hopelessness in the assessment of suicidality with a view to minimize the risk of future attempts.

Author Keywords
Attempted suicide; cognition; depression; hopelessness; suicide

Index Keywords
pesticide, poison, prescription drug; adjustment disorder, adult, Article, Beck Hopelessness Scale, Coping Strategy Questionnaire, depression, educational status, employment status, exploratory research, family life, female, Global Assessment of Functioning, hopelessness, human, India, Life Events Scale, logistic regression analysis, major clinical study, male, marriage, medical record review, mood disorder, prediction, priority journal, psychosis, retrospective study, risk reduction, social status, substance abuse, suicidal behavior, suicide attempt, teaching hospital, tertiary care center, urban rural difference

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Magneto-Optical and Catalytic Properties of Recyclable Spinel NiAl 2O4 Nanostructures Using Facile Combustion Methods

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Abstract

Spinel nickel aluminate (NiAl 2O4) nanospheres (NSPs) and nanoplatelets (NPLs) were successfully synthesized using a facile microwave combustion method (MCM) and conventional combustion method (CCM), respectively, using urea as the fuel. The as-prepared samples were characterized by powder X-ray diffraction (XRD), Fourier transform infrared (FT-IR), high-resolution scanning electron microscopy (HR-SEM), high-resolution transmission electron microscopy (HR-TEM), energy-dispersive X-ray spectroscopy (EDX), selected area electron diffraction (SAED), UV–Visible diffuse reflectance spectroscopy (DRS), photoluminescence (PL) spectroscopy, and vibrating sample magnetometer (VSM) analysis. Powder XRD, FT-IR, EDX, and SAED results showed that the samples were pure phase spinel NiAl 2O4 nanocrystals without any other secondary phase impurity. UV–Vis DRS and PL spectroscopy results were used to calculate the energy band gap (Eg) value of the samples which is 3.41 and 3.08 eV for NiAl 2O4 NSPs and NiAl 2O4 NPLs, respectively. VSM results of the NiAl 2O4 NPLs sample show lower Ms (49.16 × 10 −3 emu/g) values compared with the NiAl 2O4 NSPs sample (73.42 × 10 −3 emu/g), which confirm that both the products have ferromagnetic behavior. NiAl 2O4 NSPs were found to have higher surface area than NiAl 2O4 NPLs, which in turn leads to the improved performance towards the selective oxidation of benzyl alcohol into benzaldehyde, with 100 % selectivity, and it was found that the NiAl 2O4 NSPs sample show higher conversion (96.25 %) than NiAl 2O4 NPLs (85.37 %). The as-prepared samples show high activity, good reusability, remarkable stability, and environmentally friendly materials for industrial and technological applications. [Figure not available: see fulltext.] © 2015, Springer Science+Business Media New York.

Author Keywords

Catalytic properties; Microwave combustion; Nanocrystals; Opto-magnetic properties; Spinel NiAl 2O4

Index Keywords

Combustion, Electron diffraction, Electron microscopy, Energy dispersive spectroscopy, Energy gap, Nanocrystalline powders, Nanocrystals, Photoluminescence spectroscopy, Reusability, Scanning electron microscopy, Urea, X ray diffraction, X ray spectroscopy; Catalytic properties, Diffuse reflectance spectroscopy, Energy dispersive X ray spectroscopy, Fourier transform infrared, High-resolution scanning electron microscopies, Selected area electron diffraction, Spinel NiAl 2O4, Vibrating sample magnetometer; High resolution transmission electron microscopy

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Sathyaseelan, B.[a] , Manikandan, E.[b e f h] , Sivakumar, K.[c] , Kennedy, J.[d e f g] , Maaza, M.[e f]

Enhanced visible photoluminescent and structural properties of ZnO/KIT-6 nanoporous materials for white light emitting diode (w-LED) application

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Abstract

Mesoporous metal oxides ZnO are prepared by wet impregnation via hard templating synthesis method using KIT-6 mesoporous silica. The pore size of mesoporous silica with the symmetry of bicontinuous cubic Ia3d have been controlled in the range of 3.4-4.9 nm, indicating the existence of ordered within the silica walls respectively, by choosing surfactants and adjusting the temperature. The pore size of the silica template has been considered to be an important factor that determines the mesostructure of the resulting metal oxides. The prepared ZnO/KIT-6 samples have been studied by XRD, transmission electron microscope (TEM), BET surface area, and photoluminescence (PL) spectroscopy. The ZnO/KIT-6 nanocomposite has the ordered mesostructure of KIT-6 can be used as a white light emitting diode (w-LED) and ultraviolet nanolasers. © 2015 Elsevier B.V. All rights reserved.

Author Keywords

Electron microscopes; Nanocrystalline materials; Optical materials and properties; X-ray; ZnO

Index Keywords

Electron microscopes, Materials properties, Mesoporous materials, Nanocrystalline materials, Nanocrystals, Photoluminescence spectroscopy, Pore size, Porous materials, Silica, Transmission electron microscopy, X rays, Zinc oxide; Mesoporous metal oxides, Mesoporous Silica, Nano-porous materials, Optical materials and properties, Ordered mesostructure, Ultraviolet nanolasers, White light emitting diodes, ZnO; Light emitting diodes

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Sarkar, S.[a] , Menon, V.[b]

Development and Validation of a Scale to Assess Barriers to Health Care Seeking Among Medical Students
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Abstract
Background: Evidence suggests that medical students often hesitate to seek formalized care for their health issues and concerns during training. Presently, there is no validated instrument to assess barriers to health care seeking among medical students. Hence, we attempted to develop and validate an English language questionnaire for assessment of self-reported barriers to physical and mental health care seeking among medical students. Methods: The questionnaire was developed at a medical college in India and was evaluated among the entire undergraduate medical student population of the college. Exploratory factor analysis was conducted to find the factor structure of the questionnaire. Results: The 28-item final instrument comprised of 14 Likert-type items each pertaining to physical and mental health care separately. Higher scores on the scale reflect greater barriers to treatment. The test-retest reliability was found to be good. The factor analysis yielded an optimum five-factor solution explaining 44.8 % of the variance in the score on the scale. The five factors broadly encompassed the dimensions of “stigma and confidentiality,” “awareness of procedures,” “felt needs,” “avoidance of formalized care,” and “preference for alternative treatment.” Conclusion: The present valid and reliable instrument is likely to have institutional utility in assessing barriers to health care service utilization among medical students and thus planning corrective strategies. © 2015, International Association of Medical Science Educators.

Author Keywords
Barrier; Health; Medical students; Mental; Physical; Service

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Magneto-optical studies of manganese-doped zinc oxide nanoparticles by ionic liquid assisted synthesis route
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Abstract
In the present study, manganese (Mn)-doped zinc oxide (ZnO) nanoparticles were prepared by chemical precipitation method using the ionic liquid, 1-butylimidazolium glycolate as solvent and stabilizer. The structural phase and morphology were investigated by X-ray diffraction (XRD), Fourier transform infra-red (FT-IR), high resolution scanning electron microscopy (HR-SEM) with energy dispersive X-ray (EDX) analysis and high resolution transmission electron microscopy (HR-TEM). The crystallite size was calculated using Scherrer formula, and it was found to be 17.24 nm in size. The elemental analysis was investigated by energy dispersive X-ray analysis (EDX). Also, absorbance and emission spectra were measured by using diffuse reflectance (DRS) and photoluminescence (PL) studies. The band gap (Eg) was measured using Kubelka-Munk model and it found to be 3.15 eV. Vibrating sample magnetometer (VSM) showed the magnetic hysteresis (M-H) loop and confirmed the superparamagnetic nature of the sample. Mn-doped ZnO nanocatalyst was tested for the photo-catalytic degradation (PCD) of methylene blue (MB) and observed 94.53% efficiency. Copyright © 2015 American Scientific Publishers.

Author Keywords
Chemical Precipitation; Ionic Liquid; Nanoparticles; Photocatalysts; ZnO

Index Keywords
Aromatic compounds, Chemical analysis, Complexation, Crystallite size, Electron microscopy, Emission spectroscopy, Energy dispersive X ray analysis, Energy gap, High resolution transmission electron microscopy, Ionic liquids, Liquids, Manganese, Manganese oxide, Nanoparticles, Photocatalysts, Scanning electron microscopy, Synthesis (chemical), X ray analysis, X ray diffraction, Zinc, Zinc oxide; Chemical precipitation, Chemical precipitation method, Energy dispersive x-ray analysis (EDX), Fourier transform infra reds, High-resolution scanning electron microscopies, Manganese-doped zinc oxides, Photo catalytic degradation, Vibrating sample magnetometer; Precipitation (chemical)

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Concepts and approaches on human computer interaction - A review
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Abstract
Human Computer Interaction (HCI) technology characterizes an extremely developing area of research with application expert systems. HCI is used in many areas such as industrial design, personal information and interaction management. This paper describes how HCI design can be used in various technologies in order to achieve a certain performance. In this study, the concept of mutual understanding between the user, the machine and the existing approaches using lip movement, gesture recognition, gaze detection and voice recognition have been investigated. This paper also reviews how different types of electrophysiological signal based HCI (electroencephalography (EEG), electromyography (EMG) and electrooculography (EOG)) are designed for the same application. © 2015, International Journal of Pharmacy and Technology. All rights reserved.

Index Keywords
electroencephalogram, electroencephalography, electromyography, electrooculogram, electrooculography, gaze, gesture, human, human computer interaction, machine, recognition, voice

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Experimental investigations on the performance of a water heater using waste heat from an air conditioning system
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Abstract
Energy is one of the basic requirements for the existence and development of human life. The focus is now shifting to energy conservation due to the problems associated with conventional energy sources. This project introduces a novel water heater product that can achieve the multi-functions with improved energy performance. This paper deals with experimental investigations on the performance of a water heater, which uses waste heat from a 1.5 tonne air conditioner. Thus incorporation of a water heater in the outdoor unit of a split-type air-conditioner would result in simultaneous room space cooling and water heating. The experimental results showed that the water heater is capable of producing 88 litres of hot water in one hour of time with a temperature of 52°C. It is seen that up to 37°C of hot water temperature, COP of the waste heat recovery system is more than the COP of conventional air conditioner. But after 37°C, with the increase in hot water temperature, the COP of the waste heat recovery system decreases and becomes less than the COP of conventional air conditioner.

Author Keywords
1.5 tonne air conditioner; COP; Waste heat recovery; Water heater

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A review of the optimization algorithms on traveling salesman problem
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Abstract
The Traveling Salesman Problem (TSP) is arguably the most prominent problem in combinatorial optimization. The simple way in which the problem is defined in combination with its notorious difficulty has stimulated many efforts to find an efficient solution procedure. The TSP is a classic tour problem in which a hypothetical salesman must find the most efficient sequence of destinations in his territory, stopping only once at each, and ending up at the initial starting location. Due to the combinatorial complexity of the TSP, approximate or heuristic solution procedures are almost always employed in practice. Few prospective applications of TSP includes ruling an optimized scan chains route in integrated chip testing, parcels collection and sending in logistics companies, and transportation routing problem. There have been many algorithms introduced to grant time competent solutions for the problem, both exact and approximate. This paper is a review of the recent research work done on various algorithm like genetic algorithm, tabu search algorithm, ant colony algorithm available with respective attributes to find the nearest optimal solution for the traveling salesman problem. It also relates the traveling salesman problem with the available algorithms and provides the advantages in providing a solution for TSP.

Author Keywords
Ant colony algorithm; Combinatorial optimization; Meta heuristics; Minimum cost GA; Tabu search

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automation, cephalometry, computed tomography scanner, computer assisted tomography, dental procedure, geodigm, holography, human, morphometrics, nuclear magnetic resonance imaging, odontometry, optical surface scanning, orthodontics, rapid prototyping, Review, spiral computer assisted tomography, stereophotogrammetry, three dimensional imaging, treatment response, triangulation

Tradenames
NewTom 900 scanner

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Nerve injuries during root canal treatment: A review
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Abstract
Nerve injury during root canal treatment is not a frequent complication, but when it occurs it needs immediate attention and prompt treatment. The symptoms of nerve injury may range from paraesthesia to hyperaesthesia or even dysaesthesia. Inferior alveolar nerve and its branches are commonly affected. Aetiology is over instrumentation, irritant irrigants and canal medicaments, loss of apical constriction and extruded sealants and obturation materials. Depending on the symptoms and the time of reporting, treatment options may vary. Continuous observation, surgical/ non-surgical retreatment, systemic prednisone, decompression surgery, intentional replantation of the tooth are the various treatment options available. Prevention of such injuries is by attention to detail. Adherence to canal working length throughout the instrumentation procedure and taking a radiograph during the initial phases of the obturation can help to prevent such nerve injuries.

Author Keywords
Decompression; Endodontics; Nerve injury; Paraesthesia

Index Keywords
prednisone, root canal filling material, sealant; decompression surgery, dental surgery, dysesthesia, endodontics, human, hyperesthesia, inferior alveolar nerve, nerve injury, paresthesia, prognosis, retreatment, Review, tooth root canal

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Emerging viral diseases in India: A review
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Abstract
The incidence of emerging infectious diseases in humans has increased within the recent past or threatens to increase in the near future. Over 30 new infectious agents have been detected worldwide in the last three decades; 60 per cent of these are of zoonotic origin. Developing countries such as India suffer disproportionately from the burden of infectious diseases given the confluence of existing environmental, socio-economic, and demographic factors. In the recent past, India has seen outbreaks of eight organisms of emerging and re-emerging diseases in various parts of the country, six of these are of zoonotic origin. Prevention and control of emerging infectious diseases will increasingly require the application of sophisticated epidemiologic and molecular biologic technologies, changes in human behaviour, a national policy on early detection of and rapid response to emerging infections and a plan of action. WHO has made several recommendations for national response mechanisms. Many of these are in various stages of implementation in India.

Author Keywords
Chikunguniya; Dengue; Ebola; Swine flu

Index Keywords
brain disease, case fatality rate, dengue, Dengue virus, Ebola hemorrhagic fever, Ebolavirus, human, India, medical history, medical information, mortality rate, Nipah virus, nonhuman, Review, swine influenza virus, virus infection, virus isolation, virus particle

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Asokan, G.S.[a] , Anand, V.[a] , Balachander, N.[b] , Balaji, N.[a] , Aswini, S.[a]

Angina bullosa hemorrhagica: A rare case report
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Abstract
Angina bullosa hemorrhagica(ABH) is the term used todescribe benign subepithelial oral mucosal blisters filledwith blood that are not attributable to a systemicdisorder or haemostatic defect. The lesions are characterizedby their sudden onset. The pathogenesis isunknown, although it may be a multifactorialphenomenon. The soft palate is most commonly affected, but ABH may also appear on the buccal mucosa, lips and tongue. They appear as apainless, dark red and blood-filled blisterin the mouth that rapidly expand and rupturespontaneously in 24-48 hours. We present the case of a 30 year old male with Angina bullosa haemorrhagica.The clinical features of this case are discussed.

Author Keywords
ABH; Blood-filled blister; Soft palate

Index Keywords
adult, angina bullosa hemorrhagica, Article, bleeding, blister, bullous skin disease, burning sensation, case report, clinical examination, dysphagia, fever, follow up, human, male, mouth examination, pain, palpation, petechia, soft palate, speech disorder, xerostomia

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Leiomyoma of the gingiva

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Abstract
Leiomyomas are benign tumors of smooth muscle origin which occur more commonly in the uterus and the gastrointestinaltract. Oral leiomyomas have been reported in the literatures which are commonly present in the lip, tongue, buccal mucosa, palate and mandible. Most of the reported cases are in the 4th and 5th decades of life with very few cases reported in pediatric age group. Most of the lesions are small, asymptomatic and present as a smooth elevated area with pigmentation. Intraosseousleiomyoma's have also been reported in the mandible where it mimics a cyst. We present an 8 year old Indian (Asian) boy who presented with a large exophytic mass with a granulomatous surface on the lingual aspect of the mandible. The size, the site and the age of presentation makes this a rare case worth to be recorded.

Author Keywords
Immunohistochemistry; Leiomyoma; Mandible

Index Keywords
smooth muscle actin; Article, cancer surgery, case report, child, cytoplasm, differential diagnosis, follow up, gingiva leiomyoma, gingiva tumor, gingival biopsy, histopathology, human, human tissue, immunocytochemistry, immunohistochemistry, leiomyoma, male, school child, spindle cell, tumor biopsy, tumor diagnosis

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Abstract
The field of oral Medicine is a speciality which is unique in reflecting Oral systemic relation. The most interesting aspect is that it serves a window to the human body. The role of oral medicine in diagnosing and treating human pathologies have a diverse role both pertaining to the maxillofacial area per se and also the overall health of the human body.

Author Keywords
Oral diseases; Oral medicine; Systemic relation

Index Keywords
cod liver oil, dendrimer, glucose, glycerol, lidocaine, phenol, plant medicinal product, quantum dot, rapamycin; cancer genetics, dentistry, depression, drug therapy, epigenetics, forensic identification, human, Human immunodeficiency virus infection, imaging and display, nanotechnology, personalized medicine, prolotherapy, Review, saliva analysis, senescence, stem cell research, stomatology, temporomandibular joint disorder, theranostic nanomedicine, tooth

Chemicals/CAS
cod liver oil, 8001-69-2; glucose, 50-99-7, 84778-64-3; glycerol, 56-81-5; lidocaine, 137-58-6, 24847-67-4, 56934-02-2, 73-78-9; phenol, 108-95-2, 3229-70-7; rapamycin, 53123-88-9

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DNA adducts
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carcinogen, DNA, protein p53; Article, bladder cancer, carcinogenesis, DNA adduct, dosimetry, gene mutation, genetic code, head and neck cancer, human, isotope labeling, lung cancer, pancreas cancer, tobacco, uterine cervix cancer

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DNA, 9007-49-2

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Is resistin a biomarker for periodontitis -An insight
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Abstract
Resistin is a recently discovered adipocytokine, having a potent biomarker quality. Initially resistin was thought to be produced by adipocytes alone; however, emerging evidence suggests that it is also produced in abundance by various cells of the immunoinflammatory system, indicating its role in various chronic inflammatory diseases. Data suggests that resistin plays a role in obesity, insulin resistance, cardiovascular diseases, and periodontitis. Resistin derived its name from the original observation that it induced insulin resistance (resist-in: resist insulin) in mice and is downregulated in mature murine adipocytes cultured in the presence of insulin sensitizing drugs like thiazolidinediones. It is well recognized that obesity, is associated with insulin resistance and diabetes. Research shows incremental elevation of resistin with periodontal disease activity and a reduced level of resistin, after periodontal therapy. Thus resistin would be one of the molecular links connecting obesity, periodontitis, and diabetes and may serve as a marker that links periodontal disease with other systemic diseases.

Author Keywords
Adipocytokine; Biomarker; Obesity; Periodontitis; Resistin

Index Keywords
2,4 thiazolidinedione derivative, insulin, resistin; adipocyte, Article, cardiovascular disease, immune system, insulin resistance, nonhuman, obesity, periodontitis, systemic disease

Chemicals/CAS
insulin, 9004-10-8

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Successfull localized ridge augmentation: A combination therapy using GBR & PRP
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Abstract
Guided bone regeneration (GBR) is a reconstructive procedure of alveolar ridge using membranes. Combining platelet-rich plasma (PRP) with bone graft materials has been advocated as a means of enhancing rate and quality of new bone formation in regenerative procedures. This procedure is indicated when there is no sufficient bone for implantation, or in the case of optimal implant installation for esthetic or functional needs. The aim of this case report was to evaluate the potential of PRP in combination with Demineralized bone matrix(DMBM) along with membrane to enhance bone regeneration in an siebert's class III alveolar ridge defect .

Author Keywords
Alveolar ridge defect; Demineralized bone matrix; Guided bone regeneration; Platelet rich plasma

Index Keywords
alveolar ridge, bone matrix, bone regeneration, case report, human, membrane, thrombocyte rich plasma

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Role of systemic antibiotics in the management of periodontal diseases
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Abstract
Periodontal diseases are polymicrobial diseases resulting in inflammation of the supporting structures of the teeth. The removal of the plaque biofilm by mechanical therapy not always results in total resolution of the lesion. Frequently adjuvant administration of antibiotics is required for better results. This article overview the factors to be considered while administering systemic antibiotics as an adjunct to mechanical debridement.

Author Keywords
Amoxicillin; Periodontitis; Systemic antibiotics

Index Keywords
amoxicillin, antibiotic
agent, azithromycin, cefalexin, ciprofloxacin, clindamycin, doxycycline, erythromycin, macrolide, metronidazole, penicillin derivative; aggressive periodontitis, Article, biofilm, chronic periodontitis, debridement, drug bioavailability, drug blood level, human, kidney failure, loading drug dose, minimum inhibitory concentration, periodontal disease, periodontitis, plasma protein binding, remission, systemic therapy, treatment duration

Chemicals/CAS
amoxicillin, 26787-78-0, 34642-77-8, 61336-70-7; azithromycin, 83905-01-5, 117772-70-0, 121470-24-4; cefalexin, 15686-71-2, 23325-78-2; ciprofloxacin, 85721-33-1; clindamycin, 18323-44-9; doxycycline, 10592-13-9, 17086-28-1, 564-25-0, 94088-85-4; erythromycin, 114-07-8, 70536-18-4; metronidazole, 39322-38-8, 443-48-1

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Airway problems and its related disorders an orthodontist perspective
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Index Keywords
airway obstruction, Article, cephalometry, clinical examination, clinical feature, genioglossus muscle, human, malocclusion, mandible reconstruction, mouth breathing, muscle, nose obstruction, orthodontist, respiratory tract disease, rhinomanometry, sleep disordered breathing, spirometry, tracheostomy, weight reduction

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Abstract
Cell culture is in a limelight for past two decades because of its demand by pharmaceutical companies and cell biologist. Applicability of cell culture can vary from normal cell function to cancer treatment. It is a firm belief that cell culture will be the future trend form drug development to organ development. Hence it is inevitable for us to have knowledge on cell culture. Present article throws a light on basic idea on cell culture.

Author Keywords
Cancer treatment; Cell culture; Normal cell function; Pharmaceutical companies

Index Keywords
Article, cancer research, cell culture, cell culture technique, cell isolation, contamination, culture medium, drug industry, gene therapy, genetic counseling, genetic engineering, human, medical terminology, nonhuman, osmolality, pH, primary cell culture, tissue engineering, virology

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Aswini, S.[a] , Asokan, G.S.[a] , Malathi, L.[b] , Anand, V.[a] , Balaji, N.[a]

Dentigerous cyst with odontome: A case report
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Abstract
Delayed tooth eruption is the most common complaint of a patient which can lead to the diagnosis of two main odontogenicanomalies, dentigerous cyst and odontome. This article presents a case report of a 13 year old male child with a complex odontome and a dentigerous cyst resulting in delayed eruption of both the first and second mandibular molars.

Author Keywords
Delayed eruption; Odontogenic anomalies

Index Keywords
Article, case report, child, human, male, molar tooth, mouth examination, odontogenic cyst, odontogenic tumor, orthodontics, palpation, school child, submandibular lymph node, swelling, teratoma, tooth crown, tooth disease

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Cascade molecule: An innovation in nanotechnology: Review article
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Abstract
The concept of nanotechnology has been made a lot of revolution in the field of dentistry both in diagnostic and therapeutic aspects. Dendrimers are a type of nanoparticles that has given promising results in various dental applications. This article gives a comprehensive view about the structure, synthesis, properties and applications of dendrimers.

Author Keywords
Dendrimers; Diagnosis; Therapeutics

Index Keywords
dendrimer, polyamidoamine; chemical structure, drug delivery system, encapsulation, gene therapy, human, nanotechnology, neutron capture therapy, photodynamic therapy, Review, static electricity, synthesis

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Recent advances in root end filling materials : A review
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Abstract
The aim of the root end filling is to prevent the leakage of irritants from the root canal into the periapical region and to enhance the apical seal provided by the non surgical endodontic treatment. Various restorative materials which have been used for coronal restorations have been tried and tested as a root end filling materials, along with development of restorative materials exclusively for use as a root end filing material.In old times amalgam was considered the material of choice for root end filling. In recent times MTA has been developed which fulfils almost all the requirements of an ideal root end filling material and has become the gold standard against which the newer materials are compared.This article reviews the conventional root end materials in endodontics and gives a bird's eye view of the recent advances in root end filling materials.

Author Keywords
Endodontics; MTA; Periapical surgery; Root end filling materials; Root resection

Index Keywords
amalgam, epoxy resin, glass ionomer, gutta percha, polymer, resin, root canal filling material, tooth cement, zinc oxide eugenol; gold standard, human, oral surgery, reparative dentistry, Review, tooth root canal

Chemicals/CAS
gutta percha, 9000-32-2; zinc oxide eugenol, 8068-83-5

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Bone substitues in prosthodontic service

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Abstract
The use of artificial bone graft substitutes has increased as the surgical applications widen and the availability of allograft bone decreases. The ideal graft substitute should reabsorb with time to allow and encourage new bone formation whilst maintaining its properties as an osteoconductive scaffold until it is no longer required. A potential disadvantage of some synthetic substitutes is their long dissolution time. Autologous bone grafting is currently considered as the gold standard to restore bone defects. However,clinical benefit is not guaranteed and there is an associated 8-39% complication rate. This has resulted inthe development of alternative (synthetic) bone substitutes.

Author Keywords
Clinical; Prosthodontic; Surgical

Index Keywords
Article, bone allograft, bone conduction, bone development, bone graft, bone growth, dental procedure, gold standard, human, nonhuman, ossification, prosthodontics, xenograft

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Krishna, P.S.[a] , Shankar, K.A.[a] , Babu, N.A.[b] , Masthan, K.M.K.[b]

Cyclin B in oral squamous cell carcinoma: Mini review
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Abstract
Oral squamous cell carcinoma accounts for more than 50% of all tumours in India due to the increased use of tobacco and its products. The most common cause of mortality in OSCC is due to the local recurrence and regional and distant nodal metastasis, thus necessitating the need for proper therapy. Cyclins are a family of proteins that a play an important role in the cell cycle and its regulation. Cyclin B which belongs to the group of M cyclins is responsible for the G2/M transition and also the mitotic process. Cyclin B1 has been implicated in many cancers including Oral squamous cell carcinoma. Cyclin B2 which is coexpressed along with cyclin B1 is relatively less known. Cyclin B2 can act in the absence of cyclin B1 and vice versa too. Cyclin B1 can induce golgi fermentation faster than cyclin B2. Cyclin B2 can cause the progression of cell to undergo mitosis in the absence of cyclin B1. So in cancers both the cyclins play an important role. Targeted therapies have earlier targeted only the cyclin dependent kinases in the cyclin B1-Cdk complex. But now research is on to directly act against cyclin B. This mini review brings to light the role and expression of cyclin B in oral squamous cell carcinoma.

Author Keywords
Cell cycle; Check points; Cyclin B; Cyclin B1; Cyclin B2; M phase factor

Index Keywords
antineoplastic agent, bortezomib, cyclin B, cyclin B1, cyclin B2, cycline, midostaurin, regulator protein; cancer chemotherapy, cancer patient, cancer prognosis, carcinogenesis, cell cycle, cell cycle arrest, G2 phase cell cycle checkpoint, histopathology, human, immunohistochemistry, mouth squamous cell carcinoma, neoplasm, protein expression, protein function, Review

Chemicals/CAS
bortezomib, 179324-69-7, 197730-97-5; midostaurin, 120685-11-2

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Maxillectomy

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Evaluation of airborne bacterial contamination during procedures in oral surgery clinic

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Abstract
Aerosols arising out of oral surgical procedures are composed of saliva, nasopharyngeal secretion, organic particle and blood. This aerosol may act as a vehicle for various bacteria and thus can become a source of infection. An evaluation of airborne bacterial contamination has been done to assess the bacterial composition of aerosols that are formed during surgical procedures. Thirty patients, of both gender in the age group of 18 to 25 years with mandibular impacted third molar who visited the Department of Oral and maxillofacial Surgery, in our center were selected for the study. Microbiological analysis of air borne contamination Petri dishes containing blood agar. Wilcoxon signed rank test, Friedman test using software SPSS version 17.0 Alpha hemolytic streptococci are the predominant bacterium seen in all the 30 surgeries followed by other bacteria. Bacteria grown on the blood agar plate near the surgeon and the patient are the same however Enterococcus faecalis and Escherichia coli are not grown in the agar plate kept near the instrument trolley. The dental surgery clinic should have proper air conditioning system with air filters that can reduce circulating aerosols and it should be made mandatory to find out whether the patient is in active stage of any infection before oral surgical procedure.

Author Keywords
Aerosol; Bacteria; Infection; Minor oral surgery

Index Keywords
agar; adult, aerosol, air conditioning, air filter, airborne infection, alpha hemolytic Streptococcus, Article, bacterial load, bacterium contamination, chemical composition, clinical article, coagulase negative Staphylococcus, dental procedure, Enterococcus faecalis, Escherichia coli, female, hospital infection, human, male, microbiological examination, molar tooth, oral surgery, petri dish, Pseudomonas, Staphylococcus aureus

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Bite marks: Normal or abnormal?
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Abstract
It is not easy for criminals to escape the long arm of the law. Usually a suspect leaves a clue in a crime scene. From a dentist perspective mostly it will be a bite marks. Bite mark is a pattern made by teeth on a substrate. By comparing the dental status and DNA analysis it is possible now to identify a criminal. Scientific approach always requires a proper observation, recording and analysing when inspecting a clue. When analysing a bite marks it is necessary to follow the same scientific approach.It becomes a need for a dentist to know the normal bite marks and its variation. Present article throws a light on these aspects and adds little bit on way of presenting it.

