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Al-wabli, R.I.[a] , Khedr, M.A.[b c] , Kadi, A.A.[a] , Motaleb, M.A.[d] , Al-rashood, K.A.[a] , Zaghary, W.A.[a c]
Synthesis, molecular docking and antibacterial evaluation of various quinoline schiff bases: labeling and biodistribution of 99mTc-2-(p-hydroxybenzylidene)-1-(quinolin-4-yl) hydrazine
(2014) *Medicinal Chemistry Research*, pp. 1-10. Article in Press. Cited 1 time.

DOI: 10.1007/s00044-014-0977-1

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Abstract
Abstract: A new series of 2-(substituted benzylidene)-1-(quinoline-4-yl)hydrazine was designed, synthesized, and evaluated for their antimicrobial activity. A molecular docking study was performed against bacterial topoisomerase II (PDB code: 2XCT) using MOE 2012.10 and Leadit 2.1.2 softwares. Compound 4a with the highest antibacterial activity was labeled with one of the most important radioactive isotopes (technetium-99m). 99mTc-4a complex showed high labeling yield, stability, and uptake in the inflamed tissue (T/NT = 6.11 ± 0.5) compared to the commercially available 99mTc-ciprofloxacin (T/NT = 3.6 ± 0.4). Graphical Abstract: [Figure not available: see fulltext.]

Author Keywords
Antimicrobial activity; Benzylidene; Molecular docking; Quinoline; Technetium-99m

Document Type: Article in Press
Source: Scopus

Abd El-Ghaffar, M.A.[a] , Shaffei, K.A.[b] , Abdelwahab, N.[a]
Evaluation of some conducting polymers as novel antioxidants for rubber vulcanizates
(2014) *International Journal of Polymer Science*, 2014, pp. 1-9.

DOI: 10.1155/2014/893542

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[b] Chemistry Department, Faculty of Science, Helwan University, Cairo, Egypt

Abstract
Natural rubber (NR) and styrene-butadiene rubber (SBR) formulations containing polyaromatic and polyheterocyclic amine homopolymers and copolymers were prepared. Te studied homopolymers named polythiophene (PT), poly(o-phenylene diamine) (Po-PDA) and copolymers named poly(aniline-co-m- toluidine) (PAn-co-mT), poly(aniline-co-o-phenylene diamine) (PAn-co-o-PDA), poly(aniline-co-thiophene) (PAn-co-T), poly(aniline-co-2-amino pyridine) (PAn-co-2APy), and poly(2-amino pyridine-co-o-phenylene diamine) (P2APy-co-o-PDA) have been prepared and characterized. Te rheological characteristics and physicomechanical properties of the compounded rubber mixes and vulcanizates were investigated and determined. Te effects of the prepared polymers on the ageing characteristics of corresponding vulcanizates were evaluated. It was found that the prepared polymers have shown better antioxidant efficiency than the conventional antioxidants phenyl β naphthyl amine (PβN) and the polymerized-2,2,4-trimethyl-1,2-dihydroquinoline (TMQ) industrially used in addition to their safety and ecofriendliness to the environment. Copyright

Document Type: Article
Source: Scopus

Hafiez, H.E.A.[a] , El-Hussain, I.[b] , Khalil, A.E.[c] , Deif, A.[a b]
Determination of a local earthquake magnitude scale for the Sultanate of Oman

(2014) *Arabian Journal of Geosciences*, pp. 1-10. Article in Press.

DOI: 10.1007/s12517-014-1343-9

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Abstract
Determination of earthquake magnitude is of great importance for quantitative seismological hazard studies. Since no local magnitude scale has been developed for the seismic network of the Sultanate of Oman, the present work is aiming towards developing the first local magnitude scale for earthquakes that occur in and around the Sultanate of Oman. Currently, the Earthquake Monitoring Center (EMC) in Oman uses the Southern California formula for ML calculations; the calculated values of local magnitudes are not comparable to the average magnitude calculated by the international centers (e.g., ISC and NEIC). In many cases, they show clear underestimation in magnitude for the local and regional distance events compared with magnitude values published by the international centers. A database of 424 simulated Wood-Anderson horizontal amplitudes of 55 events recorded by 9 very broadband stations, available since 2011, is built. All of the available events are located in northern Oman region. The attenuation function together with the magnitudes and the station corrections are determined using a multistep inversion process based on the application of the genetic algorithm. The computation provided the values of the empirical coefficients for geometrical spreading (n) and anelastic attenuation coefficient (k) to be 0.95 and 0.001, respectively. Station corrections for the used nine stations are calculated and found to be in the range of ±0.2 magnitude units. Great improvement regarding the local magnitude calculation is achieved as demonstrated by the better correlation with the provided ISC/NEIC magnitude values. © 2014 Saudi Society for Geosciences.

Author Keywords
Attenuation curve; Earthquake magnitude scale; Wood-Anderson response

Document Type: Article in Press
Source: Scopus

Shaker, F.M.F., Abd Elrahman, W.M.
Behavior of flush and extended end-plate beam-to-column joints under bending and axial force
(2014) *World Applied Sciences Journal*, 30 (6), pp. 685-695.

DOI: 10.5829/idosi.wasj.2014.30.06.14092

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Abstract
Because of the ease of fabrication and erection, end-plate beam to column joints have the priority of interest to be studied by researchers. These types of joints are often subjected to a combination of bending and axial forces. Many of design codes neglect the effect of axial force in the connection analysis as it is usually low. The level of axial forces in the joint may be significant in case of: sway frames under horizontal loads, pitched roof portal frames and irregular frames. The objective of this paper is to discuss the behavior of flush and extended end-plate connections under a combination of bending and axial tension or compression forces. The analytical investigation utilizes nonlinear finite element modeling techniques using ANSYS program, considering both geometric and material nonlinearities. The functions of ANSYS are used to simulate the pretension force in bolts, as well as the interface between each of end plate, column and bolts accurately. The results of finite element models were verified and they were found to be close with those of the experimental and analytical models found in the literature. Results are compared with those presented in Eurocode 3 which limits the axial force acting on the joint to 5% of the design plastic resistance of the connected member cross section. © IDOSI Publications, 2014.

Author Keywords
Axial force; End plate connection; Finite element analysis; Pre-tensioned bolts; Semi-rigid connections

Document Type: Article
Source: Scopus

Shaker, F.M.F., Abd Elrahman, W.M.
Analytical behavior of steel pre-tensioned bolted connections with flushed and extended end plates under bending
(2014) *World Applied Sciences Journal*, 30 (6), pp. 673-684.

DOI: 10.5829/idosi.wasj.2014.30.06.14091

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Abstract
The connection between beam and column is repeatedly used in steel structures. Only rigid and pin connections are considered in many steel codes such as Egyptian code (ECP).Floor beams with high reactions need so large number of bolts to be connected with other elements and then these connections do as semi rigid connections. Semi rigid connection can resist some of internal bending moment in steel beam according to connection stiffness and then beam can be redesigned with saving in its weight. The stiffness of semi rigid connection is affected by many parameters as; type of connection end plate (flushed or extended), plate thickness, bolt diameter and stiffening of column panel zone. The analytical investigation utilizes nonlinear finite element modeling techniques using ANSYS program, considering both geometric and material nonlinearity. The functions of ANSYS are used to simulate the pretension force in bolts, as well as the interface between each of end plate, column and bolts accurately. The results of the finite element models were verified and they were found closed with those of experimental and analytical models. The main purpose of this paper is to study the effect of all effective parameters on the stiffness of semi rigid connections according to the basis of the moment-rotation curves. Recommendations are presented to the Egyptian Code of Practice, ECP. © IDOSI Publications, 2014.

Author Keywords
End plate connection; Finite element analysis; Joints; Pre-tensioned bolts; Semi-rigid connections

Document Type: Article
Source: Scopus

Moustafa, A.[a] , Mahmoud, S.[b c]
Damage assessment of adjacent buildings under earthquake loads
(2014) *Engineering Structures*, 61, pp. 153-165. Cited 3 times.

DOI: 10.1016/j.engstruct.2014.01.004

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Abstract
This paper deals with damage assessment of adjacent colliding buildings under strong ground motion. In previous studies, the structure input-response pair is used to examine pounding effects on adjacent buildings under seismic loads. In this paper, pounding of adjacent buildings is assessed using input energy, dissipated energy and damage indices. Damage indices (DI) are computed by comparing the structure's responses demanded by earthquakes and the associated structural capacities. Damage indices provide quantitative estimates of structural damage level, and thus, a decision on necessary repair can be taken. Adjacent buildings with fixed-base and isolated-base are considered. The nonlinear viscoelastic model is used for capturing the induced pounding forces. Influences of the separation distance between buildings, buildings properties, such as, base-condition (fixed or isolated), and yield strength on damage of adjacent buildings are investigated. The set of input ground motions includes short-, moderate- and long-duration accelerograms measured at near-fault and far-fault regions with different soil types. Earthquake records with different characteristics are considered to study damage of adjacent buildings under seismic loads. Numerical illustrations on damage of fixed-base and isolated-base adjacent buildings with elastic-plastic force-deformation relation are provided. © 2014 Elsevier Ltd.

Author Keywords
Adjacent buildings; Base-isolation; Damage index; Ductility; Earthquake loads; Inelastic structures

Document Type: Article
Source: Scopus

Tohamy, A.A.[a] , Abdella, E.M.[b] , Ahmed, R.R.[b] , Ahmed, Y.K.[b]
Assessment of anti-mutagenic, anti-histopathologic and antioxidant capacities of Egyptian bee pollen and propolis extracts
(2014) *Cytotechnology*, 66 (2), pp. 283-297. Cited 4 times.

DOI: 10.1007/s10616-013-9568-0

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Abstract
Bee pollen and propolis are popular, traditional health foods. The objective of the current study was to investigate the anti-mutagenic, anti-histopathologic and antioxidant effects among water extracts of Egyptian bee pollen (WEBP) and

brown powder of water-soluble derivative propolis (WSDP) on cisplatin (CDDP) induced hepatic, renal, testicular and genotoxicity in male albino mice (Mus muscullus), in addition to their effects on the oxidant/antioxidant status in the tested organs. Hepatic, renal and testicular dysfunctions were evaluated histologically; while genotoxicity and cytotoxicity were evaluated by the bone marrow chromosomal aberration assay and mitotic index, respectively. Moreover, oxidative stress was explored via determination of lipid peroxidation, catalase activity and the concentration of the reduced form of glutathione. The treatment of mice with WEBP and WSDP at doses 140 and 8.4 mg/kg b. wt./day, respectively for 14 days simultaneously with CDDP (2.8 mg/kg b. wt.) resulted in significant protection. The positive control animals taken CDDP alone showed toxic histological and genetical manifestations (at $P < 0.05$) accompanied with an elevated content of peroxidized lipid and lowered catalase activity and glutathione concentration in the homogenate of liver, kidney and testis tissues (at $P < 0.001$). These toxic side effects in all tested organs were greatly ablated with a significant reduction in lipid peroxidation level and elevation in catalase activity and glutathione concentration ($P < 0.001$) when using both WEBP and WSDP. On the basis of the present assays, Bee pollen appears more potent in exerting an ameliorative effect and this effect was more pronounced in testis.

Author Keywords
Anti-histopathologic; Anti-mutagenic; Antioxidant; Bee pollen; Propolis

Document Type: Article
Source: Scopus

Inam, F.[a] , Bhat, B.R.[b] , Vo, T.[c d] , Daoush, W.M.[e]
Structural health monitoring capabilities in ceramic-carbon nanocomposites
(2014) *Ceramics International*, 40 (2), pp. 3793-3798. Cited 1 time.

DOI: 10.1016/j.ceramint.2013.09.039

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Abstract
A novel method for analysing structural health of alumina nanocomposites filled with graphene nanoplatelets (GNP), carbon nanotubes (CNTs) and carbon black nano-particles (CB) is presented. All nanocomposites were prepared using novel colloidal processing and then by Spark Plasma Sintering. Good homogeneous dispersion was observed for all carbon filled materials. Nanocomposite bars were indented to produce sub-surface damage. Change in electrical conductivities were analysed after indentation to understand structural damage. For correlating change in electrical conductivity and indentation damage and understanding damage tolerance, mechanical properties were compared. Because of the systematically induced indentation damage, a sharp decrease of 86% was observed in the electrical conductivity of CNT nanocomposite as compared to 69% and 27% in the electrical conductivities of GNP nanocomposites and CB nanocomposites respectively. CNTs impart superior damage sensing capability in alumina nanocomposites, in comparison to GNP and CB, due to their fibrous nature, high aspect ratio and high electrical conductivity.

Author Keywords
Alumina; Carbon black; Carbon nanotubes; Graphene nanoplatelets; Structural health monitoring

Document Type: Article
Source: Scopus

Aly, W.I.A.[a b]
Numerical study on turbulent heat transfer and pressure drop of nanofluid in coiled tube-in-tube heat exchangers
(2014) *Energy Conversion and Management*, 79, pp. 304-316. Cited 13 times.

DOI: 10.1016/j.enconman.2013.12.031

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Abstract
A computational fluid dynamics (CFD) study has been carried out to study the heat transfer and pressure drop characteristics of water-based Al 2O3 nanofluid flowing inside coiled tube-in-tube heat exchangers. The 3D realizable k-ε turbulent model with enhanced wall treatment was used. Temperature dependent thermophysical properties of nanofluid and water were used and heat exchangers were analyzed considering conjugate heat transfer from hot fluid in the inner-coiled tube to cold fluid in the annulus region. The overall performance of the tested heat exchangers was assessed based on the thermo-hydrodynamic performance index. Design parameters were in the range of; nanoparticles volume concentrations 0.5%, 1.0% and 2.0%, coil diameters 0.18, 0.24 and 0.30 m, inner tube and annulus sides flow rates from 2 to 5 LPM and 10 to 25 LPM, respectively. Nanofluid flows inside inner tube side or annular side. The results obtained showed a different behavior depending on the parameter selected for the comparison with the base fluid. Moreover, when compared at the same Re or Dn, the heat transfer coefficient increases by increasing the coil diameter and nanoparticles volume concentration. Also, the friction factor increases with the increase in curvature ratio and pressure drop penalty is negligible with increasing the nanoparticles volume concentration. Conventional correlations for predicting average heat transfer and friction factor in turbulent flow regime such as Gnielinski correlation and Mishra and Gupta correlation, respectively, for helical tubes are also valid for the tested nanofluids which suggests that nanofluids behave like a homogeneous fluid.

Author Keywords
CFD; Heat exchanger; Heat transfer; Helical tube; Nanofluid; Pressure drop

Document Type: Article
Source: Scopus

Almetwally, A.A.[a] , Mourad, M.M.[b]
Effects of spandex drawing ratio and weave structure on the physical properties of cotton/spandex woven fabrics
(2014) *Journal of the Textile Institute*, 105 (3), pp. 235-245.

DOI: 10.1080/00405000.2013.835092

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Abstract
In this experimental study, we investigated the effects of spandex filament drawing ratio and weave structures on the properties of cotton/spandex woven fabrics. One-way analysis of variance was used to explore the significant effects of the independent variables on the fabric properties. A regression analysis was also used to derive regression relationships between each of fabric properties and spandex filament drawing ratio. Our findings show that the spandex drawing ratio and structures of the woven fabrics significantly affect the physical and mechanical properties of the cotton/spandex woven fabrics. Cotton woven fabrics containing spandex show higher contraction, crease recovery, and flexural rigidity with increasing spandex drawing ratio, whereas the rest of fabric properties decreases with the increasing drawing ratio. Because of higher contraction and then higher weight, thickness, and cover factor of cotton/spandex fabrics, unexpected results of fabric air permeability and breaking elongation were detected.

Author Keywords
air permeability; bending rigidity; fabric contraction; physical properties; spandex; woven fabrics

Document Type: Article
Source: Scopus

Magdy, A.[a] , Sayed, S.[a b] , Mahmoud, K.R.[a] , Ibrahim, I.I.[a]
Modified Cooperative Access with Relay's Data (MCARD) based Directional Antenna for multi-rate WLANs
(2014) *Alexandria Engineering Journal*, 53 (1), pp. 33-40.

DOI: 10.1016/j.aej.2013.11.007

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Abstract
In this paper, for multi-rate wireless local area networks (WLANs), a modified protocol in Medium Access Control (MAC), called Modified Cooperative Access with Relay's Data (MCARD) based Directional Antenna using half wave length dipole in Uniform Circular Array (UCA) topology is proposed. MCARD gives remote stations chance to send

their information by using intermediate stations (relays) to Access Point (AP) at a higher data rate based practical antenna. As can be seen under MCARD, a relay station transmits its information before forwarding information from the source station because it uses directional antenna. Analytical results and simulations show that MCARD can significantly improve system quality of service (QOS) in terms of throughput under different channel conditions. © 2014 Production and hosting by Elsevier B.V.

Author Keywords
Cooperative communication; MAC; UCA; WLAN

Document Type: Article
Source: Scopus

Attallah, A.M.[a] , Abdallah, S.O.[b] , El-Desouky, M.A.[b] , El-Far, M.[c] , Omran, M.M.[d] , Farid, K.[e] , Abdelrazek, M.A.[a] , Shabaka, M.N.[a] , Zaghloul, H.[e] , Fawzy, A.M.[a] , Bazeed, F.B.[e]

A rapid, low-cost quantitative diagnostic method for hepatitis C virus infection using capillary zone electrophoresis

(2014) *European Journal of Clinical Microbiology and Infectious Diseases*, 33 (3), pp. 439-452.

DOI: 10.1007/s10096-013-1976-8

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Abstract
Hepatitis C virus (HCV)-RNA amplification is a costly procedure in terms of time and reagents. Consequently, the search for more a cost-effective specific HCV diagnostic method is of great interest. Capillary zone electrophoresis (CZE) methods that detect HCV in serum, plasma, whole blood, and ascites without the need for sample pretreatment are not currently available. Here, a CZE method was developed that detects a larger specific peak in serum and other body fluids of HCV-infected patients than that found in healthy or hepatitis B virus (HBV)-infected individuals. The nature of the HCV peak was investigated using biochemical treatments, including RNase, DNase, and chymotrypsin enzymes. Electroeluted HCV peak was applied to transmission electron microscopy; electron micrographs showed that the HCV peak was attributed to virus-like particles with diameter and morphological properties similar to non-enveloped HCV nucleocapsids. The determination of CZE-HCV and HCV-RNA levels using quantitative real-time reverse transcriptase-polymerase chain reaction (qRT-PCR) in 258 subjects revealed that these two tests were highly correlated ($r = 0.92$, $p < 0.0001$). One important issue of HCV testing is the storage conditions of serum to obtain reliable results. Serum samples at -20 C showed the best preservation of the HCV peak up to one year. In conclusion, we detected HCV using CZE in a microliters volume from different body fluids. Besides the stability of samples in maintaining their peak height, the HCV-CZE test is rapid (<15 min) and a well-suited and low-cost technique. Thus, a major improvement in the quantitative diagnosis of HCV infection was established. © 2013 Springer-Verlag Berlin Heidelberg.

Document Type: Article
Source: Scopus

Elhalawany, N.[a] , Mossad, M.A.[b] , Zahran, M.K.[c]

Novel water based coatings containing some conducting polymers nanoparticles (CPNs) as corrosion inhibitors

(2014) *Progress in Organic Coatings*, 77 (3), pp. 725-732. Cited 2 times.

DOI: 10.1016/j.porgcoat.2013.12.017

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Abstract
A new type of anticorrosive water-based paints containing some conducting polymers nanoparticles (CPNs) such as poly anisidine (PAns), poly toluidine (PTol) and their copolymer (CCPNs) have been prepared and evaluated. The CPNs and CCPNs have been synthesized via miniemulsion polymerization. The prepared materials have been characterized by GPC, FTIR, TEM and DSC. The prepared CPNs and CCPNs of different weight percentages (wt.%) have been incorporated into paint formulations. It has been found that the presence of the prepared CPNs and CCPNs in the paint formulations highly enhanced the resistance of the formed paint films against washability,

Author Keywords
Anticorrosive water-based paints; Conducting polymers nanoparticles; Paint formulations and miniemulsion polymerization

Document Type: Article
Source: Scopus

Farag, I.S.A.[a] , Girgis, A.S.[b] , Ramadan, A.A.[c] , Moustafa, A.M.[a] , Mabied, A.F.[a]
5-Chloro-5″-(4-chlorobenzylidene)-4′-(4-chlorophenyl)-1′, 1″-dimethyldispiro[indoline-3,2′-pyrrolidine-3′, 3″-piperidine]-2,4″-dione
(2014) *Acta Crystallographica Section E: Structure Reports Online*, 70 (3), pp. o379-o380. Cited 3 times.