Author Keywords
Bite marks; Scientific approach; Variations

Index Keywords
DNA; algorithm, Article, bite, bite mark, bite wound, classification, dentition, DNA determination, forensic science, human, Mac Donald classification, medical terminology, saliva analysis, tooth arch

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Role of local drug delivery agents in the treatment of periodontal diseases

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Abstract
Removal of the plaque biofilm mechanically forms the mainstay in the management of periodontal diseases. Mechanical debridement has its inherent limitations and frequent use of antibiotics is essential for complete resolution of the lesion. Antibiotics, when used directly into the site have more advantages than when administered systemically. This review highlight the rationale and beneficial effects of locally delivered agents.

Author Keywords
Antibiotics; Periodontitis; Root planing

Index Keywords
antibiotic agent, azithromycin, cellulose acetate, chlorhexidine, doxycycline, ethyl cellulose, eudragit rs, glycerol, hydroxyethylcellulose, metronidazole, metronidazole benzoate, microsphere, minocycline, ofloxacin, ointment base, sesame seed oil, tetracycline, tissue adhesive, triacetin; Article, bactericidal activity, biofilm, debridement, drug degradation, drug delivery system, gingivitis, human, periodontal disease, periodontal dressing, periodontal pocket, sustained drug release

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Parthasaradhi, T.[a] , Paddmanabhan, P.[b] , Ramya, V.[b]

Periodontal vaccines: A sophisticated treatment design in the future?

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Abstract
Periodontal vaccine is a boon in periodontics. The demanding primary role of any periodontal vaccine would be to eradicate the global periodontal disease burden with the ultimate purpose of lowering periodontal disease associated morbidity in humans. In late eighteenth century, Edward Jenner developed and established the principle of vaccination using the cross protection conferred by cowpox virus, which is non pathogenic in humans. Vaccination accomplished can be active immunization, passive immunization or DNA vaccination, made from the antigenic epitopes in periodontopathic bacteria. The objective of periodontal vaccine is to identify the antigens involved in the destructive process of periodontitis against which antibodies would be evoked to exert protection. It also aims to induce mucosal antibody response with little or moderate doses of vaccine. Ongoing research & collaborative efforts can result in development of functional periodontal vaccine for human use in future.

Author Keywords
Active immunization; DNA vaccination; Epitope; Passive immunization; Vaccines

Index Keywords
antibody, antigen, cysteine proteinase, DNA vaccine, epitope, fimbria protein, gingipain, lithium derivative, lithium diiodosalicylate, monoclonal antibody, periodontal vaccine, rabbit antiserum, synthetic peptide, unclassified drug, vaccine; active immunization, Aggregatibacter actinomycetemcomitans, antibody response, antigenicity, Article, bacterial strain, bactericidal activity, clinical research, DNA immunization, drug efficacy, fimbria, human, nonhuman, passive immunization, peptide synthesis, periodontal disease, periodontitis, Porphyromonas gingivalis, vaccination, whole cell

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cysteine proteinase, 37353-41-6

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Balaji, N.[a] , Asokan, G.S.[a] , Rajesh, E.[b] , Anand, V.[a] , Aswini, S.[a]

Rhino orbital mucormycosis presenting as palatal ulcers -A report of two cases: Case report
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Abstract
Mucormycosis is a life threatening fungal infection caused by fungi of the order Mucorales and is one of the fulminant and fatal opportunistic infections, characterized by very acute onset, with a high mortality rate. Rhinocerebralmucormycosis is the most common type and its extension to the orbit and brain is quite usual. It is commonly reported in immunocompromised patients such as poorly controlled diabetics, immunosuppression with corticosteroids, hematological malignancy, solid malignancy, iron overload and burns. Mucormycosis is on the rise with an increase in incidence of Diabetes mellitus and HIV infection leading to immunocompromised status of the patient. Here in, reporting two cases of rhinocerebralmucormycosis in two diabetic patients with palatal perforation in both cases and this is a rare and late occurrence. One was in a known systemic lupus erythematosus (SLE) patient, which is a very rare incidence. Both the patients were successfully treated with a combination of surgical debridement and systemic amphotericin B administration. By presenting these two case reports we would like to point out that mucormycosis should be included in the differential diagnosis of hard palate ulcers and cellulitis, especially in diabetic patients.

Author Keywords
Mucorales; Rhino orbital; Subtotal maxillectomy; Vascular thrombosis

Index Keywords
amphotericin B; adult, Article, bone destruction, case report, computer assisted tomography, debridement, diabetic patient, differential diagnosis, ethmoid sinus, female, follow up, hard palate, human, human tissue, maxilla resection, mucormycosis, nose septum, pain severity, palate disease, palate ulcer, panoramic radiography, rhino cerebral mucormycosis, rhino orbital mucormycosis, systemic lupus erythematosus, tooth socket

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Juvenile aggressive fibromatosis: Review of literature

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Abstract
Extra abdominal desmoid tumours also called as Aggressive fibromatosis (AF) or Juvenile aggressive fibromatosis (JAF) are rare, benign, slow growing, locally destructive tumours of musculoaponeurotic tissue. They are a type of desmoid tumour with a propensity to occur in the head and neck region and can occur at a young age. Early identification and diagnosis is crucial in management of this condition because of its locally aggressive biological behaviour. This article attempts to better understand this rare pathology with a review on its aetiology, clinical course and treatment options.

Author Keywords
Aggressive; Juvenile; Musculoaponeurotic; Tissue fibromatosis

Index Keywords
disease course, fibromatosis, histopathology, human, juvenile aggressive fibromatosis, radiography, Review

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Abstract
This paper is a review on Guided Bone Regeneration. Guided Bone Regeneration has emerged as a predictable method to enhance the bone volume in deficient recipient sites prior to implant placement. It provides sufficient bone volume and adequate soft tissue thickness to enable implants to be placed at the most optimal position from a prosthetic point of view. The barrier membrane acts as a physical barrier, excluding competing and non-osteogenic cells from the overlying mucosa into the membrane-protected space.

Author Keywords
Implants; Non-osteogenic; Placement; Regeneration

Index Keywords
bone graft, bone implant, bone mass, bone regeneration, decortication, human, incision, periodontal dressing, recipient, Review, soft tissue, thickness

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Temporomandibular joint ankylosis -A case report
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Abstract
Temporomandibular Joint (TMJ) ankylosis is a condition in which condylar movement is limited by a mechanical problem in the joint ("true ankylosis") or by a mechanical cause not related to joint components ("false ankylosis"). True ankylosis may be bony or fibrous. In bony ankylosis, the condyle or ramus is attached to the temporal or zygomatic bone by an osseous bridge. In fibrous ankylosis a soft tissue (fibrous) union of joint components occurs; the bone components appear normal. False ankylosis may result from conditions that inhibit condylar movement, such as muscle spasm, myositis ossificans, or coronoid process hyperplasia. Most unilateral cases are caused by mandibular trauma or infection. The most common cause of bilateral TMJ ankylosis is rheumatoid arthritis, although in rare cases bilateral fracture may be the cause. Here we report a case of TMJ ankylosis in a 30 year-old male patient showing most of the characteristic features of this condition.

Author Keywords
Mechanical; Muscle; Spasm; Temporomandibular

Index Keywords
adult, Article, case report, clinical examination, clinical feature, exercise, face asymmetry, feeding disorder, human, hypertrophic scar, male, muscle spasm, occlusion, ossifying myositis, periodontitis, physiotherapy, surgical approach, temporomandibular ankylosis, tooth extraction, tooth periapical disease

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Use of chlorhexidine in implant dentistry

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Abstract
Chlorhexidine is a commonly used antiplaque and antigingivitis agent. Chlorhexidine was used as a broad spectrum antiseptic since the 1950's. Its antibacterial action is due to the disruption of the bacterial cell membrane by the chlorhexidine molecules, increasing the permeability and resulting in cell lysis. It can be either bacteriostatic or bactericidal depending on the dose. It is available in various formulations. This article discusses the clinical application of chlorhexidine in implant dentistry.

Author Keywords
Antibacterial; Chlorhexidine; Spectrum antiseptic

Index Keywords
chlorhexidine, chlorhexidine gluconate; antimicrobial activity, Article, bacterial load, clinical effectiveness, drug indication, human, mouth hygiene, nonhuman, postoperative infection, tooth implant, tooth implantation

Chemicals/CAS
chlorhexidine, 3697-42-5, 55-56-1; chlorhexidine gluconate, 18472-51-0

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Accuracy of three different electronic apex locators -A pilot study
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Abstract
Accurate working length determination is a prerequisite for successful root canal treatment, reducing the chance of insufficient cleaning of the canal or of damaging the periapical tissues from over instrumentation. The use of an electronic apex locator has improved the accuracy of the working length measurement in clinical endodontics. The purpose of this in-vivo study was to compare the accuracy of three different Electronic Apex Locator (EALs). Twelve human mandibular premolar to be extracted for orthodontic treatment were selected. Teeth were divided into three groups Group 1 (n = 4) (IPex, NSK NAKANISHIINC, Tochigi, Japan) Group 2 (n =4) (Mini Apex Locator ,Sybron Endo, Glendora,CA, USA) Group 3 (n=4)(IROOT S,SDenti, Korea).After determining the working length the No 10 Kfile was cut at the reference point and sealed in position using Glass Ionomer cement. Tooth is extracted and apical 3-5mm is exposed and photographed using SLR digital camera. The distance between file tip and minor apical diameter were measured using a calibrated measurement software. (Adobe .version 9). Raw data of 12 samples were recorded and inference was made. Within the limitation of this pilot study we are able to comment that all the Electronic Apex Locators evaluated in this study performed to the recommended accuracy. Further study is important to statistically analyze above mentioned comment.

Author Keywords
EAL; Electronic apex locator; Working length

Index Keywords
adult, Article, dental device, device comparison, electric resistance, electronic apex locator, human, human tissue, impedance, in vivo study, measurement accuracy, pilot study, premolar tooth, tooth root canal

Tradenames
IPex; IROOT S; Mini Apex Locator, Sybron, United States

Manufacturers
Sybron, United States

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Index Keywords
dentin bonding agent, fiber reinforced composite resin, resin, unclassified drug; adolescent, adult, Article, case report, dental floss, dental surgery, follow up, human, male, mouth hygiene, periodontal disease, surface property, tooth implant, traffic accident, young adult

Tradenames
Filtek Z250, 3M; vectris

Manufacturers
3M

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Prabhakar, P.[a] , Bhuvaneshwarri, J.[b] , Paddmanabhan, P.[b]

Evaluation of the impact of impacted mandibular third molars on surrounding structures: A clinical and radiographic analysis in students of tagore dental college and hospital

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Abstract
Useful purpose for third molars has become more difficult, especially when one considers that people experience pain and disease when third molars are not extracted, and many other people experience pain and morbidity when they are extracted. Whether there is a need for these teeth in the dentition is a question worth asking? This study aims to present data about the prevalence and distribution of mandibular third molars students of Tagore Dental College & Hospital. The sample of 200 students was selected by Simple Random Sampling Method in the age group between 21 to 25 years. Intraoral periapical radiographs of right and left mandibular third molars were taken and clinical examination was done to assess the presence of pericoronitis, periodontal pocket, proximal caries, root resorption in distal surface of second. On clinical examination, 23% of pericoronitis was present, 12% of periodontal pockets, 8% proximal caries and no resorption were observed. Within the limitations of this study, it was concluded that significantrelatively less impact of mandibular third molar on second molars. Further studies are recommended with increased sample size.

Author Keywords
College; Dental; Hospital; Mandibular; Radiographic

Index Keywords
adult, Article, clinical examination, controlled study, dental caries, dental student, female, gingiva disease, groups by age, human, major clinical study, male, mandible, molar tooth, periodontal pocket, prevalence, randomized controlled trial, tooth disease, tooth radiography

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Documents

Veerasamy, J.S.[a] , Raj, L.S.M.[b] , Leenasankari, S.[c] , Jayasrikrupaa, R.[c]

Odontogenic keratocyst in right maxilla of 15 year old boy: A case report of not a rare lesion
(2015) *Biomedical and Pharmacology Journal*, 8SE, pp. 47-52.

DOI: 10.13005/bpj/650

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Abstract
Wepresent a case of odontogenickeratocyst involving the right maxilla in 15 years old boy. The histochemicalof the lesion was analysed by haematoxylin & eosin stain and picrosirius red stain.Expansilenatureof the lesion was assessed by using picrosirius red to categorize the fibrous wall of the cyst. The purpose of this case report is to stressthe point that even though the diagnosis of classical odontogenickeratocystis straight forward with histochemical study alone, it is prudent to profile the biology of each patient using less expensive methods before deciding the appropriate adjunctive surgical procedure,for proper rehabilitation of that particular patient as well as to avoid its recurrence in future.

Author Keywords
Odontogenickeratocyst; Picrosirius red; Polarization microscope

Index Keywords
adolescent, Article, basement membrane, case report, cell nucleus, follow up, human, human tissue, immunohistochemistry, inflammatory infiltrate, male, maxilla, odontogenic keratocyst, thickness

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Documents

Saikrishna, P.[a] , Shankar, K.A.[b] , Balachander, N.[b]

Orthokeratinized odontogenic cyst of the mandible: Case report with unusual histopathologic features with review
(2015) *Biomedical and Pharmacology Journal*, 8SE, pp. 121-125.

DOI: 10.13005/bpj/662

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Abstract
Orthokeratinizedodontogeniccysts(OOC's) are relatively uncommon developmental cysts lined with orthokeratinized epithelium consisting of prominent granular layer and a basal layer of low cuboidal flattened cells that show no tendency for nuclear palisading. OOC's has been considered a distinct entity from odontogenickeratocyst since they exhibit a less aggressive behavior and a very low recurrence rate. This report describes a 27 year old female patient who presented with a cyst with unique histopathological features. The purpose of this article is to present a case of OOC in the posterior mandible and also emphasize on the need for differentiating it from keratocysticodontogenictumor(KCOT) with a comprehensive literature review.

Author Keywords
Keratocysticodontogenic tumor; Odontogenic cyst; Orthokeratinized odontogenic cyst

Index Keywords
adult, ameloblastoma, basal cell, case report, dentist, differential diagnosis, enucleation, female, general anesthesia, granular cell, histopathology, human, inflammatory cell, mandible cyst, mouth cavity, mouth examination, odontogenic cyst, odontogenic keratocyst, orthokeratinized odontogenic cyst, radiodiagnosis, Review, teratoma, tooth pain

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Documents

Rajasekaran, S.[a] , Jayaprakash, R.[a] , Babu, N.A.[b] , Masthan, K.M.K.[b]

Resin infiltration technique for arresting white spot lesion: Case report
(2015) *Biomedical and Pharmacology Journal*, 8SE, pp. 225-228.

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Abstract
Management of white spot lesion has always been an important issue in modern dentistry. Many methods have been suggested to prevent (or) slow the demineralization of enamel as soon as white spot lesion begins to appear. The following article illustrates the use of a novel approach to treat smooth surface non cavitated white spot lesions microinvasively based on infiltration of enamel caries with low viscosity light cure resin through infiltration. This treatment aims upon both the prevention of caries progression and improving esthetics by diminising the opacity.

Author Keywords
Case report; Infiltration; Microinvasively

Index Keywords
resin; Article, cofferdam, dental caries, dental procedure, disease course, human, invasive procedure, medical photography, mouth lesion, non invasive procedure, preoperative evaluation, resin infiltration technique, surface property, white spot lesion

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George, J.[a] , Parthasaradhi[a] , Jayesh, R.[b] , Chandran, C.R.[a] , Venkatakrishnan, R.[a]

Frenectomy and vestibuloplasty: A case report
(2015) *Biomedical and Pharmacology Journal*, 8SE, pp. 169-173.

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Abstract
The treatment of the mucogingivalproblems is one of the main objectives of the periodontal therapy. The insufficient or absent attached gingival increases the risk of development of gingival recessions. The classical grafting procedures cannot offer a solution for coverage of a larger than 3 teeth recipient area. The strip technique for free gingival graft avoids the limitations of the palatal donor area and decreases the number of surgical procedures required for augmentation of the attached gingival tissues.

Author Keywords
Gingival tissues; Grafting; Vestibuloplasty

Index Keywords
case report, gingiva, human, oral surgery, palate, recipient, surgical technique

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Asokan, G.S.[a] , Anand, V.[a] , Jimson, S.[b] , Balaji, N.[a] , Aswini, S.[a]

Maxillofacial menace in morbid syndromes: Review article
(2015) *Biomedical and Pharmacology Journal*, 8SE, pp. 117-119.

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Abstract
Syndrome literally means running together and it refers to collection of signs, to groups of symptoms, and to mixed assortments of signs and symptoms.The term refers to a group of manifestations when cause is poorlyunderstood.Some use the term syndrome for multiple anomalies of genetic origin. It is of paramount significance that the clinical features of syndromes especially those relating to maxillofacial and oral manifestations have a promising role to play in diagnosis.

Author Keywords
Maxillofacial manifestations; Oral manifestations; Syndromes

Index Keywords
autosomal dominant inheritance, bone radiography, Caffey disease, fever, hemifacial atrophy, human, maxillofacial disorder, mouth disease, ossification, progeria, Review, skeleton

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Bejoymony, C.M.[a] , Hemasathya, B.[a] , Mitthra, S.[b]

Perception and proprioception in relation to masticatory act
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Abstract
Perceptionis the consciousmentalregistration of a sensorystimulus. It involves interpretation of often ambiguous, insufficient, or overwhelming information in the light of your knowledge, beliefs, goals and expectations. Proprioception means" awareness of oneself"2.It keeps us aware of the position of the body, extremities, mandible etc proprioceptor impulses participate in reflex adjustments. They are group of enteroreceptors that provide information regarding the position of parts of body in space and the receptors of posture and movements .They are highly specialized types of mechanoreceptor (consist of the terminal dendrites of sensory neurons and are encapsulated in structures of connective tissue or free) responding to tension or movement included by associated structures.

Author Keywords
Perception; Proprioception; Stimuli

Index Keywords
awareness, body posture, connective tissue, dendrite, expectation, human, human experiment, limb, mandible, mechanoreceptor, proprioception, reflex, sensory nerve cell, stimulus, tension

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Sharma, A.[a] , Jayaprakash, R.[a] , Babu, N.A.[b] , Masthan, K.M.K.[b]

General anaesthesia in pediatric dentistry

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Abstract
Management of uncooperative children in the dental office has been a challenge to the profession which can be overcome by rendering treatment under General Anaesthesia. Oral Rehabilitation of children under General Anaesthesia is beneficial but one must keep in mind the physiological differences as child is not a miniature adult. This paper focusses on these differences, benefits and principles of General Anaesthesia in children.

Author Keywords
General anaesthesia in children; Pediatric dentistry

Index Keywords
child, dentistry, general anesthesia, human

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Kumar, J.V.[a] , Jain, A.R.[a] , Jayesh, R.[b] , Parthasaradhi, T.[a] , Venkatakrishnan[a]

Biomaterials in implant dentistry: A review
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Abstract
It has been accepted that no foreign material placed within the living body is completely compatible currently there are many types of biomaterials used for the dental implants. The clinician should have adequate knowledge of these material to select an appropriate material to be used , which directly influences the success and longevity of the treatment. This paper reviews various biomaterials that are used in dental implants.

Author Keywords
Ceramic; Dental implants; Metal; Surface coating

Index Keywords
alloy, aluminum, aluminum oxide, biomaterial, calcium
phosphate, carbon, chromium, cobalt, gold, hydrogen, hydroxyapatite, iron, molybdenum, nitrogen, palladium, platinum, stainless steel, titanium, vanadium, zirconium oxide; aerosol, bone regeneration, calcium phosphate
ceramic, ceramics, human, material coating, metal implant, Review, shear strength, surface property, tooth implant

Chemicals/CAS
aluminum, 7429-90-5; aluminum oxide, 1302-74-5, 1318-23-6, 1344-28-1, 14762-49-3; calcium phosphate, 10103-46-5, 13767-12-9, 14358-97-5, 7758-87-4; carbon, 7440-44-0; chromium, 16065-83-1, 7440-47-3, 14092-98-9; cobalt, 7440-48-4; gold, 7440-57-5; hydrogen, 12385-13-6, 1333-74-0; hydroxyapatite, 1306-06-5, 51198-94-8; iron, 14093-02-8, 53858-86-9, 7439-89-6; molybdenum, 7439-98-7; nitrogen, 7727-37-9; platinum, 7440-06-4; stainless steel, 12597-68-1; titanium, 7440-32-6; vanadium, 7440-62-2; zirconium oxide, 1314-23-4, 53801-45-9

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Geriatric dentistry

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Index Keywords
aged, aging, Article, conservative treatment, continuing education, cross linking, geriatric nutrition, geriatric patient, geriatrics, health care policy, health program, health promotion, human, metabolic rate, mouth disease, mouth hygiene, senescence, somatic mutation, theory, world health organization

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Balagopal, S.[a] , Sukumaran, V.G.[b] , James, V.[a]

Effect of electro magnetic field (EMF) on dental amalgam and general health
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Abstract
Electromagnetic radiation (EMR) is energy in waves emitted from a source. This energy is both electric and magnetic. Electromagnetic radiation from a source penetrates the surrounding area, creating an electromagnetic field (EMF). It affects the behavior of objects in the vicinity of the field. This includes the amalgam fillings in particular and other metal restorations and components of prosthesis and appliances and the dental implants. Even humans beings are store house of different bio-electrical fields. The muscles and hence the body move and different organs like heart function due to the bio electric stimulus. These bio-electrical mechanism which smoothly maintain our lives can be altered through external interfering EMR. This often results in varying types of stress one suffers. This article is about a true health incidence that happened to an acquaintance of mine and I think all practicing dentists should be aware of such conditions in the current Hi-Tech world. I assure that this article is worthy of your time and it is sure to kindle your brains.

Author Keywords
Dental amalgam; Dental metal restorations; Electromagnectic radiation (EMR); Electromagnetic field (EMF)

Index Keywords
dental amalgam; adult, amnesia, anxiety, Article, body weight, case report, counseling, depression, disorientation, dizziness, electromagnetic field, electromagnetic radiation, fatigue, fever, flu like syndrome, headache, human, insomnia, irritability, male, muscle spasm, myalgia, paresthesia, self evaluation, thorax pain, tooth implant, traffic accident

Chemicals/CAS
dental amalgam, 8049-85-2

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Kumari, S.[a] , Asokan, G.S.[a] , Rajesh, E.[b] , Aswini, S.[a] , Bharathi, E.[a]

Supernumerary tooth: A case report & review of literature
(2015) *Biomedical and Pharmacology Journal*, 8SE, pp. 267-269.

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Abstract
Supernumerary tooth is a developmental anomaly. They can be seen as erupted or embedded in the alveolar bone. They are classified based on their shape, size and location and can be diagnosed clinically or radiographically. These are most commonly seen in maxillary anterior region. Their management varies according to their position. This article overviews a case report in maxillary anterior region.

Author Keywords
Maxilla; Radiograph; Supernumerary tooth

Index Keywords
adult, case report, human, male, orthodontics, permanent tooth, prophylaxis, radiography, Review, root development, theory, tooth extraction, tooth malformation, young adult

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Ragavendran, R.[a] , Ramya, V.[b] , Preethe[b] , Paddmanabha[b]

Aggregatibacter actinomycetemcomitans: Its role in periodontitis
(2015) *Biomedical and Pharmacology Journal*, 8SE, pp. 249-252.

DOI: 10.13005/bpj/685

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Abstract
Strong evidence is available on the role of Aggregatibacteractinomycetemcomitans (A.a) as the causative agent of localised juvenile periodontitis(LJP), a disease characterised by rapid destruction of the tooth-supporting tissues. This organism possesses a large number of virulence factors with a wide range of activities which enable it to colonise the oral cavity, invade periodontal tissues, evade host defences, initiate connective tissue destruction and interfere with tissue repair. Adhesion to epithelial and tooth surfaces is dependent on the presence of surface proteins and structures such as microvesicles and fimbriae. Invasion has been demonstrated in vivo and in vitro. The organism has a number of means of evading host defences, which include: (i) production of leukotoxin; (ii) producing immunosuppressive factors; (iv) secreting proteases capable of cleaving IgG; and (v) producing Fc-binding.

Author Keywords
Leukotoxin; Lipopolysaccharide; Periodontitis

Index Keywords
virulence factor; Aggregatibacter actinomycetemcomitans, Article, bacterial colonization, bacterial virulence, bacterium adherence, microbial morphology, nonhuman, periodontitis

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Abstract
Periodontal disease is the most widespread and prevalent disease in the world which involves complex interactions between plaque microorganism and host immune system resulting in the loss of periodontal structures surrounding the tooth. Till recently the disease was thought to be caused by environmental factors, but now research is pointing to genetic causes of many of these diseases. Researchers are trying to identify the genetic mutations or polymorphism in respect to the various aspects of immunity. This article is a review of the monogenic disorders are caused by mutation of single gene and referred to as single gene disorders and polygenic alterations at multiple areas of the genes, each with a small contribution and is called polymorphism, that are influenced by environmental and behavioral factors.

Author Keywords
Gene defect; Genetic mutation; Genetic polymorphism; Inheritance; Monogenic disorders; Periodontitis; Polygenic disorders; Syndromes

Index Keywords
gene mutation, genetic variation, human, molecular phylogeny, monogenic disorder, multifactorial inheritance, periodontal disease, Review

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Massive osteolysis of oral cavity: A review with emphysis on its etio-pathogenesis and histological appearance
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Abstract
Massive osteolysis is a rare condition of unknown aetiology resulting in progressive destruction of bony structures. Literature reviews suggest less than 40 cases of massive osteolysis in the jaws has been reported.Clinically it is seen mostly between age groupof 18-40 years and depending on the site of involvement is shows various clinical presentation. Even after so many advances in the field of medicine still this disease is still considered as nightmare for the pathologist as the course of the diseaseand prognosis after treatment are unpredictable. As its name indicates its radiological features varies from slow resorption of affected bone finally resulting in complete loss of affected bone.No specific treatment is proven effective against this disease. Hence the purpose of this review is to provide comprehensive in depth idea about the disease to help in early diagnosis.

Author Keywords
Bone disease; Massive osteolysis; Vanishing bone disease

Index Keywords
alpha2b interferon, antiinfective agent, bisphosphonic acid derivative, calcitonin, fluoride; bone resection, bone transplantation, chylothorax, clinical feature, differential diagnosis, early diagnosis, hematothorax, histopathology, human, massive osteolysis, mouth cavity, mouth cavity massive osteolysis, mouth disease, paraplegia, prognosis, respiratory failure, Review

Chemicals/CAS
alpha2b interferon, 99210-65-8; calcitonin, 12321-44-7, 21215-62-3, 9007-12-9; fluoride, 16984-48-8

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Index Keywords
Article, dental wire, dentistry, fixed space regainer, gerber space regainer, herbst space regainer, human, jackscrew space regainer, lip, lip bumper, magnet, medical device, mixed dentition, molar tooth, orthodontic spring, otz lingual arch type regainer, screw type of space regainer, sling shot type space regainer, space regainer, split saddle type space regainer, spring type space regainer, tooth extraction, treatment contraindication, treatment indication

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Influence of stress on periodontium: A review
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Abstract
Psychological condition, particularly stress have been implicated as a risk indicator of many inflammatory diseases including periodontal disease. Stress and psychosomatic disorders causes changes in interactions among nervous, endocrine and immune system. It results in delayed healing of the connective tissues and bone, apical migration of the junctional epithelium and formation of periodontal pocket.Thispaper describe aoverview of association between stress and periodontium and stress interaction with immune system.

Author Keywords
Periodontal diseases; Psychological distress; Stress

Index Keywords
adrenalin, corticotropin, corticotropin releasing factor, gamma interferon, glucocorticoid, hydrocortisone, interleukin 1, interleukin 10, interleukin 3, interleukin 6, neuropeptide, noradrenalin, tumor necrosis factor; adrenergic system, aggressive periodontitis, association, chronic periodontitis, connective tissue, cytokine production, emotional stress, healing, human, hypothalamus hypophysis system, immune system, immunosuppressive treatment, mental disease, mental health, mental stress, mood disorder, mouth hygiene, periodontal disease, periodontitis, psychosomatic disorder, Review, smooth muscle tone, stress

Chemicals/CAS
corticotropin, 11136-52-0, 9002-60-2, 9061-27-2; corticotropin releasing factor, 9015-71-8, 178359-01-8, 79804-71-0, 86297-72-5, 86784-80-7; gamma interferon, 82115-62-6; hydrocortisone, 50-23-7; noradrenalin, 1407-84-7, 51-41-2

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Abstract
Bimaxillary protrusion is a condition warranting retraction of upper and lower incisor for optimizing their axial inclination to obtain lip competency and for straightening the profile. These cases generally require maximum conservation of anchorage since the entire retraction space must be utilized for retracting the incisors with protracted treatment time. Demineralization of a thin layer of bone over a root prominence after corticotomy surgery can optimize the response to applied orthodontic forces. The current technique employed a modified stage of corticotomy procedure which utilizes the principle of Regional acceleratory phenomenon, in addition Demineralized freeze dried bone was also used to augment the periodontal apparatus. The current modification is relatively simple, less invasive and can be done under local anesthesia as an outpatient procedure. The results conclusively prove that selective alveolar decortication is effective for retraction, reduces the retraction time by half in addition to conserving anchorage.

Author Keywords
Corticotomy assisted retraction; En-masse retraction; Selective alveolar decortications

Index Keywords
bone, decortication, human, local anesthesia, orthodontics, outpatient

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Miniscrew implant-supported maxillary canine retraction with and without corticotomy-facilitated orthodontics
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Narasimman, M.[a] , Pandian, R.M.R.[a] , Jayesh, R.[b] , Pradeep, R.[a] , Philip, J.M.[a]

Immediate loading of dental implants: How far Ee ?: A review
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Abstract
The earliest possible restoration to achieve proper form and function is a hallmark of all surgical specialties. This principle underlies the concept for immediate loading of dental implants. The concept of immediate loading was applied in the very early stages of dental implants. The failure rate of the earliest trials of dental implants was high and often occurred shortly after attempts at functional loading. In some cases the complications arising from the early loading of dental implants were more severe than the indication for treatment. Despite these setbacks, many of the early attempts at implant placement were functional for long periods and provided the support for functional prostheses. Several factors contributed to the high early failure rates: metallurgic properties of implants had not yet been improved; the dental materials utilized, although proven compatible, lacked the necessary strength to support prosthesis in function; and there was not yet a thorough understanding or the proper surgical and prosthetic techniques necessary for success.

Author Keywords
Dental implant; Immediate loading; Occlusal loading

Index Keywords
host factor; bone transplantation, human, osteolysis, patient selection, Review, tooth implant, tooth implantation, tooth prosthesis, treatment failure, treatment indication

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Mishra, S.[a] , Parthsarthy, T.R.[b] , Gita, B.[c] , Rchandran, C.[b] , Lal, K.[a]

Periodontal management of HIV-infected patients : An overview
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Abstract
Recognition and diagnosis of the general oral manifestations and specific periodontal manifestations of HIV infection will continue to be a major responsibility of the dental practitioner. By combining local and systemic therapy aimed at both preventing and treating oral lesions and periodontal diseases, combined with new systemic antiviral and vaccine therapies, dental and medical practitioners may together help reduce both the dental morbidity and the overall patient morbidity in the HIV infected patient. With the advent of newer pharmacological approaches to the treatment of human immunodeficiency virus (HIV) infection, the incidence and progression of both atypical and conventional periodontal diseases are changing. While the accepted approaches to treating the spectrum of periodontal diseases in HIV patients remain essentially unchanged over the past 15 years, the impact of newer systemic therapies on patient immunocompetence may influence treatment decisions.

Author Keywords
Highlyactiveantiretroviraltherapy; HIV; Immunocompetence; Periodontitis; Systemic antiviral and vaccine therapies

Index Keywords
amoxicillin plus clavulanic acid, amphotericin B, clavulanate potassium, clindamycin, clotrimazole, fluconazole, interleukin 1, interleukin 6, itraconazole, ketoconazole, lamivudine plus nevirapine plus stavudine, lamivudine plus stavudine, metronidazole, nucleoside analog, nystatin, tumor necrosis factor; bacterial infection, candidiasis, CD4 lymphocyte count, diseases, erythema, gingivitis, highly active antiretroviral therapy, human, Human immunodeficiency virus infected patient, Human immunodeficiency virus infection, immune response, immunocompetence, incidence, inflammation, linear gingival erythema, morbidity, mouth disease, mouth hygiene, mouth lesion, mycosis, necrotizing gingivitis, periodontal disease, periodontal pocket, periodontitis, Review, systemic therapy, virus attachment, virus infection

Chemicals/CAS
amoxicillin plus clavulanic acid, 74469-00-4, 79198-29-1; amphotericin B, 1397-89-3, 30652-87-0; clavulanate potassium, 61177-45-5; clindamycin, 18323-44-9; clotrimazole, 23593-75-1; fluconazole, 86386-73-4; itraconazole, 84625-61-6; ketoconazole, 65277-42-1; metronidazole, 39322-38-8, 443-48-1; nystatin, 1400-61-9, 34786-70-4, 62997-67-5

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Role of submental intubation during the management of airway in midface and Pan Facial Fractures
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Index Keywords
adult, Article, clinical article, face fracture, follow up, general anesthesia, human, intubation, male, maxillofacial surgery, medical record review, oral surgery, recording, respiration control, submental intubation, traffic accident

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Risk factors associated with periodontal diseases: A review

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Abstract
Periodontal diseases are a group of chronic infections caused by pathogenic bacteria colonizing the periodontium. Initiation and progression of periodontal infections are affected by local and systemic conditions. The local factors include dental plaque and plaque retentive areas such as dental calculus and defective restorations. Systemic risk factors include poorly controlled diabetes mellitus and tobacco smoking. Systemic conditions associated with immunodeficiency state such as neutropenia, AIDS/HIV infections are also important risk factors. Recent studies have revealed several potentially important periodontal risk indicators. These include stress and coping behaviors and osteopenia associated with estrogen deficiency. There are also demographic factors associated with periodontal disease including gender, and hereditary factors.

Author Keywords
Diabetes mellitus; Periodontitis; Risk factors; Smoking; Systemic factors

Index Keywords
aging, diabetes mellitus, disease
association, heredity, human, microorganism, nonhuman, nutrition, osteoporosis, periodontal disease, psychological aspect, Review, risk factor, smoking, social status, stress, systemic disease

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Bose, B.B.[a] , Gita, B.[b]

Rheumatoid arthritis and periodontitis-plausible inflammatory link
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Abstract
An association between oral disease/periodontitis and rheumatoid arthritis (RA) has been considered for more than a century. RA is considered as an autoimmune disease whereas periodontitis has an infectious etiology with a complex inflammatory response. Inspite of the controversial etiology, both diseases are chronic and may present with bursts of disease activity. Genetic factors are driving the host responses in both RA and periodontitis. The inflammatory events are regulated by Tumor necrosis factor -A, a proinflammatory cytokine, in both RA and periodontitis. Porphyromonas gingivalis is a common pathogen in periodontal infection. P. gingivalis has also been identified in synovial fluid. The specific abilities of P. gingivalis to citrullinate host peptides by proteolytic cleavage at Arg-X peptide bonds by arginine gingipains can induce autoimmune responses in RA through development of anticyclic citrullinated peptide antibodies. In addition, P. gingivalis carries heat shock proteins (HSPs) that may also trigger autoimmune responses in subjects with RA. Data suggest that periodontal therapies combined with routine RA treatments further improve RA status. This review enlightens the link between periodontitis and rheumatoid arthritis.

Author Keywords
Bacteria; Citrullination; Genetics; Inflammation; Periodontitis; Porphyromonas gingivalis; Rheumatoid arthritis

Index Keywords
cyclic citrullinated peptide antibody, heat shock protein; antigen presenting cell, Article, atherogenesis, chronic periodontitis, heredity, human, inflammatory cell, oxidative stress, periodontitis, Porphyromonas gingivalis, rheumatoid arthritis

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Evaluvation of physical stress among HIV seropositive discordant couples undergoing ART
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Index Keywords
antiretrovirus agent; adult, age, aged, Article, assessment of humans, controlled clinical trial, controlled study, discordant couple, female, highly active antiretroviral therapy, human, Human immunodeficiency virus infected patient, Human immunodeficiency virus infection, major clinical study, male, outcome assessment, physical stress, physical stress score, population based case control study, who brief questionnaire

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Unicystic ameloblastoma: Cyst or tumour

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Abstract
One of the most common and significant tumour of odontogenic origin affecting the jaws is ameloblastoma. Even though it is considered a benign tumour, in certain cases it can lead to significant morbidity and even lead to mortality. A distinct yet less frequent type of ameloblastoma which resembles a cyst more than a tumour is Unicystic ameloblastoma (UCA), which has characteristic histopathological, clinical and radiographic features. A review of the literature is presented to help better understand the various types of UCA with a view to proper management.

Author Keywords
Ameloblastoma; Histopathological; Radiographic

Index Keywords
liquid nitrogen; ameloblastoma, Article, clinical feature, cryotherapy, curettage, disease course, histopathology, human, odontogenic cyst, pathogenesis, radiography, recurrence risk, unicystic ameloblastoma

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Saliva as a diagnostic fluid -A review

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Abstract
In the last 10 years, the use of saliva as a diagnostic fluid has become somewhat of a translational research success story. Technologies are now available enabling saliva to be used to diagnose disease and predict disease progression. This review describes some important recent advances in salivary diagnostics and its application in various systemic diseases .This review will also stimulate future research activity.

Author Keywords
Saliva; Sjogren syndrome

Index Keywords
autoimmune disease, bacterial infection, cardiovascular disease, drug monitoring, endocrinology, human, nephrology, oncology, psychiatry, Review, saliva, saliva analysis, virus infection

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Genes in tooth development

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Abstract
Teeth form as epithelial appendages such as hairs and glands. During development, reciprocal and sequential epithelial-mesenchymal interactions regulate processes such as proliferation, differentiation and morphogenesis. These interactions are mediated by conserved signaling pathways that are reiteratively used during development of all organs. Mutations in genes encoding molecules in the signaling pathways cause numerous abnormalities in craniofacial bones and teeth including missing or supernumerary teeth, and disturbances in formation of dentin and enamel. This article is regarding the genetic basis of tooth development, methods used to study it, and the genes that have been definitively implicated in the development of human dentition and the brief notice on the deformities caused due to the mutation of the these genes.

Author Keywords
DLX; Homeoboxgenes (HOX); MSX; PAX

Index Keywords
axin, axin 2, ectodysplasin A, latent transforming growth factor beta binding protein 3, protein, transcription factor, transcription factor dlx, transcription factor MSX1, transcription factor MSX2, transcription factor PAX9, unclassified drug, Wnt protein; Article, craniofacial morphology, dentin, enamel, gene function, gene mutation, genetic code, Hox gene, human, hypodontia, inheritance, nonhuman, oligodontia, signal transduction, tooth development, tooth malformation, transgenic mouse

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Anticipated benefit of "Surgery first: Approach-A clinical case report
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Abstract
In recent years, a trend toward implementing treatment plans that achieve immediate facial change has arisen. In "Surgery First" treatment plans, the presurgical orthodontic treatment phase is eliminated or greatly reduced, the jaws are surgically repositioned into the desired locations, and orthodontic tooth movement follows. This clinical case typically exemplifies the effect of Anterior segmental maxillary osteotomy and Mandibular anterior subapical osteotomy on improving the skeletal, dental, soft tissue and over all aesthetics of the patient.

Author Keywords
Anterior maxillary segmental osteotomy; Gummy smile; Surgery first

Index Keywords
case report, facial expression, human, mandible, maxilla osteotomy, orthodontics, soft tissue, surgery

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Lovelina, F.D.[a] , Anitha[b] , Jimson, S.[b]

Hypodontia -Genetic or environmental? A case report of monozygotic twins
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Abstract
In the present report, a case of 19 year-old monozygotic twin sisters with variable expression of hypodontia is presented. One of the twins had agenesis of mandibular lateral incisor. The occurrence of dissimilarity in the tooth agenesis in the monozygotic twins may suggest the influence of epigenetic factors in their etiology. DNA fingerprinting was used to confirm monozygosity.

Author Keywords
Epigenetics; Hypodontia; Missing mandibular lateral incisors; Monozygotic twins

Index Keywords
dental amalgam, DNA, DNA fragment; adult, Article, blood sampling, case report, DNA determination, DNA fingerprinting, environmental factor, epigenetics, female, gel electrophoresis, genetic analysis, health status, heredity, human, hypodontia, incisor, molar tooth, monozygotic twins, mouth examination, orthodontics, panoramic radiography, polymerase chain reaction, short tandem repeat, silver staining, young adult

Chemicals/CAS
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HIV: A global challenge and its oral manifestations: Review article
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Abstract
HIV is a devastating global challenge to the mankind.This paper discusses the importance of oral lesions as indicators of infection with human immune deficiency virus and as predictors of progression of HIV disease to Acquired Immuno Deficiency Syndrome(AIDS).Oral manifestations are the earliest and most important indicators of infection with HIV.The presence of oral lesions can have a significant impact on health related quality of life.It is important that all health care workers receive education and training on the importance of oral lesions in HIVand the use of oral lesions as surrogate markers of progression of the disease.

Author Keywords
Anti retroviral; Global health issue; Opportunistic

Index Keywords
aspergillosis, bacterial infection, candidiasis, clinical feature, cryptococcosis, cytomegalovirus infection, disease course, disease marker, epidemic, gingiva disease, hairy leukoplakia, herpes simplex, Herpes simplex virus, histoplasmosis, human, Human immunodeficiency virus infection, Human immunodeficiency virus prevalence, India, Kaposi sarcoma, linear gingival erythema, medical education, mouth disease, mouth lesion, mucormycosis, necrotizing ulcerative periodontitis, nonhodgkin lymphoma, nonhuman, papillomavirus infection, periodontal disease, periodontitis, professional knowledge, quality of life, Review, Wart virus

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Effect of diabetes in osseointegration of dental implant -A review

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Abstract
Diabetes Mellitus is a pandemic metabolic disease prevailing globally and is characterized by chronic hyperglycemia due to absolute or relative deficiency of insulin. It affects most parts of human body including the oral cavity. The review describes the effect of diabetes in the process of osseointegration of implants in oral cavity.

Author Keywords
Diabetes in osseointegration; Implants; Oral cavity

Index Keywords
alloxan, antibiotic agent, chlorhexidine, insulin, streptozocin; alloxan-induced diabetes mellitus, antibiotic therapy, autonomic neuropathy, bone development, bone regeneration, cardiovascular disease, cerebrovascular disease, diabetes mellitus, diabetic foot, diabetic nephropathy, diabetic neuropathy, diabetic patient, diabetic retinopathy, drug efficacy, foot disease, fracture healing, glycemic control, human, hyperglycemia, insulin dependent diabetes mellitus, mouth cavity, non insulin dependent diabetes mellitus, nonhuman, ossification, osteoblast, peripheral neuropathy, peripheral occlusive artery disease, postoperative infection, Review, streptozotocin-induced diabetes mellitus, surgical risk, tooth implant, tooth implantation

Chemicals/CAS
alloxan, 3237-50-1, 50-71-5; chlorhexidine, 3697-42-5, 55-56-1; insulin, 9004-10-8; streptozocin, 18883-66-4

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Jayaprakash, R.[a] , Sharma, A.[a] , Babu, N.A.[b]

Therapeutic chewing gums: Review

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Abstract
Chewing gums are mobile drug delivery systems. It is a potentially useful means of administering drugs either locally or systemically via, the oral cavity. The medicated chewing gum has through the years gained increasing acceptance as a drug delivery system. Several ingredients are now incorporated in medicated chewing gum, e.g. Fluoride for prophylaxis of dental caries, chlorhexidine as local disinfectant, nicotine for smoking cessation, aspirin as an analgesic, and caffeine as a stay alert preparation. MCGs are solid, single dose preparations with a base consisting mainly of gums that are intended to be chewed but not swallowed. They contain one or more active substances which are released by chewing and are intended to be used for local treatment of mouth diseases or systemic delivery after absorption through the buccal mucosa.

Author Keywords
Chewing gums; Medicated; Oral; Smoking

Index Keywords
chlorhexidine, fluoride, inorganic salt, probiotic agent, urea; cheek mucosa, chemical composition, chewing gum, dental caries, drug delivery system, human, mouth mucosa, Review, smoking cessation

Chemicals/CAS
chlorhexidine, 3697-42-5, 55-56-1; fluoride, 16984-48-8; urea, 57-13-6

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An Effect of Probiotic Chewing Gum on Caries Susceptibility in Orthodontic Patients: A Randomised Controlled Trial,

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Menon, V.[a] , Sarkar, S.[b] , Kattimani, S.[a] , Mathan, K.[a]

Do personality traits such as impulsivity and hostility-aggressiveness predict severity of intent in attempted suicide? Findings from a record based study in South India

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Abstract
Background: Little is known about the association of personality traits with intent in attempted suicide. Aims: Our objectives were to assess the levels of selected personality factors among suicide attempters and to examine their association with suicide intent. Materials and Methods: A chart review of 156 consecutive suicide attempters was carried out. All participants were administered the Beck Suicide Intent Scale, Barratt Impulsivity Scale-11, Buss-Perry Aggression Questionnaire, and Past Feelings and Acts of Violence Scale to assess suicide intent, trait impulsivity, hostility-aggression, and violence, respectively. Pearson's product moment correlation was the used as the test of association. Stepwise linear regression was used to identify predictors of suicide intent. Results: Suicide intent was significantly correlated with verbal aggression (Pearson r = 0.90, P = 0.030), hostility (Pearson r = 0.316, P < 0.001), and nonplanning impulsivity (r = -0.174, P = 0.049). High hostility and low motor impulsivity emerged as significant predictors of suicide intent. Conclusion: Personality traits such as hostility and to an extent, impulsivity are accurate predictors of intentionality in attempted suicide. Clinicians should focus on these personality attributes during a routine evaluation of suicide attempters. They can also be considered as potential targets for suicide prevention programs.

Author Keywords
Aggression; attempted suicide; hostility; impulsivity; personality; suicide intent

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A comparative study on the morphological features of highly ordered MgO:AgO nanocube arrays prepared via a hydrothermal method

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Abstract

II-VI semiconductor nanotubes are a recently developed class of nanomaterials whose unique photophysical properties are helping to create a new generation of nanomaterials in the field of photonics and microelectronics. In this report, we examine the progress in adapting these nanomaterials for several optoelectronics applications followed by characterization studies. Magnesium oxide and silver oxide (MgO:AgO) nanoparticles were synthesized using a hydrothermal method by taking magnesium nitrate, silver oxide and glycine. X-ray diffraction (XRD) results showed that the peaks are consistent with a pure phase cubic structure of MgO. The XRD pattern also confirmed the crystallinity and phase purity of the sample. Nanocrystal sizes were found to be up to 25 nm as revealed by XRD and HRTEM. Photoluminescence measurement (PL) reveals the systematic shift of the emission band towards lower wavelength thereby ascertaining the quantum confinement effect. © 2015 The Royal Society of Chemistry.

Index Keywords

Amino acids, Magnesia, Magnesium, Microelectronics, Nanocrystals, Nanostructured materials, Oxides, Silver, Synthesis (chemical), X ray diffraction, Yarn; Characterization studies, Comparative studies, Hydrothermal methods, II-VI semiconductor, Morphological features, Photoluminescence measurements, Photophysical properties, Quantum confinement effects; Silver oxides

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Hardware implementation of visible watermarking

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Abstract
Development of Personal Computers and Cloud Computing, Internet of Things is making duplicating the data very feasible. In this paper we are proposing visible watermarking using FPGA which provides one to one compound mapping that allows reversible watermarking. This method can be applied for different types of host images like binary, opaque monochrome and translucent full color ones. The ultimate objective of the research is to develop low power, high performance, real-time, reliable and secured watermarking system which can provide robustness over certain attacks namely cover-up attack, cropping noise, scaling and geometric attacks. © 2015 IEEE.

Author Keywords
FPGA; Image watermarking; Reversible watermarking; TFT Display

Index Keywords
Digital watermarking, Field programmable gate arrays (FPGA), Hardware, Image watermarking, Personal computers, Reconfigurable hardware, Thin film transistors; Full color, Geometric attacks, Hardware implementations, Host images, Reversible watermarking, TFT displays, Visible watermarking, Watermarking systems; Watermarking

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Rao, M.R.K.[a] , Nandha Kumar, S.[a] , Jones, S.[b] , Elizabeth, A.A.[c] , Prabhu, K.[d] , Ravi, A.[c] , Dinakar, S.[e]

Phytochemical and GC MS analysis of an ayurvedic formulation, patolakaturohinyadi kwatham
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Abstract
Medicinal efficacy of most of the ayurvedic and siddha preparations is time tested. Patolakaturohinyadi kwatham is a known medicine for anorexia, vomiting, skin diseases, jaundice, viral infections and liver diseases. Phytochemical and GC MS analytical study was conducted on this medicine. It was observed that saponin was present in all the three extracts whereas phytochemicals like steroids, amino acids, flavonoids, coumarins and carbonyl compounds were absent in all the three extracts. The GC MS analysis revealed the presence of some very important bio molecules like Propanoic acid 3, 3'-thiobis-didodecyl ester, Piperine, Ergosterol, 1 H- Imidazole, 1-(1-oxooxtadecyl)-derivative,Trideca-1,7,11-triene-1,1-dicarbonitrile,4,8,12-trimethyl derivative and Cyclopropanecarboxylic acid undec-2-enyl ester, which have known medicinal properties. These results substantiate the medicinal effects of Patolakaturohinyadi kwatham as claimed by Ayurveda. © Copyright protected.

Author Keywords
Ayurvedic; Ergosterol; Patolakaturohinyadi kwatham; Phytochemical; Piperine; Sidha

Index Keywords
1 h imidazole, 1 (1 oxooxtadecyl) derivative, 1 pentene 3 one, 2 methyl derivative, 1,2 benzenedicarboxylic acid, diisooctyl ester, 1,2 benzenedicarboxylic acid, mono(2 ethylhexyl) ester, 1,3,5 traiazin 2 amine, n cyclohexyl 4,6 bis(2,2,2 trifluoro 1 (trifluoromethyl) ethoxy derivative, 1,4 napthalenedione, 2 (3,7,11,15,19,23,27 heptamethyl 2,6,10,14,18,22,26 octacosaheptaenyl) 3 methyl derivative, 2,6 octadine, 4 methyl derivative, 4 tosyl 8,9,17,18 dibenzo 1,7 diehia 4,10,16 triazacyclooctadeca 8,17 diene, 5 thia 10 azaspiro decane 7 carbonitrile, 7,8 bis(trifluoromethyl) 1,1,3,3, tetramethyl 2,9 dioxo derivative, anthraquinone derivative, ayurvedic drug, bis (2 ethylhexyl) phthalate, cardiac glycoside, chemical compound, cyclopropanecarboxylic acid undec 2 enyl ester, ergosterol, hexadecaneperoxoic acid, 1,1 demethyl 3 ((1 oxohexadecyl) oxy) propyl ester, lauric acid, 2 (hexadecyloxy) 3 (octadecyloxy) propyl ester, patolakaturohinyadi kwatham, phthalic acid, 2 ethylhexyl tridecyl ester, phthalic acid, dodecyl 2 ethylhexyl ester, piperine, plant medicinal product, propanoic acid, 3,3' thiobis didodecyl ester, quinone derivative, saponin, tannin derivative, trideca 1,7,11 triene 1,1 dicarbonitrile, 4,8,12 trimethyl derivative, triterpenoid, unclassified drug, unindexed drug;
anorexia, Article, Ayurveda, biological activity, drug retention, jaundice, liver disease, mass fragmentography, phytochemistry, skin disease, solvent extraction, virus infection, vomiting

Chemicals/CAS
ergosterol, 23637-22-1, 2418-45-3, 3992-98-1, 57-87-4; piperine, 94-62-2; saponin, 8047-15-2

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C-deletion in exon 4 codon 63 of p53 gene as a molecular marker for oral squamous cell carcinoma: A preliminary study

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Abstract
Background: Exfoliated oral cancer cells in saliva samples from patients with oral squamous cell carcinoma (OSCC) can be used to determine the incidence and type of mutations of the p53 tumor suppressor gene. The purpose of this study was to identify C-deletion mutation in exon 4 codon 63 of p53 gene in the saliva of OSCC patients by polymerase chain reaction (PCR). Materials and Methods: Saliva samples of 20 newly histopathologically diagnosed OSCC patients and 5 healthy volunteers were subjected to isolation of the total genomic DNA and PCR amplification for C-deletion on exon 4 of p53 gene. The resulting products were resolved by agarose gel electrophoresis, viewed and photographed on ultraviolet-transilluminator. Results: The relationship between the frequencies of genetic alterations was assessed by Chi-square test. Differences with values of $P < 0.05$ were statistically significant. Conclusion: The study concluded a 100% presence of C-deletion mutation in exon 4 codon 63 of p53 in the saliva of OSCC patients. This study suggests that detection of mutation in exon 4 codon 63 of p53 by PCR is a fast, reliable, accurate, and sensitive molecular method for OSCC diagnosis.

Author Keywords
Mutation; oral cancer; oral squamous cell carcinoma; p53 C-deletion; polymerase chain reaction

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Prospects of common biomolecules as coating substances for polymeric biomaterials

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Abstract

Growing demand for ideal materials in biomedical field not only explores novel approaches, but also examines how existing resources can be modified to fit the requirements. This strategy resulted in the development of various surface modification techniques to improve the biocompatibility of materials already in use. Although various methods are available, the concept of using biological substances for improving biocompatibility seems rational and effective because of the bio-friendly surface that they present which is closer to mimicking the innate environment. Some common biomolecules like proteins, lipids, carbohydrates and peptides are extensively applied on material surfaces through innovative mechanisms. This review will help us to keep abreast of the different types of coating methodologies used and the importance of biological substances as coating alternatives for improving the biocompatibility of polymers. Further, it will also encourage the development of these techniques to modernise materials to make them a more putative choice for biomedical applications. © The Royal Society of Chemistry 2015.

Index Keywords

Biocompatibility, Biomolecules, Coatings, Medical applications, Molecular biology, Proteins, Surface treatment; Biological substance, Biomedical applications, Biomedical fields, Growing demand, Material surface, Polymeric biomaterials, Surface modification techniques; Polymers

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Clinico-microbiological investigation of catheter associated urinary tract infection by enterococcus faecalis: VanA genotype

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Abstract

Prolonged hospitalization and exposure to third generation cephalosporins are reported to facilitate the acquisition and colonization of Vancomycin Resistant Enterococci (VRE). Though VRE is not uncommon in India, urinary tract infection with a vanA genotype is a cause of serious concern as VRE co-exhibit resistance to aminoglycosides. In India, majority of the VRE isolates recovered from hospitalized patients include Enterococcus faecium. We report a case of catheter associated urinary tract infection by an endogenous, multidrug resistant E. faecalis of vanA genotype following prolonged hospitalization, ICU stay, catheterisation and exposure to 3G cephalosporin and metronidazole. The patient responded to linezolid therapy. © 2015, Journal of Clinical and Diagnostic Research. All Rights Reserved.

Author Keywords

High level aminoglycoside resistance (HLAR); Multidrug resistance; Vancomycin resistant enterococci (VRE)

Index Keywords

amikacin, aminoglycoside antibiotic agent, ampicillin, cefoperazone, cephalosporin, chloride, creatinine, erythromycin, genomic DNA, gentamicin, glucose, hemoglobin, imipenem, linezolid, meropenem, metronidazole, nitrofurantoin, penicillin derivative, potassium, sodium, streptomycin, sulbactam, teicoplanin, tetracycline, tigecycline, urea, vancomycin; adult, agar diffusion, antibiotic sensitivity, Article, bacterium identification, bacteriuria, biofilm, case report, catheter associated urinary tract infection, catheter infection, debridement, Enterococcus faecalis, genotype, hospitalization, human, intensive care unit, leukocyte differential count, male, minimum inhibitory concentration, multidrug resistance, polymerase chain reaction, skin graft, tertiary care center, traffic accident, ureter catheterization, urinary tract infection, urine culture, young adult; Enterococcus faecalis, Enterococcus faecium

Chemicals/CAS

amikacin, 37517-28-5, 39831-55-5; ampicillin, 69-52-3, 69-53-4, 7177-48-2, 74083-13-9, 94586-58-0; cefoperazone, 62893-19-0, 62893-20-3; cephalosporin, 11111-12-9; chloride, 16887-00-6; creatinine, 19230-81-0, 60-27-5; erythromycin, 114-07-8, 70536-18-4; gentamicin, 1392-48-9, 1403-66-3, 1405-41-0; glucose, 50-99-7, 84778-64-3; hemoglobin, 9008-02-0; imipenem, 64221-86-9; linezolid, 165800-03-3; meropenem, 96036-03-2; metronidazole, 39322-38-8, 443-48-1; nitrofurantoin, 54-87-5, 67-20-9; potassium, 7440-09-7; sodium, 7440-23-5; streptomycin, 57-92-1; sulbactam, 68373-14-8; teicoplanin, 61036-62-2, 61036-64-4; tetracycline, 23843-90-5, 60-54-8, 64-75-5, 8021-86-1; tigecycline, 220620-09-7; urea, 57-13-6; vancomycin, 1404-90-6, 1404-93-9

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Association between personality factors and suicide intent in attempted suicide: Gender as a possible mediator?
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Abstract
Background: Gender appears to be a factor closely related to key suicide-related constructs. Aims: The study aims to assess gender differences in personality factors among suicide attempters and to examine the role of gender in mediating the relationship between suicide attempts and selected personality attributes in the same group. Methods: A chart review of 156 consecutive suicide attempters was carried out. All participants were administered the Beck Suicide Intent Scale (BSIS), Barratt Impulsivity Scale-11 (BIS-11), Buss-Perry Aggression Questionnaire (BPAQ) and Past Feelings and Acts of Violence (PFAV) Scale. Results: The suicidal intent and impulsiveness did not differ significantly between men and women, although men had significantly greater PFAV scores (t=3.361, p=0.001). BPAQ showed a significant difference between the genders (F=3.621, p=0.008; Wilk's Λ=0.950, partial η2=0.100), mainly for physical aggression (F=11.006; p=0.001; partial η2=0.076) and anger (F=4.298; p=0.040; partial η2=0.031). Conclusion: Certain differences seem to be present between Indian male and female suicide attempters with regard to baseline personality attributes and their role in predicting suicide intent. The import of personality traits as potential targets for suicide prevention is worth exploring further. © 2015 John Wiley & Sons, Ltd.

Index Keywords
adult, behavior, female, human, male, personality, personality assessment, psychology, risk factor, sex difference, statistics and numerical data, suicidal ideation, suicide attempt, young adult;
Adult, Female, Humans, Intention, Male, Personality, Personality Assessment, Risk Factors, Sex Factors, Suicidal Ideation, Suicide, Attempted, Young Adult

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Kaviyarasu, K.[a b] , Manikandan, E.[b c] , Nuru, Z.Y.[a b] , Maaza, M.[a b]

Quantum confinement of lead titanate nanocrystals by wet chemical method

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Abstract
Lead Titanate (PbTiO3) is a category of the practical semiconductor metal oxides, which is widely applied in various scientific and industrial fields because of its catalytic, optical, and electrical properties. PbTiO3 nanocrystalline materials have attracted a wide attention due to their unique properties. PbTiO3 nanocrystals were investigated by X-ray diffraction (XRD) to identify the PbTiO3 nanocrystals were composed a tetragonal structure. The diameter of a single sphere was around 20 nm and the diameter reached up to 3 μm. The chemical composition of the samples and the valence states of elements were determined by X-ray photoelectron spectroscopy (XPS) in detail. © 2015 Published by Elsevier B.V.