DOI: 10.1107/S1600536814004309

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Abstract
The racemic title compound, C30H26Cl 3N3O2, comprises two spiro links, the first connecting the piperidine and pyrrolidine rings and the other connecting the indole and pyrrolidine rings. The piperidine ring adopts a half-chair conformation, while the pyrrolidine ring has an envelope conformation with the unsubstituted C atom as the flap. The dihedral angles between the two p-Cl-substituted benzene rings and the indole ring are 33.13 (14) and 54.11 (14)°. In the crystal, molecules form inversion dimers through pairs of N - H···O hydrogen bonds [graph set R 2 2(8)]. Aromatic C - H···O hydrogen bonds extend these dimers into a ribbon structure, enclosing R 2 2(14) ring motifs, along the a-axis direction.

Author Keywords
Data-to-parameter ratio = 10.6; Mean σ(C-C) = 0.005 Å; R factor = 0.057; Single-crystal X-ray study; T = 298 K; wR factor = 0.111

Document Type: Article
Source: Scopus

Alzoman, N.Z.[a] , Sultan, M.A.[b] , Maher, H.M.[a c] , Alshehri, M.M.[a] , El-Gendy, M.A.[a] , Wani, T.A.[a] , Darwish, I.A.[a]
New 96-Microwell-based spectrophotometric assay with high-throughput for determination of lenalidomide in capsules: The new potent drug for treatment of multiple myeloma
(2014) *Latin American Journal of Pharmacy*, 33 (1), pp. 56-64.

[a] Department of Pharmaceutical Chemistry, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia
[b] Department of Analytical Chemistry, Helwan University, Cairo, Egypt
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Abstract
This study describes the development and validation of a new 96-micorwell-based spectrophotometric assay with high-throughput for pharmaceutical quality control of lenalidomide (LND), the new drug for treatment of multiple myeloma. The reaction between LND and 1,2-naphthoquinone-4-sulphonate (NQS) as a chromogenic reagent was investigated. In alkaline medium (pH 9), a red-colored product exhibiting maximum absorption peak (λmax) at 462 nm was produced. The stoichiometry and kinetic of the reaction were investigated and the reaction mechanism was postulated. This color-developing reaction was employed, for the first time, in the development of the proposed assay. The reaction was carried out in 96-microwell plate and the absorbance of the colored-product was measured by microwell plate absorbance reader at 450 nm. The optimized reaction conditions were established; under which, Beer's law correlating the absorbance with LND concentration was obeyed in the range of 3-100 μg/mL with appropriate correlation coefficient (0.9986). The limits of detection and quantification were 2.82 and 8.55 μg/mL, respectively. The assay showed high precision as the values of relative standard deviations (RSD) did not exceed 1.25%. No interference was observed from the excipients that are present in the capsules. The proposed assay was applied successfully for the determination of LND in its pharmaceutical capsules with appropriate accuracy and precisions; the label claim percentage was 101.43 ± 1.35%. The results were compared favorably with those of a reference pre-validated method. The proposed assay is practical and valuable in terms of its routine application in pharmaceutical quality control laboratories.

Author Keywords

1,2-naphthoquinone-4-sulphonate; 96-microwell-based assay; High-throughput; Lenalidomide; Pharmaceutical analysis; Photometry

Document Type: Article
Source: Scopus

Mahmoud, K.R.[a] , Hamad, S.[b]
Parallel implementation of hybrid GSA-NM algorithm for adaptive beam-forming applications
(2014) *Progress In Electromagnetics Research B*, (58), pp. 47-57.

[a] Department of Electronics and Communications Engineering, Faculty of Engineering, Helwan University, Cairo, Egypt
[b] Faculty of Computer and Information Sciences, Ain Shams University, Abbassia, Cairo 11566, Egypt

Abstract
Recently researchers have great interest in using multi-core processors for applications requiring intensive parallel computing. In this paper, an approach for the implementation of hybrid parallel Gravitational Search Algorithm (GSA) and Nelder-Mead (NM) algorithm using open Multi-Processing (OPEN-MP) on multi-core processors is proposed for beam-forming applications. The proposed parallel GSA-NM algorithm is used to optimize the complex excitations, amplitudes and phases, of the adaptive array elements to synthesize the array beam-pattern. The array consists of 24-elements uniformly distributed in a circular configuration. To measure the performance of the proposed approach, the results are compared with those obtained using parallel hybrid CFO-NM, and PSO-NM Algorithms.

Document Type: Article
Source: Scopus

Darwish, A.[a] , Poleshchuk, O.[b]
New models for monitoring and clustering of the state of plant species based on semantic spaces
(2014) *Journal of Intelligent and Fuzzy Systems*, 26 (3), pp. 1089-1094.

DOI: 10.3233/IFS-120702

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[b] Department of Electronics and Computers, Moscow State Forest University, Moscow, Russian Federation

Abstract
One of the tasks of a program of greenery monitoring is the task of determination of plant species which are the most adapted for severe ecological conditions of urban environment with the purpose of planning of various measures to be performed at amenity planting objects. Taking into account that even a highly qualified expert may not always be absolutely sure of assigning plants to one of the categories of state we formalize the results of expert evaluation of plants with the help of semantic spaces. These formalizations are used for clustering of plant species and for determination their ratings.

Author Keywords
clustering; expert evaluation; fuzziness; monitoring; plant species; Semantic spaces; urban environment

Document Type: Article
Source: Scopus

Elewi, A.[a] , Shalan, M.[b] , Awadalla, M.[a] , Saad, E.M.[a]
Energy-efficient task allocation techniques for asymmetric multiprocessor embedded systems
(2014) *Transactions on Embedded Computing Systems*, 13 (2 SUPPL.), art. no. 71, .

DOI: 10.1145/2544375.2544391

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Abstract
Asymmetric multiprocessor systems are considered power-efficient multiprocessor architectures. Furthermore, efficient task allocation (partitioning) can achieve more energy efficiency at these asymmetric multiprocessor platforms. This article addresses the problem of energy-aware static partitioning of periodic real-time tasks on asymmetric multiprocessor (multicore) embedded systems. The article formulates the problem according to the

Dynamic Voltage and Frequency Scaling (DVFS) model supported by the platform and shows that it is an NP-hard problem. Then, the article outlines optimal reference partitioning techniques for each case of DVFS model with suitable assumptions. Finally, the article proposes modifications to the traditional bin-packing techniques and designs novel techniques taking into account the DVFS model supported by the platform. All algorithms and techniques are simulated and compared. The simulation shows promising results, where the proposed techniques reduced the energy consumption by 75% compared to traditional methods when DVFS is not supported and by 50% when per-core DVFS is supported by the platform. © 2014 ACM.

Author Keywords
Asymmetric multiprocessors; Bin packing; DVFS; Energy-aware scheduling; Task mapping; Task partitioning; Uniform multiprocessors

Document Type: Article
Source: Scopus

Tayel, A.[a] , Zaki, M.F.[b] , El Basaty, A.B.[a] , Hegazy, T.M.[c]
Modifications induced by gamma irradiation to Makrofol polymer nuclear track detector
(2014) *Journal of Advanced Research*, . Article in Press. Cited 1 time.

DOI: 10.1016/j.jare.2014.01.005

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Abstract
The aim of the present study was extended from obtaining information about the interaction of gamma rays with Makrofol DE 7-2 track detector to introduce the basis that can be used in concerning simple sensor for gamma irradiation and bio-engineering applications. Makrofol polymer samples were irradiated with 1.25 MeV 60Co gamma radiations at doses ranging from 20 to 1000 kG y. The modifications of irradiated samples so induced were analyzed using UV-vis spectrometry, photoluminescence spectroscopy, and the measurements of Vickers' hardness. Moreover, the change in wettability of irradiated Makrofol was investigated by the contact angle determination of the distilled water. UV-vis spectroscopy shows a noticeable decrease in the energy band gap due to gamma irradiation. This decrease could be attributed to the appearance of a shift to UV spectra toward higher wavelength region after irradiation. Photoluminescence spectra reveal a remarkable change in the integrated photoluminescence intensity with increasing gamma doses, which may be resulted from some matrix disorder through the creation of some defected states in the irradiated polymer. The hardness was found to increase from 4.78 MPa for the unirradiated sample to 23.67 MPa for the highest gamma dose. The contact angle investigations show that the wettability of the modified samples increases with increasing the gamma doses. The result obtained from present investigation furnishes evidence that the gamma irradiations are a successful technique to modify the Makrofol DE 7-2 polymer properties to use it in suitable applications. © 2014.

Author Keywords
Gamma irradiation; Makrofol DE 7-2; Photoluminescence; UV-vis; Vicker's hardness; Wettability

Document Type: Article in Press
Source: Scopus

Attia, H.A.[a] , Abbas, W.[b d] , Abdeen, M.A.M.[c] , Emam, M.S.[d]
Effect of porosity on the flow of a dusty fluid between parallel plates with heat transfer and uniform suction and injection
(2014) *European Journal of Environmental and Civil Engineering*, 18 (2), pp. 241-251. Cited 1 time.

DOI: 10.1080/19648189.2013.860923

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Abstract

In the present study, the unsteady flow with heat transfer of a viscous incompressible dusty fluid through a porous medium is studied. The parallel plates are assumed to be porous and subjected to a uniform suction from above and injection from below while the fluid is flowing through a porous medium that is assumed to obey Darcys law. The equations of motion are solved analytically to obtain the velocity distributions for both the fluid and dust particles. The energy equations for both the fluid and dust particles including the viscous dissipations are solved numerically using finite differences to get the temperature distributions for both phases. The influence of the porosity of the medium and the suction and injection velocity on both the fluid and particle phases is investigated. © 2013 Taylor and Francis.

Author Keywords
dusty fluid; finite differences; heat transfer; parallel channel flow; two phase flow

Document Type: Article
Source: Scopus

Soliman, M.H.[a] , Hindy, A.M.M.[b] , Mohamed, G.G.[b]
Thermal decomposition and biological activity studies of some transition metal complexes derived from mixed ligands sparfloxacin and glycine
(2014) *Journal of Thermal Analysis and Calorimetry*, 115 (2), pp. 987-1001. Cited 4 times.

DOI: 10.1007/s10973-013-3466-8

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Abstract
The synthetic method of novel ternary M(II)/(III)/(IV) complexes, with fluoroquinolone drug sparfloxacin (HSFX) and glycine (HGly) containing nitrogen and oxygen donor ligand have been synthesized and characterized. The prepared complexes fall into stoichiometric formulae of [M(SFX)(Gly)(H2O) 2]Cl (M = Cr(III) and Fe(III), [M(SFX)(Gly)(H2O) 2] (M = Mn(II), Co(II), Ni(II), Cu(II), Zn(II) and UO2(II) and [Th(SFX)(Gly)(H2O)2]Cl2. The chelate rings are six-membered and six coordinate with 1:1:1 [M]:[SFX]:[Gly]. The important bands in the IR Spectra and main 1H NMR signals are tentatively assigned and discussed in relation to the predicted molecular structure. The IR data of the HSFX and HGly ligands suggested the existing of a bidentate binding involving carboxylate O and carbonyl O for HSFX ligand and amino N and carboxylate O atoms for HGly ligand. The coordination geometries and electronic structures are determined from the diffused reflectance spectra and magnetic moment measurements. The complexes exist in octahedral form. The complexes decomposed in four to six steps within the temperature range 30-1,000 C with metal oxides as residues of decomposition. The decomposition steps are accompanied by endothermic or exothermic peaks in the DTA. The HSFX drug, HGly and metal complexes have been screened for their in vitro antibacterial activities against Staphylococcus aureus and Escherichia coli, and antifungal activities against Aspergillus niger and Candida albicans by MIC method. The metal complexes were found to have higher antimicrobial activity than the HSFX drug and HGly ligand and their activity are comparable with the antibacterial and antifungal standards. © 2013 Akadémiai Kiadó, Budapest, Hungary.

Author Keywords
Biological activity; Glycine; IR; Metal complexes; Sparfloxacin; Thermal analyses

Document Type: Article
Source: Scopus

Ebead, U.[a b] , Saeed, H.[c]
Numerical modeling of shear strengthened reinforced concrete beams using different systems
(2014) *Journal of Composites for Construction*, 18 (1), art. no. 04013031, . Cited 1 time.

DOI: 10.1061/(ASCE)CC.1943-5614.0000409

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Abstract
This research aims at creating finite-element models for fiber-reinforced polymer (FRP) shear strengthened concrete beams. It is inspired by the fact that the determination of the structural behavior of shear strengthened beams requires advanced numerical methods of which results are substantiated by credible experimental findings. The models are developed here to assess the shear and interfacial types of behavior of beams strengthened using one of three different schemes, namely, externally bonded (EB), mechanically fastened (MF), and hybrid EB/MF FRP schemes. The interfacial behavior between the EB, MF, and hybrid EB/MF FRP and the concrete is accounted for using interface

elements for both vertical and inclined FRP strips. A user-defined subroutine for the microplane constitutive law for the concrete material is incorporated in the model. Results are presented in terms of the ultimate load-carrying capacities, load-deflection relationships, and interfacial stress/slip distributions. Numerical results are validated against available experimental data and show reasonable agreement. Models for hypothetical cases of MF FRP strengthened beams are created to enrich the discussion on the interfacial bearing stress distributions. © 2013 American Society of Civil Engineers.

Author Keywords
Bonding; Concrete beams; Fiber-reinforced polymer (FRP); Finite-element method; Hybrid externally bonded/mechanically fastened FRP systems; Mechanically fastened; Reinforced concrete; Shear stress

Document Type: Article
Source: Scopus

El-Mahdy, T.S.[a b] , El-Ahmady, M.[c d] , Goering, R.V.[e]
Molecular characterization of methicillin-resistant Staphylococcus aureus isolated over a 2-year period in a Qatari hospital from multinational patients
(2014) *Clinical Microbiology and Infection*, 20 (2), pp. 169-173. Cited 4 times.

DOI: 10.1111/1469-0691.12240

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Abstract
Global spread of epidemic methicillin-resistant Staphylococcus aureus (MRSA) is an issue of increasing clinical concern especially problematic community-associated (CA) -MRSA. However, data regarding MRSA epidemiology in regions of the Middle East, including Qatar, are still insufficient. A representative subset of 61 MRSA isolates from multinational patients from hospital in Qatar during a 2-year period (2009/2010) was examined. Molecular characterization for MRSA isolates was performed by pulsed-field gel electrophoresis (PFGE), SCCmec, spa and dru typing, and PCR for the presence of the arginine catabolic mobile element and genes for the Panton-Valentine leukocidin (PVL). Prevalence of MRSA among S. aureus isolated was 176/840 (21%). Of the 61 MRSA isolates examined, three (5%) represented hospital-acquired infection. By PFGE, 32 isolates (52%) were CA-MRSA USA300 (n = 4), USA400 (n = 3), USA1100/Southwest (SW) Pacific (n = 17) and ST80-MRSA-IV (n = 8) strains. The remaining isolates were well-known healthcare-associated EMRSA-15 (n = 8) and USA800 (n = 13). Three isolates were USA900, one was USA1200 and four were unrelated to any known strains in the international database. Unexpectedly, the USA900 isolates were all positive for PVL and USA400 isolates were PVL negative. Five of the eight EMRSA-15 isolates were PVL positive. ST80-MRSA-IV and USA300 strains exhibited typical dru types (dt10a and dt9g, respectively). Eleven different spa types were observed in this study. All USA300 isolates were arginine catabolic mobile element positive. The high prevalence of CA-MRSA, especially including USA300, in this setting underscores the importance of global epidemiological monitoring to better understand and hopefully help prevent the emergence and spread of these problem pathogens in patient populations. © 2013 European Society of Clinical Microbiology and Infectious Diseases.

Author Keywords
Arginine catabolic mobile element; dru; Methicillin-resistant Staphylococcus aureus; Panton-Valentine leukocidin; Pulsed-field gel electrophoresis; Qatar; SCC mec; Spa

Document Type: Article
Source: Scopus

Eskander, J.Y.[a] , Haggag, E.G.[a] , El-Gindi, M.R.[a] , Mohamedy, M.M.[b]
A novel saponin from Manilkara hexandra seeds and anti-inflammatory activity
(2014) *Medicinal Chemistry Research*, 23 (2), pp. 717-724.

DOI: 10.1007/s00044-013-0663-8

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Abstract

Chromatographic separation of acetone precipitate of the seeds of Manilkara hexandra has resulted in a novel saponin, 3-O-(β-d-apiofuranosyl-(1 → 3)-β-d-glucopyranosyl)-28-O-(α-l-rhamnopyranosyl(1 → 3)-β-d-xylopyranosyl(1 → 4)-α-l-rhamnopyranosyl(1 → 2)-α-l-arabinopyranosyl)-16-α-hydroxyprotobassic acid (Saponin 3), together with two known saponins isolated for the first time from the family Sapotaceae, viz, 3-O-β-d-glucopyranosyl(1 → 6)[(β-d-apiofuranosyl-(1 → 3)]-β-d-glucopyranosyl)-28-O-(α-l- rhamnopyranosyl(1 → 3)-β-d-xylopyranosyl(1 → 4)-α-l-rhamnopyranosyl(1 → 2)-α-l-arabinopyranosyl)-16α- hydroxyprotobassic acid (Saponin 1), 3-O-(β-d-glucopyranosyl)-28-O- (α-l-rhamnopyranosyl(1 → 3)-β-d-xylopyranosyl(1 → 4)-α-l-rhamnopyranosyl(1 → 2)-α-l-arabinopyranosyl)-protobassic acid, and 3-O-(β-d-glucopyranosyl)-28-O-(α-l-rhamnopyranosyl(1 → 3)-β-d-xylopyranosyl(1 → 4)-α-l-rhamnopyranosyl(1 → 2)-α-l-arabinopyranosyl)-protobassic acid (Saponin 2). Also, three known phenolic compounds were isolated for the first time from the species hexandra, viz, gallic acid, myrecetin, and quercetin. The chemical structures of the isolated saponin compounds were established by spectral techniques (UV, 1H, 13C NMR, and MS). The acetone fraction containing the crude saponin mixture possessed a significant inhibitory effect on LPS-induced nitric oxide to the extent of 60 % compared to the LPS-stimulated cells and to the extent of 20 % compared to the control level showing significant anti-inflammatory activity. Acetone and MeOH seed extracts as well as the crude saponin fraction of M. hexandra showed no antioxidant activity as measured by DPPH assay (SC50 = 217.65, 496.68, and 562.38 μg/ml, respectively) compared to that of ascorbic acid (SC50 = 12.9). The MeOH seed extract showed no cytotoxic activity against three different human cancer cell lines, viz, colon carcinoma (HCT-116), hepatocellular carcinoma (Hep-G2), and breast adenocarcinoma (MCF-7), estimated by MTT assay (IC50 = 95.20, 73.39, and 79.15 μg/ml, respectively). © 2013 Springer Science+Business Media New York.

Author Keywords
16-α-Hydroxyprotobassic acid; Anti-inflammatory activity; Milky tree; Protobassic acid; Sapotaceae; Triterpenoid saponins

Document Type: Article
Source: Scopus

Deifalla, A.[a] , Hamed, M.[b] , Saleh, A.[b] , Ali, T.[c]
Exploring GFRP bars as reinforcement for rectangular and L-shaped beams subjected to significant torsion: An experimental study
(2014) *Engineering Structures*, 59, pp. 776-786. Cited 4 times.