Author Keywords
Colloidal processing; Composite materials; Lead titanate; Nanoparticles; XPS; XRD

Index Keywords
Composite materials, Nanocrystalline materials, Nanocrystals, Nanoparticles, Semiconducting lead compounds, Titanium compounds, X ray diffraction; Chemical compositions, Colloidal processing, Industrial fields, Lead titanates, Semiconductor metal oxides, Tetragonal structure, Wet-chemical method, XRD; X ray photoelectron spectroscopy

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Kaviyarasu, K.[a b] , Manikandan, E.[b c] , Nuru, Z.Y.[a b] , Maaza, M.[a b]

Investigation on the structural properties of CeO2 nanofibers via CTAB surfactant
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Abstract
Abstract The solvothermal reaction of cerium oxide (CeO2) in ethanol by using cetyltriethylammonium bromide (CTAB) as surfactant resulted in the formation of hexagonal cubic shaped CeO2 nanofibers. Low concentration of CTAB in ethanol was conductive for the formation of CeO2 nanofibers. The Fourier transform infrared (FTIR) spectroscopic analysis showed a standard peak of CeO2 at 541 cm-1. The as-synthesized products were characterized by high resolution transmission electron microscopy (HRTEM) and room temperature Photoluminescence (PL) studies. The chemical composition of the samples and the valence states of elements were determined by X-ray photoelectron spectroscopy (XPS) in detail. © 2015 Published by Elsevier B.V.

Author Keywords
Electron microscopy; FTIR; Microstructure; Spectroscopy; XPS

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Cerium oxide, Electron microscopy, Ethanol, Fourier transform infrared spectroscopy, High resolution transmission electron microscopy, Microstructure, Nanofibers, Spectroscopic analysis, Spectroscopy, Surface active agents; Chemical compositions, Fourier transform infrared, FTIR, Low concentrations, Room-temperature photoluminescence, Solvothermal reactions, Valence state; X ray photoelectron spectroscopy

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Free standing diamond-like carbon thin films by PLD for laser based electrons/protons acceleration
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Abstract
This study we reports for the first time on the synthesis and optical characteristics of free standing diamond-like carbon (DLC) deposited by pulsed laser deposition (PLD) onto graphene buffer layers for ultrahigh intensity laser based electron/proton acceleration applications. The fingerprint techniques of micro-Raman, UV-VIS-NIR and the IR spectroscopic investigations indicate that the suitability of such free standing DLC thin-films within the laser window and long wave infrared (LWIR) spectral range and hence their appropriateness for the targeted applications. ©2015 Published by Elsevier B.V.

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Diamond-like carbon; Interface; Laser deposition; Proton acceleration; Raman

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Free standing diamond-like carbon thin films by PLD for laser based electrons/protons acceleration
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Abstract
This study we reports for the first time on the synthesis and optical characteristics of free standing diamond-like carbon (DLC) deposited by pulsed laser deposition (PLD) onto graphene buffer layers for ultrahigh intensity laser based electron/proton acceleration applications. The fingerprint techniques of micro-Raman, UV-VIS-NIR and the IR spectroscopic investigations indicate that the suitability of such free standing DLC thin-films within the laser window and long wave infrared (LWIR) spectral range and hence their appropriateness for the targeted applications. ©2015 Published by Elsevier B.V.

Author Keywords
Diamond-like carbon; Interface; Laser deposition; Proton acceleration; Raman

Index Keywords
Acceleration, Carbon, Carbon films, Deposition, Diamonds, Graphene, Infrared devices, Infrared radiation, Interfaces (materials), Pulsed laser deposition, Pulsed lasers, Thin films; Diamond like carbon, Diamond-like carbon thin films, Electrons/protons accelerations, Laser depositions, Proton acceleration, Raman, Spectroscopic investigations, Ultra high intensity lasers; Diamond like carbon films

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Shaw, P.R.[a] , Sumathi, M.[a] , Burnwal, S.[a] , Venkatraman, K.[b]

Study of removal of speckle noise from OCT images
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Abstract
Introduction: In the field of biomedical imaging, optical coherence tomography images are used for retinal tissues disorder characterization. It uses the principle of low coherence interferometry to perform a depth resolved axial scan of human retina. Speckle is modeled as a signal dependent noise, which tends to reduce the image quality. OCT images suffer from speckle noise which reduces image contrast. Most of speckle reduction techniques have been studied by researchers and found that Filtering technique is one of the common methods which are used to reduce the speckle noises. Aim: In this paper, OCT images are taken as study under test and noise removal algorithms are applied for speckle noise reduction in retinal OCT imagery. This work highlights and compares different speckle reduction filters quantitatively using simulated imageries. Materials and Method: Generally speckle noise is a granular noise and commonly found in synthetic aperture radar images (SAR) and medical images. The presence of speckle noise affects image interpretation and degrades the quality of the medical images. Various filters were tested for speckle affected OCT image and the performance factors of these filters were evaluated in terms of Mean Square Error (MSE), Signal to Noise Ratio (SNR), and Peak Signal to Noise Ratio (PSNR). Image smoothening is used for enhancing the OCT images corrupted by speckle noise. Two domains used for image processing under enhancement. First was frequency domain and second was spatial domain. Results: Different filters are used in both the domains for comparative study of performance factors. Finally Gaussian Filter has been selected as the best filters for the removal of speckle noise from OCT images. The response of the filter varies locally with the co-efficient of variation.

Author Keywords
Image filters; Performance factors; Simulation; Speckle noises

Index Keywords
algorithm, Article, comparative study, controlled study, human, image enhancement, image processing, image quality, interferometry, mathematical parameters, mean square error, noise reduction, optical coherence tomography, retina image, signal noise ratio, signal processing

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Balhara, Y.P.S.[a] , Sarkar, S.[b] , Gupta, R.[a]

Phosphodiesterase-5 inhibitors for erectile dysfunction in patients with diabetes mellitus: A systematic review and meta-analysis of randomized controlled trials

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Abstract

Background and Aims: Patients with diabetes mellitus frequently experience erectile dysfunction. This systematic review and meta-analysis were conducted to find efficacy and tolerability of phosphodiesterase 5 (PDE5) inhibitors in patients with diabetes mellitus experiencing erectile dysfunction. Methodology: Electronic searches were carried out to identify English language peer-reviewed randomized controlled trials (RCTs), which reported clinical efficacy of any PDE5 inhibitor in patients with diabetes mellitus having erectile dysfunction. Effect sizes were computed using Cohen's d, and I 2-test was used to assess heterogeneity. Pooled mean effect sizes were computed using random-effects model. Number needed to treat (NNT), and the adverse event rates were computed. Results: The systematic review included a total of 17 studies yielding 25 comparisons. Three studies were open RCTs while others were double-blind RCTs. The pooled mean effect size of any PDE5 inhibitor over placebo was 0.926 (95% confidence intervals [CI]: 0.864-0.987; I 2 =26.3). The pooled mean effect size for sildenafil was 1.198 (CI: 1.039-1.357; I 2 =), for tadalafil was 0.910 (CI: 0.838-0.981; I 2 =33.6), and for vardenafil was 0.678 (CI: 0.627-0.729; I 2 =). In pooled analysis, the NNT for sildenafil, tadalafil, vardenafil and any PDE5 inhibitor was 2.4, 2.6, 4.1 and 3.0 respectively. The most common side effects were headache, flushing, and nasal congestion. Conclusions: PDE5 inhibitors are effective and safe medications for the treatment of sexual dysfunction in patients with diabetes mellitus experiencing erectile dysfunction.

Author Keywords

Diabetes mellitus; erectile dysfunction; phosphodiesterase 5 inhibitor; sildenafil; tadalafil; vardenafil

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A new alternative technique for denture identification

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Abstract
Forensic science deals with examining and gathering information related to an accident or a crime scene. The contribution of prosthodontics to forensic odontology is highly significant after the invention of denture labeling techniques. Personal identification is inevitable in case of accident, loss of memory, state of unconsciousness and in hospitals. Labeled dentures can remarkably help identify the dead after disasters and accidents. Since then various denture markers were described in literature. This case report highlights an alternative technique of denture identification wherein a quick response code (QR code) is incorporated into the processed denture using a clear acrylic sheet instead of self cure acrylic resin. © 2015, Jaypee Brothers Medical Publishers (P) Ltd. All rights reserved.

Author Keywords
Acrylic sheet; Barcode; Denture identification; Forensic; Scanning

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Consensus and evidence-based Indian initiative on obstructive sleep apnea guidelines 2014 (first edition)

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Abstract
Obstructive sleep apnea (OSA) and obstructive sleep apnea syndrome (OSAS) are subsets of sleep-disordered breathing. Awareness about OSA and its consequences among the general public as well as the majority of primary care physicians across India is poor. This necessitated the development of the Indian initiative on obstructive sleep apnea (INOSA) guidelines under the auspices of Department of Health Research, Ministry of Health and Family Welfare, Government of India. OSA is the occurrence of an average five or more episodes of obstructive respiratory events per hour of sleep with either sleep-related symptoms or co-morbidities or ≥15 such episodes without any sleep-related symptoms or co-morbidities. OSAS is defined as OSA associated with daytime symptoms, most often excessive sleepiness. Patients undergoing routine health check-up with snoring, daytime sleepiness, obesity, hypertension, motor vehicular accidents, and high-risk cases should undergo a comprehensive sleep evaluation. Medical examiners evaluating drivers, air pilots, railway drivers, and heavy machinery workers should be educated about OSA and should comprehensively evaluate applicants for OSA. Those suspected to have OSA on comprehensive sleep evaluation should be referred for a sleep study. Supervised overnight polysomnography is the "gold standard" for evaluation of OSA. Positive airway pressure (PAP) therapy is the mainstay of treatment of OSA. Oral appliances (OA) are indicated for use in patients with mild to moderate OSA who prefer OA to PAP, or who do not respond to PAP or who fail treatment attempts with PAP or behavioral measures. Surgical treatment is recommended in patients who have failed or are intolerant to PAP therapy.

Author Keywords
Bariatric surgery; continuous positive airway pressure; Indian guidelines; obstructive sleep apnea; obstructive sleep apnea syndrome; polysomnography; sleep apnea; sleep study; syndrome Z

Index Keywords
armodafinil, modafinil; anthropometry, Article, awareness, bariatric surgery, body position, consensus, Epworth sleepiness scale, evidence based practice, home monitoring, human, Indian, mandibular repositioning appliance, medical history, mortality, oral appliances therapy, pathogenesis, physical examination, polysomnography, positive end expiratory pressure, practice guideline, prediction, preoperative evaluation, randomized controlled trial (topic), risk factor, sleep disordered breathing, titrimetry, tongue retaining appliance

Chemicals/CAS
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Oral mucosal lesions associated with smokers and chewers – A case-control study in chennai population
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Abstract
Aims and Objectives: To determine the association of oral mucosal lesions in a group of Chennai population aged 15 years and above with smoking and chewing habits. To also determine the dose-response relationship of these habits associated with the risk of oral mucosal lesions. Materiala and Methods: The study was undertaken with 450 subjects with smoking and/or chewing habits aged 15 years and over gathered through random selection in Chennai, India. Subjects with alcohol intake were excluded from the study. Based on the habits the study group was categorized into smokers, chewers and mixed (smoking+chewing). One hundred and fifty subjects diagnosed with oral mucosal lesions designated as “cases” and 300 lesion-free “controls”, frequency matched for age, sex, habit and family income were assessed during the study. The study protocol included a visual oral soft tissue examination and a questionnaire-based interview. In addition, those requiring further examination, scalpel biopsies were performed to establish a definitive diagnosis. R esults: Irrespective of the type of habit, 78% of cases smoked and/or chewed for more than 10 years as compared to 37.4% of the control group. Similarly, 71.3% of cases smoked and/or chewed more than 5 times per day as compared to 25.6% of the control group. Eleven habits related mucosal lesions of the oral cavity were encountered. Smoker’s melanosis was the most common oral mucosal lesion followed by Oral submucous fibrosis and Leukoplakia. Dose-response relationships were observed for both duration and frequency of habits on the risk of oral mucosal lesions. C onclusion: The result of the present study provides information on the association of oral mucosal lesions in smokers, chewers and patients with mixed habits. The mucosal lesions encountered included a few potentially malignant conditions and oral squamous cell carcinoma. Habits were more prevalent in men thus more lesions were encountered in males than in females. Moreover, increase in the duration and frequency of habits was significant predictors of risk in the case population. © 2015, Journal of Clinical and Diagnostic Research. All rights reserved.

Author Keywords
Dose-response relationship; Habits; Tobacco

Index Keywords
adolescent, adult, aged, Article, case control study, controlled study, disease association, erythema, female, glossitis, histopathology, human, human tissue, interview, keratosis, leukoplakia, lichen planus, major clinical study, male, mastication, melanosis, middle aged, mouth examination, mouth squamous cell carcinoma, oral mucosal disease, questionnaire, risk, smoking; Nicotiana tabacum

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Poornima, K.[a] , Gopala Krishnan, K.[b] , Lalitha, B.[c] , Raja, M.[d]

CdS quantum dots sensitized Cu doped ZnO nanostructured thin films for solar cell applications
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Abstract
ZnO nanorods and Cu doped ZnO nanorods thin films have been prepared by simple hydrothermal method. CdS quantum dots are sensitized with Cu doped ZnO nanorod thin films using successive ionic layer adsorption and reaction (SILAR) method. The X-ray diffraction study reveals that ZnO nanorods, and CdS quantum dot sensitized Cu doped ZnO nanorods exhibit hexagonal structure. The scanning electron microscope image shows the presence of ZnO nanorods. The average diameter and length of the aligned nanorod is 300 nm and 1.5 μm respectively. The absorption spectra shows that the absorption edge of CdS quantum dot sensitized ZnO nanorod thin film is shifted toward longer wavelength region when compared to the absorption edge of ZnO nanorods film. The conversion efficiency of the CdS quantum dot sensitized Cu doped ZnO nanorod thin film solar cell is 1.5%. ©2015 Elsevier Ltd. All rights reserved.

Author Keywords
CdS quantum dot; HRTEM; X-ray diffraction; ZnO nanorod

Index Keywords
Cadmium sulfide, Nanocrystals, Nanorods, Scanning electron microscopy, Semiconductor quantum dots, Solar cells, Thin films, X ray diffraction, Zinc oxide; CdS quantum dots, HRTEM, Nanostructured thin film, Solar-cell applications, Successive ionic layer adsorption and reactions, Thin film solar cells, X-ray diffraction studies, ZnO nanorod; Copper

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Raja, M.D.[a] , Kumar, C.M.A.[b] , Arulmozhi, S.[b] , Madhavan, J.[b]

Spectroscopic and thermodynamic properties of L-ornithine monohydrochloride
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Abstract
L-Ornithine Monohydrochloride (LOMHCL) has been investigated with the help of B3LYP density functional theory with 6-31 G (d, p) basis set. Fourier transform infrared and Fourier transform Raman spectra is to identify the various functional groups. The theoretical frequencies showed very good agreement with experimental values. On the basis of the thermodynamic properties of the title compound at different temperatures have been calculated, revealing the correlations between standard heat capacities (C) standard entropies (S), and standard enthalpy changes (H) and temperatures. Second harmonic generation (SHG) efficiency of the grown crystal has been studied. © 2015 AIP Publishing LLC.

Author Keywords
DFT; LOMHCL; SHG

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Spectroscopic and thermodynamic properties of L-ornithine monohydrochloride
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Abstract
L-Ornithine Monohydrochloride (LOMHCL) has been investigated with the help of B3LYP density functional theory with 6-31 G (d, p) basis set. Fourier transform infrared and Fourier transform Raman spectra is to identify the various functional groups. The theoretical frequencies showed very good agreement with experimental values. On the basis of the thermodynamic properties of the title compound at different temperatures have been calculated, revealing the correlations between standard heat capacities (C) standard entropies (S), and standard enthalpy changes (H) and temperatures. Second harmonic generation (SHG) efficiency of the grown crystal has been studied. © 2015 AIP Publishing LLC.

Author Keywords
DFT; LOMHCL; SHG

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Aircraft random vibration analysis using active landing gears

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Abstract
In this article, random vibration analysis of full aircraft with passive and active landing gears has been done by numerical simulations on random runway profile. The mathematical model of full aircraft with active landing gears and modelling of runway profiles have been developed for analysing the aircraft bounce, pitch, roll accelerations, displacement and shock strut travel while taxiing on random runways. The results show that vibration levels of the aircraft by the active landing gear system is less than the conventional landing gear system while taxiing on different grades of random runways. Comparison results also show that the active system improves the ride comfort and easiness of pilot handling and thus, increases the fatigue life of the aircraft.

Index Keywords
Aircraft, Fatigue of materials, Gears, Landing, Vibration analysis, Vibrations (mechanical); Active systems, Comparison result, Random vibration analysis, Ride comforts, Vibration level; Landing gear (aircraft)

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Shanmugakrishnan, R.R.[a] , Naveenkumar, V.[b] , Mahalakshmi, K.[c] , Krishnan, P.[b]

Enterococcus avium—a rare cause for limb loss in a type 2 diabetic patient

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Abstract
Enterococcus avium is a Gram-positive facultative anaerobe, found normally in the intestinal tract of human beings, pigs and chickens. E. avium has rarely been reported as a human pathogen. This bacterium has been reported previously along with other aerobes and obligate anaerobes.We report a case of diabetic foot infection with wet gangrene caused by E. avium that had led to morbidity in a 60-year-old woman due to her ignorance regarding health and self-care skills. Pus and exudates of the diabetic foot wound were processed for anaerobic cultivation, and the pure culture obtained was subjected to nested PCR using 16S rDNA universal eubacterial primers for rapid and precise identification. The clinical isolate obtained by anaerobic incubation was identified as E. avium. Aerobic culture detected scanty growth of Proteus mirabilis. This case report highlights the pathogenic potential of E. avium in anaerobiosis in the absence of obligate anaerobe accounting for serious health burden threatening patients' quality of life. © 2015, Research Society for Study of Diabetes in India.

Author Keywords
16S rDNA sequencing; Diabetic foot; Enterococcus avium; PCR

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Adaptation difficulties among immigrants
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Jimson, S.[a] , Sree Ranjani, S.[b] , Lenka, S.[c] , Jimson, S.[d]

Comparative Effects of Clonidine and Adrenaline with Lignocaine During Maxillary Infiltration Anaesthesia for Dental Extraction

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Abstract

Introduction: Lignocaine is a commonly used local anaesthetic in dental practice. Many practitioners use adrenaline (epinephrine) as additive with lignocaine, and some have used clonidine, instead of adrenaline. Both having benefits and limitations. Aims: Hence a study was undertaken in our department to evaluate the advantages and disadvantages of using (plain lidocaine local anaesthetic) versus (lidocaine with adrenaline as additive) versus (lidocaine with clonidine as additive). Study Design: Randomised, prospective, double blind study. Materials and Methods: Seventy five patients requiring extraction of maxillary molar teeth who fall under ASA I category were included and randomly divided into group I (n=25) (Lignocaine), group II (n=25) (Lignocaine ± Adrenaline) and group III (n=25) (Lignocaine ± Clonidine). The observations recorded were, time of onset of anaesthesia, hemodynamic parameters, blood loss during procedure and duration of post operative analgesia. Statistical Analysis:The statistical analysis was carried out using SPSS 16 software. Results: A statistically significant difference was seen in blood loss, being higher in group I and duration of anaesthesia, being shortest in group I. There was no statistical difference between the three groups amongst other parameters. Conclusion: Adrenaline at 10 µg/ml and clonidine at 15 µg/ml can be safely used as additives with lignocaine, in maxillary infiltration anaesthesia for dental extraction; with addition of either of these two drugs, having an equal advantage over use of plain lignocaine; in terms of lower blood loss and longer duration of anaesthesia; but, with no difference in the onset of anaesthesia and with no significant hemodynamic changes. © 2015, Journal of Clinical and Diagnostic Research. All rights reserved.

Author Keywords

Additives; Local anaesthesia; Vasoconstrictor

Index Keywords

adrenalin, clonidine, lidocaine; adult, anesthesia, Article, controlled study, double blind procedure, drug activity, drug response, drug safety, female, human, major clinical study, male, operative blood loss, postoperative analgesia, prospective study, randomized controlled trial, tooth extraction

Chemicals/CAS

adrenalin, 51-43-4, 55-31-2, 6912-68-1; clonidine, 4205-90-7, 4205-91-8, 57066-25-8; lidocaine, 137-58-6, 24847-67-4, 56934-02-2, 73-78-9

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Experimental investigation of twisted tape insert on laminar flow with uniform heat flux for enhancement of heat transfer

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Abstract
This paper analyses the experimental and numerical investigation of heat transfer, heat transfer co-efficient and friction factor with twisted tape insert using CFD simulation. An experimental data obtained from the heat exchanger both plain tube and twisted tape inserts. The experimental setup was made with mild steel pipe on outside with 28mm inner diameter and 32mm outer diameter. The inner pipe made on aluminum tube with 18mm inner diameter and 20mm outer diameter. A uniform heat flux condition was set by electric heating coil wire wrapped around the tube section and proper Insulating is used over the entire tube length. The surface temperature of the heating coil tube value measured at four different points. The inlet and outlet temperature of the inner tube cold fluid flow was recorded with two thermocouples. The copper twisted tape were inserted with twist ratio y is 3.90 in the inner tube and takes swirling flow to enhance the heat transfer. The recorded data obtain from the CFD simulations were verified with the experimental assessment of twisted tape insert. The results shows that the considerable amount of heat transfer enhancing with several of heat transfer co-efficient and Reynolds number.

Author Keywords
CFD; Heat transfer; Twisted tape

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Balaji, P.[a] , Rangarajan, K.[b]

Analysis of marked graphs of basic stock control system and kanban control systems using sign incidence matrix
(2015) *Journal of Chemical and Pharmaceutical Sciences*, 2015-April, pp. 195-200.

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Abstract
In this paper we take four marked graphs of one basic stock control system and three kanban control systems and analyze them using sign incidence matrix.

Author Keywords
Basic stock control system; Flexible manufacturing systems; Independent extended control system; Independent Kanban control system; Marked graphs; Petri nets; Sign incidence matrix; Simultaneous Kanban control system

Index Keywords
control system, controlled study

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Malathi, L.[a] , Amsaveni, R.[b] , Anitha, N.[a] , Balachander, N.[a]

Reticuloendothelial malignancy of head and neck: A comprehensive review
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Abstract
The mononuclear phagocyte system consists of cells that have a common lineage whose primary function is phagocytosis. The specific immunity is achieved by the combined effects of macrophages and lymphocytes, and system has been called lymphoreticular system. Reticuloendothelial system means a special group of cells, scattered in different parts of the body, but all having some common characteristics. These cells are powerful phagocytes.

Author Keywords
leukemia; Lymphoma; oral ulcers

Index Keywords
aminocaproic acid, antifibrinolytic agent, chlorhexidine, ferritin, nebacetin, povidone iodine, tranexamic acid; acute myeloblastic leukemia, adaptive immunity, amyloidosis, Burkitt lymphoma, cell destruction, chronic lymphatic leukemia, chronic myeloid leukemia, clinical feature, dental procedure, disease association, environmental factor, erythrocyte, follicular lymphoma, gingiva bleeding, head and neck tumor, heredity, histiocytic neoplasm, human, immunophenotyping, innate immunity, large cell lymphoma, lymphoblastoma, lymphoma, macrophage, mantle cell lymphoma, molecular pathology, monoclonal immunoglobulinemia, mouth infection, mouth ulcer, multiple myeloma, myeloma, phagocytosis, plasmacytoma, priority journal, reticuloendothelial neoplasm, reticuloendothelial system, Review, teratogenesis, tumor classification, tumor virus, Waldenstroem macroglobulinemia

Chemicals/CAS
aminocaproic acid, 1319-82-0, 60-32-2; chlorhexidine, 3697-42-5, 55-56-1; ferritin, 9007-73-2; nebacetin, 53765-20-1, 8025-63-6; povidone iodine, 25655-41-8; tranexamic acid, 1197-18-8, 701-54-2

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Antioxidant status in neonatal jaundice before and after phototherapy
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Abstract
Background: Neonatal jaundice refers to yellow coloration of the skin and the sclera (whites of the eyes) of newborn babies that result from the accumulation of bilirubin in the skin and mucous membranes. Because bilirubin is potentially toxic to the central nervous system. Genetic disorders of bilirubin conjugation, particularly the common Gilbert's syndrome, can also contribute to neonatal hyperbilirubinemia. Objective: The aim of this study was to evaluate the lipid per-oxidation and antioxidant enzyme activities in patients with neonatal jaundice before and after phototherapy. Materials and Methods: The study includes 50 neonatal jaundice patients with average age 2-15 days. All patients of neonatal jaundice receiving phototherapy except feeding, cleaning. Subjects selected were from the patients attending Pediatrics Department. Plasma malondialdehyde (MDA), erythrocyte glutathione peroxidase (GPX), superoxide dismutase and catalase (CAT) to monitor the bilirubin level. Results: The results show increased levels of bilirubin compared with controls ($P < 0.001$) shows the level of plasma MDA in control, before and after phototherapy. Represents the level of GPX was significantly increased in after the phototherapy group when compared with before phototherapy and control SPSS soft ware: ($P < 0.001$). Shows the reduced glutathione (GSH) level in plasma was significantly decreased in the after phototherapy group when compared with before phototherapy and control ($P < 0.001$). And finally with ascorbic acid and CAT. Conclusion: It is evident from the study that increased oxidative stress in neonatal jaundice babies leads to decrease in the levels of antioxidants like GSH and ascorbic acid and disturb their metabolism, that weaken their ability to fight the growing stress. Intense oxidative stress and decreased antioxidants may contribute to neural cell death and alter the erythrocytomembrane structure processing in neonatal jaundice.

Author Keywords
Antioxidants; bilirubin; Gilbert's syndrome; neonatal jaundice

Index Keywords
antioxidant, ascorbic acid, bilirubin, catalase, glutathione peroxidase, malonaldehyde, superoxide dismutase; Article, blood sampling, clinical article, controlled study, enzyme activity, enzyme assay, enzyme blood level, human, lipid peroxidation, newborn, newborn jaundice, oxidative stress, phototherapy, priority journal

Chemicals/CAS
ascorbic acid, 134-03-2, 15421-15-5, 50-81-7; bilirubin, 18422-02-1, 635-65-4; catalase, 9001-05-2; glutathione peroxidase, 9013-66-5; malonaldehyde, 542-78-9; superoxide dismutase, 37294-21-6, 9016-01-7, 9054-89-1

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Forensic radiology in dentistry

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Abstract
Radiography can play an important part in forensic odontology, mainly to establish identification. This may take the precise form of comparison between antemortem and postmortem radiographs. Radiographs may also be taken to determine the age of a minor victim and even help in the assessment of the sex and ethnic group. Comparable radiographs are an essential factor to confirm identification in a mass disaster.

Author Keywords
Ante mortem; postmortem radiographs; radiography

Index Keywords
age determination, antemortem radiography, anthropometric parameters, autopsy, bite mark, bite wing film, cause of death, childhood injury, dental pattern, dental radiology, dentistry, expert witness, extra oral radiography, human, imaging software, investigative procedures, Johansons method, legal aspect, legal evidence, mass disaster, multidetector computed tomography, panoramic radiography, physical anthropology, priority journal, recording, Review, sex determination, skull radiography, subtraction radiography, tooth radiography, X ray film

Tradenames
Dentascan, GE Healthcare, United Kingdom

Manufacturers
GE Healthcare, United Kingdom

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Anatomy research under the knife of medical ethics
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Abstract
There is increased awareness and anxiety in conducting research for publication and at the same time ignorance about getting Ethical Committee clearance at least in Anatomy Departments among Basic Medical Sciences. While people are actively presenting papers, collect data, Indian Council for Medical Research guidelines does not cover aspects pertaining to Anatomy oriented research activities. This review article is an eye opener for fraternity in the medical field, especially in anatomy.

Author Keywords
Body donation; cadaver; fetus

Index Keywords
anatomy, career planning, honesty, human, India, institutional ethics, medical ethics, medical research, medical society, personal experience, priority journal, professional knowledge, professional misconduct, research ethics, Review, social psychology, trust

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Shiva Govindan, K.P.[a] , Basha, S.[a] , Ramesh, V.[b] , Kumar, C.N.[b] , Swathi, S.[c]

A comparative study on serum lipoprotein (a) and lipid profile between rheumatoid arthritis patients and normal subjects

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Abstract
Background: Rheumatoid arthritis is a chronic and systemic inflammatory disorder, in which Lipoprotein (a) [Lp (a)] increases plaque formation and thus promotes atherosclerosis. Coronary artery disease is one of the co-morbidity in rheumatoid arthritis patients. Aim: The aim of this study is to evaluate Lp (a) as a cardiovascular risk factor in patients with rheumatoid arthritis. This was a comparative study in which Lp (a) and lipid profile were compared in rheumatoid arthritis patients and controls. Materials and Methods: The study included 30 sero-positive rheumatoid arthritis patients and 30 normal healthy subjects with an age and sex matched group of 25-80 years. Statistical analysis was performed using SPSS version 17. Results: Serum Lp (a) concentration was significantly increased ($P < 0.001$) in rheumatoid arthritis patients compared with controls. Serum high-density lipoprotein-cholesterol was significantly lowered ($P < 0.05$) in patients as compared to controls. There was no significant difference in serum total cholesterol, triglycerides, and very low density lipoprotein-cholesterol between patients and controls. Conclusion: The findings indicate that the patients with rheumatoid arthritis are at high risk of developing cardiovascular disease in future due to the increased level of Lp (a). In addition to conventional lipid profile, estimation of Lp (a) can prove to be a valuable tool in risk assessment of population in general and management of disease in particular.