DOI: 10.1016/j.engstruct.2013.11.027

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Abstract
Steel corrosion related problems have been a heavy burden on countries economically and socially for many decades. Therefore, the inevitable quest to find an alternative for steel reinforcements is long overdue. On the other hand, fiber reinforced polymer (FRP) bars have non-corrosive nature and could be the solution for this problem. In this study, the objective is exploring the usage of glass fiber polymer (GFRP) bars as torsion reinforcement for L-shaped beams. New adhesively bonded GFRP stirrups are presented and implemented. Five beams were constructed and tested under significant torsion. The bonded GFRP stirrups were more effective as transversal reinforcement compared with the bent steel stirrups and the bent GFRP stirrups. It improved the ultimate torsional strength and increased the corresponding unit angle of twist and the maximum stirrup strain as well as the major concrete crack width. In addition, the increase in the GFRP transversal reinforcement percentage improved the ultimate torsional strength, the toughness, and the deformability. Moreover, the usage of a stirrup strain value of 0.4% resulted in overly conservative predictions for the ultimate torsional resistance; however, it provided adequate torsional deformability index and toughness. © 2013 Elsevier Ltd.

Author Keywords
Bent GFRP stirrups and L-shaped beams; Bonded GFRP stirrups; GFRP bars

Document Type: Article
Source: Scopus

Mohareb, R.M.[a] , Abdallah, A.E.M.[b] , Abdelaziz, M.A.[c d]
New approaches for the synthesis of pyrazole, thiophene, thieno[2,3-b]pyridine, and thiazole derivatives together with their anti-tumor evaluations
(2014) *Medicinal Chemistry Research*, 23 (2), pp. 564-579. Cited 3 times.

DOI: 10.1007/s00044-013-0664-7

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Abstract
The reaction of cyanoacetylhydrazine (1) with acetylchloride (2) gave the N-acyl derivative 3. The latter underwent ready cyclization in sodium ethoxide to give the pyrazole derivative 4 which was the key compound for the synthesis of thiophene, thieno[2,3-b]pyridine, and thiazole derivatives. The anti-tumor evaluations of the newly synthesized products against the three human tumor cell lines, namely, breast adenocarcinoma (MCF-7), non-small cell lung cancer (NCI-H460), and CNS cancer (SF-268), were studied. Some of these compounds were found to exhibit much higher inhibitory effects toward the three tumor cell lines than the reference doxorubicin. Molecular modeling of the four compounds 12c, 12f, 16a, and 16d, which showed the maximum inhibitory effect, were done. © 2013 Springer Science+Business Media New York.

Author Keywords
Anti-tumor; Pyrazole; Thiazole; Thieno[2,3-b]pyridine; Thiophene

Document Type: Article
Source: Scopus

El-Mahdy, G.A.[a b] , Atta, A.M.[a c] , Al-Lohedan, H.A.[a]
Synthesis and Evaluation of Poly(Sodium 2-Acrylamido-2- Methylpropane Sulfonate-co-Styrene)/Magnetite Nanoparticle Composites as Corrosion Inhibitors for Steel
(2014) *Molecules*, 19 (2), pp. 1713-1731. Cited 7 times.

DOI: 10.3390/molecules19021713

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Abstract
Self-stabilized magnetic polymeric composite nanoparticles of coated poly-(sodium 2-acrylamido-2-methylpropane sulfonate-co-styrene)/magnetite (PAMPS-Na-co-St/Fe3O4) were prepared by emulsifier-free miniemulsion polymerization using styrene (St) as a monomer, 2-acrylamido-2-methylpropane sulfonic acid sodium salt (AMPS-Na) as an ionic comonomer, N,N-methylenebisacrylamide (MBA) as crosslinker, hexadecane (HD) as a hydrophobic solvent, and 2,2-azodiisobutyronitrile (AIBN) as an initiator in the presence of hydrophobic oleic acid coated magnetite particles. Hydrophobic oleic acid coated magnetite particles with an average size of about 7-10 nm were prepared with the new modified water-based magnetite ferrofluid, synthesized by a chemical modified coprecipitation method. The morphology and the particle size distributions of the crosslinked PAMPS-Na-co- St/Fe3O 4 composite were observed and analyzed by transmission electron microscopy (TEM). The average Fe3O4 content of PAMPS-Na-co-St/Fe 3O4 was determined by thermogravimetric analysis (TGA). The inhibitory action of PAMPS-Na-co-St/Fe3O4 towards steel corrosion in 1 M HCl solutions has been investigated by polarization and electrochemical impedance spectroscopy (EIS) methods. Polarization measurements indicate that PAMPS-Na-co-St/Fe3O4 acts as a mixed type-inhibitor and the inhibition efficiency increases with inhibitor concentration. The results of potentiodynamic polarization and EIS measurements clearly showed that the inhibition mechanism involves blocking of the steel surface by inhibitor molecules via adsorption. © 2014 by the authors; licensee MDPI, Basel, Switzerland.

Author Keywords
Corrosion inhibitor; Magnetite; Nanocomposite; Nanoparticle; Sodium 2-acrylamido-2-methylpropane sulfonate-co-styrene

Document Type: Article
Source: Scopus

El Ashry, E.S.H.[a b] , Yousuf, S.[a] , Hassan, H.H.[a c] , Zahran, M.K.[c] , Hebishy, A.S.[c]
Synthesis and single-crystal x-ray diffraction studies of an arylidenethiosemicarbazone and hydrazonyl-phenylthiazole
(2014) *Letters in Organic Chemistry*, 11 (2), pp. 101-108.

DOI: 10.2174/15701786113106660065

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Abstract
The reaction of aromatic aldehydes with thiosemicarbazide gives arylidene hydrazinecarbothioamide, whose reaction with phenacyl bromide, yielded (arylidenehydrazonyl)-4-phenylthiazole. The structures of 3 and 7 were fully characterized by using 1H-NMR and mass spectroscopic techniques. The spectral analysis agreed with the assigned structures. The assigned structures were further supported by single-crystal X-ray diffraction studies and summarized as follows: (3) Triclinic, P-1, a=7.6319(4) A, b= 8.7099(4) A, c=10.7145(5) A, α = 77.7400 (10)°, β = 74.0160 (10)°, and γ = 72.8270 (10)°, V= 647.47(5) A3, and Z = 2; (7) Orthorhombic, Pna21, a = 9.3760(13), b = 14.029(2), c = 23.591(3)A, α =90, β = 90, and γ = 90o, V = 3103.0(7)A3, and Z = 4. © 2014 Bentham Science Publishers.

Author Keywords
Geometric isomers; Hydrazonylthiazole; Phenacyl bromide; Phenylthiazole; Thiosemicarbazone; X-ray

Document Type: Article
Source: Scopus

Mohamed, M.H.
Aero-acoustics noise evaluation of H-rotor Darrieus wind turbines
(2014) *Energy*, 65, pp. 596-604. Cited 8 times.

DOI: 10.1016/j.energy.2013.11.031

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Abstract
The problems aided with wind turbine noise have been one of the more studied environmental influence areas in wind energy engineering. Noise levels can be measured, but, similar to other environmental attentions, the public's perception of the noise impact of wind turbines is in part a subjective determination. The author investigated in this work the aerodynamic acoustics of one type of the VAWT (vertical axis wind turbine) which called Darrieus turbine. Darrieus turbine is suitable to be established within the densely populated city area. Therefore, the noise item is very important to investigate. In this work, Darrieus rotor has been studied numerically and aerodynamically to obtain the generated noise from blades. This work offers a method based on the FW-H (Ffowcs Williams and Hawkings) equations and its integral solutions. Time-accurate solutions can be obtained from URANS (unsteady Reynolds-averaged Navier-Stokes) equations. Blade shape, tip speed ratio and solidity effects have been studied in this work. The results indicated that the higher solidity and higher tip speed ratio rotors are more noisy than the normal turbines. © 2013 Elsevier Ltd.

Author Keywords
Aerodynamic; CFD; Darrieus turbine; Noise; Wind energy

Document Type: Article
Source: Scopus

Hamdy, M.S.[a b] , Saputera, W.H.[a] , Groenen, E.J.[c] , Mul, G.[a]
A novel TiO2 composite for photocatalytic wastewater treatment
(2014) *Journal of Catalysis*, 310, pp. 75-83. Cited 7 times.

DOI: 10.1016/j.jcat.2013.07.017

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Abstract
A novel TiO2 composite consisting of Anatase interacting with a Ti3+-containing Rutile phase was synthesized by heating a mixture of TiO2 (Hombikat) and Ti2O3 in air at different temperatures ranging from 300 °C up to 900 °C . The preparation of the samples was analyzed by Thermal Gravimetric Analysis (TGA), and the resulting composites characterized by X-ray powder diffraction (XRD), Raman and UV- Vis spectroscopy, X-ray Photoelectron Spectroscopy (XPS), Electron Paramagnetic Resonance (EPR) spectroscopy, and Scanning Electron Microscopy. Characterization data show a phase transformation from Ti2O3 to Ti 3+-containing Rutile at temperatures of around 600 °C . Moreover, Hombikat is gradually converted from amorphous to crystalline Anatase. The Ti3+-content and the degree of Anatase crystallinity are respectively inversely and directly proportional to an increasing preparation

temperature. The composite which was synthesized at 600 °C showed the highest photocatalytic rate in the decolorization of Methyl Orange (MO). The rate constant was significantly larger than obtained for Evonik P25 after identical thermal treatment (600 °C). Photodeposition of Pt further not only enhanced the photocatalytic activity of the optimized composite, but surprisingly also the stability. The methyl orange degradation results are discussed on the basis of hole and electron transfer phenomena between Anatase and Rutile phases, the latter containing (surface) oxygen vacancies (Ti3+). The presence of surface oxygen vacancies and/or Pt nanoparticles is proposed to be of benefit to the rate determining oxygen reduction reaction.

Author Keywords
Anatase; Composite; Electron transfer; Methyl orange; Oxygen vacancies; Photocatalysis; Rutile; Ti2O3; Ti3+

Document Type: Article
Source: Scopus

Elhalawany, N.[a] , Saleeb, M.M.[b] , Zahran, M.K.[c]
Novel anticorrosive emulsion-type paints containing organic/inorganic nanohybrid particles
(2014) *Progress in Organic Coatings*, 77 (2), pp. 548-556.

DOI: 10.1016/j.porgcoat.2013.11.019

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Abstract
Novel anticorrosive emulsion-type paints were prepared by utilizing organic/inorganic nanohybrid particles (nHPs) of composition (1:1) based on polyaniline (PANI) and nanosilica. Polyaniline (PANI) and nanosilica were synthesized via chemical oxidative and sol-gel polymerization techniques respectively. The prepared materials were characterized via (gel permeation chromatography (GPC), infra red (FT-IR), transmission electron microscope (TEM) and differential scanning calorimetry (DSC)). The binder used in this context is polyvinyl acetate (PVAc). Nanohybrid particles/PVAc emulsion composites (nHPs ECs) were simply formed by individual mixing of the prepared neat PANI and nHPs of composition (1:1) with PVAc to produce the corresponding nanohybrid particles/PVAc emulsion composites EC1 and EC2 respectively. The chemical and basic properties including (acid and alkali resistance, adhesion, washability, gloss, opacity, whiteness, hardness, impact, and weathering) as well as the anticorrosion properties of the blank paint films and the paint films containing neat PANI and nHPs of different concentrations (5%, 10%, and 15%) were investigated and evaluated. The obtained experimental results revealed that the presence of nHPs in the blank paint are highly enhanced both basic and anticorrosion properties of the coated films.

Author Keywords
Anticorrosive emulsion paints; Basic properties; Composite emulsion; Nanohybrid particles

Document Type: Article
Source: Scopus

Ali, A.I.[a c] , Park, K.[b] , Ullah, A.[a] , Huh, R.[c] , Kim, Y.S.[c d]
Ferroelectric enhancement of La-doped BaTiO3 thin films using SrTiO3 buffer layer
(2014) *Thin Solid Films*, 551, pp. 127-130. Cited 2 times.

DOI: 10.1016/j.tsf.2013.11.048

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Abstract
Pulsed laser deposition (PLD) was used to fabricate La 0.01Ba0.99TiO3 (LBTO) thin films on MgO/TiO2/SiO2/Si substrates with and without SrTiO 3 (STO) buffer layer. LBTO films deposited on STO layers exhibited enhanced ferroelectricity and decreased leakage current (9 × 10 - 7 A/cm2 at 50 kV/cm), conductivity, and Hall mobility, compared to those of LBTO films on MgO substrate. The remanent polarization (Pr) and coercive field (Ec) for LBTO thin films on STO buffered MgO substrate dramatically improved, 36.5 μC/cm2 and ~ 220 kV/cm, compared to those for LBTO thin films on MgO substrate, 3 μC/cm2 and ~ 60 kV/cm. The degradation of Pr and E c after 105 switching

test is less than 0.1% for LBTO thin films on STO buffered MgO substrate. This work demonstrates a route to a lead-free ferroelectric thin film for nonvolatile memories and electro-optic devices. © 2013 Elsevier B.V.

Author Keywords
Ferroelectric; La-doped BaTiO thin film3; Polarization; Pulsed laser deposition; SrTiO3buffer layer

Document Type: Article
Source: Scopus

Aly, W.I.A.
Computational fluid dynamics and optimization of flow and heat transfer in coiled tube-in-tube heat exchangers under turbulent flow conditions
(2014) *Journal of Thermal Science and Engineering Applications*, 6 (3), art. no. 031001, . Cited 2 times.

DOI: 10.1115/1.4026120

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Abstract
The present computational fluid dynamics (CFD) study was performed to investigate the 3D turbulent flow and heat transfer of coiled tube-in-tube heat exchangers (CTITHEs). The realizable k-e model with enhanced wall treatment was used to simulate the turbulent flow and heat transfer in the heat exchangers. Temperature dependent thermophysical properties of water were used and heat exchangers are analyzed considering conjugate heat transfer from hot fluid in the inner-coiled tube to cold fluid in the annulus region. After simulations, Taguchi method was used for finding the optimum condition for some design parameters in the range of coil diameter from 0.18 to 0.3 m, tube and annulus flow rates from 2 to 4 and 10 to 20 LPM, respectively. Results show that the Gnielinski correlation used extensively for predicting Nusselt number for turbulent flow in ducts can be used to predict Nusselt number for both inner-coiled tube and annular coiled tube using the friction factor correlation for helical tubes of Mishra and Gupta. Contribution ratio obtained by Taguchi method shows that annulus side flow rate, tube side flow rate, coil diameter, and flow configuration are the most important design parameters in coiled tube-in-tube heat exchangers, respectively. © 2014 by ASME.

Author Keywords
CFD; Coiled heat exchanger; Taguchi method; Turbulent convection

Document Type: Article
Source: Scopus

Abdel-Aal, E.A.[a] , El-Sayed, D.[b] , Shoeib, M.[b] , Kandil, A.T.[b] , Kandil, A.T.[b]
Erratum: Enhancing coating of brushite/hydroxyapatite layer on titanium alloy implant surface with additives (Applied Surface Science (2013) 285 (136-143))
(2014) *Applied Surface Science*, 290, p. 516.

DOI: 10.1016/j.apsusc.2013.10.156

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Document Type: Erratum
Source: Scopus

Eissa, M.M.[a] , Fayek, W.M.[a] , Hadhoud, M.M.A.[b] , Elmesalawy, M.M.[c] , Shetaya, A.A.[a]
Frequency/voltage wide-area measurements over transmission control protocol/internet protocol communication network for generator trip identification concerning missed data
(2014) *IET Generation, Transmission and Distribution*, 8 (2), pp. 290-300.

DOI: 10.1049/iet-gtd.2013.0207

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Abstract
Wide-area frequency/voltage measurements are used to observe and record changes in power system operating

conditions. This study introduces an application of the frequency/voltage (F/V) wide-area measurements for identifying the generator trips. These measurements are received from the frequency disturbance recorders (FDRs). The FDRs transmit their measurements over the transmission control protocol/internet protocol-based communication network to the data concentrator server (DCS) hosted at Helwan University. The transmitted data from FDRs to the DCS using IP protocol cannot guarantee the quality of service while it provides the best effort delivery for data packets. Missed data at the DCS are expected as a result of number of factors including packet drop because of network congestion, buffer overflow at the source or destination, corrupted packets rejected in-transit or faulty networking hardware. The study introduces a new technique to compensate the missed data using principal component analysis in order to determine a specific signature and properties for each generator trip in the power system network. These signatures are compared with recorded signatures using minimum distance classification to determine a probable match. The real-time measurements collected at DCS showed that some data are missed because of the previously mentioned factors.

Document Type: Article
Source: Scopus

Abdelaziz, T.H.S.
Robust pole assignment using velocity-acceleration feedback for second-order dynamical systems with singular mass matrix
(2015) *ISA Transactions*, . Article in Press.

DOI: 10.1016/j.isatra.2014.11.015

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Abstract
In this paper the robust pole assignment problem using combined velocity and acceleration feedback for second-order linear systems with singular mass matrix is illustrated. This is promising for better applicability in several practical applications where the acceleration signals are easier to obtain than the proportional ones. First, the explicit parametric expressions of both the feedback gain controller and the eigenvector matrix are derived. The parametric solution involves manipulations only on the original second-order model. The available degrees of freedom offered by the velocity-acceleration feedback in selecting the associated eigenvectors are utilized to improve robustness of the closed-loop system. Straight-forward computational algorithms are introduced to demonstrate the effectiveness of the proposed approach. These algorithms are applicable for a dynamical system with mass matrices that can be either singular or nonsingular. Numerical examples are provided to illustrate the application of the proposed procedure.

Author Keywords
Active control; Eigenstructure assignment; Feedback stabilization; Robust pole assignment; Second-order descriptor linear systems; Velocity-acceleration feedback

Document Type: Article in Press
Source: Scopus

Abskharon, R.N.N.[a b c] , Giachin, G.[d] , Wohlkonig, A.[a b] , Soror, S.H.[a b e] , Pardon, E.[a b] , Legname, G.[d] , Steyaert, J.[a b]
Probing the N-terminal β-sheet conversion in the crystal structure of the human prion protein bound to a nanobody
(2014) *Journal of the American Chemical Society*, 136 (3), pp. 937-944. Cited 10 times.

DOI: 10.1021/ja407527p

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Abstract
Prions are fatal neurodegenerative transmissible agents causing several incurable illnesses in humans and animals. Prion diseases are caused by the structural conversion of the cellular prion protein, PrPC, into its misfolded oligomeric form, known as prion or PrPSc. The canonical human PrPC (HuPrP) fold features an unstructured N-terminal part (residues 23-124) and a well-defined C-terminal globular domain (residues 125-231). Compelling evidence indicates that an evolutionary N-terminal conserved motif AGAAAAGA (residues 113-120) plays an important role in the conversion to PrPSc. The intrinsic flexibility of the N-terminal has hampered efforts to obtain detailed atomic

information on the structural features of this palindromic region. In this study, we crystallized the full-length HuPrP in complex with a nanobody (Nb484) that inhibits prion propagation. In the complex, the prion protein is unstructured from residue 23 to 116. The palindromic motif adopts a stable and fully extended configuration to form a three-stranded antiparallel β-sheet with the β1 and β2 strands, demonstrating that the full-length HuPrPC can adopt a more elaborate β0-β1-α1-β2-α2-α3 structural organization than the canonical β1-α1-β2-α2-α3 prion-like fold. From this structure, it appears that the palindromic motif mediates β-enrichment in the PrPC monomer as one of the early events in the conversion of PrPC into PrPSc. © 2013 American Chemical Society.

Document Type: Article
Source: Scopus

Ashour, M.L.[a b] , El-Readi, M.Z.[a c] , Hamoud, R.[a] , Eid, S.Y.[a] , El Ahmady, S.H.[b] , Nibret, E.[a] , Herrmann, F.[a] , Youns, M.[d e] , Tahrani, A.[a] , Kaufmann, D.[a] , Wink, M.[a]
Anti-infective and cytotoxic properties of Bupleurum marginatum
(2014) *Chinese Medicine (United Kingdom)*, 9 (1), art. no. 4, . Cited 2 times.

DOI: 10.1186/1749-8546-9-4

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Abstract
Background: Bupleurum marginatum Wall. ex DC (Apiaceae) is a perennial herb widely used in traditional Chinese and Kampo medicine for the treatment of various infectious diseases. The biological activities of B. marginatum have not been fully investigated. This study aims to investigate the antitrypanosomal, antimicrobial and antiviral activities of methanol (ME) and dichloromethane (DCM) extracts of B. marginatum aerial parts and the ability of both extracts to inhibit the growth of different cancer cell lines.Methods: Phytochemical characterization of the extracts was performed by LC-MS profiling. The antitrypanosomal activity was evaluated using the resazurin method. The antimicrobial activity was assessed using agar diffusion and microdilution methods, and the minimum inhibitory concentration (MIC) values were determined. The antiviral activity was determined for 6.25, 12.5, and 50 μg/mL doses using a plaque reduction assay. Cytotoxicity was investigated in eight cancer cell lines (Caco-2, CCL-81, CCRF-CEM, COS-7, HL-60, MIA PaCa-2, MCF-7, and PANC-1) using the MTT assay and the caspase 3/7 activity was determined over the range of 62.5-1000 μg/mL.Results: Phytochemical analyses resulted in the characterization of 15 components, mainly flavonoids and lignans. The DCM extract showed significant antitrypanosomal activity (IC50: 36.21 μg/mL) and moderate activity against Streptococcus pyogenes (MIC value: 0.25 mg/mL). At a dose of 12.5 μg/mL, the DCM extract inhibited 73.6% of the plaque production by hepatitis A virus. CCRF-CEM cells were the most sensitive to both extracts (IC50: 12.5-22.7 μg/mL). The cytotoxicity was mediated by induction of apoptosis (19-fold increase in the cellular caspase 3/7 level after treatment with the DCM extract at 1 mg/mL).Conclusions: ME and DCM extract of B. marginatum showed anti-infective and antiproliferative effects. © 2014 Ashour et al.; licensee BioMed Central Ltd.

Document Type: Article
Source: Scopus

Kathuria, J.[a] , Khan, M.A.[b] , Abraham, A.[c] , Darwish, A.[d]
Low power techniques for embedded FPGA processors
(2014) *Studies in Computational Intelligence*, 520, pp. 283-304.

DOI: 10.1007/978-3-642-40888-5-11

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Abstract
The low-power techniques are essential part of VLSI design due to continuing increase in clock frequency and complexity of chip. The synchronous circuit operates at highest clock frequency. These circuits drive a large load because it has to reach many sequential elements throughout the chip. Thus, clock signals have been a great source of power dissipation because of high frequency and load. Since, clock signals are used for synchronization, they does not carry any information and certainly doesn't perform any computation. Therefore, disabling the clock signal in inactive portions of the circuit is a useful approach for power dissipation reduction. So, by using clock gating we can

save power by reducing unnecessary clock activities inside the gated module. In this chapter, we will review some of the techniques available for clock gating. The chapter also presents Register-Transfer Level(RTL) model in Verilog language. Along with RTL model we have also analyzed the behaviors of clock gating technique using waveform. © 2014 Springer-Verlag Berlin Heidelberg.

Document Type: Article
Source: Scopus

Ibrahim, N.[a] , Rizk, M.[b] , Ibrahim, A.[c] , Tawakkol, S.[b] , Ali, I.[a]
Simultaneous determination of amlodipine besylate and atorvastatin calcium by using spectrophotometric method with multivariate calibration and HPLC method implementing "design of experiment"
(2014) *International Journal of Pharmacy and Pharmaceutical Sciences*, 6 (1), pp. 419-425. Cited 1 time.

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Abstract
Objectives: The aim of the present work is to develop a rapid and simple method for the simultaneous determination of amlodipine besylate and atorvastatin calcium mixture by two different methods. First, Multivariate calibration methods using preprocessing to enhance results in case of presence of any interference in samples. Second, RP-HPLC method for achieving a good separation of the mixture with accepted system suitability parameters with using design of experiment in the robustness study according to Plackett-Burman design. Methods: The method is based on the spectrophotometric measurements of the drugs in the range of 200-400 nm together with multivariate calibration methods. Resolution of the binary mixture under investigation has been accomplished mainly by using partial least squares (PLS) and principal component regression (PCR). The proposed RP-HPLC method utilizes a YMC-pack pro C18 ODS-A (25 cm x 4.6 mm, 5 µm) column, at room temperature, optimum mobile phase consisted of methanol and 0.01 M sodium dihydrogen phosphate buffer (75:25, v/v), pH adjusted to 3.5 with orthophosphoric acid solution. The flow rate was monitored at 1.2 ml/min, and UV detection at 239 nm. Results: The recovery percentage for amlodipine besylate and atorvastatin calcium in tablets dosage form were found to be in PLS method (98.98 ± 0.85, 99.68 ± 1.35), PCR method (99.16 ± 0.75, 99.60 ± 1.40) and RP-HPLC method (98.82 ± 0.62, 101.19 ± 0.69), respectively. Conclusion: The methods were validated as per ICH guidelines. All the results obtained were found to be within the acceptable limits. The methods were successful to estimate amlodipine besylate and atorvastatin calcium in bulk powder and pharmaceutical preparation Caduet®.

Author Keywords
Amlodipine besylate; Atorvastatin calcium; Design of experiment; PCR; PLS; RP-HPLC

Document Type: Article
Source: Scopus

Hamdy, M.S.[a b] , Amrollahi, R.[a] , Sinev, I.[c] , Mei, B.[c] , Mul, G.[a]
Strategies to design efficient silica-supported photocatalysts for reduction of CO2
(2014) *Journal of the American Chemical Society*, 136 (2), pp. 594-597. Cited 6 times.

DOI: 10.1021/ja410363v

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Abstract
The photocatalytic reduction of CO2 by water vapor to produce light hydrocarbons was studied over a series of catalysts consisting of variable loading of Ti incorporated in TUD-1 mesoporous silica, either modified by ZnO nanoparticles or isolated Cr-sites. Unexpectedly, the performance of ZnO-Ti-TUD-1 and Cr-Ti-TUD-1 was inferior to the parent Ti-TUD-1. An explanation can be found in experiments on the photocatalytic degradation of a mixture of hydrocarbons (i.e., CH4, C2H4, C 2H6, C3H6, and C3H 8) under the same illumination conditions. Ti-TUD-1 exhibits the poorest activity in hydrocarbon degradation, while ZnO-Ti-TUD-1 and Cr-Ti-TUD-1 showed very significant degradation rates. This study clearly demonstrates the importance of evaluating hydrocarbon conversion over photocatalysts active in converting CO2 to hydrocarbons (in batch reactors). © 2013 American Chemical Society.

Document Type: Article
Source: Scopus

Alshehri, M.[a] , Darwish, I.[a] , Sultan, M.[b] , Maher, H.[a c] , Alzoman, N.[a]
Determination of cinacalcet hydrochloride by capillary electrophoresis with photodiode array detection
(2014) *Instrumentation Science and Technology*, 42 (1), pp. 27-37.

DOI: 10.1080/10739149.2013.832292

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Abstract
This article reports a validated stability-indicating capillary electrophoresis method using a photodiode array detector at 220 nm for the determination of cinacalcet hydrochloride. The best electrophoretic separation between the analyte and internal standard (lamotrigine) was achieved within 5 min in a deactivated fused silica capillary (55 cm effective length × 75 μm internal diameter) maintained at 24°C using a background electrolyte solution consisted of phosphate buffer (50 mM, pH 6.4):methanol (95:5, v/v) at a separation voltage of 30 kV. The linear range of the method was 0.5-30 μg/mL (r = 0.9999) with limits of detection and quantitation of 0.1 and 0.5 μg/mL, respectively. The assay precision and accuracy were favorable as the relative standard deviations did not exceed 1.09%, and the recovery values were 98.99-100.33 ± 0.19-1.09%. The induced degradation products, when any, did not interfere with the detection of analyte. The proposed method was successfully applied for the determination of cinacalcet hydrochloride in bulk and pharmaceutical formulations; the percentage recovery values were 98.16-102.00 ± 0.24-1.08%. The results demonstrated the value of the method.

Author Keywords
capillary electrophoresis; cinacalcet hydrochloride; pharmaceutical dosage forms; photodiode array detector; stability-indicating

Document Type: Article
Source: Scopus

Henain, E.F.[a] , Hassan, A.F.[b] , Megahed, F.[a] , Tayel, I.M.[c]
Thermo-elastic half space under illumination of a laser beam by using lord and Shulman theory
(2014) *Journal of Thermal Stresses*, 37 (1), pp. 51-72.

DOI: 10.1080/01495739.2013.839431

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Abstract
The problem of thermo-elasticity, based on the theory of Lord and Shulman with one relaxation time, is used to solve a two-dimensional boundary value problem for a semi-infinite medium heated by a pulsed laser beam. The surface of the medium is taken as traction free. The general solution is obtained in the Laplace and Hankel transforms domain. Approximate small time analytical solutions to temperature, displacement, and stress are obtained. Results of this problem are presented graphically.

Author Keywords
Convolution theorem; Generalized thermo-elasticity; Laser pulse; Small time approximation

Document Type: Article
Source: Scopus

Emam-Ismail, M.[a] , El-Hagary, M.[b] , Ramadan, E.[c] , Matar, A.[b d] , El-Taher, A.[c]
Influence of γ-irradiation on optical parameters of electron beam evaporated ZnSe 1-xTe x nanocrystalline thin films
(2014) *Radiation Effects and Defects in Solids*, 169 (1), pp. 61-72. Cited 1 time.

DOI: 10.1080/10420150.2013.811505

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Abstract
In the present paper, we reported the effect of γ-irradiation with different doses (100-300 kGy) on the optical parameters of nanocrystalline ZnSe1-xTex (x=0.0, 0.2, 0.5, 0.7, 1.0) thin films. In the wavelength range 400-2500 nm, the optical parameters of the as-deposited and γ-irradiated were extracted from transmission spectra using the Swanepoel method. It was found that the refractive index of the investigated films increases with increasing the doses of γ-radiation. Such post-irradiation increase in the refractive index was attributed to the increase of the density of the investigated films with irradiation doses due to structure transformation induced by thermal effects during irradiation. In addition, the refractive index dispersions of both as-deposited and γ-irradiated of nanocrystalline ZnSe0.8Te0.2 films are found to follow the single oscillator model. The calculated single oscillator parameters; oscillator strength Ed, static refractive index no, increased after irradiation while the oscillator energy Eo, reduced after irradiation. The absorption coefficient was found to increase with the increase of the doses of γ-radiation. Furthermore, the obtained optical energy gap of nanocrystalline ZnSe1-xTex films was found to decrease with increasing the doses of the γ-radiation which is attributed to the increase of the telluride (Te) atoms or defects after irradiation. This is confirmed by the decrease in the Urbach energy Ee after radiation. The γ-irradiation stimulated increase in the absorption coefficient and change in the optical parameters, which can be utilized for industrial dosimetric and detector purposes.

Author Keywords
nanocrystalline

Document Type: Article
Source: Scopus

Shabana, Y.M.
Minimizing stresses of layer composites by controlling the interface geometry
(2014) *Mechanics of Advanced Materials and Structures*, 21 (1), pp. 47-52. Cited 1 time.

DOI: 10.1080/15376494.2012.677105

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Abstract
One of the most critical issues of layer composite structures is the induced high stresses at the interfaces due to the property mismatch of the layers. In the previous attempts to reduce these stresses, the interfaces are considered as flat surfaces perpendicular to the lay-up direction of the layers. The objective of this article is to minimize these stresses by proposing other forms of the interface geometry, such as curved surface and flat surface inclined on the lay-up direction of the layers. It is found that the induced highest stress can be reduced greatly by considering the proposed interface geometries.

Author Keywords
finite element analysis; interface; layered structures; stress reduction

Document Type: Article
Source: Scopus

El-Ghazawy, R.A.[c] , Mahmoud, A.G.[a b] , Ferreira, M.J.[a] , Gomes, C.S.B.[a] , Gomes, P.T.[a] , Shaffei, K.A.[b] , Atta, A.M.[c d]
Preparation and characterization of melamine-based porous Schiff base polymer networks for hydrogen storage
(2014) *Journal of Polymer Research*, 21 (6), art. no. 480, .

DOI: 10.1007/s10965-014-0480-x

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Abstract
Based on Schiff base chemistry, crosslinked porous organic aminal networks were prepared using acetic acid as a catalyst. These Schiff base networks (SNWs) are polymeric materials based on melamine and 5,5'-methylene bissalicylaldehyde, with nitrogen contents as high as ca. 36 wt.%, which were characterized by FTIR spectroscopy, elemental analysis, and 13C and 15N solid-state NMR spectroscopies. A series of polymer networks with different monomeric molar ratios and different amounts of added catalyst were explored, in order to study their effect on the

final polymer structure, porosity and H2 storage capacity. These materials exhibit Brunauer-Emmett-Teller (BET) surface areas up to ca. 526 m2/g, as measured by N2 adsorption at 77 K, and exhibit gravimetric storage capacities up to 2.57 wt.% at 20 bar and 77 K. © Springer Science+Business Media Dordrecht 2014.

Author Keywords
Aminal networks; Hydrogen storage; Melamine-based networks; Porous polymers; Schiff base networks

Document Type: Article
Source: Scopus

AlFayoumi, S.A.[a] , Hegazy, A.A.[a] , Belal, M.A.[b]
Influence of Evolutionary computing on nutrition recommendation: A survey
(2014) *Journal of Computer Science*, 10 (10), pp. 1917-1923.

DOI: 10.3844/jcssp.2014.1917.1923

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Abstract
This study is a survey about how Evolutionary Computing doesn't play its important role in a vital field such as Nutrition. Evolutionary computing is a subset from the artificial intelligence umbrella that involves continuous optimization and combinational optimization which is based on searching methodologies. It has also a lot of algorithms that have played a main role in supporting the decision making and taking processes accurately and effectively. It is concerning many fields in our life such as Industry, Agriculture, Engineering, Transportation, Medicine and Nutrition, etc. One of these algorithms is Genetic Algorithm (GA) which is contributed to a lot of fields. Moreover, Nutrition is a wide field of research because it has several sides, medically, physically and psychologically and so on. But, has Genetic Algorithms been used to contribute to the field of nutrition? This survey illustrates that (GA) is not involved in nutrition computerized models or applications and it suggests building a model to promote a nutrition system using this powerful algorithm and this study presents a suggestion to build a model for nutrition as a future work that uses Genetic Algorithm. © 2014 Science Publications.

Author Keywords
Artificial Evolution (AE); Evolutionary Algorithms (EA); Evolutionary computing; Genetic Algorithms (GA); Nutrition

Document Type: Article
Source: Scopus

Fahmy, S.[a] , Abu-Gharbieh, E.[b]
In vitro dissolution and in vivo bioavailability of six brands of ciprofloxacin tablets administered in rabbits and their pharmacokinetic modeling
(2014) *BioMed Research International*, 2014, art. no. 590848, .

DOI: 10.1155/2014/590848

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Abstract
This study was undertaken to assess the in vitro dissolution and in vivo bioavailability of six brands of ciprofloxacin oral tablets available in the UAE market using rabbits. The in vitro dissolution profiles of the six ciprofloxacin products were determined using the USP dissolution paddle method. Pharmacokinetic modeling using compartmental and noncompartmental analysis was done to determine the pharmacokinetic parameters of ciprofloxacin after single-dose oral administration. In vitro release study revealed that the amount of ciprofloxacin released in 20 minutes was not less than 80% of the labeled amount which is in accordance with the pharmacopoeial requirements. All tested products are considered to be very rapid dissolving except for formulae A and D. Ciprofloxacin plasma concentration in rabbits was best fitted to a two-compartment open model. The lowest bioavailability was determined to be for product A (93.24%) while the highest bioavailability was determined to be for product E (108.01%). Postmarketing surveillance is very crucial to ensure product quality and eliminating substandard products to be distributed and, consequently, ensure better patient clinical outcome. The tested ciprofloxacin generic products distributed in the UAE market were proven to be of good quality and could be used interchangeably with the branded ciprofloxacin product. © 2014 Sahar Fahmy and Eman Abu-Gharbieh.

Document Type: Article

Source: Scopus

Dkhil, M.A.[a b] , Al-Quraishy, S.[a] , Abdel-Baki, A.-A.[a c] , Ghanjati, F.[d] , Arauzo-Bravo, M.J.[e f] , Delic, D.[g h] , Wunderlich, F.[g]
Epigenetic modifications of gene promoter DNA in the liver of adult female mice masculinized by testosterone
(2014) *Journal of Steroid Biochemistry and Molecular Biology*, 145, pp. 121-130. Cited 1 time.

DOI: 10.1016/j.jsbmb.2014.11.006

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Abstract
Testosterone (T) is known to masculinize the female phenotype of the liver, evidenced as up- and down-regulated expressions of male- and female-predominant genes, respectively, involved in hepatic metabolism. This study is aimed at identifying epigenetic modifications of promoters of these differently expressed genes in the liver after masculinization by T of adult female C57BL/6 mice using methylated DNA immunoprecipitation and NimbleGen microarrays. Among the 17,354 promoters examined, 82 promoters in the liver have been identified to be significantly changed by T ($p < 0.05$), with 47 and 35 promoters exhibiting increased and decreased DNA methylation, respectively. Most of these promoters display the changes of DNA methylation in their Ups-regions, which are between +500 and +2000 bp upstream from the transcription start site (TSS) of the genes. Less T-induced modifications have been detected in the Cor-regions of the promoters, i.e., +500 to -500 bp around the TSS. Only 13 and 7 Cor-promoters are hyper- and hypo-methylated, respectively, among which are 10 hyper- and 5 hypo-methylated promoters of genes with annotated functions. Surprisingly, the promoters are largely unmethylated in those genes whose expression has been previously found to be permanently deregulated by T in the liver, as e.g. the T-upregulated male-predominant genes Cyp7b1, Cyp2d9, Cyp4a10, Ugt2b1, Ugt2b38, Hsd3b5, Slco1a1 as well as the T-downregulated female-predominant genes Cyp2b9, Cyp2b13, Cyp3a41, Cyp3a44, Fmo3, Sult2a2, respectively. Though methylatable, the promoter DNA of Ar, Esr1, and Esr2 remained unaffected by T. However, T decreases DNA-methylation of the Cor-promoter region of Ddc encoding the AR-coactivator dopa decarboxylase. Among the identified 15 Cor-promoters of genes with annotated functions are also those of Defb43, Cst11, and Sele involved in innate immunity. Our data support the view that T may exert long-lasting epigenetic effects on functions of the liver-inherent immune system.

Author Keywords
DNA methylomics; Epigenetics; Gene promoter; Liver; Testosterone

Document Type: Article
Source: Scopus

Nasr, E.A.[a b] , Al-Ahmari, A.[c] , Kamrani, A.[d] , Moiduddin, K.[a]
Digital design and fabrication of customized mandible implant
(2014) *World Automation Congress Proceedings*, art. no. 6935880, .

DOI: 10.1109/WAC.2014.6935880

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Abstract
Reconstruction of mandibular defects following severe trauma is one of the most challenging problems faced by today's maxillofacial reconstructive surgeons. Mandible plays a major role in the support of dental and para-dental structures like mastication, articulation, deglutition and respiration. Segmental Mandibular resections without reconstruction result in deviation of the mandible towards the resected side due to the unopposed pull of the remaining muscles, loss of function and significant cosmetic defect. With the advancement of current medical imaging technology such as Computer Tomography (CT) and Magnetic Resonance Imaging (MRI), and other technologies

such as Computer Aided Design (CAD) and Additive Manufacturing, it is possible to design geometrical models and visualize the anatomical structures to obtained required information fabricate customized implants for each patients. This article presents the results of an on-going project in mandiblular reconstruction using Electron Beam Melting (EBM) additive manufacturing technology for mandibular reconstruction and surgery. © 2014 TSI Press.

Author Keywords
Additive Manufacturing; CT-Scan; Electron Beam Melting; Mandible; Titanium

Document Type: Conference Paper
Source: Scopus

El-kafafy, M.[a b c] , Peeters, B.[b] , De Troyer, T.[a] , Guillaume, P.[a]
Polymax Plus estimator: Better estimation of the modal parameters and their confidence bounds
(2014) *Proceedings of ISMA 2014 - International Conference on Noise and Vibration Engineering and USD 2014 - International Conference on Uncertainty in Structural Dynamics*, pp. 2469-2484.