Author Keywords
Cardiovascular disease; lipid profile; lipoprotein (a); rheumatoid arthritis

Index Keywords
high density lipoprotein cholesterol, lipoprotein A, triacylglycerol, very low density lipoprotein cholesterol;
adult, aged, Article, cardiovascular risk, cholesterol blood level, clinical article, comparative study, controlled study, high risk patient, human, lipid composition, priority journal, protein blood level, rheumatoid arthritis, risk assessment, risk factor, triacylglycerol blood level

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Ilakkiya, A.[a] , Parveen, S.[b] , Kumar, C.N.[a] , Swathi, S.[c]

Macrolide resistance in Streptococcus species

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Abstract
Background: The Streptococci are Gram-positive spherical bacteria (cocci) that characteristically form pairs and chains during growth. Some macrolide-resistant bacteria lack the proper receptor on the ribosome (through methylation of the rRNA). This may be under plasmid or chromosomal control. Aim and Objectives: The aim was to study the prevalence of macrolide resistance among the isolate and evaluate the degree of resistance by minimum inhibitory concentration (MIC) method. And also to detect the phenotypic pattern of macrolide resistance. Materials and Methods: All age group attending general medicine OPD and pediatric OPD with symptoms of respiratory and pyogenic infections are included in the study. Various samples are collected with detailed case history and processed for macrolide resistance among beta hemolytic Streptococci MIC method and D-test. Results: According to our studies resistance pattern in Group A Streptococci by D-test, cMLS was 27.85%, iMLS was 13.92%, M-type was 55.69%, in GCS, cMLS was 17.6%, M-type was 82.35% In GGS, cMLS was 31.58%, iMLS was 10.53% and M-type was 57.89%. Conclusions: Therefore by this study, we would like to highlight the necessity to do antibiotic sensitivity testing for all isolates, and limit the usage of antibiotics, whenever necessary and select the appropriate antibiotics for resistant strains.

Author Keywords
Macrolide-resistant; minimum inhibitory concentration and D-test; Streptococci

Index Keywords
clindamycin, erythromycin, macrolide, penicillin derivative; antibiotic resistance, antibiotic sensitivity, Article, bacterial growth, bacterium colony, bacterium isolate, beta hemolytic Streptococcus, cMLS type antibiotic resistance, concentration (parameters), disk diffusion, epsilometer test, human, iMLS type antibiotic resistance, inhibition zone, M type antibiotic resistance, minimum inhibitory concentration, nonhuman, phenotypic variation, prevalence, priority journal, Streptococcus, Streptococcus group A, Streptococcus group C, Streptococcus group G, Streptococcus pneumoniae; Posibacteria, Streptococcus, Streptococcus sp. 'group A'

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clindamycin, 18323-44-9; erythromycin, 114-07-8, 70536-18-4

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Uthiravelu, P.[a] , Saravanan, A.[b] , Kumar, C.K.[c] , Vaithiyanandane, V.[c]

Pulmonary function test in formalin exposed and nonexposed subjects: A comparative study
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Abstract
Background: The main function of the lung is gas exchange, which can be assessed in several ways. A spirometer measures the flow and the volumes of the inspired and expired air. The thoracic and abdominal muscle strength plays an important role in pulmonary function and diffusing lung capacity. Aims and Objectives: The aim of this study was to assess the effects of formalin exposure on the pulmonary function to compare with healthy individuals. To assess the chronic effects of formalin exposure on Pulmonary function tests (PFTs) in the faculties, lab technicians and attender of the Department of Anatomy and Pathology of SRM Medical Hospital and Research Centre, Kattankulathur. Materials and Methods: This prospective study was carried out in 50 healthy formalin exposed subjects (at least 5 years exposure) from Department of Anatomy and Pathology of SRM Medical College Hospital and Research Centre, Kattankulathur and 50 healthy controls of same age group of this study were included after obtaining ethical clearance and consent 'Easy One Pro Spirometer (Ndd Medical Technologies, Cheshire SK 101LT, United Kingdom) was used to find out the PFT. Results: Student's t-test was applied to compare the PFT parameters between formalin exposed and formalin nonexposed group. There was a significant difference in mean and standard deviation of pulmonary parameters with the $P < 0.005$ in formalin exposed, which shows that they have lesser ventilatory drive. Conclusion: The formalin exposed subjects in our study presented with a mixed disorder of both obstructive and restrictive type. We also found that there was a negative correlation of pulmonary function with that of the degree and duration of exposure to formalin.

Author Keywords
Formalin; pulmonary function test; spirometer

Index Keywords
formaldehyde; Article, body mass, breathing rate, comparative study, controlled study, forced expiratory flow, forced expiratory time, forced expiratory volume, forced inspiratory vital capacity, forced vital capacity, human, human experiment, inspiratory capacity, inspiratory reserve volume, long term exposure, lung function test, normal human, peak expiratory flow, peak inspiratory flow, priority journal, respiratory tract parameters, tidal volume

Chemicals/CAS
formaldehyde, 50-00-0

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Nivas, M.[a] , Ramakrishnan, M.[b]

An efficient method for segmentation of CT-SCAN image using multiresolution analysis (MRA)
(2015) *Journal of Theoretical and Applied Information Technology*, 73 (1), pp. 155-162.

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Abstract
Classification of the cancer region from the human organs by means of shape or gray-level information is a demanding task; organs shape varies throw diverse portions in medical heap and the gray-level intensity overlie in soft tissues. Multiresolution analysis based segmentation united with thresholding as pre- and post-processing steps permit accurate detection of ROIs. Curvelet transform is a newest extension of wavelet and ridgelet transforms which focuses on compacting with exciting experiences taking place along curves. This paper focuses on developing an automatic image segmentation method for classifying region of interest (ROI) in medical images which are achieved from various medical scanners such as PET, CT or MRI. The proposed segmentation system utilizes wavelet, ridgelet and curvelet transforms based Multiresolution analysis (MRA). Results attained for curvelet, wavelet and ridgelet transforms experimented on medical data sets are evaluated. Comparison results demonstrate that exploiting curvelet significantly develops the classification of abnormal tissues in the scans and diminish the adjacent noise. © 2005 - 2015 JATIT & LLS. All rights reserved.

Author Keywords
Curvelet transforms; Multiresolution analysis; Ridgelet transforms; Thresholding; Wavelet transforms; Wrapping

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Nivas, M.[a] , Ramakrishnan, M.[b]

A medical volume segmentation technique using 3d discrete wavelet transform (DWT)

(2015) *Journal of Theoretical and Applied Information Technology*, 73 (1), pp. 163-166.

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Abstract
3D medical image segmentation focuses at separating the voxels into 3D objects (sub-volumes) which show considerable physical entities. MRA permits for the preservation of an image based on specific levels of resolution or blurring. The superiority of this system makes it important in image compression, denoising, and classification or segmentation. This paper aims at the implementation of a medical volume segmentation based on 3D MRA methods. Therefore, 3D discrete curvelet transform is proposed and evaluated with the discrete wavelet transform (DWT). An assessment study has been executed to evaluate 2D and 3D techniques which unveil that 3D approaches can exactly locate the region of interest in both phantom and real data. © 2005 - 2015 JATIT & LLS. All rights reserved.

Author Keywords
A3D Image processing; Discrete Curvlet Transform; Discrete Wavelet Transform; Multi-Resolution Analysis; Segmentation

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Gopalakrishnan, S.[a] , Ganeshkumar, P.[b] , Katta, A.[b]

Study of morbidity profile of a rural population in Tamil Nadu

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Abstract
Objective: To identify the reported morbidity profile of people according to age, gender and organ system affected using International Classification of Diseases (ICD) coding, in a demographically defined area in Tamil Nadu in order to identify their health care needs and to plan appropriate interventions strategies. Materials and Methods: This is a-cross sectional study using a convenience sample of 12308 persons sceened from the 41 panchayat units of the Kattankulathur block, comprising 90 villages with a population of about 2,00,890, over a period of one year. Diagnosis made were coded using ICD 10 version and data collected was analysed by appropriate statistical methods to explain the distribution of morbidity profile among the study population. Result: Out of total, 38.1% screened were males and 61.9% were females. Underfives were 5.3%, school going children 43.3%, adults 39.2% and elderly 12.3%. Majority had illness affecting respiratory system (20%), 'symptoms and signs' (19%), musculo-skeletal system (16.1%) and digestive system(11.9%). 'Symptoms and signs' classification, is a group of conditions which is of nonspecific diseases, signs, symptoms, abnormal findings and complaints, apart from the system specific conditions diagnosed properly and not elsewhere classified, More males were affeced with respiratory, digestive and illnesses with 'symptoms and signs' while more women were affected with musculo-skeletal problems. Only 9.7 % of patients reported with non-communicable diseases. Among them, 55 % women and 42.3 % men had osteoarthritis and 15.7 % women and 21.3 % men had cataract. About 15.8 % women and 18.1 % men had hypertension and other heart diseases while 9.7 % women and 8.4 % men had diabetes and 10.0 % men and 3.9 % women had chronic respiratory diseases. Conclusion: School going children and adults have higher levels of morbidity when compared to elderly and under five children. More females reported with illness but morbidity was found to be higher among males. The burden of illness increased with age. Acute ailments were responsible for high morbidity among children, while chronic ailments caused high morbidity among the elderly. © 2015, Journal of Clinical and Diagnostic Research. All rights reserved.

Author Keywords
Acute illness; Chronic illness; International classification of diseases; Morbidity

Index Keywords
acute disease, adult, aged, Article, cataract, child, cross-sectional study, diabetes mellitus, digestive system disease, eye disease, female, health care need, heart disease, human, ICD-10, India, International Classification of Diseases, interview, male, morbidity, musculoskeletal disease, non communicable disease, osteoarthritis, parasitosis, physical disease by body function, respiratory tract disease, skin disease

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Wasy, A.[a b] , Balakrishnan, G.[a c] , Lee, S.[d] , Kim, J.-K.[d] , Kim, T.G.[e] , Song, J.I.[a]

Thickness dependent properties of diamondlike carbon coatings by filtered cathodic vacuum arc deposition
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Abstract
Diamond-like carbon (DLC) coatings of 300, 500 and 650 nmthickness were deposited on stainless steel substrates using a filtered cathodic vacuum arc hybrid with magnetron sputtering system. A 100 nm thick chromium interlayer was deposited before the deposition of the DLC coatings. The films morphology was characterised by field emission scanning electron microscopy and structure was identified by Raman spectroscopy. Tribology was evaluated by ball disc wear test and wear tracks were observed by scanning electron microscopy. The interface adhesion was studied by scratch tester. The results of all characterisations were concluded and 500 nm DLC coating has suggested as optimum thickness that would be applicable for industrial applications. © 2015 Institute of Materials, Minerals and Mining.

Author Keywords
Adhesion; Coating; Diamond-like carbon; Filtered cathodic vacuum arc; Plasma etching; Sputtering; Tribology

Index Keywords
Adhesion, Carbon, Deposition, Electron microscopy, Field emission microscopes, Plasma etching, Scanning electron microscopy, Sputtering, Stainless steel, Tribology, Vacuum applications, Vacuum technology; Diamond like carbon, Diamond-like carbon coatings, Field emission scanning electron microscopy, Filtered cathodic vacuum arc, Filtered cathodic vacuum arc deposition, Interface adhesion, Magnetron sputtering systems, Stainless steel substrates; Coatings

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Sridhar, K.[a] , Rajesh, B.[a] , Sangeetha, K.[b]

Sterno-costo-chondro-coracoidan muscle - a case report

(2015) *International Journal of Pharma and Bio Sciences*, 6 (2), pp. B79-B83.

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Abstract
Pectoralis minimus is a rare muscle usually found in the pectoral region. The aberrant muscle in the present report was arising from the first two costal cartilages and the second chondro-sternal joint of right side. The tendon of the muscle inserted into the superior surface of coracoid process and continued laterally to merge with coracoacromial ligament and coracohumeral ligament. This muscle was unique in its attachment and not reported previously. Pectoralis minimus may help in scapulo humeral rhythm. The knowledge of this aberrant muscle helps radiologist and surgeons in the diagnosis and surgical interventions of the area.

Author Keywords
Chondro-sternal joint; Pectoralis minimus; Sterno-chondro-coracoidan muscle

Index Keywords
adult, Article, cadaver, case report, dissection, human, human tissue, male, middle aged, muscle development, muscle malformation, pectoralis major muscle, pectoralis minimus muscle, pectoralis minor muscle, skeletal muscle, sterno costo chondro coracoidan muscle, thorax wall

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Lokanadham, S.[a] , Kothandaraman, U.[b] , Prabhu, K.[c]

Behavioural changes in experimental models on long term exposure to kainic acid followed by nicotine - locomotor activity study

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Abstract
Long term administration of Nicotine is capable to protect the excitotoxicity and neuronal degeneration induced by Kainic acid and it's analogues in rodents. 16 adult male albino rats of wistar strain weighing 135-150 grams were used for the present study. The rats were divided in to four groups each consists of 4 animals. The control group was given 0.9% saline as vehicle and the experimental groups (group-II with 1mg/kg Nicotine; group III- Kainic acid 1mg/kg; IV- Kainic acid followed by Nicotine 1mg/kg bodyweight) were given intraperitoneal injections respectively for a period of 28 days. All the animals were utilized on last day of the experiment by using digital photoactometer to study the locomotor activity. The mean and standard deviation for the control group was 396.4683±5.802298, for Nicotine treated group was 201.4441±12.91962, Kainic acid treated group was 163.7172679±3.774917218 and Kainic acid followed by Nicotine group was 256.3096±11.44552 calculated and recorded. There was a significant locomotor activity improvement in kainic acid followed by nicotine treated group compared to kainic acid and nicotine treated groups was observed. Our study helps to understand the neuroprotective effect of nicotine on kainic acid induced excitotoxicity.

Author Keywords
Kainic acid; Locomotor; Nicotine; Photoactometer

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Uthiravelu, P.[a] , Paneerselvam, S.[b] , Kishorkumar, C.[c] , Saravanan, A.[d]

The diffusing lung capacity in formalin exposed and non exposed subjects - a comparative study
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Abstract
The thoracic and abdominal muscle strength plays an important role in pulmonary function and diffusing lung capacity. The main function of the lung is gas exchange, which can be assessed in several ways. A Spirometer measures the flow and the volumes of the inspired and expired air. The aim of the study was to assess Diffusing Lung Capacity of formalin exposure and to compare with healthy individuals. To assess the chronic effects of formalin exposure on Diffusing lung capacity in the faculties, lab technicians and attender of the department of anatomy and pathology of SRM Medical Hospital and Research Centre, Kattankulathur. This prospective study was carried out in 50 healthy formalin exposed subjects (atleast 5 years exposure) from department of anatomy and pathology of SRM medical college hospital and research centre, Kattankulathur and 50 healthy controls of same age group of this study were included after obtaining ethical clearance and consent' Easy One Pro Spirometer was used to find out the Diffusing Lung Capacity. Student t-test was applied to compare the PFT parameters between formalin exposed and formalin non exposed group. There was a significant difference in mean and standard deviation of pulmonary parameters with the p - value < 0.005 in formalin exposed which shows that they have lesser ventilatory drive.

Author Keywords
Diffusing lung capacity (DLCO); Formalin; Spirometer

Index Keywords
formaldehyde; Article, body mass, chronic obstructive lung disease, clinical article, comparative study, controlled study, environmental exposure, human, long term exposure, lung diffusion capacity, lung gas exchange, lung toxicity, lung volume, prospective study, respiratory airflow, spirometry

Chemicals/CAS
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Enhancing the accuracy 0F SVM classifiers with kernel and parameter training
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Abstract
Data mining methods based on support vector machine are attractive to address the curse of dimensionality. The Kernel mapping contributes a unifying frame work for most of the commonly employed models to get the linear planes in the higher dimensional space. In this paper, we prove this approach enhances the accuracy of diabetes data set. We further refine the results with parameter tuning for the selected kernels. The natural question that arises in case of many such different mappings to choose from, which is the best for a particular problem? The selection can be validated using independent test sets or variety of data sets and methods of cross validations.

Author Keywords
Kernel functions; Normalized polynomial; Pearson VII function-based; Polynomial kernel; RBF kernel; Support vector machine

Index Keywords
Article, classifier, data mining, diabetes mellitus, kernel method, measurement accuracy, radial based function, support vector machine

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Non-diabetic maternal factor with caudal regression syndrome - A novel case report
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Abstract
Caudal regression syndrome (CRS) is a rare neural tube defect which impairs thedevelopment of lower (caudal) half of the body. The spectrum of this disease can vary from isolated partialgenesis of the sacrococcygeal spine to complete absence of sacral, lumbar, or lower thoracic vertebrae. Most of the cases which are reported as the causative agent for CRS are mostly due to a diabetic maternal pattern. But there are few cases of CRS which are seen occurring even when there is no maternal diabetes or any genetic pre-disposition or influence from any kind of teratogens. Thus here we are discussing a unique case of a new born deceased infant with CRS with a clear background, that is a non-diabetic mother and no inheritance from the hereditary. We have also done karyotyping from the peripheral blood of the new born infant to identify thechromosomal anomalies which have been allied with this syndrome. Thus these preliminary as well as novel findings are beginning to shed light on this very rare syndrome in which further more researches have to be carried out to uncover the actual pathogenesis linked to this syndrome.

Author Keywords
Ambiguous genetalia; Caudal regression syndrome; Neural tube defect; Non-diabetic

Index Keywords
adult, Apgar score, Article, autopsy, bone dysplasia, breech presentation, case report, caudal regression syndrome, cesarean section, chromosome 10q, chromosome deletion, congenital malformation, female, fetus echography, gene mutation, glycemic control, human, hydronephrosis, infant, karyotyping, pes equinovarus, young adult

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Asad Ahmed, R.[a] , Venkatraman, S.[c] , Thanigaiarasu, S.[b] , Elangovan, S.[d] , Rathakrishnan, E.[e]

Study of slanted perforated shapes in tabs for control of subsonic jets
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Abstract
Flowfield characteristics of correctly expanded subsonic and sonic jets from uncontrolled nozzle and jet with plain solid tab were compared with jet having slanted perforated tabs of different shapes. The jet with tab of slanted perforation angles of 300 of circular, elliptical in horizontal and vertical major axis and square shape were used for the experiment. Detailed Pitot pressure measurements revealed that the slanted perforation in the tab had a strong influence on the emerging flowfield. The tab with 300 slanted perforation of circular shape was found to be more efficient in disturbing the potential core in subsonic jets when compared with solid tab and other shapes of perforation in tabs considered. It was also found that it was having a slightly lesser potential core as compared to jet with solid tab. © 2016, American Institute of Aeronautics and Astronautics Inc, AIAA. All rights reserved.

Index Keywords
Aerodynamics, Flow fields, Jets; Circular shape, Different shapes, Major axis, Sonic jets, Square shape, Subsonic jets; Fighter aircraft

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Jayasudha, S.[a] , Ramanathan, K.[b] , Kumaravel, A.[c]

Fuzzy petri net generated by data mining rules for diabetes data

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Abstract
Fuzzy Petri nets are capable of concurrent, reliable specification of business rule engines of a core of an expert system. An expert system based on Fuzzy rule based systems are common and specification of those systems by tools like Petri nets encourage more research work nowadays. The focus of this paper is to establish an iterative scheme using data mining techniques for extractingantimal set of rules with best accuracies of such models is devised and obtained result for generating theoptimal rule base for predicting the diabetes diagnosis results.

Author Keywords
Classification; Data mining; Fuzzy inference system and receiver operating Characteristics (ROC); Fuzzy logic; Fuzzy Petri net; Fuzzy rule base; Selected attributes; WEKA

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Selvan, M.A.[a] , Selvakumar, S.[b]

Statistical Approach for Location Identification in MANET

(2015) *International Journal of Control Theory and Applications*, 8 (4), pp. 1521-1525. Cited 1 time.

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Abstract
Localizing nodes in MANET is significant as it serves several purposes. Various issues such as routing, security and so on could be resolved if the exact the location of the nodes is known. There exist several localization techniques such as Received Signal Strength (RSS), Time of Arrival (TOA), Time Difference of Arrival (TDOA) and Angle of Arrival (AOA) and so on. But these techniques produce inaccurate location estimates. Thus in this paper a Statistical Approach for Location Identification (SALI) has been proposed to estimate the location of the mobile nodes. This technique is independent of TOA, TDOA and AOA measurements. This technique estimates the location of the mobile node with reference to the mutation point. In addition the behavior of the nodes is monitored to identify malicious node and these nodes are localized using proposed location identification approach. © International Science Press.

Author Keywords
Angle of arrival; Localization; MANET; Received signal strength; Time difference of arrival; Time of arrival

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Sadhanandham, S.[a] , Narayanan, G.[b] , Rao, M.R.K.[c] , Prabhu, K.[d] , Jones, S.[e] , Ravi, A.[f] , Dinakar, S.[g]

GC-MS analysis and antioxidant studies of an ayurvedic drug, partharishtam

(2015) *International Journal of Pharmaceutical Sciences Review and Research*, 34 (2), art. no. 45, pp. 273-281. Cited 11 times.

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Abstract
The present work envisages in understanding the bio molecules present in Partharishtam by GC MS analysis and to find its antioxidant activity. Partharishtam is prepared by processing the bark of Terminalia arjuna, flowers of Madhuca indica and Woodfordia fruticosa, fruits of Vitis vinefera, jaggery and water. Partharishtam was subjected to GC MS analysis after suitable preparation. Major bio molecules such as Glycerol tricaprylate (RT value-33.104: % Area-11.44), Piperine (RT Value-33.900: % Area-6.22), Pyrazole (RT Value-32.807: % Area-5.400) were present among other compounds like 2-(3-chlorophenoxy)-N'-(2,4-dicholorobenzylidine) acethydrazide (RT value-32.307: % Area-8.83), Methyl 2-(4-chlorophenyl)-6-metoxy-7-chlorocinchoninate (RT value-31.817: % Area-1.70), 1,3-dipentyl-heptabarbital (RT value-35.003: % Area-4.44), 2-Pyrididone, 3,5-diiodo-n-methyl-1-Dimethyl derivative(RT Value-31.633: % Area-1.65), Stanzolol (RT value – 29: % Area-0.15). The various antioxidant studies of Partharishtam have indicated moderate activities when compared with standards in various methods applied. The medicinal properties of the molecules present in Partharishtam and its antioxidant properties could substantiate well with the claim that Partharishtam is a potent cardio tonic formulation. © Copyright protected.

Author Keywords
Madhuca indica; Partharishtam; Piperine; Pyrazole; Terminalia arjuna; Vitis vinefera; Woodfordia fruticosa

Index Keywords
1,3 dipentyl heptabarbital, 2 (3 chlorophenoxy) n' (2,4 dichlorobenzylidene)acethydrazide, 2 (3 chlorophenoxy) n' (2,4 dicholorobenzylidine) acethydrazide, 2 pyrididone 3,5 diiodo n methyl 1 dimethyl derivative, 2 pyridone,3,5 diiodo n methyl 1 dimethyl(phenyl)silyloxyhexadecane, 2,3 butanediol, acetic acid, acetohydrazide, alcohol, antioxidant, ayurvedic drug, cardiotonic agent, dichloroacetic acid, diisopropyl sulfide, fluoro anhydride decyl ester, heptadecyl ester, hexane, isopropylphosphonic acid, methyl 2 (4 chlorophenyl) 6 methoxy 7 chlorocinchonate, partharishtam, phytochemical, piperine, propanoic acid, 3, 3' thiobis didodecyl ester, pyrazole, stanozolol,n,o bis (trimethylsilyl) derivative, stanzolol, Terminalia arjuna bark, tricaprilin, unclassified drug, water; antioxidant activity, Article, DPPH radical scavenging assay, flower, fruit, hydrogen peroxide scavenging assay, hydroxyl radical scavenging assay, Madhuca, Madhuca indica, mass fragmentography, spectrophotometry, Vitis, Vitis vinefera, Woodfordia, Woodfordia fruticosa

Chemicals/CAS
2,3 butanediol, 513-85-9; acetic acid, 127-08-2, 127-09-3, 64-19-7, 71-50-1; acetohydrazide, 1068-57-1; alcohol, 64-17-5; dichloroacetic acid, 13425-80-4, 2156-56-1, 79-43-6; hexane, 110-54-3; piperine, 94-62-2; pyrazole, 288-13-1; tricaprilin, 538-23-8; water, 7732-18-5

Tradenames
P2010, Shimadzu; TD20, Shimadzu

Manufacturers
Shimadzu

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Chitra, A.[a b] , Raja, M.D.[b c] , Kavitha, E.[d] , Madhavan, J.[b]

Structural, vibrational, optical and dielectric studies on Bis-Glycine Lithium Molybdate
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Abstract
Semiorganic nonlinear optical crystals are expected to possess the advantages of both inorganic and organic materials. Optically active Bis-Glycine Lithium Molybdate (BGLM) is a semi-organic crystal and growth of single crystals of the prepared samples was carried out by slow evaporation method. The crystals were obtained after a period of 45 days and were subjected to various characterization studies. Powder X-ray diffraction analysis revealed the crystalinity of the grown crystal. Infrared spectral analysis showed the vibrational behaviour of chemical bonds and its functional groups and they were confirmed by FT Raman studies. UV-Visible transmittance studies revealed that the transparency region is from 320nm to 1036nm and its cut off wavelength of the grown crystal was found to be 320 nm. Optical band gap is found to be 3.25eV. The SHG efficiency of BGLM crystal is 1.5 times of KDP crystal. The dielectric response of the grown crystal was studied as a function frequency. © Research India Publications.

Author Keywords
BGLM; Semi-organic; SHG; UV-Vis and FT-IR

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Kishor Kumar, C.[a] , Christy, A.[b] , Sasikala, C.[c] , Vijayakumar, R.[a]

Prevalence of prehypertension among school students in Puducherry

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Abstract
Hypertension in childhood is now recognized to be a common and serious problem with a prevalence of 2% to 5%. Early detection of children at risk for hypertension, proper evaluation and appropriate management are important to prevent the serious, long-term complications associated with the condition. The present study was undertaken in this direction, to assess the prevalence of prehypertension and among school students [11 -17 years] in Puducherry. To show any possible correlation between high normal BP and increasing BMI. A total of 1100 school students consented to participate in this study, their BP reading were recorded after a demographic questionnaire to assess their socioeconomic status & BMI. Out of a total of 1100 students, there were 31 [4.97%] boys & 14 [3.09 %] girls. boys and girls both systolic and diastolic blood pressure increases with weight and it is found to be statistically significant.

Author Keywords
Blood Pressure; BMI; Pre-hypertension; School Students

Index Keywords
adolescent, Article, body mass, body weight, child, controlled study, cross-sectional study, descriptive research, diastolic blood pressure, female, human, incidence, India, major clinical study, male, prehypertension, prevalence, questionnaire, risk factor, sex difference, social status, systolic blood pressure

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Chandra Bose, G.[b] , Thanigaiarasu, S.[b] , Elangovan, S.[c] , Rathakrishnan, E.[a]

Experimental investigation of shape transition effects on isolator performance
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Abstract
Isolator is a critical component in supersonic air breathing engine and it is usually situated between the inlet and the combustor of a dual-mode ramjet/scramjet engine. In the present study, shape transition effects on isolator performance have been studied by carrying out experimental investigations on square, square to circular and square to elliptical transition ducts. The length of the isolator chosen in this study is 180 mm and the cross-sectional area of 900 mm2 is maintained constant along the length for all the ducts. Experiments were carried out for isolator inlet Mach 2, using a contoured nozzle. Varying the pressure of the settling chamber varied the expansion level at the nozzle exit, which run the nozzle. The wall static pressure along the length of the isolator and the Pitot pressure at the exit plane of the isolator were measured for all the configurations. Shadowgraph technique was employed for visualizing the shock-train in the isolator. The square to circular transition isolator is found to be more efficient in achieving the static pressure rise across the isolator than the square and square to elliptical transition ducts. © 2015, Walter de Gruyter GmbH. All rights reserved.

Author Keywords
Dual mode Scramjet engine; Isolator; Shape transition; Shock train; Static pressure rise

Index Keywords
Ducts, Engines, Nozzles; Dual-mode scramjet, Isolator, Shape transitions, Shock train, Static pressure; Ramjet engines

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Sivakumar, K.[a] , Mohanamurugan, S.[b] , Nagarajan, P.K.[c] , Vijay, R.[d] , Sabarish, R.[e]

Multiobjective optimum design of gear box - issues and challenges
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Abstract
Gear box is the most commonly used mechanical element in various kinds of machines which should be strong enough to withstand the sudden variations in load. Hence there is a need for designing an optimum gearbox for efficient performance. This research focuses on the multi objective design of gear pairs and gearboxes using evolutionary computation. The gear pair and gearbox design problems considered in this paper have two different parameters as objective functions. Since all the parameters are on different scales, these factors are normalised to the same scale. The normalised objective function is obtained and it is called as Combined Objective Function (COF), the design optimisation of spur gear pair, three speed gearbox design is planned to be optimised by using COF. The objective functions and constraints considered in this work are given. The objective functions consid ered in the present study are: minimisation of weight and minimisation of centre distance. The constraints considered are: (a) The induced bending stress obtained from the formula based on bending strength should be lesser than or equal to the allowable bending stress, (b) The induced crushing stress obtained from the formula based on contact compressive strength should be lesser than or equal to the allowable crushing stress, (c) The centre distance should be greater than or equal to the value obtained from the formula based on contact compressive strength, and (d) The module should be greater than or equal to the value obtained from the formula based on bending strength.

Author Keywords
centre distance; combined objective function (COF); conflicting objectives.; modified genetic algorithms; optimisation

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Vanangamudi, S.[a] , Pradeep Kumar, M.[b]

Parametric study of double point cutting tool on chip-tool interface temperature during turning of Aluminum Bar
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Abstract
Usually we use single point cutting tool for turning a workpiece to reduce the diameter say from 50 mm to 40 mm for the length of 200 mm. We have to go for at least 4 passes to finish the workpiece. By using a newly designed tool, i. e., double point cutting tool we can turn the same workpiece in 2 passes. So the Half of the machining time is reduced. Time is money. Hence Money is saved for machining. The double point cutting tool has two cutting points which has the height difference of 0. 5 mm and the distance between them is 6 mm. So that when the first cutting point takes 0. 5 mm depth of cut and next to that the second cutting point also takes 0. 5 mm depth of cut as the tool proceeds for turning. Chip-Tool Interface Temperature takes very important role in metal cutting which decides the dimensional accuracy, mechanical properties of the workpiece and the tool life. Experimental study is made on Chip-Tool Interface temperature by using double point cutting tool during turning of Aluminum Bar for different speed and feed is presented and discussed in this Research article. © Research India Publications.

Author Keywords
Aluminum Bar; Chip-tool interface temperature; Different speed and feed; Dimensional accuracy; Double point cutting tool; Machining time; Mechanical properties of the work piece; Tool life

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GC MS analysis of an Ayurvedic medicine "Ashokarishtam"
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Abstract
Ashokarishtam is a proven Ayurvedic medicine for the treatment of disorders of female reproductive system, particulary, menorrhagia, metrorrhagia and amenorrhea. In order to understand the various biomolecules present in this medicine, GC MS analaysis was performed. It was found that some very important biomolecules like 2, 3- Butanediol, [R-(R*, R*)], Phenol, 2,4-bis(1,1-dimethylethyl)- derivatives, n- Hexadecanoic acid, 2-Amino-1,3- propanediol or Thiophene, Furyl hydroxymethyl ketone, Dihydroxyacetone, 2-Furanmethanol, 2, 5- Dimethyl-4- hydroxy-3(2H)-furanone were found which have some very effective medicinal roles. It is of interest to find that there is no biological activity reports available for some of the major components found in the GC MS study like1- Propanol, Oxalic acid, cyclobutyl heptyl ester, Propanoic acid, 2-oxo-, methyl ester, 1,3-Butadiene-1-carboxylic acid, 1, 2-Cyclopentanedione, 2,4-Dihydroxy-2,5-dimethyl-3(2H)-furan-3-one, Hexadecanoic acid, 2-hydroxy-1- (hydroxymethyl)ethyl ester, Hexanoic acid, 2-ethyl-anhydride, 1-Isobutyl-7,7-dimethyl-octahydro-isobenzofuran-3aol, Ethyl 2-nitropropionate. Further investigations are warranted to identify the biological functions of these components to get some clues as to the medicinal role of Ashokarishtam.

Author Keywords
1-Propanol; Amenorrhea; Ashokarishtam; GC MS; Hexadecanoic acid; Metrorrhagia

Index Keywords
1 isobutyl 7,7 dimethyl octahydro isobenzofuran 3a ol, 1,2 cyclopentanedione, 1,3 butadiene 1 carboxylic acid, 2 amino 1,3 propanediol, 2 ethyl anhydride, 2 hydroxy 1 (hydroxymethyl)ethyl ester, 2 oxomethyl ester, 2,3 butanediol, 2,4 bis(1,1 dimethylethyl) derivative, 2,4 dihydroxy 2,5 dimethyl 3(2h) furan 3 one, 2,5 dimethyl 4 hydroxy 3(2h) furanone, ashokarishtam, ayurvedic drug, cyclobutyl heptyl ester, dihydroxyacetone, ethyl 2 nitropropionate, furfuryl alcohol, furyl hydroxymethyl ketone, hexanoic acid, n hexadecanoic acid, oxalic acid, palmitic acid, phenol, plant medicinal product, propanol, propionic acid, thiophene, unclassified drug; antiinflammatory activity, antioxidant activity, Article, Ayurveda, biological activity, chemical composition, human, mass fragmentography, medicinal plant, menstruation disorder, nonhuman, phytochemistry

Chemicals/CAS
2,3 butanediol, 513-85-9; dihydroxyacetone, 67255-48-5, 96-26-4; furfuryl alcohol, 98-00-0; hexanoic acid, 142-62-1, 151-33-7; oxalic acid, 144-62-7; palmitic acid, 57-10-3; phenol, 108-95-2, 3229-70-7; propanol, 62309-51-7, 71-23-8; propionic acid, 72-03-7, 79-09-4; thiophene, 110-02-1

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Study on the intravascular catheter-related bloodstream infections in a tertiary care hospital of Tamil Nadu, India
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Abstract
The catheter related blood stream infections (CRBSI) are identified as a threat of human kind worldwide affecting ICU admitted patients in hospitals. The rate of chances of getting the CRBSIs vary depending on the hospital set ups and several other variables. The aim of this study is to evaluate the percentage of bacterial colonisation and catheter related blood stream infections (CRBSI) together with the antibiotic susceptibility patterns in a tertiary care hospital located in Chennai, Tamilnadu. Of the 68 catheters studied out of 55 patients, the incidence of colonisation was found 37.6% and CRBSI was 14%. The pathogens identified from the cultures include S.aureus, Pneumonia sp. Klebisiella etc. Among this Staphylococcus aureus was found to be the major contributor of CRBSI with 25% rate of. With respect to antibacterial resistance 100% of Enterobacteriacae were ESBL producer, 49.0% Pseudomonas sp. were imipenem resistant, 65% Staphylococcus aureus were resistant to methicillin resistant. The major risk factors include age of patient, immune status and number of catheters in situ etc. The result of this study would be useful for control and treatment of CRBSI.

Author Keywords
Blood cultures; Catheter related blood stream infections; Central venous catheters; S.aureus

Index Keywords
amikacin, amoxicillin plus clavulanic
acid, cefotaxime, ceftazidime, ceftriaxone, chloramphenicol, ciprofloxacin, clindamycin, cotrimoxazole, gentamicin, imipenem, netilmicin, oxacillin; Acinetobacter, adult, age, antibiotic sensitivity, Article, bacterial colonization, bacterium culture, bacterium identification, Candida, catheter infection, Escherichia coli, female, human, immune status, incidence, India, infection risk, intravascular catheter, Klebsiella, major clinical study, male, Pseudomonas, risk factor, Staphylococcus aureus, Staphylococcus epidermidis, tertiary care center, treatment duration

Chemicals/CAS
amikacin, 37517-28-5, 39831-55-5; amoxicillin plus clavulanic acid, 74469-00-4, 79198-29-1; cefotaxime, 63527-52-6, 64485-93-4; ceftazidime, 72558-82-8; ceftriaxone, 73384-59-5, 74578-69-1; chloramphenicol, 134-90-7, 2787-09-9, 56-75-7; ciprofloxacin, 85721-33-1; clindamycin, 18323-44-9; cotrimoxazole, 8064-90-2; gentamicin, 1392-48-9, 1403-66-3, 1405-41-0; imipenem, 64221-86-9; netilmicin, 56391-56-1, 56391-57-2; oxacillin, 1173-88-2, 66-79-5, 7240-38-2

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Experimental study on the effect of rise on shallow funicular concrete shells over square ground plan
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Abstract
Shells, stressed skin structures because of their geometry and small flexural rigidity of the skin, tend to carry loads primarily by direct stresses acting in their plane. Concrete shallow funicular shells of rectangular ground plan, double curvature with different rises are loaded to failure with a concentrated central force. Specimens of size 100 cm x 100 cm in plan with edge beam of size 4 cm x 4 cm are prepared with concrete of grade M30 for which the mix design is carried by Indian Standard method. The specimens are prepared with various rises and moist cured. They are subjected to ultimate loads and the corresponding strains and deflections are measured. Failure patterns for shells with different rises are observed. From the experimental investigations, a relation between span to rise ratio and ultimate load is arrived. It is concluded that the ultimate loads are function of the rise of the shell. © Research India Publications.

Author Keywords
Concrete shell; Funicular shell; Shells; Span to rise ratio; Ultimate load

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A heuristics based adaptive audio watermarking scheme through SVD-KFDA

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Abstract
The heuristics based adaptive audio watermarking technique using SVD-KFDA is proposed in this study. The audio signal is segmented by sub-frames and synchronization code embedded with watermarked signal. On other side, the down-sampling and modulation process using energy relationship is anticipated in order ensure reliable and robust fidelity on watermarked signal. The heuristics process identifies the native energy relationship among sub-frames which is hidden in the watermarked signal through SVD-KFDA. The heuristics based adaptive model is more resilient and can propose extraordinary robustness on usual acoustic data processing and outbreaks associated with common watermarking methods. This system exposes feasibility on implementation and derives less evaluation complexity. © Medwell Journals, 2015.

Author Keywords
Audio watermarking; Energy relationship modulation; Kernel Fisher Discriminant Analysis (KFDA); Singular Value Decomposition (SVD); Synchronization code

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Karthick, S.[a] , Kattimani, S.[a] , Sarkar, S.[b] , Bharadwaj, B.[a] , Rajkumar, R.P.[a]

Quality of sleep in patients with bipolar i disorder during remission
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Abstract
Background and Goals: Sleep disturbances have been noted not only during affective episodes in bipolar disorder, but also between affective episodes. The goal of this study was to assess and identify determinants of sleep quality in patients with bipolar I disorder. Methods: This cross-sectional study enrolled patients with bipolar disorder who were currently in remission. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI). Mood symptoms were evaluated using the Young Mania Rating Scale (YMRS) and the Hamilton Depression Rating Scale (Ham-D). Adherence was assessed using the Medication Adherence Rating Scale. Results: The mean age in the sample (N=103) was 37.4 years; 44.7% of the sample were men. On the basis of PSQI scores, 41 patients (39.8%) were poor sleepers. Poor sleepers had significantly higher Ham-D scores (mean score of 1.8 vs. 0.9, P=0.012) and higher rates of medication nonadherence (36.6% vs. 11.3%, P=0.002). The relationship between Ham-D scores and sleep quality did not remain significant when the sleep-related items on the Ham-D were removed. Logistic regression analysis suggested that medication nonadherence was the only independent predictor of poor sleep quality in this study. Conclusions: A significant proportion of patients with bipolar disorder who are in remission have sleep problems that seem to be independent of core symptoms of depression. © 2015 Wolters Kluwer Health, Inc. All rights reserved.

Author Keywords
Adherence; Bipolar disorder; Depression; Recovery; Sleep quality

Index Keywords
adult, Article, bipolar I disorder, cross-sectional study, depression, female, guilt, Hamilton Depression Rating Scale, human, insomnia, major clinical study, male, Medication Adherence Rating Scale, medication compliance, mood, Pittsburgh Sleep Quality Index, rating scale, remission, sleep disorder, sleep quality, sleep time, Structured Clinical Interview for DSM Disorders, suicidal behavior, Young Mania Rating Scale, bipolar disorder, complication, depression, Diagnostic and Statistical Manual of Mental Disorders, middle aged, outcome assessment, pathophysiology, patient compliance, psychological rating scale, Sleep Wake Disorders; psychotropic agent; Adult, Bipolar Disorder, Depression, Diagnostic and Statistical Manual of Mental Disorders, Female, Humans, Male, Middle Aged, Outcome Assessment (Health Care), Patient Compliance, Psychiatric Status Rating Scales, Psychotropic Drugs, Remission Induction, Sleep Wake Disorders

Chemicals/CAS
Psychotropic Drugs

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Lokanadham, S.[a] , Kothandaraman, U.[b] , Chidamabaram, R.[c] , Johnson, W.M.S.[d] , Prabhu, K.[e]

Long term administration of nicotine in albino rat cerebellum - Histopathological study
(2015) *International Journal of Pharmaceutical Sciences Review and Research*, 34 (2), pp. 114-117.

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Abstract
The actions of nicotine upon cerebellar function are poorly understood. Small doses of nicotine have a stimulating action on the central nervous system whereas large doses depress. 16 adult male albino rats of wistar strain weighing 135-150 grams were used for the present study. The rats were divided in to four groups each consists of 4 animals. The control group was given 0.9% saline as vehicle and the experimental groups (drug treated- II, III, IV) were given intraperitoneal injection of Nicotine a dose of 0.5 mg/kg, 0.75 mg/kg and 1mg/kg body weight dissolved 1:1 ratio in normal saline respectively for a period of 28 days. Cortical layers were intact in the entire drug treated group. White matter with few vacuoles was observed in 0.5 mg/kg Nicotine induced group. Disruption of Purkinje cell layer and granular cells was observed in 0.75 mg/kg induced group. Dose of 1mg/kg nicotine induced group animals shown complete disruption of Purkinje cell layer, cellular disruption in granular cell layer. Extended core of white matter into the folia of the cerebellum cellular microcystic change with interstitial oedema was observed in the same group. The loss of white core, Purkinje cell layer, and granular layer cellular disruption give better knowledge in understanding long term nicotine exposure. Our study reveals the histopathological changes of nicotine on long term administration in adolescent rat cerebellum with their clinical significance. © Copyright protected.

Author Keywords
Cerebellum; Disruption; Nicotine; White core

Index Keywords
nicotine; adult, animal experiment, animal model, animal tissue, Article, brain cortex, brain edema, cell disruption, cerebellum injury, controlled study, granular cell, histopathology, long term exposure, male, nerve degeneration, nonhuman, Purkinje cell, rat, white matter

Chemicals/CAS
nicotine, 54-11-5

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Web cluster load balancing techniques: A survey

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Abstract
Nowadays due to exceptional scale and vibrant nature of the internet, popular web services will often run on web clusters in order to guarantee the availability and scalability of the web services. To share the service traffic among cluster servers transparently to the clients the servers will depend on load balancing techniques. In this paper, content-blind and content-aware web switches to assign the requests of clients is considered. In particular, we will consider request dispatching algorithms which uses either only client information or client and server information for load balancing. © Research India Publications.

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Sivakumar, K.[a] , Rajan, K.[b]

Experimental analysis of heat transfer enhancement in a circular tube with different twist ratio of twisted tape inserts

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Abstract
An experimental investigation was carried for measuring heat transfer, Reynolds number, and friction factor fitted in concentric tube with twisted tape inserts. The different twist ratio y=2.52, 3.00 and 3.20 were studied for the laminar flow using computational fluid dynamics package. An aluminium inner tube of 18 mm internal diameter and 20mm outer diameter and 220mm length was used for experimental study. The outer tube material is mild steel of 28mm inner diameter and 32mm outer diameter was used for the experimental record. A copper twisted tape of different twist ratio of twist was inserted and the obtained plain tube data were verified with twisted tape inserts and ensure the validation of simulation results. The results are analyzed that the twisted tape accessible high heat transfer with increases in friction factor. In additionally the experimental value of twisted tape as compared with numerical simulation. A CFD package of commercial Ansys Fluent were utilized for simulate the twisted tape.

Author Keywords
Computational fluid dynamics; Heat transfer; Twisted tape

Index Keywords
Carbon steel, Computational fluid dynamics, Fluid dynamics, Friction, Laminar flow, Reynolds number, Tubes (components); Computational fluid dynamics package, Experimental analysis, Experimental investigations, Experimental values, Heat Transfer enhancement, High heat transfers, Twisted tape insert, Twisted tapes; Heat transfer

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William Christopher, I.[a] , Prakash, S.[b]

Modeling and analysis of photovoltaic module

(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 6867-6872.

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Abstract
This paper presents modeling of Photovoltaic module using MATLAB Simulink toolbox. Single diode equivalent circuit of a PV cell is used to study the I-V and P-V characteristics. The proposed model is developed for a typical 250W PV module. The key benefit of this study can be done for any PV module configuration. © Research India Publications.

Author Keywords
PV (Phtovoltaic) module; Single diode equivalent circuit

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Prasad, K.S.[a] , Ramya, O.[b]

Fuzzy based modeling of cascaded multilevel inverter

(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 6820-6824.

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Abstract
Multilevel pulse width modulation (PWM) inverters have been developed to overcome shortcomings in solid state switching device ratings so that large motors can be controlled by highpower adjustable frequency drives. This paper investigates the variation in the harmonic spectrum of cascaded multilevel inverters with different voltage levels. To make the analysis efficient, fuzzy based control scheme is employed. © Research India Publications.

Author Keywords
Fuzzy; Multilevel inverter

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Kerinab Beenu, G.[a] , Brindha, G.[b]

A study on the women empowerment through self help group (SHG) and bank linkage model
(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 7514-7519.

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Abstract
Micro finance is a type of banking service that is provided to unemployed or lowincome individuals or groups who would otherwise have no other means of gaining financial services. Ultimately, the goal of microfinance is to give low income people an opportunity to become selfsufficient by providing a means of saving money, borrowing money and insurance. In recent years Microfinance has attracted widespread attention for its developmental Impact for the poor. The aim of the project is to study the level of women empowerment through SHG & Bank linkage model. The study is conducted with reference to Indian Overseas Bank, T.Nagar Branch, Chennai. The main objective of the study is to know the women empowerment in all aspects of their life through micro finance. Descriptive type of research design has been adopted for the study. Census survey is conducted with members of the self help group IOB, T.Nagar Branch, Chennai. The data are collected from the survey conducted among SHG women the women (primary data). The data thus collected are interpreted through various techniques. Statistical tools used for the study are Chi-Square, Average, One way ANOVA and Z Test.Based on the analysis findings suggestions and conclusions are made. © Research India Publications.

Author Keywords
Empowerment; Micro credit; Micro finance

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Elangovan, S.[a] , Nirmal Kumar, U.[b] , Baskaran, P.[b]

Smart stimuli material for hybrid ornithopters with alternative power source

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Abstract
MAVs are tiny vehicles which can be flown from aremote location and used for various reconnaissance and detection applications. MAV Flappers are those which are of lightweight with fewer payloads, flapping wings and supported by a slender body. The flapping wings which resemble those of birds are the lift producing surfaces. But it is obvious that the energy needed for flapping is more when compared to that of fixed winged MAVs. And moreover the long-range flight has been unsuccessful with flappers. Hence the paper deals with the alternative source of energy that is using of thermals for the soaring of MAVs. The body of the MAV should be very sleek and slender. Further it should be light in weight as well. It should have the tendency to sense the thermals and should not undergo any material fatigue. One such material which satisfies the above criteria is Smart material. A special type of smart materials, responsive polymer materials, are able to transmit the stimuli signals to each other that comes from the surrounding environments such as thermal, electrical and other kinds of signals. Hence the thermal stimuli responsive polymer smart materials can respond efficiently to the surrounding thermals. The above mentioned thermo-responsive material suits the MAV flapper, which uses thermals for soaring, in which the flapping wings are to be responsive to the incident thermal air currents on the MAV from the environment. Further, the stabilizers at the rear side of the MAV maintain the stability and hence are to be strong and weightless for efficient flight. This can be achieved by the use of composite materials. They possess a very high strength to weight ratio as well as stiffness to weight ratio. © Research India Publications.

Author Keywords
High endurance; Long range; MAV flappers; Thermal soaring; Thermo responsive material

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Vijayaraghavan, S.P.[a] , Venkatesan, R.[b]

Performance improvements of permanent magnet brushless DC motor-FFT analysis
(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 6815-6819.

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Abstract
Permanent Magnet Brushless motor DC (PMBLDC) motor is rapidly gaining popularity and are widely used in industries such as aerospace, consumer, medical, industries, automation equipment and instrumentation because of their important characteristic like high power density, Torque-inertia ratio, small size, higher efficiency. One main problem in the PMBLDC motor is the torque ripple which causes undesirable acoustic noise and vibration which effect the overall performance of the machine. The proposed work aims at analysing the harmonics using FFT analysis. © Research India Publications.

Author Keywords
Fast fourier transform (FFT); Permanent magnet brushless (PMBLDC) motor; Torque ripple

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Manoj Kumar, A.K.[a] , Elangovan, S.[b] , Chand, D.S.[c]

Passive control for prevention of flow separation in axial flow compressors
(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 5163-5168.

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Abstract
Flow separation is the most common problem in the area of Aerospace Industry. The flow separation in the wings leads to loss of lift. There are many techniques involved to prevent the flow separation. In the case of jet engines the axial flow compressor are prone to flow separation. The efficiency of Brayton Cycle is function of pressure ratio (Jet Engine works on Brayton Cycle). Due to flow separation and pressure loss associated with it renders engine for limited applications. To have high pressure in such cases more numbers of stages are required hence makes system bulky and heavy. More numbers of stages also enhances the chances of flow separation. This flow separation can be prevented by active and passive methods. It is proposed to inject a secondary jet flow on the blade airfoil (2-D), which re-energizes the flow. This method can be treated as passive control since no external agency is used to activate the flow. Normal cambered blade profile of a compressor with different secondary injection will be analysed for optimum jet injection velocity and angle to prevent flow separation (stall) using Ansys, Fluent. © Research India Publications.

Author Keywords
Axial flow compressor; Flow separation; Optimum jet injection; Passive method; Secondary jet flow

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Rajesh, S.[a] , Sucharita, G.[b]

Experimental investigation on the metal matrix composite of aluminium alloy with Al2o3
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Abstract
The purpose of the project is to show and compare of modern method composite materials with aluminium alloy matrix reinforced by Al2O3 particles manufacturing. Using this project work it is possible to fabricate products with different geometries like solid and hollow profiles, with a fixed or varying transverse section. The received results show the possibility of obtaining the new composite materials with required structure joining positive properties of composite materials component. This project work of aluminium alloy composite materials reinforced by ceramic particles manufacturing ensures required structure and can be applied in practice. The results indicate that Al2O3 particles can be used as the hard dispersed phase in aluminium for wear-resistant and abrasion-resistant applications. © Research India Publications.

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Vijayaraja, K.[a] , Sundararaj, M.[b]

Numerical analysis of drilling characteristics in Gfrp composite using grey relational algorithm
(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 5340-5347. Cited 1 time.

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Abstract
The Glass Fibre Reinforced Plastic (GFRP) composites are widely used for a several applications in automotive, aerospace and chemical industries due to their superior properties. This composite material needs the drilling operation for their final assembly. The drilling of GRFP laminates imposes a great challenge due to its non homogeneous and anisotropy nature. Debonding, delamination, fibre pullout and hole shrinkage may occur during the drilling of these GFRP composites. Proper selections of drill tool and process parameters are very important in drilling of these composite materials to minimize these defects. The drilling experiments were carried out at full factorial design for this glass/polyester composite using Helical flute straight shank drill and “Brad and Spur” drill by varying the drilling process parameters such as cutting speed and feed. The aim of this paper is to present the application of Grey relational Algorithm to evaluate the drilling characteristics of glass/polyester composite. The effects of drilling process parameter such as cutting speed and feed rate on specific cutting pressure, power, delamination factors were investigated to get the optimum drilling process parameters. The Analysis of variance (ANOVA) and Grey Relation Algorithm were used to get multiple objective optimizations to get damage less drilling of glass/polyester composites. The results demonstrate that the feed rate is the major parameter than other controllable factor that influences the delamination. At the end, the optimal combinations of the drilling process parameters are determined. © Research India Publications.

Author Keywords
Delamination; Drilling; Glass fibre reinforced plastics; Multi-objective optimization

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Meenakshi, N.[a] , Jayalakshmi, V.[b]

Multilevel neutral point diode clamped inverter based on SVPWM

(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 6873-6878.

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Abstract
In this paper, the space vector modulation technique for an ordinary two level inverter is described. Based on the two level inverter, the paper further deals with space vector pwm technique for a three level inverter. A new algorithm is adopted which ensures reduced computational complexity and the same methodology can be used with higher levels as well. Further a performance comparison of both two and three level inverter is done and this proves superiority of multilevel inverters over an ordinary inverter. © Research India Publications.

Author Keywords
Space vector pulse width modulation (SVPWM); Three level inverter; Two level inverter

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Praveen, R.[a] , Nakkeeran, S.[b] , Vivek, R.[c]

Experimental study on macroscopic spray characteristics in direct injection diesel engine by using diesel
(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 7633-7637.

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Abstract
Potential improvement on exhaust emissions, biodegradability and the possibility to reduce dependence on fossil fuel resources has led to an increasing interest on the use of alternative fuels for transport application. In diesel engine spray characteristics play a vital role in improving the combustion and emission characteristics of fuel because it directly affects the air-fuel mixture formation. Spray characteristics of the fuel depends on density and viscosity of fuel, injection pressure, injection timing, injection duration, ambient pressure and temperature of fuel. In this study investigate the spray characteristics for diesel by changing the injection timing such as conventional timing (23° bTDC), retard injection timing (20° bTDC) and advance injection timing (28° bTDC). For visualizing spray characteristics of combustion chamber the Mie-Scattering technique is followed and in diesel engine there are two holes on the cylinder walls one hole is for LED light source is placed to visualize the spray inside the cylinder combustion chamber. Another one hole is for fastec high speed video camera is fixed to capture the spray structure. Then the image is captured and taken for analysis. The record images are analysed by PRO-ANALYST software with incorporating the computer. © Research India Publications.

Author Keywords
Diesel; Injection timing; Spray cone angle; Spray penetration

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Preethi, D.[a] , Vijaya Ragavan, S.P.[b]

Z-source buck-boost matrix converter using safe commutation strategy
(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 6879-6886.

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Abstract
This paper describes a type of converter that can buck and boost voltage with step-changed frequency called a Single-Phase Z-Source Buck- Boost Matrix Converter. It employs a safecommutation strategy which results in the elimination of voltage spikes on switches without the need of a snubber circuit. This is achieved through a novel switching control. The operating principles of this converter are described and the circuit behaviour is confirmed by MATLAB / Simulink simulation results. The Hardware Design for Single Phase Matrix Converter for R load is implemented. © Research India Publications.

Author Keywords
Buckboost voltage; Single phase matrix converter; Step-up and step-down frequency; Zsource

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Prathipa, J.[a] , Lingeswaran, K.[b]

Smart home voice controller

(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 6895-6898.

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Abstract
Now a days voice controllers are gaining importance because of improvements in speech recognition and huge processing power of processors. Voice controller is more beneficial and easy to use for elderly and other incapable home dwellers. Human voice is used to control various switches of few smart appliances. This project aims at developing a new domestic switching that can be controlled a trained by voice. The voice recognition system that consists of voice recognition chip HM2007, and the PIC18F8722 microcontroller forms the heart of the system. The HM2007 serves as voice observer (ear of the system) that will listen and interpret the command, while the PIC18F8722 serves as the brain of the system that will select the correct output for the given input command. © Research India Publications.

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Singh Chand, D.[a] , Elangovan, S.[b] , Vasanth Kumar, G.[c]

Numerical investigation of mixing characteristics of chevron nozzle by passive controls method
(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 5169-5179.

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Abstract
The paper deals with the Reduction of noise in the Nozzle exhaust is done by attaching Chevrons with particular parameters in the Nozzle exhaust. Numerical investigations have been carried out on Chevron Nozzles to assess the importance of Chevron parameters such as the number of Chevrons and the mixing characteristics of jet. After assessing the Chevron parameters we modify the Chevron shapes at the exit by fixing the triangular wedge in order to get maximum noise reduction along with very negligible thrust loss. Finally compare the results of free jet Nozzle with Chevron and Chevron with wedge using ICEM CFD software and also compare the results of potential core decay of these Nozzles. © Research India Publications.

Author Keywords
Chevron nozzle; Chevron parameters; Chevron with wedge; Passive control methods; Potential core decay of nozzle

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Augmentation of lift by airfoil modification

(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 5188-5192.

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Abstract
S.T.O.L. aircrafts have high L/D, at very low speeds, by using high t/c airfoils and because of this, they are limited to low velocities. The objective of the project is to vary the upper surface of a “laminar” airfoil with that of a “high lift” airfoil during takeoff to be quickly airborne and to change it back to the original one, once the velocity reaches the limiting velocity of the modified one. C.F.D. analysis has been done for different angles and three velocities. The shape change is expected to be brought about by some effective actuating mechanisms or by S.M.A.s. © Research India Publications.

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Speed control of linear induction motor

(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 6831-6838.

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Abstract
Today's conventional solution of machine tool drive consists of a rotational motor and a mechanical converter which converts rotational motion into translational. Since the mechanical elements introduce backlash and elasticity in the system, better performance of the feed drive could be achieved by the linear motor with appropriate servo control. The input output linear zing control of a linear induction motor was therefore designed which, provides high performance and high disturbance rejection. This paper shows a design of linear induction motor using Magnet software and the speed is controlled by using PI and PID controller using Matlab platform. © Research India Publications.

Author Keywords
Linear induction motor (LIM); PI controller; PID controller

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Mechanical characterization of GLARE composites

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Abstract
Fiber metal laminates are hybrid composite materials built-up from interlacing layers of thin metals and fiber reinforced adhesives. The most commercially available fiber metal is Glare(Glass Reinforced Aluminium Laminate).Any load on Glare laminated composites may encounter major damages like fiber metal delamination and fiber metal debonding and fiber failure etc. So it is essential to study the fiber metal debonding and improve the bonding between the fiber and metal. To investigate the effect of surface roughness of the Aluminium sheet, the Aluminium sheets were sandblasted at three different pressure levels(40psi, 60psi, 80psi to produce surface roughness). By using Tinius olsen 100KU universal testing machine the specimens were subjected to flexural and tensile testing with acoustic emission monitoring. From the test it is observed that the bonding between the Aluminium and fiber is high in the laminate having the aluminium of sandblasted pressure of 60 psi. From the acoustic monitoring results, the nature and extent of damage has been observed. Further Aluminium powder is added as a filler material to improve the bonding between fiber and metal,this laminate is impacted at a velocity of 2.5m/s. © Research India Publications.