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Abstract
The key challenge behind the Polymax Plus modal parameter estimator is to keep the property of clear stabilization diagram constructed by the well-known Polymax estimator (Polymax user friendliness) and at the same time to have improved, statistically optimal, modal parameter estimates (Maximum likelihood (ML) accuracy). The Polymax Plus estimator is based on the combination of the ML estimator and the classical Polymax estimator. This approach overcomes the major drawback of the currently available pLSCF (Polymax) estimator of having a high bias on the damping estimate in the cases of very noisy data and/or weakly excited modes. Unlike the deterministic methods, the Polymax Plus estimator offers more consistent modal parameter estimates together with their uncertainty bounds, which play an important role in the model validation process. Moreover, unlike the stochastic methods, it features clear stabilization charts in a fast way. This estimator is optimized with respect to the computational time and memory requirements. An important issue with this estimator, which mainly affects its efficiency, is the neglecting of the possible correlation over the different measured outputs with a purpose to speed up its implementation. In this paper, the Polymax Plus estimator will be validated and compared with other modal estimators using simulation and real measured data sets. Moreover, the effects of the possible correlation over the different measured outputs on the uncertainty calculation will be studied.

Document Type: Conference Paper
Source: Scopus

El Sharkawi, F.Z.[a] , El Shemy, H.A.[b] , Khaled, H.M.[c]
Possible anticancer activity of rosuvastatine, doxazosin, repaglinide and oxcarbazepin
(2014) *Asian Pacific Journal of Cancer Prevention*, 15 (1), pp. 199-203. Cited 7 times.

DOI: 10.7314/APJCP.2014.15.1.199

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Abstract
Background: Rosuvastatine, doxazosin, repaglinide and oxcarbazepin are therapeutic drugs available in the market for the treatment of different diseases. Potential to display antitumor activities has also been suggested. The aim of the current study was to evaluate their in vitro effects on some human transformed cell lines. Materials and Methods: Cytotoxicity of the four drugs was tested in MCF-7, HeLa and HepG2 cells by the neutral red assay method and also the effect of rosuvastatine and doxazosin against Ehrlich Ascities Carcinoma Cells (EACC) by trypan blue assay. Results: Rosuvastatine exerted the greatest cytotoxic effect against HepG2 cells with an IC50 value of 58.7±69.3; in contrast doxazosin showed least activity with IC50=104.4 ±115.7. Repaglinide inhibited the growth of both HepG2 and HeLa cells with IC50 values of 87.6±117.5 and 89.3±119.5, respectively. Oxcarbazepine showed a potent cytotoxicity against both HeLa (IC50=19.4±43.9) and MCF7 cancer cells ((IC50=22±35.7).On the other hand the growth of EACC was completely inhibited by doxazosine (100% inhibition) while rosuvastatine had weak inhibitory activity (11.6%) . Conclusions: The four tested drugs may have cytotoxic effects against hepatic, breast and cervical carcinoma cells; also doxazosine may inhibit the growth of endometrial cancer cells. Further investigations in animals are needed to confirm these results.

Author Keywords
Cell lines; Doxazosin; In vitro anticancer chemosensitivity; Oxcarbazepin; Repaglinide; Rosuvastatine

Document Type: Article
Source: Scopus

Hamid, Z.A.[a] , El-Khair, M.T.A.[b] , Gomaa, M.H.[a] , Morsy, F.A.[c] , Khalifa, N.A.A.[c]
Impact of chemical composition of the substrate on the synthesis and behaviour of nano hard anodised layers
(2014) *International Journal of Nanoparticles*, 7 (3-4), pp. 231-250.

DOI: 10.1504/IJNP.2014.067611

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Abstract
The purpose of this article is to focus on the effect of chemical composition of aluminium substrate on the formation of nano hard anodised aluminium oxide layer (NHAAO) from sulphuric acid bath. The effect of operating conditions (temperature, time and current density) and chemical composition of the substrate on the thickness, pore diameter, morphology, microhardness, abrasion resistance and corrosion resistance of the anodised layers have been investigated. The optimum conditions for the formation of NHAAO films were studied by field emission-scanning electron microscope (FE-SEM) and X-ray photoelectron spectroscopy (XPS). The results demonstrated that the substrate composition, temperature and current density have been effected on the thickness and the pore diameters of the anodic film. XPS analysis illustrated that, the anodised layer consists mainly of oxide. Additionally, the formation of NHAAO on Al or 3004 Al alloy improves the hardness, abrasion resistance and corrosion resistance comparing with unanodised substrates. Copyright © 2014 Inderscience Enterprises Ltd.

Author Keywords
AAO; Anodic aluminium oxide; Anodising process; Films; Hard coat; Nano hard anodised aluminium oxide; Nanoporous materials; NHAAO; Sulphuric acid electrolyte

Document Type: Conference Paper
Source: Scopus

Gouhar, R.S.[a] , Youns, M.[b]
Novel series of substituted heterocycles derived from α,β-unsaturated ketones for anticancer evaluation
(2014) *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, 5 (2), pp. 680-692. Cited 1 time.

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Abstract
The aldol condensation of 2-acetyl (5,6,7,8-tetrahydro-naphthalene) with 1-naphthaldehyde afforded chalcone derivative 1 that consider as excellent starting material for the synthesis of many Heterocycles derivatives. On consideration of 1 with hydrazine hydrate, methyl hydrazine, and / or phenyl hydrazine afforded the pyrazole ring system 2a-c and also on condensation of 1 with hydroxyl amine hydrochloride gave isooxazole derivative 3. The condensation of 1 with substituted semicarbazide or substituted thiosemeicarbazide gave the corresponding pyrazole urea or thiourea derivatives 4a-d. On the other hand, cyclo condensation of 1 with urea, thourea and / or guanidine gives pyrimidine derivatives 5a-c. The addition reaction of different primary amines to chalcone 1 gave the corresponding addition products 6a-c. The cyclo condensation of 1 with ethyl acetoacetate, malononitrile and / or ethyl cyanoacetate gave the pyrane ring system 7-9 respectively. Cyclization of 4b with phenacyl bromide and / or 2-acetyl 5,6,7,8-tetrahydronaphthalene gave substituted thiazole 10, 11 respectively. Many of these newly synthesized compounds are evaluated as anticancer agent in two cell lines Hep-G2 cells and CaCO.2 cells.

Author Keywords
Anticancer agent; Oxazoles; Pyranes; Pyrazoles; Pyrimidines; Thiazoles; α,β-Unsaturated Ketone

Document Type: Article
Source: Scopus

Farahat, A.I.Z.[a] , El-Morsy, A.-W.[b c] , El-Bitar, T.A.[a]
Severe plastic deformation of large-scale Nb-microalloyed steel billet by multi-directional forging process

(2014) *Steel Research International*, 85 (5), pp. 844-850.

DOI: 10.1002/srin.201300265

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Abstract
The microstructural and the tensile properties of Nb-microalloyed steel billet subjected to severe deformation processing were investigated. The steel samples in the form of as-cast were severely deformed using multi-directional hot forging process to approximately accumulated strain 4). The microstructure and tensile properties of multi-directional forging samples were compared with those of the unidirectional forging (UDF) samples. Both optical and scanning electron microscopy examinations showed that the grain size is smaller after multi-directional forging in comparison with UDF. In addition, the microstructure appears to be more homogeneous and generally more equiaxed after multi-directional forging processing. Fine-grained materials produced through multi-direction forging process have the greatest potential for large-scale industrial applications because they make use of equipment that has many similarities with that used in conventional deformation processing. The characterization of the microstructure revealed that the grain size is significantly smaller after processing by multi-direction forging process in comparison with unidirectional forging process. © 2014 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

Author Keywords
grain refinement; multi-directional hot forging; Nb-microalloyed steel; severe plastic deformation; unidirectional hot forging

Document Type: Article
Source: Scopus

Khalil, D.[a] , Wageeh, A.[b] , El-Sabban, S.[b] , Khalaf, G.A.F.M.[b]
On the resonance frequency of an integrated optical ring resonator with low radius of curvature
(2014) *Proceedings of SPIE - The International Society for Optical Engineering*, 8988, art. no. 89881Q, .

DOI: 10.1117/12.2039127

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Abstract
For small radius ring resonators, the estimation of the resonance wavelength and Free Spectral Range FSR using the group index fails to give accurate results consistent with the FDTD calculation. In this work we present a new formula for the calculation of these parameters. The formula is based on the expansion of the ring effective index as a function of the wavelength and then solving the resonance equation to get the resonant wavelength and the FSR. Using this form, the error in estimating the resonance wavelength is reduced from 5.7% to less than 0.3% when compared with the FDTD calculation. © 2014 SPIE.

Author Keywords
Dispersion; Integrated optics; Micro-resonators; Ring resonators

Document Type: Conference Paper
Source: Scopus

Chen, X.[a] , Meawad, A.[b] , Struble, L.J.[a]
Method to stop geopolymer reaction
(2014) *Journal of the American Ceramic Society*, 97 (10), pp. 3270-3275.

DOI: 10.1111/jace.13071

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Abstract
The objective of this study was to develop a method to stop geopolymer reaction at early ages so that the molecular

structure can be determined and its link to setting behavior probed. Solvent extraction, using a mixture of alcohol and acetone to remove water, was seen to suspend reaction up to at least 53 h, allowing enough time for nuclear magnetic resonance (NMR) tests to determine structure. However, this method caused precipitation of soluble species present at early ages, confounding interpretation of the spectra and thus making it suitable only for mature geopolymers. A combination of water treatment to extract soluble species and solvent treatment to extract water was seen to stop the geopolymer reaction long enough (> 1 week) for NMR tests in specimens with and without calcium. © 2014 The American Ceramic Society.

Document Type: Article
Source: Scopus

Al-Saeed, T.A.[a] , Shalaby, M.Y.[b] , Khalil, D.A.[b c]
Dispersion compensation in Fourier domain optical coherence tomography
(2014) *Applied Optics*, 53 (29), pp. 6643-6653.

DOI: 10.1364/AO.53.006643

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Abstract
In this work, we propose a numerical technique to compensate for errors due to dispersion effects in Fourier domain optical coherence tomography. The proposed technique corrects for errors in depth measurements and resolution loss due to dispersion. The results show that, by using this technique, errors in thickness measurement are reduced from about 5% to less than 0.1% depending on the sample length and the amount of dispersion. Also, an improvement in the resolution from about 50 μm to less than 10 μm is demonstrated. © 2014 Optical Society of America.

Document Type: Article
Source: Scopus

El-Mahdy, T.S.
Identification of a novel metallo-β-lactamase VIM-28 located within unusual arrangement of class 1 integron structure in Pseudomonas aeruginosa isolates from Egypt
(2014) *Japanese Journal of Infectious Diseases*, 67 (5), pp. 382-384. Cited 2 times.

DOI: 10.7883/yoken.67.382

Helwan University, Cairo, Egypt

Abstract
Two multidrug-resistant Pseudomonas aeruginosa strains harboring blaVIM were isolated from a hospital in Egypt and were indistinguishable by pulsed-field gel electrophoresis. Sequence analysis revealed a novel VIM β-lactamase, VIM-28. Additional sequencing of integron revealed that the bla<inf>VIM-28</inf> gene cassette had an unusual arrangement of class 1 integron structure, located directly downstream of the integrase gene “intI1” and oriented divergently from it. The new organization of integron also comprised the aacA7 and smr-2 gene cassettes in that order. A complete ISPa21 containing a tnpA gene flanked by two 13-bp inverted repeats was located directly upstream of the 3′-CS conserved region of the integron containing qacEΔ1/sul1 genes. The bla<inf>VIM-28</inf>-containing class 1 integron was found to have a chromosomal origin in both strains. In conclusion, the presence of a new variant of blaVIM, bla<inf>VIM-28</inf>, on a new organization of class 1 integron having ISPa21 increases the possibility of dissemination of resistance genes within the integron in P. aeruginosa among hospitalized patients in Egypt. © 2014 National Institute of Health. All rights reserved.

Author Keywords
Bla<inf>VIM</inf>; Carbapenem resistance; Egypt; Pseudomonas aeruginosa

Document Type: Article
Source: Scopus

Abdel Moneim, A.E.
Citrus peel extract attenuates acute cyanide poisoning-induced seizures and oxidative stress in rats
(2014) *CNS and Neurological Disorders - Drug Targets*, 13 (4), pp. 638-646. Cited 4 times.

DOI: 10.2174/18715273126661312060951 42

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Abstract
The primary aimed of this study was to investigate the potential protective effects of methanolic extract of citrus peel (MECP) on acute cyanide (KCN) poisoning-induced seizures and oxidative stress in rats. The intraperitoneal LD50 value of KCN (6.3 mg/Kg bwt), based on 24 hrs mortality, was significantly increased by 9, 52 or 113% by oral administration of MECP (500 mg/Kg bwt) pre-administered for 1, 2 and 3 days, respectively, in rats in a time-dependent manner. Intraperitoneal injection of the sublethal dose of KCN (3 mg/Kg bwt) into rats increased, 24 hrs later, lipid peroxidation (LPO), nitric oxide (NO), glutamate levels and acetylcholinesterase (AChE) activity in hippocampus, striatum and cerebral cortex. KCN also decreased brain glutathione (GSH) level and superoxide dismutase (SOD) and catalase (CAT) activities in these animals. Pre-treatment of rats with MECP inhibited KCN-induced increases in LPO, NO, and glutamate levels and AChE activity as well as decreases in brain GSH level and SOD and CAT activities. In addition, KCN significantly decreased norepinephrine, dopamine and serotonin levels in different brain regions which were resolved by MECP. From the present results, it can be concluded that the neuroprotective effects of MECP against KCN-induced seizures and oxidative stress may be due to the inhibition of oxidative stress overproduction and maintenance of antioxidant defense mechanisms. © 2014 Bentham Science Publishers.

Author Keywords
Antioxidants; Citrus peel; Oxidative stress; Potassium cyanide; Seizures

Document Type: Article
Source: Scopus

Mubaraki, M.A.[a] , Dkhil, M.A.[b] [c] , Al-Shaebi, E.M.[b] , Lubbad, M.Y.[b] , Ibrahim, K.E.[b] , Al-Quraishy, S.[b]
The protective effect of pomegranate, Punica granatum, on murine Malaria
(2014) *Pakistan Journal of Zoology*, 46 (5), pp. 1345-1350. Cited 2 times.

[a] Clinical Laboratory Sciences Department, College of Applied Medical Sciences, King Saud University, Saudi Arabia
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Abstract
Malaria is still one of the most devastating infectious diseases in the tropics. The present study aims to investigate the protective role of pomegranate peel extract against Plasmodium chabaudi-induced spleen tissue damage in mice. Animals were divided into three groups. Group I served as a vehicle control. Group II and group III were infected with 106 P. chabaudi-infected erythrocytes. Group III was gavaged with 100 µl of 300 mg/kg pomegranate peel extract for 6 days. All mice were sacrificed at day 6 post-infection. Treated mice with pomegranate significantly showed approximately 50% reduction in parasitemia compared to untreated control. Infection also induced a weight loss. Histochemical studies revealed that infection caused a decrease in both carbohydrates and protein contents in the spleen. Pomegranate could improve these altered changes. Based on these results, it is concluded that pomegranate peel could offer protection against splenic tissue damage. © 2014 Zoological Society of Pakistan.

Author Keywords
Malaria; Pomegranate peel; Spleen

Document Type: Article
Source: Scopus

Abouelfadl, A.A.[a] [b] , El-Bendary, M.A.M.[c] , Shawki, F.[a] [b]
Enhancing transmission over wireless image sensor networks based on ZigBee network
(2014) *Life Science Journal*, 11 (8), art. no. 46, pp. 342-354.

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Abstract
Different scenarios for the efficient transmission of images over wireless sensor networks are presented. The research is focused on the use of the IEEE 802.15.4 ZigBee for applying the proposed scenarios. The heart of these scenarios is a novel chaotic interleaving scheme, which can tolerate error bursts. The investigation studies the performance of

the proposed interleaver with convolutional codes having different constraint lengths (K). A comparison study between the traditional block interleaving scheme and the proposed chaotic interleaving scheme for image transmission over a correlated fading channel is presented. The simulation results show the superiority of the proposed chaotic interleaving scheme. The results also prove that the chaotic interleaver on a packet-by-packet basis gives a high quality image with (K=3) and eliminates the need for a complex encoder having K=7.

Author Keywords
Convolutional coding; Interleaving technique chaotic based; Wireless image sensor networks; ZigBee

Document Type: Article
Source: Scopus

Bauomy, A.A.
The potential role of morus alba leaves extract on the brain of mice infected with schistosoma mansoni
(2014) *CNS and Neurological Disorders - Drug Targets*, 13 (9), pp. 1513-1519.

Department of Zoology and Entomology, Helwan University, Ain Helwan, Egypt

Abstract
Schistosomiasis is a neglected tropical disease which is associated with neuropsychiatric and neuropathological disorders. Herein, the main goal of the presented work is to investigate the effect of Morus alba leaves extract in mice brain infected with Schistosoma mansoni. Since, the resistance of Schistosomes to antischistosomal drug (praziquantel) has been examined, schistosomiasis induced brain oxidative stress as evidenced by the decrease of glutathione level, total antioxidant capacity and the activity of catalase significantly, while a significant elevation in the levels of nitrite/nitrate and malondialdhyde. In addition, the infection resulted in neurochemical disturbances, the main inhibitory amino acid, γ- aminobutyric acid level was decreased. In contrast, the level of chloride ions and acetylcholine esterase activity were significantly increased. Moreover, the histopathological section showed some impairments in the brain. The treatment with Morus alba leaves extract ameliorated the induced disturbances in schistosome-infected mice where the levels of non-enzymatic and enzymatic antioxidants were elevated. On the other hand, the levels of nitrite/nitrate and malondialdhyde were significantly reduced. Likewise, treatment of mice with Morus alba leaves extract improved the altered levels of γ- aminobutyric acid level and chloride ion. Also, it improved the recorded impairments of the histopathological section in the brain of schistosome infected mice. © 2014 Bentham Science Publishers.

Author Keywords
Biochemical; Brain; Histopathology; Mice; Morus alba; Schistosoma mansoni

Document Type: Article
Source: Scopus

EL-Bagory, T.M.A.A.[a b] , Younan, M.Y.A.[c] , Sallam, H.E.M.[d e] , Abdel-Latif, L.A.[f]
Limit load determination and material characterization of cracked polyethylene miter pipe bends
(2014) *Journal of Pressure Vessel Technology, Transactions of the ASME*, 136 (4), art. no. 041203, .

DOI: 10.1115/1.4026330

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Abstract
The quality of Natural Gas Piping Systems (NGPS), must be ensured against manufacturing defects. The main purpose of the present paper is to investigate the effect of loading mode and load angle (30 deg, 45 deg, and 60 deg) on the limit load of miter pipe bends (MPB), under different crack depths a/W=0-0.4 at a crosshead speed 500 mm/min. The geometry of cracked and uncracked multi-miter pipe bends are pipe bend angle, a=90 deg, pipe bend factor, h=0.844, standard dimension ratio, SDR=11, and three junctions, m=3. The material of the investigated pipe is a high-density polyethylene (HDPE), which is commonly used in NGPS. The welds at the miter pipe junction are produced by butt-fusion welding. For all loading modes the limit load is obtained by the tangent intersection (TI) method from the load-deflection curves produced by the specially designed and constructed testing machine at the

laboratory5. Tensile tests are conducted on specimens longitudinally extruded from the pipe with thickness, T=10, 30 mm, at different crosshead speeds (5-500 mm/min), and different gauge lengths (G=20, 25, and 50 mm) to determine the mechanical properties of welded and unwelded specimens. The fracture toughness is determined on the basis of elastic plastic fracture mechanics (EPFM). Curved three-point bend specimens (CTPB), are used. All specimens are provided with artificial precrack at the crack tip, a/W=0.5. The effect of specimen thickness variation (B=10, 15, 22.5, 30, 37.5, and 45 mm) for welded and unwelded specimens is studied at room temperature (Ta=23 °C) and at different crosshead speeds, VC.H, ranging from 5 to 500 mm/min. The study reveals that increasing the crack depth leads to a decrease in the stiffness and limit load of MPB for both in-plane, and out-of-plane bending moment. In case of combined load (out-of-plane and in-plane opening; mode), higher load angles lead to an increase in the limit load. The highest limit load value occurs at a loading angle,=60 deg. In case of combined load (out-of-plane and in-plane closing; mode), the limit load decreases with increasing load angles. At a load angle=30 deg, the higher limit load value occurred in both cases. For combined load opening case, higher values of limit load are obtained. The crosshead speed has a significant effect on the mechanical behavior of both welded and unwelded specimens. The fracture toughness, JIC, is greater for unwelded than welded specimen. .

Author Keywords
Butt-fusion (BF) method; curved three-point bend (CTPB); high-density polyethylene (HDPE); Miter pipe bends (MPB); tangent intersection (TI) method

Document Type: Article
Source: Scopus

Fattah, M.A.[a] [b]
A hybrid machine learning model for multi-document summarization
(2014) *Applied Intelligence*, 40 (4), pp. 592-600.

DOI: 10.1007/s10489-013-0490-0

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[b] Department of Electronics Technology, FIE Helwan University, Cairo, Egypt

Abstract
This work proposes an approach that uses statistical tools to improve content selection in multi-document automatic text summarization. The method uses a trainable summarizer, which takes into account several features: the similarity of words among sentences, the similarity of words among paragraphs, the text format, cue-phrases, a score related to the frequency of terms in the whole document, the title, sentence location and the occurrence of non-essential information. The effect of each of these sentence features on the summarization task is investigated. These features are then used in combination to construct text summarizer models based on a maximum entropy model, a naive-Bayes classifier, and a support vector machine. To produce the final summary, the three models are combined into a hybrid model that ranks the sentences in order of importance. The performance of this new method has been tested using the DUC 2002 data corpus. The effectiveness of this technique is measured using the ROUGE score, and the results are promising when compared with some existing techniques.

Author Keywords
Maximum entropy; Multi-document automatic summarization; Naive-Bayes; Support vector machine

Document Type: Article
Source: Scopus

Ebid, A.-H.I.M.[a] , Ali, Z.T.[a] , Ghobary, M.A.F.[b]
Blood pressure control in hypertensive patients: Impact of an Egyptian pharmaceutical care model
(2014) *Journal of Applied Pharmaceutical Science*, 4 (9), pp. 93-101.

DOI: 10.7324/JAPS.2014.40917

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[b] Department of Internal Medicine, Faculty of Medicine, Cairo University, Cairo, Egypt

Abstract
Hypertension is poorly managed in Egypt due to low rates of awareness about the disease. The aim of this study was to describe the role of the pharmacist as a health care provider and the implementation of a pharmaceutical care model to improve medications adherence, BP control, knowledge and quality of life (QOL) in a sample of Egyptian patients suffering from hypertension. A total of 280 hypertensive adults, whether their BP was controlled or not, were enrolled in the study and randomly classified into either control group (CG) or intervention group (IG); both received the usual hospital care and kept on their antihypertensive. Patients in the IG, beside the usual hospital care, received

a pharmaceutical care program described in the methods. All patients visited the clinic monthly up to three months for check and evaluation. Significant improvements were observed in the studied parameters for the IG compared with the CG, at the end of the study, although there was no significant difference (P > 0.05) between them in demographics and characteristics at the baseline. At the end of the study, a significant lower SBP (-8.2 mmHg, P = 0.003) and DBP (-5.4 mmHg, P = 0.001) levels were observed in the IG with significantly higher BP control (P=0.018). Also, medication adherence was significantly higher (P = 0.002) in the IG (27.2%, 52.8%, 20.0% vs 48.6%, 33.6%, 17.8% for low, intermediate and high adherence, respectively). Similarly, patients' knowledge, attitude and practice were significantly improved (P = 0.001) in IG ((20.5+1.8), (4.7+1.0), (4.7+1.0), respectively) vs ((13.7+7.2), (3.8+1.8), (2.9+2.0), respectively) for the CG. While end of study QOL for the IG, increased significantly compared with the CG (P = 0.001, 0.001, 0.020, 0.010 and 0.016 for patients' rate of QOL, enjoy, energy, sleep and access to health system, respectively), most of QOL dimensions were decreased significantly from their baseline in the CG. Conclusion: Pharmacist intervention can significantly improve BP control, medication adherence, patients' knowledge, attitude, practice and QOL in hypertensive Egyptian patients treated with antihypertensive agents. © 2014 Abdel-Hameed I. M. Ebid et al.

Author Keywords
Blood pressure control; Egypt; Hypertension; Medication adherence; Pharmaceutical care; Pharmacist intervention

Document Type: Article
Source: Scopus

Ibrahim, H.E.A.[a] , Hassan, F.N.[b] , Shomer, A.O.[c]
Optimal PID control of a brushless DC motor using PSO and BF techniques
(2014) *Ain Shams Engineering Journal*, 5 (2), pp. 391-398. Cited 3 times.

DOI: 10.1016/j.asej.2013.09.013

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[b] Department of Power and Machines Eng., Helwan University, Egypt
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Abstract
This paper presents a Particle Swarm Optimization (PSO) technique and bacterial foraging (BF) technique for determining the optimal parameters of (PID) controller for speed control of a brushless DC motor (BLDC) where the (BLDC) motor is modeled in simulink in Matlab. The proposed technique was more efficient in improving the step response characteristics as well as reducing the steady-state error, rise time, settling time and maximum overshoot. © 2013 Production and hosting by Elsevier B.V.

Author Keywords
Bacterial Foraging Technique; Brushless DC motor; Matlab; Particle Swarm Optimization; PID controller

Document Type: Article
Source: Scopus

Abdel Moneim, A.E.[a b] , Bauomy, A.A.[b] , Diab, M.M.S.[c] , Shata, M.T.M.[d] , Al-Olayan, E.M.[e] , El-Khadragy, M.F.[b e]
The protective effect of Physalis peruviana L. against cadmium-induced neurotoxicity in rats
(2014) *Biological Trace Element Research*, 160 (3), pp. 392-399. Cited 1 time.

DOI: 10.1007/s12011-014-0066-9

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Abstract
The present study was carried out to investigate the protective effect of Physalis peruviana L. (family Solanaceae) against cadmium-induced neurotoxicity in rats. Adult male Wistar rats were randomly divided into four groups. Group 1 was used as control. Group 2 was intraperitoneally injected with 6.5 mg/kg bwt of cadmium chloride for 5 days. Group 3 was treated with 200 mg/kg bwt of methanolic extract of Physalis (MEPh). Group 4 was pretreated with MEPh

1 h before cadmium for 5 days. Cadmium treatment induced marked disturbances in neurochemical parameters as indicating by significant (p<0.05) reduction in dopamine (DA), serotonin (5-HT), and 5-hydroxyindoleacetic acid (5-HIAA) in cerebellum, hippocampus, and cerebral cortex and enhanced significantly (p<0.05) the levels of lipid peroxidation and nitric oxide in the brain. Cadmium treatment also decreased the amount of nonenzymatic and enzymatic antioxidants significantly (p<0.05). Pretreatment with MEPh resulted in significant (p<0.05) decreases in lipid peroxidation and nitric oxide levels and restored the amount of glutathione successfully. Although, preadministration of MEPh also brought the activities of cellular antioxidant enzymes, namely superoxide dismutase, catalase, glutathione peroxidase, and glutathione reductase significantly (p<0.05) to the control levels, as well as the levels of Ca2+, Cl-, DA, 5-HT, and serotonin metabolite, 5-HIAA. These data indicated that Physalis has a beneficial effect in ameliorating the cadmium-induced oxidative neurotoxicity in the brain of rats. © 2014 Springer Science+Business Media.

Author Keywords
Cadmium; Neurotoxicity; Oxidative stress; Physalis peruviana L.; Rats

Document Type: Article
Source: Scopus

Shaffei, K.A.[c] , Atta, A.M.[b d] , Gomes, C.S.B.[a] , Gomes, P.T.[a] , El-Ghazawy, R.A.[d] , Mahmoud, A.G.[a c]
Preparation of polymer networks for hydrogen storage using the Ullmann synthetic protocol
(2014) *Journal of Polymer Research*, 21 (5), art. no. 445, .

DOI: 10.1007/s10965-014-0445-0

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Abstract
Based on the Ullmann synthetic protocol, melamine-based porous organic networks, to be used for hydrogen storage, were prepared by a facile one-pot approach. These polymers were produced by condensation of melamine with different aryl halides under mild conditions, using a soluble copper(I) complex as catalyst. These materials exhibit Brunauer-Emmett-Teller (BET) surface areas up to 19.8 m2/g as measured by N2 adsorption at 77 K, and exhibit gravimetric storage capacities up to 1.17 wt.%, at 20 bar and 77 K. © Springer Science+Business Media Dordrecht 2014.

Author Keywords
Hydrogen storage; Organic networks; Porous polymers; Ullmann coupling

Document Type: Article
Source: Scopus

Mohamed, M.S.[a] , Ali, S.A.[b] , Abdelaziz, D.H.A.[b] , Fathallah, S.S.[a]
Synthesis and evaluation of novel pyrroles and pyrrolopyrimidines as anti-hyperglycemic agents
(2014) *BioMed Research International*, 2014, art. no. 249780, . Cited 1 time.

DOI: 10.1155/2014/249780

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Abstract
A series of pyrrole and pyrrolopyrimidine derivatives were examined for their in vivo antihyperglycemic activity. Compounds Ia-c,e, and IVg showed promising antihyperglycemic activity equivalent to a well-known standard antihyperglycemic drug, Glimepiride (Amaryl, 4 mg/kg). In this paper, we examine and discuss the structure-activity relationships and antihyperglycemic activity of these compounds. © 2014 M. S. Mohamed et al.

Document Type: Article
Source: Scopus

Ghorab, H.Y.[a] , Rizk, M.[a] , Ibrahim, B.[b] , Allam, M.M.[b]
High belite cement from alternative raw materials
(2014) *Materiales de Construccion*, 64 (314), art. no. e012, .

DOI: 10.3989/mc.2014.01913

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Abstract
Three high belite laboratory clinkers were prepared from traditional and alternative raw materials. Reference clinker was obtained from 77% limestone, 11% sandy clays, 11% fatty clays and 1% iron scales. The fatty clays were replaced by red brick powder in the raw meal of the second clinker and were lowered to 2% with the replacement of 10% of the limestone by egg shells in the third clinker. The SEM examination revealed clear presence of crossed striae and twinning in the rounded belite grains of the reference clinker caused by the transformation of the α′-belite to the β polymorph. Striae were weaker in the second and third clinkers indicating a probable stabilization of the α '-belite polymorph. Compressive strength of the respective cements were attained first after 28 days and the early strength did not improve with increasing fineness. Higher compressive strength values were found for the cement prepared from second clinker. Copyright: © 2014 CSIC.

Author Keywords
Alternative raw materials; Clinker; Stabilization; α Belite

Document Type: Article
Source: Scopus

Yi, W.[a b] , Yan, C.[a b] , Hamdy, M.S.[a c] , Baltrusaitis, J.[a] , Mul, G.[a]
Effects of bismuth addition and photo-deposition of platinum on (surface) composition, morphology and visible light photocatalytic activity of sol-gel derived TiO2
(2014) *Applied Catalysis B: Environmental*, 154-155, pp. 153-160. Cited 2 times.

DOI: 10.1016/j.apcatb.2014.01.055

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Abstract
Several remarkable observations regarding structure, (surface) composition and visible light induced photocatalytic activity of Bi-promoted Anatase photocatalysts are reported. First, XPS characterization data show that compositions of mixed Bi-Ti-oxide phases obtained by hydrothermal treatment at 180°C of aqueous solutions of ethanol, titanium n-butoxide, and bismuth nitrate, are surface enriched with a specific fraction of metallic-like bismuth. Second, the formation of highly dispersed nanoparticles of platinum on these composites by photo-deposition is accompanied by significant morphological changes. Third, the platinum functionalized, bismuth-promoted Anatase composites exhibit extraordinary photocatalytic activity in the photocatalytic degradation of organic compounds (acid orange 7 and salicylic acid, respectively) upon illumination at 447nm, higher than observed for P25 upon UV illumination in similar reactor configuration. An optimized Pt-Bi-Ti-Ox composite consists of 1wt% Pt and 5wt% Bi. The high activity of the composite is discussed on the basis of the crystalline morphology and surface composition. © 2014 Elsevier B.V.

Author Keywords
Anatase; Bismuth; Photocatalysis; Platinum; Water treatment

Document Type: Article
Source: Scopus

Fayoumi, S.A.A.[a] , Hegazy, A.A.[a] , Belal, M.A.[b]
Genetic-based nutrition recommendation model
(2014) *Journal of Computer Science*, 10 (10), pp. 1782-1791.

DOI: 10.3844/jcssp.2014.1782.1791

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Abstract
Evolutionary computing is the collective name for a range of problem-solving techniques based on principles of biological evolution, such as natural selection and genetic inheritance. These techniques are being widely applied to a variety of problems in many vital fields. Also, Evolutionary Algorithms (EA) which applied the principles of Evolutionary computations, such as genetic algorithm, particle swarm, ant colony and bees algorithm and so on play an important role in decision making process. EAs serve a lot of fields which can affect our life directly, such as medicine, engineering, transportations, communications. One of these vital fields is Nutrition which can be viewed from several points of view as medical, physical, social, environmental and psychological point of view. This study, presents a proposed model that shows how evolutionary computing generally and genetic algorithm specifically-as a powerful algorithm of evolutionary algorithms-can be used to recommend an appropriate nutrition style in a medical and physical sides only to each person according to his/her personal and medical measurements. © 2014 Science Publications.

Author Keywords
Body Status Index (BSI); Evolutionary Algorithms (EA); Evolutionary computations; Genetic Algorithm (GA); Nutrition

Document Type: Article
Source: Scopus

Farag, I.S.A.[a] , Girgis, A.S.[b] , Ramadan, A.A.[c] , Moustafa, A.M.[a] , Tiekink, E.R.T.[d]
5-Chloro-5″-[4-(dimethylamino)benzylidene]-4′-[4- (dimethylamino)phenyl]-1′,1″-dimethyldispiro[indoline-3, 2′-pyrrolidine-3′,3″-piperidine]-2,4″- dione
(2014) *Acta Crystallographica Section E: Structure Reports Online*, 70 (1), pp. o70-o71. Cited 2 times.

DOI: 10.1107/S1600536813033771

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Abstract
The title compound, C34H38ClN5O 2, has spiro links connecting the pyrrolidine ring and indole residue, as well as the piperidine and pyrrolidine rings. A half-chair conformation is found for the piperidine ring with the C atom connected to the spiro-C atom lying 0.738(4)Å out of the plane of the remaining five atoms (r.m.s. deviation = 0.0407Å). The methylene C atom is the flap in the envelope conformation for the pyrrolidine ring. In the crystal, supramolecular chains are sustained by alternating eight-membered {···HNCO}2 and 14-membered {···HC5O}2 synthons. Chains are connected into a three-dimensional network by (pyrrolidine-bound phenyl-methyl)C-H···π(pyrrolidine-bound phenyl) edge-to-face interactions.

Document Type: Article
Source: Scopus

Baioumy, H.M.[a] , Ahmed, A.H.[b c] , Khedr, M.Z.[d]
A mixed hydrogenous and hydrothermal origin of the Bahariya iron ores, Egypt: Evidences from the trace and rare earth element geochemistry
(2014) *Journal of Geochemical Exploration*, 146, pp. 149-162. Cited 1 time.

DOI: 10.1016/j.gexplo.2014.08.008

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Abstract
This study utilizes the trace and rare earth element geochemistry of bulk ores and in situ LA-ICP-MS analyses of mineral grains to clarify the controversy in the origin of the Bahariya sedimentary iron ores, Egypt. Different types of iron ores were identified in the Bahariya Oasis including high grade, high-Mn, high-Ba, oolitic, and ochreous iron ores. Hematite and goethite are the main constituents of the studied ores with some manganese oxide and hydroxide minerals (pyrolusite, bixbyite, cryptomelane, aurorite, romanechite, manjiroite, and pyrochroite). Barite is common in the high-Ba ore, while some quartz, calcite, and halite are detected in the oolitic iron ore. High-Mn iron ores are

characterized by higher contents of SiO2, Al2O3, MgO, CaO, Na2O, and K2O, while high-Ba iron ore has higher TiO2 contents. Analyses of bulk ores and in situ mineral grains are characterized by substantially high contents of Ba (average of 9497ppm); also Zn and Sr occur in considerably high concentrations (averages of 4263 and 429ppm, respectively). Mn-rich ores and Mn-bearing minerals show relative enrichments of trace metals compared to the Mn-poor ores probably due to the ability of Mn-bearing minerals to fix such trace metals by adsorption, absorption, and/or replacement. The σREE ranges between 2.6 and 80ppm with an average of 23ppm. High-Mn ores show higher σREE (average of 61ppm) compared with the low Mn ore (average of 13ppm). The oolitic iron ore shows very low σREE content (7ppm). Red and yellow ochers from El Gedida mine have similar σREE values (38 and 39ppm, respectively), while red ocher from the Ghorabi area has relatively higher σREE (57ppm). Chondrite-normalized REE patterns of all types of iron ores, whether in the form of bulk ores or Fe- and Mn-bearing grains, have LREE enrichment relative to HREE as shown by (La/Yb)N ratios that vary from 1.7 to 29.4. Majority of the bulk samples and mineral grains have negative Eu anomalies with EuN/Eu* ranges from 0.68 to 0.8. However, bulk samples of one high grade and high-Ba ores as well as some of the Mn-bearing grains from El Gedida ores show positive Eu anomalies with Eu/Eu* ranges from 1.1 to 17.7. With few exceptions, all bulk ores and mineral grains show negative Ce anomalies with Ce/Ce* range from 0.28 to 0.96. A seawater precipitation (hydrogenous to hydrothermal exhalite) is proposed for the Bahariya iron ores. The hydrogenous origin is suggested based on the occurrence of high-Mn iron ores in the base of the iron ore succession, oolitic texture of some of these ores, Si-Al plot, low La/Ce ratios, high Y/Ho ratios, and LREE-enriched patterns with negative Eu anomalies of most of the bulk ores and mineral grains. The hydrothermal contribution to the source of these iron ores can be evident from the high contents of some trace elements such as Ba, Zn, and Mo, and plots the analyzed samples in the hydrothermal fields of the Fe-M-(Ni+Co+Cu)*10 ternary diagram, (Co+Ni)-(As+Cu+Mo+Pb+V+Zn) and (Co+Ni+Cu-Co/Zn) binary plot, low σREE concentrations and positive Eu anomalies and high La/Ce ratios in some of the analyzed samples. The hydrothermal contribution looks for local effect and is restricted to El Gedida area. © 2014 Elsevier B.V.

Author Keywords
Bahariya; Egypt; Iron ores; Origin; Rare earth elements; Trace elements

Document Type: Article
Source: Scopus

Al-Ateeq, M.A.[a] , Ahmed, A.H.[b c] , Alhobaib, A.S.[a] , Al-Saleh, A.M.[d]

Geochemistry and Genesis of Base Metal-Rich Mn-Fe Mineralization in Volcaniclastic Sediments, Asfar Thwelil Area, Saudi Arabia

(2014) *Arabian Journal for Science and Engineering*, 39 (1), pp. 361-378.