Author Keywords
Fibre metal; Glare; Impact; Sandblasting

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Data compression soft error rate mitigation in FPGA

(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 6887-6894.

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Abstract
A built in Hamming Code has been introduced to provide a reliable operation of SRAM based FPGA systems in the remote applications such as space research. Radiation induced soft errors degrades the reliability of the Field Programmable Gate Arrays. Our proposed built in Hamming Code feature leads to improvement of system availability in-case of occurrence of faults. Without depending on an external memory our proposed system can recover the configuration bits. To enrich the efficiency of our design we propose an SRAM buffer. In additional this paper proposes a novel test data compression technique.It proposes a test compression technique using efficient dictionary and bitmask selection to significantly reduce the testing time and memory requirements. With our built in hamming code technique the SRAM based FPGA can be 99.99% with data bit of 7 error in 1 billion h. Our test compression algorithm outperforms existing dictionary- based approaches by up to 30%, giving a best possible test compression of 92%. © Research India Publications.

Author Keywords
Error correction codes; Field programmable gate arrays; Soft errors

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Ramjet with steam fuel system

(2015) *International Journal of Applied Engineering Research*, 9 (22), pp. 5180-5183.

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Abstract
Fuel consumption is more and major drawback in Ramjet. To minimize this problem different techniques can be adopted. Paper deals with one such technique viz. Steam fuel system. To increase density of fuel this system has greater influence to decrease the fuel consumption at the same time thrust can be enhanced up to a large extend. Paper deals with comparison of fuel consumed in a simple Ramjet and Ramjet with steam fuel system. The experiments are carried out in a simple Ramjet and the corresponding pressure, temperature, velocity reading will be taken to calculate thrust. Similarly the experiments were conducted in Ramjet with steam fuel system and corresponding readings of pressure, temperature, velocity reading will be taken to calculate thrust. The result is expected to be increase in temperature and thr ust compare to be simple ramjet. © Research India Publications.

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Hema Shankari, K.[a] , Thirumalai Selvi, R.[b]

Regression testing using AIGRTP algorithm for industries
(2015) *International Journal of Applied Engineering Research*, 10 (18), pp. 39822-39827.

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Abstract
In a software industry during the software production phase the software maintenance activity is an expansive phase which cost nearly sixty percentage of total cost. Regression testing is an important phase in software maintenance activity to ensure the modification caused by debugging. Regression testing is a testing to test the modified software during the maintenance level. Regression testing is a costly but crucial problem in software development. Both the research community and the industry have paid much attention to this problem. This paper try to do the survey of and current practice in industry and also try to find out whether there are gaps between them. The observations show that although some issues are concerned both by the research community and the industry. The goal of our research is to improve the control of the testing and reduce the amount of redundant testing in the product line context by applying regression test selection strategies. The proposed Advanced Industry oriented genetic algorithm for regression test case prioritization (AIGRTP) is compared with previous approach using APFD metric. The results represent that propose approach outperforms the earlier approach. © Research India Publications.

Author Keywords
AIGRTP; APFD metric; Business rules; Cost-risk-assessment; Industry application; Regression testing; Test case prioritization

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Sundar Raj, M.[a] , Dinagan, V.[a] , Adalarasu, K.[b]

Development of low cost wireless physiological monitoring system
(2015) *International Journal of Pharmacy and Technology*, 7 (2), pp. 8800-8803.

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Abstract
Wireless physiological monitoring system (WPMS) and wireless wearable physiological monitoring system are widely used for the purpose of quick and remotely diagnosing method. From the last decade the usage of telemedicine system is moderately increasing to reduce the physician requirement in the field of diagnosis. The currently available diagnostic methods are very expensive and rarely available in developing countries. The present experiment we have developed to reduce the cost of the patient monitoring system and user friendly version of WPMS. and develop affordable low-cost wireless physiological monitoring system for patient diagnosis. © 2015, International Journal of Pharmacy and Technology. All Rights Reserved.

Author Keywords
Matlab; Telemedicine; Zigbee

Index Keywords
Article, computer system, controlled study, cost control, developing country, electrocardiogram, equipment design, general medical device, patient monitoring, product development, signal detection, telemedicine, wireless physiological monitoring system

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Documents

Sundar Raj, M.[a] , Prasath, M.[a] , Adalarasu, K.[b]

Autism spectrum disorder
(2015) *International Journal of Pharmacy and Technology*, 7 (2), pp. 8638-8647. Cited 1 time.

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Abstract
Autism is a lifelong developmental condition that affects, among other things, the way an individual relates to his or her environment and their interaction with other people. The main areas of difficulty are in social communication, social interaction and restricted or repetitive behaviours and interests. An estimated one in 100 people has autism; that's almost 230,000 Australians. Autism affects almost four times as many boys than girls. A kid's symptoms could be very mild, severe, or somewhere in the middle. For example, some kids might be upset by too many noises or sounds that are too loud. This is serious disorder which requires treatment with brain wave and signals. Brain imaging studies have shown that abnormal brain development beginning in an infant's first months may have a role in ASD. At this time, the only medications approved by the FDA to treat aspects of ASD are the antipsychotics risperidone (Risperdal) and aripripazole.Because of these developments, Autism Research is expanding its scope to include adequately powered treatment studies, with a particular emphasis on research that reveals underlying mechanisms, either by testing causal hypotheses or by revealing variations in responses, which prompts refinement of explanatory models. © 2015, International Journal Of Pharmacy and Technology. All rights reserved.

Author Keywords
Autism symptoms; Medications treatment

Index Keywords
citalopram, fluoxetine, methylphenidate, neuroleptic agent, sertraline; Article, autism, cerebral palsy, child health, clinical feature, clinical trial (topic), communication skill, compulsion, Down syndrome, drug indication, environmental factor, fragile X syndrome, heredity, human, idiopathic disease, intellectual impairment, muscular dystrophy, nervous system, neurofibromatosis, nonhuman, pathophysiology, prescription, psychological aspect, Rett syndrome, risk factor, social adaptation, tuberous sclerosis

Chemicals/CAS
citalopram, 59729-33-8; fluoxetine, 54910-89-3, 56296-78-7, 59333-67-4; methylphenidate, 113-45-1, 298-59-9; sertraline, 79617-96-2

Tradenames
celexa; prozac; ritalin; zoloft

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Stroke rehabilitation through physiotherapy- A reveiw

(2015) *International Journal of Pharmacy and Technology*, 7 (2), pp. 3250-3255.

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Abstract
Most of the members of the therapeutic team in stroke rehabilitation use physiotherapy as an effective treatment for stroke. Hence it does imply that stroke patients benefit from rehabilitation with physiotherapy. This benefit may be small, but for a given individual, chance of relief from the stroke is high. The evidences are available today about effect of physiotherapy in treating stroke using which the normal life of the stroke's patience is brought back. Even though many treatments exist for stroke, Physiotherapy is the most effective one. Like other treatments it does not need any clinical trials. Since we are in need of selecting therapies that are most cost-effective and also to be given to the largest number of patients this physiotherapy satisfies both the needs. © 2015, International Journal Of Pharmacy and Technology. All rights reserved.

Author Keywords
Exercises; Physiotherapy; Stroke

Index Keywords
aphasia, arm exercise, cerebrovascular accident, disease association, functional assessment, health care need, health program, hemiparesis, hemiplegia, human, long term care, motor control, nursing care, occupational therapist, outpatient care, physiotherapist, physiotherapy, psychologist, Review, social worker, speech language pathologist, speech rehabilitation, stretching exercise

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Sivaram, A.R.[a] , Kanimozhivendhan, G.[b] , Rajavel, R.[a] , Durai Raj, V.P.[c]

Performance investigation of a closed cycle magneto hydrodynamics powerplant with liquid metal as heat source
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Abstract
Magneto hydro dynamics power generation is a non-conventional energy resource used in modern systems. Due to high demand of coal, it is necessary to search for other alternative heat source to drive the magneto hydrodynamics power plants. The liquid metal like alumi-num, manganese, copper and silver can be employed due their improved thermal conductivity and flow characteristics. The magneto hydro dynamics power generation process needs high temperature heat source for converting the inert gas into ionized plasma. A regenerative heat exchanger is employed for heat transfer between melted metal from source chamber to argon gas chamber. The heat transfer coefficient between the liquid metal flow and inert gas is high according to flow conducting material. This work deals with the inert gas plasma which is produced from liquid aluminium and this can be used for recycling. This system proves only 36% of aluminum is required than that of regular MHD system using coal as a heating source.

Author Keywords
Ionization; Liquid metal phase change; Magnetic field strength; Magneto hydrodynamics; Power density

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Long term administration of nicotine in albino rat cerebellum - histopathological study
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Abstract
Background: The actions of nicotine upon cerebellar function are poorly understood. Small doses of nicotine have a stimulating action on the central nervous system whereas large doses depress. Materials and Methods: 12 adult male albino rats of wistar strain weighing 135-150 grams were used for the present study. The rats were divided in to four groups each consists of 4 animals. The control group was given 0.9% saline as vehicle and the experimental groups (drug treated- II, III, IV) were given intraperitoneal injection of Nicotine a dose of 0.5 mg/kg,0.75 mg/kg and 1mg/kg body weight dissolved 1:1 ratio in normal saline respectively for a period of 28 days. Results: Cortical layers were intact in the entire drug treated group. White matter with few vacuoles was observed in 0.5 mg/kg Nicotine induced group. Disruption of Purkinje cell layer and granular cells was observed in 0.75 mg/kg induced group. Dose of 1mg/kg nicotine induced group animals shown complete disruption of Purkinje cell layer, cellular disruption in granular cell layer. Extended core of white matter into the folia of the cerebellum cellular microcystic change with interstitial oedema was observed in the same group. Conclusion: The loss of white core, Purkinje cell layer, and granular layer cellular disruption give better knowledge in understanding long term nicotine exposure. Our study reveals the histopathological changes of nicotine on long term administration in adolescent rat cerebellum with their clinical significance. © 2015, International Journal Of Pharmacy and Technology. All rights reserved.

Author Keywords
Cerebellum; Disruption; Nicotine; White core

Index Keywords
nicotine; adult, animal experiment, animal tissue, Article, brain cortex, cell disruption, cell vacuole, cerebellum, chronic drug administration, controlled study, dose response, edema, granular cell, histopathology, male, nonhuman, Purkinje cell, rat, white matter

Chemicals/CAS
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Chevva, H.[a] , Palla, S.[a] , Sankaranarayanan, S.[b]

Characterization and properties evaluation of conducting Al-doped ZnO at low temperature by ECD method

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Abstract
Low temperature (70°C) deposition of Al-doped ZnO films are successfully reported by simple electrochemical deposition technique. Simple three electrode setup is used with chemical bath containing different molar ratios of Zinc nitrate and Aluminium nitrate (9:1, 8:2, 7:3 and 6:4), a constant potential of -1.3 V is employed between electrodes for deposition of films. '2,' and'd' spacing variations obtained from XRD with varied Al content proves doping of Al into crystal structure of ZnO. Al content from Elemental analysis (EDAX) is in accordance with the compositions used. Morphology of films is characterized by FE-SEM, where flake-like structures are observed. Variation of Electrical resistivity with varying Al content in the films supports the argument of doping. Lowest resistivity is observed for composition 7:3 i.e. 2.25×10-4 &! cm. Optical characterization is done on the film powder for measuring band gap and transmittance, which showed 90% of transmittance and Band gap widening is observed for different compositions, due to incorporation of Al into crystal structure of ZnO.

Author Keywords
Al doped; Electrochemical deposition; XRD band gap widening and transmittance; ZnO

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Alwarsamy, V.[a] , Nirubama, M.[a] , Renuga Devi, A.[b]

Advanced V2V & V2I based system for preventing & notification of accident with severity estimation
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Abstract
In traffic accidents the injured people can be assisted efficiently on time by the modern information technologies like GSM, GPS. The communication technologies should support to emergency service center to take a quick decision automatically based on the information they received from the vehicle, so that we can estimate the severity of an accident and can reduce the service time to the peoples who injured by an accident. In proposed system the accident can be notified automatically using sensors and the location & severity of accident also send as SMS via GSM to the corresponding rescue centre. We consider relevant variables (such as Speed sensor Body Control Module) that can characterize the severity of accident. © Research India Publications.

Author Keywords
Google earth; GPS receiver; GSM; LCD; PIC; Sensors; UART

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Alwarsamy, V.[a] , Nirubama, M.[a] , Renuga Devi, A.[b]

Advanced V2V & V2I based system for preventing & notification of accident with severity estimation
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Abstract
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An efficient VLSI architecture for an IIR filter using Multi-Bit Flip-Flops
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Abstract
Recent advances in mobile computing and multimedia applications demand high-performance and low power VLSI Digital Signal Processing (DSP) systems. In this paper, a design methodology to implement low-power and high-speed 2nd order recursive digital Infinite Impulse Response (IIR) filter has been proposed. Since IIR filters suffer from a large number of constant multiplications, the proposed method replaces the constant multiplications by using addition/subtraction and shift operations. The proposed new 6T adder cell is used as the Carry-Save Adder (CSA) to implement addition/subtraction operations in the design of recursive section IIR filter to reduce the propagation delay.Utilizing multi-bit flip-flops (MBFFs) is one of the most effective power optimization techniques in modern nanometer integrated circuit design.One way to improve the flip-flop's performance is to merge the clock pulse given to multiple flip-flops, so that we can reduce its power consumption. Multi-bit flip-flops are designed by single clock pulse thereby maintaining the same functionality as that of two single-bit flip-flop. Hence in the proposed work, the MBFFs are used as a delay element. It is observed from the experimental results that the proposed 6T adder and MBFF based design method can find better IIR filter designs in terms of power and delay. © Research India Publications.

Author Keywords
CSA full adder; IIR filter; Multi-bit flip-flops

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Mani Sankar, G.[a] , Renitarexy, R.[b] , Rosita Rosini, R.[a]

A NOR type, SMLSS for high speed and energy efficient CAM cell

(2015) *International Journal of Applied Engineering Research*, 10 (55), pp. 653-657.

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Abstract
Content Addressable Memory(CAM) is widely used in the network routers for performing high speed data searching operation. A NOR type CAM offers high speed search operation in a single clock cycle. Normally NOR type CAM cell is power hungry than the NAND type CAM. So we try to introduce the energy efficient structure for the NOR type CAM using Small Match Line Sensing Scheme(SMLSS). Matchlines(MLs) are precharged to an intermediate level by pulsed current source to minimize the power. In this technique, SMLSS can reduce the power consumption 5 times compared with the conventional one. In addition Multi Vttransistors are used in every cam cell for reducing the leakage current during missmatch period. This Multi Vt transistor concept reduces the leakage current by 15×than the normal Vt transistor. © Research India Publications.

Author Keywords
MLs; Multi Vt; Precharge; SMLSS

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Lokanadham, S.[a] , Shakothandaraman, U.[b] , Chidamabaram, R.[c] , Johnson, W.M.S.[d] , Satheesh Naik, K.[e]

Histopathological changes in cerebellum on administration of Kainic acid in experimental models
(2015) *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, 6 (5), pp. 423-427.

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Abstract
Kainic acid induced neuronal excitation and selective vulnerability in the hippocampal neurons are related to the distribution and selective susceptibility of the AMPA/kainate receptors in the brain. Recently, the neuro-physiological studies also suggested that the cerebellum also could participate in excitotoxicity. A total of 12 adult male albino rats of wistar strain weighing 135-150 grams were used for the present study. The rats were divided in to four groups each consists of 4 animals. The control group was given 0.9% saline as vehicle and the experimental groups (drug treated-II, III, IV) were given an intra peritoneal injection dose of 0.5 mg/kg, 0.75 mg /kg and 1mg/kg body weight respectively for a period of 28 days. Purkinje cell loss was not much in number and granular cells were normal in 0.5 mg/kg KA induced group. There was a loss of Purkinje cell layer (very few cells) and cells were in degenerative stage stained lightly. We were also observed all the other layers and white matter of the cerebellum in 0.75 mg/kg induced group. Dose of 1mg/kg Kainic acid induced group animals shown significant loss of Purkinje cells and disruption of cellular layers and granular cells. There were vacuoles in white matter when compared to other drug treated groups was found in the same group. Previous literatures stated that mechanisms underlying the pathogenesis of kainic acid induced cerebellar excitotoxicity remain unknown. The present study gives histopathological knowledge of neuronal cell death in cerebellum at different doses on long term administration of kainic acid but cellular mechanisms need to be evaluated.

Author Keywords
Cerebellum; Degeneration; Kainic acid; Purkinje cells

Index Keywords
kainic acid; adult, animal cell, animal experiment, animal model, animal tissue, Article, cell death, cell disruption, cell loss, cell vacuole, cerebellum, controlled study, excitotoxicity, granular cell, histopathology, male, neuropathology, nonhuman, Purkinje cell, rat, white matter

Chemicals/CAS
kainic acid, 487-79-6

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Documents

Sathya Priya, B.[a] , Johnson, W.M.S.[b] , Lakshmanan, P.[c] , Merlin, J.[a]

The relative position of greater palatine foramen in dried human adult unsexed skull bones
(2015) *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, 6 (5), pp. 869-876.

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Abstract
The relative position of the greater palatine foramen (GPF) was evaluated for precise injection of local anesthetics for optimal pain control in maxillofacial and dental surgeries. The study was conducted in 132 adult dried unsexed skulls which were normal with fully erupted third molars and free from any pathological changes. Unambiguous and well-defined points were taken and the observations were made. All the distances were measured with vernier caliper to the nearest millimeter The statistical analysis indicated there was no significant difference in the measurement between the right and left sides with regard to the distance of GPF to the midline, GPF to the incisive fossa, GPF to the posterior border of the hard palate. The angle made by the line joining the GPF to the incisive foramen with the palatal midline (GIM angle) on two sides showed statistical significance. The mean angle on the left side was 21.2 +/- 4.2 degrees and 20.1 +/- 4.2 degrees on the right side. In 74.6 percent of skulls, the GPF was located opposite the third maxillary molars, whereas 24.2 percent showed the GPF between the second and third molars. In 0.4 percent of skulls, the GPF was opposite to the second molar and in 0.8 percent of skulls; the GPF was situated beyond the third molar. 46.2 percent of the GPF was directed forward and medially, whereas 41.3 percent was directed forward, and 12.5 percent as directed forward and laterally.The present study indicated that the location of the GPF was more variable than is implied in the anatomy textbooks. The perpendicular distance of the GPF in Indian skulls was about 15 mm, the distance of GPF to incisive fossa was approximately 37 mm and the GIM angle was 21 degrees.

Author Keywords
Greater palatine foramen; Hard palate; Incisive foramen; Skull anatomy

Index Keywords
adult, Article, bone structure, greater palatine foramen, hard palate, human, human tissue, maxilla, middle cranial fossa, molar tooth, palate, posterior fossa, skull

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Documents

Dhandapani, E.[a] , Arun, K.[b] , Manam, A.[b]

Pattern of dyslipidemia in chronic kidney disease

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Abstract
Chronic Kidney Disease is one of the major causes leading to mortality and morbidity and its incidence and prevalence is also on the uptrend. One of the leading cause for death in stage 5 CKD patients is secondary cardiovascular problems associated with natural history of disease process. The aim of this study is to study the pattern of dyslipidaemia in patients suffering from chronic disease. In this study, 100 Chronic Kidney Disease patients attending the outpatient department or admitted in Rajiv Gandhi Government General Hospital were taken up for the study. This study revealed that there was a progressive increase in triglyceride and total cholesterol levels and a decrease in the levels of high density lipoproteins in patients suffering from Chronic Kidney Disease.

Author Keywords
Chronic kidney disease; Dyslipidaemia; Lipid profile

Index Keywords
cholesterol, high density lipoprotein, triacylglycerol; adult, Article, cholesterol blood level, chronic kidney disease, controlled study, disease classification, disease course, dyslipidemia, female, hospital admission, human, lipoprotein blood level, major clinical study, male, middle aged, outpatient department, pathogenesis, population research, triacylglycerol blood level

Chemicals/CAS
cholesterol, 57-88-5

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Satheeshwaran, U.[a] , Saravanan, T.[b]

Biometric IRIS recognition based age estimation in security systems
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Abstract
Most of the researcher mainly focused on human face image used to identify the face recognition and also used to calculate age estimation. Here we are mainly focusing and using the human Iris images. Iris recognition presents a challenging problem in the field of image analysis and computer vision, and as such has received a great deal of attention over the last few years because of its many applications in various domains. Iris recognition is an important role for playing security purpose. This kind of application is mainly used for banking services, database access and login, ATM services and so on. In this paper first we consider the human Iris image these images it may be static, dynamic, still, and video image. Images may be stored in CASIA iris database it will also work for UBIRIS. First we exactly identify and check the Authentication using GLCM algorithm. Above the images already stored in database or real time. Suppose I give some iris images in real time our software exactly identify and recognize that person is valid or not. Our system consistently achieved a nearly perfect recognition rate (over 99.7% on all databases). © Research India Publications.

Author Keywords
Age classification; Age estimation; Canny edge detection; Gender classification

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A new re-encryption scheme with improvised delegation mechanism and homomorphic encryption
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Abstract
A cloud storage system is capable of storing huge data in its storage server. The cloud platform consisting of numerous storage servers that render the storage services for long time. Usually the third party acts an admin for the cloud storage system and that does not provide expected data confidentiality. So the centralized cloud storage system is introduced, however it also has the problem of hackers who eavesdrop or attack the data. General encryption schemes protect data confidentiality. In this paper threshold proxy re-encryption scheme and integrate with Fully Homomorphic Encryption is a promising technique for access control of encrypted data. The proxy re-encryption scheme considers the encrypted messages from the data owner and encodes it as well as forwards towards the receiver or storage server. The overall performance achieves the delegation process with secured access control. The simulation results shows proposed system achieves both forward security and backward security in cloud environment. © Research India Publications.

Author Keywords
Cloud storage system; Fully homomorphic encryption; Threshold proxy re-encryption

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Julius, P.[a] , Ananthanarayanan, P.N.[a] , Anbazhagan, G.[b]

Analysis on capillary pressure curves by wettability modification through surfactants
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Abstract
Wettability of a reservoir rock is closely related to capillary pressure curves. The status of wettability is an important factor for oil recovery, can be clearly seen through the variations in capillary pressure curves. The aim is to analyze the changes in capillary pressure curves and saturations by altering wettability. An oil wet core sample was tested to alter wettability. During alteration process it is difficult to analyze the status of wettability. Surfactants were applied to modify wettability. Additionally, parameters like connate water saturation, spontaneous oil and water saturations, residual oil saturation and type of wettability can be analyzed. The concentration of surfactants was selected by conductivity test. The changes in saturations with variations in capillary pressure curves were stated.

Author Keywords
Adsorption anionic surfactant; Capillary pressure curves; Cmc; Wettability

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Documents

Meher Taj, S.[a] , Kumaravel, A.[b]

Survey on fuzzy Petri nets for Classification
(2015) *Indian Journal of Science and Technology*, 8 (14), art. no. 70702, . Cited 12 times.

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Abstract
The aim of this study is based on Survey on fuzzy Petri nets for Classification. Petri Nets (PN) is excellent networks which have great characteristics of combining a well defined mathematical theory with a graphical representation of the dynamic behavior of systems. But, with the growth in the difficulty of modern industrial, and communication systems, PN found themselves inadequate to address the problems of vagueness, and imprecision in data. This gave rise to combination of Fuzzy logic with Petri nets and a new tool emerged with the name of Fuzzy Petri Nets (FPN). Much research has been done for FPN and a number of their applications have been expected, but their basic types and structure is still ambiguous. Result of this research, an effort is made to categorize the applications of FPN for classification according to their structure and algorithms. We identify the different types of Petri nets will improve future research on Petri nets. Hence in this study, due to these limitations we focus on establishing the FPN in the light of their classifications has been done.

Author Keywords
Discrete event systems; Fuzzy logic; Fuzzy petri nets; Petri nets

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Senthil Kumar, P.K.[a] , Elavarasi, R.[b] , Eladi, P.B.[a] , Gopikrishnan, M.[c]

Pull-in voltage study of various structured Cantilever and Fixed-Fixed beam models using COMSOL multiphysics
(2015) *Indian Journal of Science and Technology*, 8 (14), art. no. 70698, . Cited 5 times.

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Abstract
The present work involves the study of pull-in voltage of MEMS electrostatic Cantilever beam, Fixed-Fixed beam and modified beam structures with perforations of square, rectangular and circular shapes. The analysis is done using COMSOL 4.3 software. The dimensions of the Cantilever beam, Fixed-Fixed beam and three various structured beams modeled in this paper are length = 300 μm, width = 50 μm, thickness = 3 μm and gap between top electrode and ground plane is 2.5 μm. The pull-in voltage obtained for Cantilever beam is 17.6 V and for Fixed-Fixed beam is 118.8 V. For the modified models with square, rectangular and circular perforations are 12.18 V, 15.45 V and 13.75 V respectively. The results of the work demonstrate an ability to achieve lower pull-in voltage levels for three various structured beams modeled in this paper when compared to cantilever and Fixed-fixed beams. The dependence of the pull-in voltage on geometrical parameters, thrusts on stringent design considerations even at the initial stages.

Author Keywords
Cantilever; Comsol; Deflection; Fixed-fixed; Perforated beams; Pull-in voltage

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Pull-in voltage study of electro statically actuated fixed-fixed beams using a VLSI on-chip interconnect capacitance model
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Bavitra, K.[a] , Sinthuja, S.[b] , Manoharan, N.[c] , Rajesh, S.[d]

The high efficiency renewable PV inverter topology

(2015) *Indian Journal of Science and Technology*, 8 (14), art. no. 70700, . Cited 35 times.

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Abstract
The recent trend in photovoltaic inverter is to use topologies with the absence of transformers to acquire higher efficiency. This gives very low ground leakage current. After the elimination of transformer in a grid/Load connected Photovoltaic (PV) system, a galvanic connection exists between the grid/Load and the PV array. The different inverter topology that generates no varying common-mode voltage is proposed to avoid leakage currents, this proposes a new topology with six switches and two diodes that generates no varying common-mode voltage and exhibits high efficiency.

Author Keywords
Ground leakage current; H-bridge; Photovoltaic inverter; Transformer less topology

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Mariappan, S.[a] , Sasibhusana Rao, G.[a] , Ravindrababu, S.[b] , Sinthuja, S.[c] , Rajesh, S.[d]

A pre-compression algorithm for optimal acquisition of modernized GNSS signal

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Abstract
The acquisition of GNSS signal is the most challenging part of any GNSS receiver. With the modernized GNSS system having longer code length and wider bandwidth, the size of the data block becomes large. To reduce the computational load of the processor, the reduction in the size of the data block without compromise in the acquisition loop performance provides overall improvement to the system. Here, a model is developed for acquisition of GPS signal L1 and L2C by compressing the input raw GPS signal with sequences of perfect periodic autocorrelation properties such as the Ipatov sequence. A compression matrix of the required dimension is constructed for compressing the input GPS signal. The improvement in the acquisition performance of the model is discussed.

Author Keywords
Acquisition; Compression; GPS; L2C; Modernised GPS

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Julius, P.[a] , Ananthanarayanan, P.N.[a] , Gopikrishnan, M.[a] , Thirumavalavan, M.[b]

Improving recovery by altering wettability from oil wet to surfactant wet

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Abstract
Surfactants play an important role to alter wettability in any reservoir. Adsorption of surfactants onto reservoir surface will reduce the contact between water and oil which indeed has less impact on Interfacial tension. Oil wet reservoirs are specifically preferred than water wet due to high oil saturation. At the same time extracting oil from oil wet reservoir is difficult due to its wetting nature. The only way to extract oil is by altering wettability from oil wet. The aim of this work is to extract more oil with less adsorption by altering oil wet to surfactant wet. Wettability of sandstone has been chosen to alter from oil wet to surfactant wet. Surfactants of low concentration, which is less than CMC (Critical Micelle Concentration) has been introduced before surfactant flooding during water flooding to make core surfactant wet. The recovery of oil during water flooding is 0.2 Pore Volume (PV). This has been increased to 0.5 pore volume by making it surfactant wet and adsorption has been reduced to 0.5 pore volumes.

Author Keywords
Adsorption; CMC; Surfactant wet; Wettability

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Deepa, S.[a] , Chitra, M.[b]

Efficacy of external cueing on kinematic gait parameters during a dual motor task in Parkinson's disease
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Abstract
Dual task walking deficits, impact functional mobility, increases disability, increases risk of fall and leads to decreased quality of life. However the therapeutic intervention in dual task walking has been limited and there is uncertainty about whether clinicians should teach people with Parkinson's disease to avoid dual tasking or whether they should encourage them to practice dual tasking. The purpose of this study is to report the effectiveness of Audio-visual cues that are applied individually in improving the abnormal kinematic gait parameters of the patients with Parkinson's disease and also to investigate the interference of dual task on the walking performance whereby improving the attention of the dual motor task while walking. A quasi experimental study was conducted in a home and rehabilitation setup. A convenient sampling of 30 subjects who fulfilled the inclusion criteria, were randomly assigned into three groups where the groups will receive auditory, visual and audio-visual cueing respectively and each group will undergo single and dual task. Initially, baseline values were taken and after the 4 weeks session post test values were recorded with a 10 meter walk test. This study will examine the role of Audio-Visual cueing that is the combination strategy which helps in the improvement of the kinematic gait variables and also a significant reduction of the interference of the dual task. The improvements shown in the values from pre test to post test, explains the suspected role of cerebellar pathway as an alternative motor pathway. Thus reflecting the need for including dual task walking with the hope to lead an enhanced quality of life and to reduce the amount of disability. © 2015, Global Research Online. All rights reserved.

Author Keywords
Cueing; Dual task; Kinematic gait; Parkinson's disease

Index Keywords
Article, association, auditory stimulation, cerebellum, clinical article, disability, dual-task performance (test), gait, human, medication compliance, motor performance, Parkinson disease, physiotherapy, quality of life, quasi experimental study, sensorimotor function, signal transduction, treatment outcome, visual stimulation, walking

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A study on the challenges posed to e-retailing markets in India
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Abstract
E-Commerce is the most used technique of buying and selling goods and services online. With the hectic and busy schedule that everyone is going through it becomes very difficult for the consumer to spend time in mails in order to select his or her desired product. At such situation the e-commerce or widely known as the e-business proves to be great help for all of us. With the rising needs of consumer based products and services the need for ecommerce is also increasing in a progressive manner. India has also developed the trend of e-commerce and has emerged out as one of the leading nations to make use of e-commerce for online selling and buying of products. According to EBay's census guide there are around 2.471 e-commerce hubs in our country and the states like Andhra Pradesh, Tamil Nadu, Maharashtra and Gujarat are the most active areas in terms of online trading. The paper aims to discuss about the impact of e-retailing market in India.

Author Keywords
E-Commerce-Retailing; Kirana; Retail; Supermarket

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Gopalakrishnan, S.[a] , Ganesh Kumar, P.[b]

Community medicine teaching and evaluation: Scope of betterment

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Abstract
There have been rapid and extensive changes in the way assessment is conducted in medical education. Assessment brings about standardization of the manner in which the syllabus is to be implemented and also gives guidelines regarding the teaching pattern, especially when the student is going to rotate through various departments in a medical college. Community Medicine is an important branch of medicine concerned with the health of populations. Existing forms of assessment of community medicine education mainly consists of internal [formative] assessment and final (summative) examination. Advantages of the present system is the similarity of the methods used for internal assessments and final examinations and is relatively easily done since only the knowledge application and recall ability of the student in theory and practical are assessed. Disadvantages in the current evaluation system are neglecting the assessment of psychomotor, affective and communication skills. Evaluation systems can be improved by implementing techniques to assess psychomotor skills, presentation and communication skills, organizational skills and the student's ability to work in a team. Regular feedback from students should be taken periodically for the betterment of Community Medicine education. This article is meant to sensitise the academic experts in medical education to plan better need based methods of assessment in the subject of Community Medicine, in relation to the new MCI 2012 Regulations, in order to make it a better learning experience for the students. © 2015, Journal of Clinical and Diagnostic Research. All rights reserved.

Author Keywords
Community medicine; Educational assessment; Medical education; Scope for improvement

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communication skill, community medicine, economic aspect, education program, evaluation study, health care system, health service, human, medical education, medical school, practice guideline, Review, teaching

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Grace Kanmani Prince, P.[a] , Rani Hemamalini, R.[b] , Kumar, S.[c]

Seizure detection by classification of EEG signals based on DWT reconstruction error and CWT using a novel wavelet

(2015) *Biomedical Research (India)*, 26 (3), pp. 530-533. Cited 2 times.

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Abstract
The analysis of EEG signals plays a vital role in the detection of Seizure. The EEG signal of a normal person varies when compared to that of a seizure affected person. A new wavelet is created which closely represents a normal EEG wave. The discrete wavelet transform using the new wavelet family is applied to the input EEG signals. Since the new wavelet represents the normal EEG wave pattern the reconstruction error is very less when a normal EEG signal is applied as an input when compared to that of a seizure EEG signal. This marked difference in the reconstruction error is used to classify the normal and seizure EEG signals. When continuous wavelet transform is applied to the input EEG signal using the new mother wavelet, the wavelet coefficients are higher in seizure EEG when compared to that of the normal EEG signal. © 2015, Scientific Publishers of India. All rights reserved.

Author Keywords
Continuous wavelet transform; Discrete wavelet transform; EEG; Reconstruction error; Seizure; Wavelet coefficients

Index Keywords
Article, classification, continuous wavelet transform, discrete wavelet transform, electroencephalogram, error, human, image reconstruction, mathematical analysis, nervous system parameters, seizure, signal processing, wavelet analysis

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Ali, A.M.[a] , Ramakrishnan, M.[b]

Equipped search results using machine learning from web databases

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Abstract
Aim of this study is to form a cluster of search results based on similarity and to assign meaningful label to it Database driven web pages play a vital role in multiple domains like online shopping, e-education systems, cloud computing and other. Such databases are accessible through HTML forms and user interfaces. They return the result pages come from the underlying databases as per the nature of the user query. Such types of databases are termed as Web Databases (WDB). Web databases have been frequently employed to search the products online for retail industry. They can be private to a retailer/concern or publicly used by a number of retailers. Whenever the user queries these databases using keywords, most of the times the user will be deviated by the search results returned. The reason is no relevance exists between the keyword and SRs (Search Results). A typical web page returned from a WDB has multiple Search Result Records (SRRs). An easier way is to group the similar SRRs into one cluster in such a way the user can be more focused on his demand. The key concept of this paper is XML technologies. In this study, we propose a novel system called CSR (Clustering Search Results) which extracts the data from the XML database and clusters them based on the similarity and finally assigns meaningful label for it. So, the output of the keyword entered will be the clusters containing related data items. © Maxwell Scientific Organization, 2015.

Author Keywords
Annotation; Clustering; Data wrappers; Web database; XML; XML data extraction; XQuery

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Suganthi, S.[a] , Senthilkumar, C.B.[b]

A study on stress management of the staff of the co operative banks of Tamil Nadu, India
(2015) *International Journal of Pharmacy and Technology*, 6 (4), pp. 7529-7533.

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Abstract
Co Operative Sectors Banking, like other services, has become one of the highly competitive sectors in Tamil Nadu. The Co Operative banking Sectors, since the beginning of this Period of 10 Years, Co Operative banking Sectors has been facing greater challenges in terms of technological revolution, Co Operative service diversification and global banking. Stress is inescapable on the part of the employees as the organization, dealings; techniques are getting complicated with the use of extra ordinary technology. An Every member of staff cannot manage with such rapid changes taking place in the works. This will show the way to coming up of stress among workers. An attempt has been made through this research paper to know the reasons of stress among the Co Operative bank workers and the ways used by employees to manage with the stress generated at place of employment. Stress is found that maximum number of workers in Co Operative banks stay in stress. Greater part of the employees tries to find solution to relieve them from stress in work place. Also the measures are also suggested in the paper to overcome stress that affects their mental health and physical. © 2015, International Journal Of Pharmacy and Technology. All Rights Reserved.

Author Keywords
Co operative bank sectors; Employees. Rural bank; Employer; Technical problem

Index Keywords
Article, controlled study, cooperative bank, employee, human, India, job stress, occupational exposure, organization and management, pilot study, quality of working life, questionnaire, staff, stress management, work capacity, work environment, workload, workplace

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Sivakumar, K.[a b] , Rajan, K.[c]

Performance analysis of heat transfer and effectiveness on laminar flow with effect of various flow rates
(2015) *International Journal of ChemTech Research*, 7 (6), pp. 2580-2587. Cited 2 times.

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Abstract
In this paper investigation the heat transfer and effectiveness of the double pipe heat exchanger with two flow directions; one is parallel flow and counter flow direction. In these two directions, deem the laminar flow and from the experimental setup in use the exit temperature of both hot and cold fluid with different mass flow rate. Finally work out the heat transfer and effectiveness of the parallel flow heat exchanger and analysis these data with the counter flow heat exchanger. A commercial CFD package, Ansys fluent version are used for this study. Generate and mesh the 3D model heat exchanger. As a final point the experimental assessment is validate with the numerical values. © 2015. International Journal of ChemTech Research. All rights reserved.

Index Keywords
Article, flow rate, fluid flow, friction, geometry, heat transfer, laminar flow, pressure, simulation, temperature dependence

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A combined approach to predict friction coefficients and convective heat transfer characteristics in A tube with twisted tape inserts for a wide range of Re and Pr
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Venkadesh, M.[a] , Chandra Sekar, A.[b]

Study on implementing web services using JAVA spring with eclipse and apache Tomcat
(2015) *International Journal of Applied Engineering Research*, 10 (4), pp. 9773-9787.

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Abstract
Web Services is used mainly for the purpose of communicating users of different platform within the network connection. Web Services mainly uses SOA architecture. In this paper we are going to implement web services using Java Spring. Spring is an open-source framework most commonly used development framework for Java. This study is based on how to implement web service and using it in spring applications. I have used Apache Tomcat, Eclipse and spring framework to implement web services. © Research India Publications.

Author Keywords
Spring; Spring AOP; Spring MVC; Web services

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Vijayan, D.S.[a] , Revathy, J.[b]

"Flexural behavior of reinforced and pre-stressed concrete beam using finite element method"
(2015) *International Journal of Applied Engineering Research*, 10 (1), pp. 717-736. Cited 14 times.

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Abstract
This study is focused on the flexural behavior of normally reinforced and prestressed reinforced concrete beams using finite element software(ANSYS)to know their load-deflection reply. Primarily, a survey was done to examine previous experimental and analytical steps related to reinforced concrete components. Secondly, a model that uses ANSYS software was set up and calculated using experimental data. © Research India Publications.

Author Keywords
ANSYS software; Cracking; Pre-stress; Steel; Zero deflection point

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Jasmin, M.[a] , Vigneshwaran, T.[b] , Beulah Hemalatha, S.[c]

Design of power aware on chip embedded memory based FSM encoding in FPGA

(2015) *International Journal of Applied Engineering Research*, 10 (2), pp. 4487-4496. Cited 233 times.

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Abstract
A new design methodology to reduce power consumption and minimization of area in FSM based system is fore fronted into FPGA using Finite state machines (FSMs) mapping in this proposed work. This FSM is mapped into the On Chip Embedded Memory (OCEM) through clock gating technique. FSM encoding is stored using OCEM as it reduces the Flip-Flop (FF) and combinational function usage. Clock gating technique will reduce the power consumption additionally through blocking the clock while OCEMP is inidle state. The proposed design is tested and analyzed using ALTERA cyclone II FPGA for Arithmetic Logic units(ALU), Advanced Encryption Standard core (AES), SRAM controller and Synchronous FIFO. OCEM based implementation of One- Hot encoding is performed and compared with conventional Flip-Flop based One-hot encoding and analyzed.The FSM implemented using proposed method consumes less power and fewer areas when compared with FF based FSM implementation or using binary encoding technique. The OCEM based implementation can be clocked to maximum clock frequency. Experimental results and analyses shows that OCEMbased FSM consumes 4 to 26% less power than FF based techniques. © Research India Publications.

Author Keywords
Gated clock; Low power design; Synchronous counter

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Begum, S.F.[a] , Rajesh[b]

Comparative study of validity indices for clustering over ill-structured datasets
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Abstract
This paper discusses and compares the various validity measures of clustering over ill-structured datasets. The dataset used in this experiment comes from the daily measures of sensors in a urban waste water treat-ment plant. This paper addresses an important issue of clustering process regarding the quality assessment of the clustering results. and also an at-tempt has been made to optimize the results. In this paper, internal clus-ter validity indices like Xie-Beni index, Dunn index, silhouette index have been used to validate the clusters and the optimization of clustering is ex-pressed in terms of number of clusters which result in a natural categoriza-tion of the dataset based on the quality parameters of the water. K-means algorithm is used for clustering the data set considering its simplicity and efficiency. Also K-Means algorithm is one of the most suitable algorithm for clustering numerical datasets. © Research India Publications.

Author Keywords
Clustering; K-Means; Optimization; Validity indices; Water Quality parameters

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Descend Traversal Prioritization and Ascend Traversal Abstraction based data anonymization over Big Data
(2015) *International Journal of Applied Engineering Research*, 10 (2), pp. 2979-2994. Cited 4 times.

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Abstract
Data security, in a Big Data application, is a standout amongst the most concerned issues that preparing huge-scale-protection-delicate data sets frequently obliges calculation assets provisioned by open cloud administrations. Sub-tree information anonymization is broadly used plan to anonymize data sets for protection and safeguarding. Descend Traversal Prioritization (DTP) and Ascend Traversal Abstraction (ATA) is two approaches that are designed to satisfy sub-tree anonymization. Be that as it may, existing methodologies for sub-tree anonymization such as Top – Down Specification (TDS) and Bottom – Up Generalization (BUG), miss the mark regarding parallelization capacity, in this manner, needs adaptability in taking care of Big Data in cloud. Still, either DTP or ATA separately experiences poor execution for certain esteeming of k-anonymity parameter. In this paper, we propose a hybrid approach that joins DTPand ATA together for efficient sub-tree anonymization and for the effectiveness in the applications of Big Data. Further, we plan MapReduce calculations for the two segments (DTP and ATA) in addition to achieve high versatility. Test assessment shows that the hybrid approach altogether enhances the versatility and efficiency of sub-tree anonymization plot over existing methodologies. © Research India Publications.

Author Keywords
Ascend Traversal Abstraction; Big Data Application; Data security; Descend Traversal Prioritization; MapReduce

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Philomina, S.[a] , Ramesh, R.[b] , George amal jose, A.[a] , Anand, J.[a]

Maximum demand control using Ad-hoc network to avoid grid failure
(2015) *International Journal of Applied Engineering Research*, 10 (1), pp. 1439-1448.

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Abstract
Controlling and monitoring the electrical grids from theft of power and high usage of power than the allotted is difficult and hard. Considering the above problem, a real time system using wireless sensor network is designed that detects when a user crosses the load limit or a theft occurs in the power line. Power can be distributed more efficiently to industries without crossing the load demand. The maximum load usage is specified by the Electricity board - EB according to which this system is designed. Each current transformers and potential transformers are incorporated with the developed system and if in any line, more than the specified power is drawn then a buzzer is set and will turn off till the user reduce the power consumption. The same will be alerted to the electricity board about the power violation. If the load usage is not reduced by the user after the buzzer is set, then the particular line that overdraws power will be shut down and an alert will be sent to the EB office about the same preventing the shutdown of the whole system. © Research India Publications.

Author Keywords
Ad-hoc networks; Maximum demand control; Power grid control; Radio transceivers; Wireless sensor networks

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Traffic Analysis Based on Web user Behavior

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Abstract
Sentiment analysis has developed rapidly in recent years as the internet usages have reached successful growth among people. Only few studies have focused on the field of transportation even that failed to meet strict requirements of safety, efficiency and information exchange of ITS (Intelligent Transportation System). To overcome the problem, TSA (Traffic Sentiment Analysis) system is used. The TSA treats the traffic problems in newer angle. A technique called keyword extraction is proposed in this paper. Our work will be helpful in the development of TSA. © Research India Publications.

Author Keywords
Sentiment analysis; Social-networking; Web-based

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Senthilkumar, S.[a] , Purushothaman, K.[b] , Hariharan, N.[c] , Nakkeeran, S.[d]

Evaluation of statistical study of droplet fragmentation in CI engine under lower injection velocity
(2015) *International Journal of Applied Engineering Research*, 10 (3), pp. 7765-7776. Cited 1 time.

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Abstract
In CI Engines the fuel droplet fragmentation plays a vital role for better mixing of fuel and air inside the combustion chamber. The droplet split-up takes place under various aerodynamic factors such as flow of air, pressure inside the combustion chamber, and the speed of the fuel injected etc., The above factors decide the fragmentation types such as: (i) Vibrational fragmentation; (ii) Bag fragmentation; (iii) Shear fragmentation; and, (iv) Explosive fragmentation. In this work we aim to simulate the fragmentation of a single droplet due to a change in injection velocity and chamber pressure keeping the square root of ratio of density of fuel to that of air a fixed at 22.42. A CFD package of commercial fluent with volume of fluid formulation is used. For the simulation, a triangular cell with approximately 13500 cells is used. A standard k-ε is solution for the scheme. For both momentum and volume of fluid computations the pressure velocity coupling uses the SIMPLE algorithm and second order upwind scheme is used. Gathered results show the different methods to split a single droplet. To understand better the various aerodynamic interactions with the fuel droplet numerical simulation comes for help. In better designing of parameters like injection pressure, chamber pressure etc., without the need for an expensive experimental setup numerical simulation guides. © Research India Publications.

Author Keywords
Droplet Liquid; Explosive Fragmentation; Shear Fragmentation; Vibrational Fragmentation; Volume of Fluid

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Kavimani, M.[a] , Suba Anandhi, K.[b] , Jebakani, C.F.[c]

Carpal tunnel syndrome

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Abstract
Carpal tunnel syndrome (CTS) is a median entrapment neuropathy that causes paresthesia, pain, numbness, and other symptoms in the distribution of the median nerve due to its compression at the wrist in the carpal tunnel. The mechanism is not completely understood but can be considered compression of the median nerve traveling through the carpal tunnel. It appears to be caused by a combination of genetic and environmental factors. Some of the predisposing factors include: diabetes, obesity, pregnancy, hypothyroidism, and heavy manual work or work with vibrating tools. There is, however, little clinical data to prove that lighter, repetitive tasks can cause carpal tunnel syndrome. Other disorders such as bursitis and tendinitis have been associated with repeated motions performed in the course of normal work or other activities. 30 years women came to my clinic for infertility evaluation.Her husband semen analysis is normal.After detailed investigation in chennai government hospital she diagnosed as carpal tunnel syndrome.We are discussing the details of this syndrome in this article.

Author Keywords
Carpal tunnel; Median nerve; Neuropathy

Index Keywords
corticosteroid; adult, Article, bursitis, carpal tunnel syndrome, case report, conservative treatment, corticosteroid therapy, diabetes mellitus, environmental factor, female, heredity, human, hypothyroidism, manual labor, median nerve, nerve compression, obesity, pain, paresthesia, pregnancy, splinting, tendinitis, vibration

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Grace Kanmani Prince, P.[a] , Rani Hemamalini, R.[b] , Kumar, S.[c]

Seizure detection using wavelet packet analysis and density estimates of EEG signals using a novel wavelet
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Abstract
Wavelet packet analysis is an effectual means for the analysis of EEG signals for epileptic seizure detection. In this paper a new wavelet named as 'eegwav' which carries the likeness of an EEG wave pattern is used as the original wavelet. The statistical contents of the wavelet packets are analyzed to tell apart the seizure and seizure free EEG signal. The density estimate of the signal is also obtained using the mother wavelet 'eegwav'. The wavelet based density estimator utilized here is the histogram analysis using hard thresholding technique.

Author Keywords
Density estimation; EEG; Seizure; Wavelet packets

Index Keywords
Article, density estimation, disease classification, electroencephalogram, frequency modulation, histogram, human, seizure, signal processing, statistical concepts, wavelet analysis

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Status of leptin, lipid profile in Oligomenorrheic and Eumenorrheic adolescence girls: It's comparison
(2015) *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, 6 (2), pp. 1523-1526.

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Abstract
The presence of obesity, hyperandrogenism, hyperinsulinemia, hirsutism, polycystic ovaries are well established features in PCOS subjects. The adolescence girls experience menstrual irregularity in first five years after menarche. The purpose of this study is to analyse the status of lipid profile and leptin at the end of hypothalamo hypophyseal maturation that is eight years after menarche. The subjects in this study includes two groups. Group 1 includes regularly menstruating adolescence girls and group 2 includes irregularly menstruating girls. Student t test was performed to analyse the test of significance between the two groups. The mean value for leptin, total cholesterol and triglycerides were statistically significant between the two groups. This study suggest that the status of adiposity marker that is leptin in irregularly menstruating adolescence girls precede towards the aetiogenesis of PCOS in later adulthood life.

Author Keywords
Leptin; Lipid profile; Oligomenorrheic and Eumenorrheic

Index Keywords
cholesterol, follitropin, high density lipoprotein, leptin, low density lipoprotein, triacylglycerol, very low density lipoprotein; adolescent, adult, age, Article, body height, body mass, body weight, cholesterol blood level, controlled study, enzyme linked immunosorbent assay, female, follitropin blood level, human, hypothalamus hypophysis system, lipid analysis, menarche, menstrual cycle, menstruation, obesity, oligomenorrhea, ovary polycystic disease, pathogenesis, protein blood level, risk factor, triacylglycerol blood level

Chemicals/CAS
cholesterol, 57-88-5; follitropin, 9002-68-0

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Positive stress and its impact on performance

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Abstract
This paper aims at throwing light on the positive stress also called 'Eustress' and its impact on one's performance level. Researches have shown that a certain amount of stress is needed for an increased performance. Eustress fills us with thrill and excitement whenever we are confronted by a demanding situation. As eustress improves our concentration and makes us more enthusiastic to perform the work. Hence positive stress is essential for bringing zeal to the life; it is healthy, useful and beneficial. When stress becomes too much in a given situation it becomes harmful for us because we are unable to cope up with the situation. This is actually referred to as 'stress' and it is negative stress (distress). Thus at one level stress may deter the performance. There are three aspects of stress-physical, mental and psychological. In all the three types both positive and negative effects are noted. We must possess the knowledge in finding out the signs and warning symptoms of stress. It is also necessary to learn the stress management steps and to follow them to counter stress.

Author Keywords
Negative stress; Performance; Positive stress

Index Keywords
Article, attitude to life, awareness, coping behavior, excitement, goal attainment, hope, human, job performance, life event, life stress, lifestyle, motivation, optimism, physical performance, quality of life, responsibility, self esteem

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Green synthesis of zinc oxysulfide quantum dots using aegle marmelos fruit extract and their cytotoxicity in HeLa cells

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Abstract
Zinc oxysulfide quantum dots have been attracting increasing research interest due to their tunable electronic, optical and magnetic properties. In this paper we report the green synthesis of zinc oxysulfide quantum dots in the range of a few nanometers using aegle marmelos fruit extract through a facile precipitation route. The zinc oxysulfide quantum dots (ZOS QDs) were characterized by X-ray diffraction, ultra violet-visible absorbance spectroscopy, photoluminescence spectroscopy, energy dispersive X-ray spectroscopy, transmission electron microscopy, and vibrating sample magnetometry. Energy dispersive X-ray spectroscopy of the synthesized samples indicates that 16% oxygen is incorporated into the zinc sulfide crystal lattice that results in an optical band-gap transformation from direct type for the zinc sulfide cubic phase to a decreased bandgap of 3.46 eV. The vibrating sample magnetometer analysis results showed the existence of room temperature ferromagnetism (RTF) in zinc oxysulfide quantum dots. The bandgap engineering approach adopted in this work to tailor the optical and electronic properties of zinc sulfide with the RTF magnetic properties of zinc oxide will have a significant impact on the development of ternary chalcogenides for magnetic and photonic applications. The prepared ZOS QDs exhibit good cell viability with HeLa cells and the toxicity results obtained from this research work provide a new direction for the development of nontoxic bandgap engineered ZOS based QDs for biological applications. To the best of our knowledge, this is the first report on the biocompatibility of novel ZOS QDs in HeLa cells. This journal is © The Royal Society of Chemistry 2015.

Index Keywords
Biocompatibility, Cytology, Electronic properties, Energy dispersive spectroscopy, Energy gap, Engineering research, Ferromagnetism, Fruits, Inorganic compounds, Magnetic properties, Magnetometers, Nanocrystals, Optical lattices, Photoluminescence spectroscopy, Sulfur compounds, Transmission electron microscopy, X ray diffraction, X ray spectroscopy, Zinc, Zinc sulfide; Biological applications, Energy dispersive X ray spectroscopy, Optical and electronic properties, Photonic application, Room temperature ferromagnetism, Ternary chalcogenides, Vibrating sample magnetometer, Vibrating sample magnetometry; Semiconductor quantum dots

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Vasudevan, K.[a] , Gopalakrishnan, K.[b] , Elango, M.[c] , Thangavel[a]

Ph dependent structural, morphological and optical properties of pristine Zinc Oxide (ZnO) nanocrystals
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Abstract
Versatile, cost effective and simple method of preparing ZnO nanocrystals was reported. Organometallic precursor derived ZnO nanocrystals were structurally possessed the hexagonal wurtzite structure with lattice constants a=3.249Å, c=5.206Å and the properties are strongly dependent on pH was also inferred. The morphological analysis was in accordance with the DLVO theory as supports the pH dependent aggregation of nanocrystals. The HR-TEM analysis confirmed the nanophase formation of the end product with an average particle sizes ranged from 10 to 35 nm. The peak shift in the band edge absorption towards the lower region tendency varied with varying pH of the growth environment and the increased band gap supplemented the nanophase nature of ZnO. The FT-IR analysis showed the existence of superfluous water and CO2 molecules on the ZnO nanocrystals. The present study concluded the pH dependent growth of ZnO related materials. © 2015, International Journal of ChemTech Research. All rights received.

Author Keywords
Optical analysis; PH dependence; Structural aspects; ZnO nanocrystals

Index Keywords
ketoconazole, nanocrystal, unclassified drug, zinc oxide nanocrystal; absorption, Article, binding affinity, energy dispersive X ray spectroscopy, infrared spectroscopy, optics, particle size, pH, scanning electron microscopy, spectroscopy, structure analysis, temperature, transmission electron microscopy, ultraviolet spectroscopy, X ray diffraction

Chemicals/CAS
ketoconazole, 65277-42-1

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Catalytic synthesis and structural characteristics of high-quality tetrapod-like ZnO nanocrystals by a modified vapor transport process
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Evaluation of primary bone tumors with plain radiograph, CT, MR and correlation with surgical and histo-pathological findings

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Abstract
Bone tumors may be benign or malignant. The need for accurate preoperative local staging techniques to allow planning of limited or limb-saving surgery in patients with primary bone sarcoma has fostered an interest in radiologic staging techniques. The modalities used in analyzing bone tumors include: a) conventional radiography, b) computed tomography (CT), c) magnetic resonance imaging (MRI) andd) surgical/histo-pathological examination. In this study, the role of imaging modalities and various MRI sequences in evaluating primary bone tumors were analysed. 1) To compare the role of plain radiograph, CT and MRI in the evaluation of bone tumors and correlate with the surgical and histo-pathological findings. 2) To determine the role of various MR sequences in primary bone tumors. In this five year study, 50 patients who had strongly suspected (clinically or radiographically) primary malignant neoplasm arising from bone underwent the following procedures: Plain radiograph, CT and MR. All the imaging findings were recorded and compared with the surgical/histopathological examination. Statistical analyses were made with IBM SPSS software version 20.0. Conventional radiography yielded the most useful information about the location and morphology of a lesion, whereas, CT was excellent in demonstrating the type of bone destruction, calcifications, ossifications and periosteal reaction and MRI was crucial in the evaluation of intraosseous and extraosseous extensions of a tumor. Both MRI and CT have advantages and disadvantages, and circumstances exist in which either can be the preferential or complementary study.

Author Keywords
Bone tumours; CT; Imaging; MR sequences; Plain radiograph; Primary

Index Keywords
adult, Article, bone cancer, bone destruction, bone malformation, bone radiography, cancer diagnosis, cancer surgery, clinical article, comparative study, computer assisted tomography, controlled study, correlational study, female, histopathology, human, male, nuclear magnetic resonance imaging, periosteum, predictive value, primary tumor, prospective study, sensitivity and specificity, tumor calcinosis

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Morphology and morphometric analysis of parotid gland

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Abstract
The parotid gland is the largest of the salivary glands and secretes saliva via the parotid duct into the oral cavity to facilitate mastication and swallowing. It is located in the parotid space. The parotid gland is wrapped around the mandibular ramus and extends to a position anterior and inferior to the ear within the parotid facial space. Morphology and Morphometric analysis of parotid gland were done in Department of Anatomy, Madras Medical College, Chennai. This valuable data is more useful in maxillofacial surgeries like parotid, gland surgery, parotid duct surgery and some facial cosmetic surgeries.

Author Keywords
Cosmetic surgeries; Parotid duct; Parotid gland; Parotid space.

Index Keywords
adult, anatomical variation, Article, cadaver, female, human, morphology, morphometrics, parotid gland, surgical anatomy, anatomy, ear, esthetic surgery, face, mandibular nerve, mastication, maxillofacial surgery, medical school, morphology, mouth cavity, salivary gland, surgery, swallowing

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A review of family and social determinants of children's eating patterns and diet quality

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Abstract
Children are more likely to have foods that are easily available and they tend to eat greater quantities when larger portions are provided. Additionally, characteristics of the social environment, including various socioeconomic and socio -cultural factors such as parents' education, time constraints, and ethnicity influence the types of foods children eat. children's consumption of fruits and vegetables (from seven day food records) was related to home availability and accessibility (as assessed by a parent telephone interview), after controlling for psychosocial characteristics. Mealtime structure includes social and physical characteristics of mealtimes including whether families eat together, TV-viewing during meals, and the source of foods (e.g., restaurants, schools)., children ate more fruits and vegetables for lunch at schools that offered more fruits and vegetables for lunch, after controlling for socioeconomic status. Parents also play a direct role in children's eating patterns through their behaviors, attitudes, and feeding styles. Interventions aimed at improving children's nutrition need to address the variety of social and physical factors that influence children's eating pattern.

Author Keywords
Childhood obesity; Complications; Family and Social determinants; Preventive measures

Index Keywords
cholesterol; adverse outcome, asthma, causal attribution, child, child behavior, disease association, eating habit, emotional disorder, exercise, family history, family interaction, family life, food quality, human, hypertension, lifestyle, menstruation, metabolic syndrome X, non insulin dependent diabetes mellitus, nonalcoholic fatty liver, obesity, psychological aspect, puberty, Review, risk factor, social aspect, social status, social stress, Article, body fat, body weight, bullying, caloric intake, childhood obesity, cholesterol diet, depression, dietary intake, environmental factor, family attitude, feeding behavior, food intake, fruit, learning disorder, nutrient availability, puberty disorders, self esteem, sleep disorder, social determinants of health, vegetable, wellbeing

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