DOI: 10.1007/s13369-013-0870-0

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Abstract
The Asfar Thwelil area, the northern Arabian Shield, contains a base metal-rich manganese-iron mineralization hosted by volcaniclastic sediments and ignimbrites of a volcanic caldera. These rock associations belong to the Shammar Group, a youngest acidic volcanic and volcaniclastic unit in the Precambrian rocks of the Arabian Shield. The Mn-Fe oxides form veins and horizontal dense stratabound layers along bedding planes and within beds. The mineralized samples contain up to 49.2 wt% MnO, 47.6 wt% FeO, 10.71 wt% SO3, 14,000 ppm Zn, 6,560 ppm Pb and 484ppm Cu. The high concentration of sulfur and base metals may be a good indicator for proximity to the heat source or to massive sulfide deposits formed at depth. Cryptomelane, coronadite, jacobsite and chalcophanite are the main Mn minerals identified, associated with goethite and hematite as Fe-bearing minerals. Pyrite, galena, sphalerite, gold and silver are the main sulfides and precious metals observed. The geological and geochemical characteristics of the Mn-Fe oxides suggest a hydrothermal origin. The hydrothermal criteria of the Mn-Fe mineralization include strong fractionation of Fe and Mn, remarkably high contents of base metals, and common abundance of fresh euhedral to subhedral sulfide minerals. The possible source of hydrothermal fluids was most probably metal-rich magmatic fluids, mixed with seawater, that penetrated through fractures, faults, and the permeable volcaniclastic pile to precipitate the Mn-Fe mineralization. Chemical characteristics of the Mn-Fe mineralization most probably indicate leaching of sulfide-bearing intermediate to acidic volcanic rocks. The results obtained would be the base for further exploration of base-metal sulfides. © 2013 King Fahd University of Petroleum and Minerals.

Author Keywords
Asfar Thwelil; Base metal-rich; Hydrothermal; Mn-Fe mineralization; Saudi Arabia; Volcanic caldera

Document Type: Article
Source: Scopus

Aly, S.[a b c] , Pelikán, M.[a] , Vrana, I.[a]

A generalized model for quantifying the impact of Ambient Intelligence on smart workplaces: Applications in manufacturing

(2014) *Journal of Ambient Intelligence and Smart Environments*, 6 (6), pp. 651-673.

DOI: 10.3233/AIS-140291

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Abstract

The potentially attractive exploitation of Ambient Intelligence (AmI) seeks improving performance and quality of life of people inside workplaces (e.g., offices, manufacturing work centers, homes). To succeed at making the implementation of AmI fruitful it is important to understand and objectively quantify the logical relationship among the following relevant elements: AmI key enabling technologies, AmI features, basic workplace functions or tasks, and performance measures of the activities of the workplace. Such relationships are fully characterized by ill-structuredness, subjectivity and vagueness. In this article we structure these ill-defined relationships and offer a generalized conceptual model as a foundation for understanding and objectively quantifying such relationships. We then propose fuzzy numbers as an adequate means for expressing the vagueness that is inherent with the subjective nature of the AmI features, technology impacts and characteristics, and relationships with workplace performance measures. The fuzzy numbers are adequately employed through the Analytical Hierarchically Process (AHP) in the form of a Fuzzy-AHP model. We give some example applications from a manufacturing system workplace. The results of the AmI technologies-performance measure assessment frameworks-can be used as a guide in designing smart workplaces and as a valuable insight in adopting the most significant AmI technologies. © 2014-IOS Press and the authors.

Author Keywords

Ambient Intelligence (AmI); Fuzzy Analytical Hierarchical Process (Fuzzy-AHP); manufactur-ing systems; Multi-criteria Decision Analysis (MCDA); Smart environment/workplaces

Document Type: Article
Source: Scopus

Al-Maadeed, M.A.[a] , Shabana, Y.M.[b] , Khanam, P.N.[a]

Processing, characterization and modeling of recycled polypropylene/glass fibre/wood flour composites

(2014) *Materials and Design*, 58, pp. 374-380. Cited 1 time.

DOI: 10.1016/j.matdes.2014.02.044

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[b] Mechanical Design Department, Faculty of Engineering, El-Mataria, Helwan University, P.O. Box 11718, Cairo, Egypt

Abstract

Polypropylene (PP) is one of the most common thermoplastic materials in the world. There is a need to recycle the large amount of this used material. To overcome the environmental problems, related to the polymer waste, PP was recycled and used as a matrix material in different composites that can be used in high value applications. In this paper, composites made of recycled polypropylene (RPP) reinforced by glass fibres and/or wood flour of the palm tree were prepared, characterized and modeled. The mechanical and thermal properties of these recycled polymer matrix composites (RPMCs) were measured experimentally and modeled theoretically. The mechanical properties included tensile modulus, tensile strength and hardness, whereas thermal properties included thermal stability, melting and crystallinity percentage content were studied. In addition we applied the functionally graded materials concept, the elastic finite element analysis of a layered functionally graded pressurized pipe, which is one of the practical industrial applications, was accomplished in order to have some insight on the performance of such RPMCs. The results reveal that the desired mechanical and thermal properties met the requirements of a wide range of practical applications which can be attained by adding the considered fillers. Also, the proper selection of the layers of the pressurized pipe, which was made of RPMCs, led to decrease of the induced stresses and accordingly increased the operational safety. © 2014.

Author Keywords

Mechanical properties; Modeling; Polymers; Thermal properties

Document Type: Article
Source: Scopus

Shafik, M.[a] , Ibrahime, H.[a] , Elyazeid, I.A.[b] , Abass, O.[c] , Saad, H.M.[a]
The stress of phenylalanine on rats to study the phenylketonuria at biochemical and molecular level
(2014) *Journal of Applied Pharmaceutical Science*, 4 (4), pp. 24-29.

DOI: 10.7324/JAPS.2014.40405

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Abstract
The present study was aimed to study the stress of phenylalanine on rats to study the effect of Phenylketonuria at molecular and biochemical level. In our study, the rats' weight ranged from 132 to 190 gm. They were housed 25 day and the diet was prepared 5% phenylalanine and the weight is recorded every week. The rats divided into 2 groups, control group and phenylalanine group. After feeding with 5% phenylalanine diet, we take blood samples to measure biochemical markers as (ALT, AST, creatinine, Lipid profile and S100B) and tissues for PCR. Our biochemical results showed significant increase in S100B in phenylalanine group and reduction in total cholesterol, HDL, LDL and triglyceride in phenylalanine group. The molecular study which based on comparing the DNA obtained by RAPD-PCR showed a specific DNA bands which may be responsible for Phenylketonuria and may be used for identification of disease at earlier time of injury. The excess of phenylalanine in diet lead to neural tissue damage and may cause mutation combined with the induced PKU (Phenylketonuria). © 2014 Mohga Shafik et al.

Author Keywords
PCR; Phenylalanine; Phenylketonuria; RAPD

Document Type: Article
Source: Scopus

Shaban, E.M.[a b] , Nada, A.A.[c] , Taylor, C.J.[d]
Exact linearization by feedback of state dependent parameter models applied to a mechatronics demonstrator
(2014) *2014 UKACC International Conference on Control, CONTROL 2014 - Proceedings*, art. no. 6915209, pp. 609-614.

DOI: 10.1109/CONTROL.2014.6915209

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Abstract
The paper develops an exact linearization by feedback approach for State Dependent Parameter (SDP), Proportional-Integral-Plus (PIP) control. The method is demonstrated using a simple automated belt driven by a DC motor equipped with a single board Reconfigurable Input-Output (sbRIO-9631) card, within a Field Programmable Gate Array (FPGA), and with a real time processor for control. The demonstrator is first modeled using a discrete-time SDP model structure, in which the parameters are functionally dependent on measured system states. An exact linearization step returns a linear model with unity coefficients, which is subsequently used to design a PIP control algorithm based on linear system design strategies, including pole assignment and optimal linear quadratic design. Preliminary experimental results demonstrate that the new approach yields an acceptable control performance for the nonlinear system. © 2014 IEEE.

Author Keywords
discrete-time nonlinear system; linearization by local coordinate transformation; proportional-integral-plus (PIP) control; state dependent parameter (SDP) model

Document Type: Conference Paper
Source: Scopus

Eissa, M.M.
New differential busbar characteristic based on high frequencies extracted from faulted signal during current transformer saturation
(2014) *IET Generation, Transmission and Distribution*, 8 (4), pp. 619-628.

DOI: 10.1049/iet-gtd.2012.0038

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Abstract
Most given techniques tend to block the differential measurement during that portion of the cycle when a current transformer (CT) is saturated. Some other techniques bring more meaning to the breakpoint settings of the operating characteristic. The time and frequency localisation properties of continuous wavelet transform (WT) offer a viable and improved option for analysing the transient characteristics of defect signals. WT depends on high frequencies of the faulted signal produced due to CT saturation. The proposed technique is based on the windowed WT of fault-generated transients to distinguish between faults in a busbar protection zone from those outside the zone, particularly in case of an early and severe CT saturation. New differential busbar characteristic with values depending on the windowed WT of fault-generated transients has also been described. © The Institution of Engineering and Technology 2014.

Document Type: Article
Source: Scopus

Ahmed, M.H.[a] , Rady, M.A.[b] , Amin, A.M.A.[b]
Multi applications of small scale solar power plant using organic rankine cycle and absorption chiller
(2014) *3rd International Symposium on Environment Friendly Energies and Applications, EFEA 2014*, art. no. 7059944, .

DOI: 10.1109/EFEA.2014.7059944

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Abstract
This paper presents a numerical simulation for the performance of solar thermal power plant consists of 190 m2 of concentrated parabolic trough collector (PTC) with a storage tank and an Organic Rankine Cycle (ORC). The numerical model simulates the effect of the operating and meteorological parameters of Northern Egypt area on the total performance of each component of the plant. A study of the operating parameters of the PTC performance was also presented in this paper. The plant uses the Therminol-VP1 as a storage media and also as a heat transfer fluid with flow rate ranges from 0.9 to 1.8 kg/s for the solar collectors. It's used also as a heat source for the ORC and the absorption chiller with a flow rate range from 0.3 to 0.9 kg/s. This paper presents four operating modes for the plant which are electric generation, cooling, heating and electric generation with heating modes. The model studies also the effect of these operating modes on the plant performance. The simulation model proves that the PTC produces a maximum thermal power of about 70 and 115 KW in winter and summer respectively. It proved also that the designed plant collect thermal energy ranges from 640 KWh to 1186 KWh during the first six months from Jan to Jun, respectively. The plant can produce also daily electric energy range from 69-85.5 KWh during the same period. © 2014 IEEE.

Author Keywords
absorption chiller; Organic Rankine Cycle; parabolic trough collector; solar thermal plant

Document Type: Conference Paper
Source: Scopus

Al-Quraishy, S.[a] , Sherif, N.E.[b] , Metwaly, M.S.[a b] , Dkhil, M.A.[a c]
Berberine-induced amelioration of the pathological changes in nutrient's homeostasis during murine intestinal eimeria papillata infection
(2014) *Pakistan Journal of Zoology*, 46 (2), pp. 437-445. Cited 3 times.

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Abstract
The current work aimed to study the ameliorative effect of berberine on the induced pathological changes in nutrient's homeostasis in mice infected with Eimeria papillata. Mice were randomly divided into three groups. The first group represents the control non-infected animals. Second and third groups were orally infected with 1.5×103 sporulated E. papillata oocysts. The 3rd group was treated with a daily dose (10 mg/kg) of berberine chloride solution for five successive days. All animals were sacrificed on day 5 p.i.. E. papillata infection induced a state of disturbance in nutrient homeostasis. Blood glucose levels and total proteins were elevated with concurrent decrease in level of

carbohydrates and soluble proteins in jejunum of mice. Also, infection induced a hyperlipidemic status as shown from the increase in triglycerides, total lipids, total cholesterol, high density lipoprotein cholesterol (LDL) with the mutual decrease in high density lipoprotein cholesterol (HDL) and phospholipids. Also, E. papillata caused marked disturbance in blood metal ion concentrations. Both ferrous and selenium ion levels were decreased, while sodium and potassium ion concentrations were increased. Berberine treatment of infected mice with E. papillata showed a great enhancement in nutrient homeostatic status and also reduced blood glucose level and restored jejunal carbohydrate content. In addition, berberine exerted hypolipidemic effect on the increased fractions of carbohydrates and lipids. Finally, berberine showed a marked enhancement in the levels of altered blood metal ions by the infection. Palm pollen grains or their extracts could be used within food mixtures or water to correct the induced metabolic disturbance and growth depression associated with the intestinal coccidial infections. Copyright 2014 Zoological Society of Pakistan.

Author Keywords
Berberine; Coccidiosis; Eimeria papillata; Impaired nutrients; Mice

Document Type: Article
Source: Scopus

Rashad, A.S.[a] , Sadek, R.A.[b] , El-Sherif, S.A.A.[c]
Computer assisted surgery and therapy (CAST) for breast masses based on mammography
(2014) *National Radio Science Conference, NRSC, Proceedings*, art. no. 6835097, pp. 355-362.

DOI: 10.1109/NRSC.2014.6835097

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Abstract
Breast cancer represents the most frequently diagnosed cancer in women. Mammography is the most commonly method for early detection of masses related to breast cancer. Correlation of information from multiple-view mammograms improves the performance of diagnosis by radiologists or by computer assisted systems. Detecting the location of masses accurately is highly important for radiologist to classify masses, for the surgeon to help in ease the procedure of an accurate surgery and in radio therapy process for less and efficient dose. In this paper, CAST is developed to accurately locate abnormal masses by quarter and clock segments. CAST will replace the manual localization method. The nipple is used as a reference point in localization process. A new simple nipple detection method is also proposed. The proposed CAST is examined on a new local database which was tested and classified by experts. The methodology achieved a sensitivity of 96% and specificity 73.33%. © 2014 IEEE.

Author Keywords
CAD; Cancer; Mammography

Document Type: Conference Paper
Source: Scopus

Elaraby, A.E.[a] , Sadek, R.A.[b] , Youssif, A.A.A.[b]
Content aware multi-metricrouting for MPEG-4 video over IEEE 802.11e wireless mesh networks using cross-layer approach
(2014) *National Radio Science Conference, NRSC, Proceedings*, art. no. 6835081, pp. 236-243.

DOI: 10.1109/NRSC.2014.6835081

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Abstract
Video streams over wireless channel require stringent QoS constraints, such as low packet loss and latency. It becomes the main challenge to design a network to achieve these QoS objectives. This paper proposes a cross-layer approach to enhance quality of MPEG-4 video stream transmission over an IEEE 802.11e wireless mesh networks. Most of the conventional routing schemes follow the philosophy of 'shortest path', where hop count is the metric to determine the best route but shortest-path routing schemes repeatedly use congested nodes and links, causing heavy loads, frequent link failures and interface queue overflow. In this paper Cross-layer approach among application layer, network layer and MAC layer has been proposed to discover the best QoS route to forward the highest priority video frames. The proposed modified protocol adds the QoS parameter ETX metric to hop count as a new routing metric to select the best QoS route during the route discovery phase. Proposed approach is compared with already

developed schemes. Simulation results using NS2 Simulator toolgive high performance under light and heavy loads network traffic. © 2014 IEEE.

Author Keywords
AODV; AOMDV; Cross layer optimization; ETX; IEEE 802.11e; MPEG-4 video compression; QoS

Document Type: Conference Paper
Source: Scopus

Ferdows, M.[a] , Chapal, S.M.[b] , Afify, A.A.[c d]
Boundary layer flow and heat transfer of a nanofluid over a permeable unsteady stretching sheet with viscous dissipation
(2014) *Journal of Engineering Thermophysics*, 23 (3), pp. 216-228. Cited 1 time.

DOI: 10.1134/S1810232814030059

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Abstract
A numerical study of the boundary layer flow past unsteady stretching surface in nanofluid under the effects of suction and viscous dissipation is investigated. The model used for the nanofluid incorporates the effects of Brownian motion and thermophoresis. A similarity solution is presented, which depends on the unsteadiness parameter A, Eckert number Ec, ζ suction or injection parameter, Prandtl number Pr, Lewis number Le, Brownian motion number Nb, and thermophoresis number Nt. The governing partial differential equations were converted to nonlinear ordinary differential equations by using a suitable similarity transformation, which are solved numerically using the Nactsheim-Swigert shooting technique together with Runge-Kutta six-order iteration scheme. The accuracy of the numerical method is tested by performing various comparisons with the previously published work, and the results are found to be in excellent agreement. Numerical results are presented both in tabular and graphical forms illustrating the effects of these parameters on thermal and nanoparticle volume fraction boundary layers. The thermal boundary layer thickens with a rise in the local temperature as the Brownianmotion, thermophoresis, and convective heating each intensify. © 2014 Pleiades Publishing, Ltd.

Document Type: Article
Source: Scopus

Ebead, U.[a] , Saeed, H.[b]
Flexural and interfacial behavior of externally bonded/ mechanically fastened fiber-reinforced polymer-strengthened reinforced concrete beams
(2014) *ACI Structural Journal*, 111 (4), pp. 741-751.

DOI: 10.14359/51686628

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Abstract
The determination of structural behavior requires advanced numerical methods, of which results are substantiated by credible experimental findings. This research aims to create precise finite element models for fiber-reinforced polymer (FRP)-strengthened concrete beams. The models are developed to assess the flexural and interfacial types of behavior of beams strengthened using three different schemes; namely, externally bonded (EB), mechanically fastened (MF), and hybrid EB/MF FRP systems. The interfacial behavior between the EB, MF, and hybrid EB/MF FRP and the concrete is accounted for using specially developed interface elements. A user-defined subroutine for the microplane constitutive law for concrete is incorporated in the model. Results are presented in terms of the ultimate load capacities, load-deflection relationships, and interfacial stress distributions. Numerical results are validated against published experimental results, and show reasonable agreement. Models for hypothetical cases are created to enrich the discussion on the interfacial stress distributions. © 2014, American Concrete Institute.

Author Keywords
Externally bonded; Fiber-reinforced polymer; Finite element analysis; Hybrid; Interfacial behavior; Mechanically fastened; Reinforced concrete beams; Strengthening

Document Type: Article

Source: Scopus

Atta, A.M.[a b] , El-Mahdy, G.A.[a c] , Al-Lohedan, H.A.[a] , Ezzat, A.O.[a]
Synthesis and application of hybrid polymer composites based on silver nanoparticles as corrosion protection for line pipe steel
(2014) *Molecules*, 19 (5), pp. 6246-6262. Cited 4 times.

DOI: 10.3390/molecules19056246

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Abstract
A facile method was developed to synthesize in high yield dispersed silver nanoparticles (AgNPs) with small particle sizes of less than 10 nm. Silver nitrate was reduced to silver nanoparticles by p-chloroaniline in the presence of polyoxyethylene maleate 4-nonyl-2-propylene-phenol (NMA) as a stabilizer. The produced AgNPs were used to prepare hybrid polymer based on N-isopropylacrylamide (NIPAm), 2-Acrylamido-2-methylpropane sulfonic acid (AMPS), N,N-methylenebisacrylamide (MBA) and potassium persulfate (KPS) using a semi-batch solution polymerization method. The prepared AgNPs and hybrid polymer were characterized by Fourier transform infrared (FTIR) spectroscopy, X-ray diffraction (XRD) patterns and transmission electron microscopy (TEM). The corrosion inhibition activity of the AgNPs and hybrid polymer towards steel corrosion in the presence of hydrochloric acid has been investigated by polarization and electrochemical impedance spectroscopy (EIS) methods. Polarization measurements indicate that the AgNPs and hybrid polymer acts as a mixed type-inhibitor and the inhibition efficiency increases with inhibitor concentration. The results of potentiodynamic polarization and EIS measurements clearly showed that the inhibition mechanism involves blocking of the steel surface by inhibitor molecules via adsorption. © 2014 by the authors.

Author Keywords
Corrosion inhibitor; Electrohemical; N-isopropylacrylamide and 2-Acrylamido-2-methylpropane sulfonic acid copolymer; Nanogels; Silver hybrid polymer; Silver nanoparticles

Document Type: Article
Source: Scopus

Khan, A.A.[a] , Nasr, E.A.[a b] , Al-Ahmari, A.[a c] , Abdulhameed, O.[a] , Abidi, M.H.[c]
An integrated CAPP/CAFD/CAIP system for prismatic parts
(2014) *IIE Annual Conference and Expo 2014*, pp. 871-880.

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Abstract
The computer aided design/computer aided manufacturing (CAD/CAM) linkage has greatly shortened the period between design and manufacture and has greatly expanded the scope of production processes. In this paper, a computer aided process planning/computer aided fixture design/computer aided inspection planning (CAPP/CAFD/CAIP) system is proposed for CAD/CAM integration. The object oriented approach is applied for integration and automation of CAPP/CAFD/CAIP modules. The proposed system is suitable for 3-D manufacturing parts that are created by using a solid modeling package. The STEP AP 203 E2 is used as input to the integrated system. The CAPP module contains data extraction, feature recognition and process planning files. The setup plans are created separately for CAFD and CAIP. The modular fixture design is established from the manufacturing setup plan using search strategy and graphical database. The CAIP module then produced inspection plan and Dimensional Measuring Interface Standard (DMIS) code for coordinate measuring machine (CMM). A case study is presented to illustrate the developed methodology.

Author Keywords
CAD/CAM; CAFD; CAIP; CAPP; CMM

Document Type: Conference Paper
Source: Scopus

Altameem, T.[a] , Amoon, M.[a b] , Sayed, M.E.L.[c] , Habashy, S.[c] , Adawy, M.E.L.[c]

Study of the whole body vibrations in Cairo different transportation systems
(2014) *Information (Japan)*, 17 (9B), pp. 4703-4714.

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[c] Dept. of Communications, Electronics and Computers, Faculty of Eng., Helwan University, Cairo, Egypt

Abstract
Whole body vibration is a source of health hazards when it exceeds certain limits or certain doses. Transportation systems could be a dangerous source of such whole body vibration hazards especially when it exceeds certain limits and certain dose due to either a bad transportation means or due to bad road conditions. This study concentrate on studying different transportation systems in Cairo (subway or metro, public busses, and private cars) in order to estimate how safe they are for passengers. High magnitude, or doses, of whole-body vibration formed by such transportations may cause a low back pain, a muscular and bone system disorder of the neck and back. After daily exposure over a number of years, these whole-body vibrations can result in a number of health disorders affecting the entire body including permanent harms to internal organs, muscles, joints and bone structure. The measured data are analyzed according to ISO 2631-1 and ISO 2631-5 standards mat define rules, limits, and doses of these vibrations. The results show high levels of vibration and adverse health effects on the lumbar spine. It is found that subway (Metro) passengers were identified to have a high risk of exposure more than bus and car passengers. The main conclusion from this study is that musculoskeletal symptoms and disorders of low back and in the neck and upper extremities, among passengers of the selected transport may result with long-term exposures to these systems. This should raise a red flag to the daily users or the drivers of these systems to protect themselves from such hazards, and to the authorities to do something to handle this problem. © 2014 International Information Institute.

Author Keywords
Whole body vibration; Whole body vibration dose; Whole body vibration hazards; Whole body vibration standards

Document Type: Article
Source: Scopus

Abouel-Seoud, S.A.
Assessment of passenger ride comfort during vertical vibration of mid-size saloon and off-road vehicles on asphalt roads
(2014) *International Journal of Vehicle Structures and Systems*, 6 (1-2), pp. 39-46.

DOI: 10.4273/ijvss.6.1-2.06

Automotive Engg. Dept., Helwan University, Cairo, Egypt

Abstract
Ride comfort in road vehicles is related to vehicle vibration levels and the perception of passenger fatigue. In this study, vibration in vertical direction on the seat and floor are measured to characterise the ride comfort based on standard formulae and frequency analysis. A mid-size saloon vehicle and an off-road vehicle are driven on smooth, spalled and coarse asphalt road surfaces. To assess the vertical vibrations transmitted to the passengers, vibration dose values, Kurtosis, frequency response functions and power spectral densities of the compartment recorded signals were evaluated. Seat effective amplitude transmissibility value based on vibration RMS and vibration dose values were also evaluated. The results indicate that the vibration dose value increases in proportional to the vehicle speed and road roughness. © 2014. MechAero Foundation for Technical Research & Education Excellence.

Author Keywords
Automotive seat; Kurtosis; Power spectral density; Ride comfort; Vibration dose values

Document Type: Article
Source: Scopus

Ansari, Z.A.[a] , Khan, A.A.[a b] , Fouad, H.[c d] , Athar, T.[e] , Ansari, S.G.[a]
Application of platinum doped MnTiO3 as electrochemical cholesterol sensor
(2014) *Sensor Letters*, 12 (8), pp. 1203-1207.

DOI: 10.1166/sl.2014.3309

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Abstract
A feasibility study of platinum doped MnTiO3 films, for cholesterol sensing is reported here. Initially, Mn-doped TiO2 was prepared using aqueous sol-gel method followed by doping with platinum. Morphological observation revealed that synthesis resulted in almost spherical particles of ~20-30 nm size. X-ray diffraction, UV-Vis, and FTIR results indicated a formation of mixed phases of Mn, TiO2 and Pt. Films of these powders were screen printed over a pre-printed gold electrode on glass epoxy substrate (SPE). Later COx was immobilized on the films by drop casting method. Electrochemical characteristics of the sensors were studied at various cholesterol concentrations (1 mg/dL to 200 mg/dL). It is realized that anodic peak current increases linearly as a function of cholesterol concentration. Doping with Pt resulted in enhanced sensitivity due to the catalytic reaction of Pt.

Author Keywords
Cholesterol; Electrochemical cholesterol sensor; Nanostructure; Rare earth metal; Titanium oxide

Document Type: Article
Source: Scopus

El Semary, N.A.
Gene mining: A case study on putative iron-responsive cyanobacterial genetic locus using in silico bioinformatics, ecophysiology and expression-combined approach
(2014) *Bangladesh Journal of Botany*, 43 (1), pp. 79-86.

Department of Botany and Microbiology, Faculty of Science, Helwan University, Ain Helwan Campus, Ain Helwan, Helwan 11795, Egypt

Abstract
Gene mining is an advanced approach used for annotating genetic loci and assigning them a putative function. In that regard, a Phormidium-like cyanobacterium was initially tested positive for its ability to produce iron-chelators. To mine for the putative genetic locus associated with these iron-chelators, a combined bioinformatics, ecophysiological, molecular and expression approach was applied. In order to test for the influence of iron limitation/starvation on the putative gene(s) involved, different levels of iron limitation/starvation were applied and the expression was quantified using real-time PCR. Mild iron limitation induced the expression of this iron-responsive locus at the beginning of iron stress but no detectable levels of expression were found as the stress continued. This possibly indicates the "switch off" of this putative genetic locus under conditions of extreme iron starvation. This locus is most likely involved in the synthesis of a membrane-associated protein that mediates iron transport or binding across membrane.

Author Keywords
Bioinformatics; Ecophysiology; In silico; Iron; Phormidium-like cyanobacterium

Document Type: Article
Source: Scopus

Abd-Allah, A.M.A.[a b] , Ahmed, A.H.[a c] , El-Fakharani, A.[a d] , El-Sawy, E.K.[a e] , Ali, K.A.[a]
Fatima suture: A new amalgamation zone in the western Arabian Shield, Saudi Arabia
(2014) *Precambrian Research*, 249, pp. 57-78.

DOI: 10.1016/j.precamres.2014.05.002

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Abstract
We describe a new amalgamation zone between Jiddah and Asir juvenile arc terranes in the western Arabian Shield. Ophiolitic rocks in this zone were deformed by a NE-SW oriented belt of opposite-verging overturned folds and thrust faults, whereas two granitic complexes intruded mainly through its axial uplift. Chemical characteristics of these rocks indicate that they formed in an arc suprasubduction zone setting. The amalgamation between Jiddah and Asir terranes is explained mainly in terms of two events followed by two more events related to convergence between eastern and western Arabian superterranes. NW-SE shortenings and dextral transpression of the first three events

induced more structural elements and tectonic fabrics than those developed during the youngest shortening event. Tectonic fabrics differentiate between the stress orientations during the oldest deformation events. Variations in attitudes and shear senses throughout these structural and tectonic elements support strain partitioning. Deformation related to assembly of the Jiddah and Asir terranes started during ophiolite emplacement at 812. Ma and ended before the deposition of the post-amalgamation Fatima basin. A northwestward shortening inverted this basin and developed NW-verging thrust faults and folds. Tectonic evolution of Fatima suture zone is correlated with the major tectonic settings of the Arabian Shield.

Author Keywords
Arabian-Nubian shield; Fatima shear zone; Folds-thrust belt; Gondwana; Terranes amalgamation

Document Type: Article
Source: Scopus

Badr, A.[a] , El-Shazly, H.H.[b] , Halawa, M.[c]
Cytological effects of gamma radiation and its impact on growth and yield of M1 and M2 plants of cowpea cultivars
(2014) *Cytologia*, 79 (2), pp. 195-206.

DOI: 10.1508/cytologia.79.195

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Abstract
This study aimed at investigating the changes imposed by gamma radiation in mitotic activities and the chromosomes as well as the vegetative criteria and yield of M1 and M2 plants of five cowpea cultivars. Seeds of cultivars (Kaha 1, Dokki 331, Azmerly, Cream 7 and Giza 6) were exposed to levels of γ-radiation ranging from 50 to 300 Gy. Low levels of γ-radiation enhanced mitotic activity and resulted in significant increase in chromosomal abnormalities in the root tip cells of M1 and M2 plants. The percentage of abnormalities varied among the varieties and was generally lower in M2 plants compared to M1 plants. The 50-Gy and 100-Gy doses of γ-radiation induced positive effects on plant growth and yield of M1 plants, while the 300 Gy of γ-radiation caused detrimental damage on three cultivars (Dokki 331, Azmerly and Cream 7), which failed to grow to flowering. More pronounced improvements in growth and yield were recorded in M2 plants; the increase in growth and yield was often associated with increased mitotic activity and the occurrence of chromosomal abnormalities, indicating that γ-radiation-induced chromosomal abnormalities are not likely to be associated with negative effects on growth or yield. Based on the calculated yield index, 50 Gy of γ-radiation may be used to improve the yield of three varieties (Dokki 331, Azmerly and Cream 7) and the 100 Gy dose may be recommended for improving the yield of the two varieties, Kaha 1 and Giza 6.

Author Keywords
Chromosome; Cowpea; Gamma radiation; Growth; Mitotic activity; Yield

Document Type: Article
Source: Scopus

Mohamed, M.S., Fathallah, S.S.
Pyrroles and fused pyrroles: Synthesis and therapeutic activities
(2014) *Mini-Reviews in Organic Chemistry*, 11 (4), pp. 477-507. Cited 4 times.

Helwan University, Department of Pharmaceutical Organic Chemistry, Ein-Helwan, Cairo, Egypt

Abstract
For several decades, interest in pyrrole derivatives increased due to their pharmaceutical importance, such as antimicrobial, anti-inflammatory, analgesic, anti-tumor, anti-epileptic, anti-viral, anti-hypertensive, and anti-diabetic agents. These huge therapeutic applications have motivated new efforts in searching for novel derivatives with improved biological activity and diverse applications in pharmaceutical industry. Motivated by the importance of this system, and in continuation of our research efforts, we have tried to highlight aspects reported on the chemistry and biological activity of pyrrole and its fused derivatives during the past years (till 2012).

Author Keywords
Biological activities and drugs; Fused pyrrole; Pyrrole; Pyrrolopyrimidine; Synthesis

Document Type: Article
Source: Scopus

Khalil, M.[a b] , Furness, D.N.[a] , Zholobenko, V.[c] , Hoole, D.[a]
Effect of tapeworm parasitisation on cadmium toxicity in the bioindicator copepod, Cyclops strenuus
(2014) *Ecological Indicators*, 37 (PART A), pp. 21-26.

DOI: 10.1016/j.ecolind.2013.09.033

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Abstract
The ubiquitous nature of crustaceans has meant that they have been considered as useful bioindicators of water quality. Although crustaceans e.g. Cyclops strenuus serve as intermediate hosts to many metazoan parasites, the effect of infection on toxicity of heavy metal pollution has not been established. The interaction between the procercoid stage of the tapeworm, Bothriocephalus acheilognathi, and its copepod host when exposed to cadmium toxicity was investigated. Exposure to 100 μg Cd/l caused a significant ($P < 0.001$) decrease in copepod survival of crustaceans exposed to combined parasite infection and metal treatment, compared with all other groups which had been exposed to these stressors individually. This effect was not dependent on infection intensity. Although cadmium could not be detected by EDXMA, optical emission spectroscopy revealed Cd accumulation in both treated uninfected and infected copepods. Overall, the data suggest that parasitic infection is an important consideration in determining the suitability of a bioindicator of water pollution.

Author Keywords
Bothriocephalus acheilognathi; Cadmium; Cyclops strenuus

Document Type: Article
Source: Scopus

Elsarnagawy, T.[a] , Farrag, M.[b] , Haueisen, J.[c] , Abulaal, M.[a d] , Mahmoud, K.[e] , Fouad, H.[f g] , Ansari, S.G.[h]
A wearable wireless respiration rate monitoring system based on fiber optic sensors
(2014) *Sensor Letters*, 12 (9), pp. 1331-1336. Cited 1 time.

DOI: 10.1166/sl.2014.3367

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Abstract
In this article a portable and wearable wireless system to measure the respiratory rate and signal using embedded fiber Bragg grating (FBG) based optical sensor into textile (nylon) is realized. The measured data is analyzed and compared with the output data of a commercial wired piezoelectric crystal film respiratory belt from Grass Technology (FBGT-200) as a reference for the sake of validation. The results showed that the resultant average respiratory rate and the signal correlation coefficients between the FBGT-200 and the reference respiratory belt was 0.99 and 0.72 respectively. A variation in correlation coefficient for respiratory signal is found which is related to the variation in volunteer respiration pattern. The developed fiber optic based monitoring system has been tested on ten volunteers of different chest circumferences.

Author Keywords
Fiber Bragg Grating; Fiber-optic; Heartbeat rate; Monitoring systems; Respiration rate; Sensors; Vital signs; Wireless

Document Type: Article
Source: Scopus

Khalifa, N.M.[a b] , Mohamed, M.S.[c] , Zaki, M.E.[d] , Al-Omar, M.A.[a] , Zohny, Y.M.[c]
Synthesis, characterization and pharmacological investigations of some novel heterocyclic derivatives incorporating pyrene and sugar moieties
(2014) *Research on Chemical Intermediates*, 40 (4), pp. 1565-1574.

DOI: 10.1007/s11164-013-1061-z

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Abstract
A series of substituted pyrene derivatives 2-15 incorporated heterocyclic and sugar moieties were synthesized and evaluated as antiviral activities using 1-acetylpyrene as a starting material. The structure assignment of the new compounds was based on chemical and spectroscopic evidence. The detailed synthesis, spectroscopic data and pharmacological activities of the synthesized compounds were reported. © 2013 Springer Science+Business Media Dordrecht.

Author Keywords
Anti-HIV-1 activities; Nucleoside analogues; Pyrene derivatives

Document Type: Article
Source: Scopus

Elgemeie, G.H.[a] , Sayed, S.H.[a] , Jones, P.G.[b]
Erratum: (E)-3-Amino-4-(2-phenylhydrazinylidene)-1H-pyrazol-5(4H)-one (Acta Crystallographica Section E: Structure Reports Online (2013) E69 (o187))
(2014) *Acta Crystallographica Section E: Structure Reports Online*, 70 (1), pp. e1. Cited 1 time.

DOI: 10.1107/S160053681303403X

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Document Type: Erratum
Source: Scopus

Soliman, N.F.[a b] , Albagory, Y.[c d] , Elbendary, M.A.M.[e] , Al-Hanafy, W.[c f] , El-Rabaie, E.-S.M.[c] , Alshebeili, S.A.[g] , El-Samie, F.E.A.[c h]
Chaotic Interleaving for Robust Image Transmission with LDPC Coded OFDM
(2014) *Wireless Personal Communications*, 79 (3), pp. 2141-2154. Cited 1 time.

DOI: 10.1007/s11277-014-1977-7

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Abstract
This paper presents a new technique for progressive image transmission over low-density parity-check coded orthogonal frequency division multiplexing (LDPC-OFDM) system. This technique adopts chaotic Baker map to improve the performance and reduce the peak-to-average power ratio (PAPR) of the OFDM signal. It helps improving

the error resilient ability and also enhancing the efficiency of progressive image transmission over frequency selective fading channels. The proposed technique can effectively resist the fading impact of the frequency selective channels using simple frequency domain equalization. The proposed technique also utilizes the set partitioning in hierarchical trees as a source coding algorithm for the transmitted images. The distinctive feature of the proposed technique is that the transmitted data sequence has less data correlation, which leads to minimizing the PAPR. Simulation results show that the proposed technique improves the visual quality of the received images and reduces the PAPR of the OFDM signal as well. © 2014, Springer Science+Business Media New York.

Author Keywords
Chaotic maps; Image transmission; OFDM; PAPR reduction

Document Type: Article
Source: Scopus

Fadel, I.[a b] , Kerle, N.[a] , van der Meijde, M.[a]
3-D object-oriented image analysis of geophysical data
(2014) *Geophysical Journal International*, 198 (1), pp. 357-365. Cited 1 time.

DOI: 10.1093/gji/ggu139

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Abstract
Geophysical data are the main source of information about the subsurface. Geophysical techniques are, however, highly non-unique in determining specific physical parameters and boundaries of subsurface objects. To obtain actual physical information, an inversion process is often applied, in which measurements at or above the Earth surface are inverted into a 2- or 3-D subsurface spatial distribution of the physical property. Interpreting these models into structural objects, related to physical processes, requires a priori knowledge and expert analysis which is susceptible to subjective choices and is therefore often non-repeatable. In this research, we implemented a recently introduced object-based approach to interpret the 3-D inversion results of a single geophysical technique using the available a priori information and the physical and geometrical characteristics of the interpreted objects. The introduced methodology is semi-automatic and repeatable, and allows the extraction of subsurface structures using 3-D object-oriented image analysis (3-D OOA) in an objective knowledge-based classification scheme. The approach allows for a semi-objective setting of thresholds that can be tested and, if necessary, changed in a very fast and efficient way. These changes require only changing the thresholds used in a so-called ruleset, which is composed of algorithms that extract objects from a 3-D data cube. The approach is tested on a synthetic model, which is based on a priori knowledge on objects present in the study area (Tanzania). Object characteristics and thresholds were well defined in a 3-D histogram of velocity versus depth, and objects were fully retrieved. The real model results showed how 3-D OOA can deal with realistic 3-D subsurface conditions in which the boundaries become fuzzy, the object extensions become unclear and the model characteristics vary with depth due to the different physical conditions. As expected, the 3-D histogram of the real data was substantially more complex. Still, the 3-D OOA-derived objects were extracted based on their velocity and their depth location. Spatially defined boundaries, based on physical variations, can improve the modelling with spatially dependent parameter information. With 3-D OOA, the non-uniqueness on the location of objects and their physical properties can be potentially significantly reduced. © The Authors 2014. Published by Oxford University Press on behalf of The Royal Astronomical Society.

Author Keywords
Africa; Continental tectonics: extensional; Cratons; Image processing; Seismic tomography

Document Type: Article
Source: Scopus

Ghallab, Y.H.[a b d] , Mostafa, H.[b c d] , Ismail, Y.[b d]
A new current mode implementation of a balanced-output-signal generator
(2014) *Analog Integrated Circuits and Signal Processing*, 81 (3), pp. 751-762.

DOI: 10.1007/s10470-014-0419-5

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Abstract
This paper presents a new current mode implementation of a balanced-output-signal generator that utilizes an operational floating current conveyor (OFCC) as a basic building block. The OFCC, as a current-mode device, shows flexible properties with respect to other current or voltage-mode circuits. The advantages of the proposed current mode balanced-output-signal generator (CMBG) are threefold. Firstly, it offers an accurate phase and amplitude performance over a wide bandwidth without requiring matched resistors. Secondly, it has a differential input and it can provide either current or voltage outputs. Finally, the proposed CMBG circuit offers a significant improvement in accuracy compared to other CMBGs based on the current conveyor. The proposed CMBG has been analyzed, simulated and experimentally tested. The experimental results verify that the proposed CMBG outperforms existing CMBGs in terms of the number of basic building blocks used and accuracy. © 2014, Springer Science+Business Media New York.

Author Keywords
Balanced amplifiers; Current conveyor; Current mode circuits; Instrumentation; Operational amplifier; Operational floating current conveyor

Document Type: Article
Source: Scopus

Abdelaziz, T.H.S.[a] [b]
Parametric approach for eigenstructure assignment in descriptor second-order systems via velocity-plus-acceleration feedback
(2014) *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, 136 (4), art. no. 044505, .

DOI: 10.1115/1.4026876

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Abstract
In this article, the problem of eigenstructure in descriptor matrix second-order linear systems using combined velocity and acceleration feedbacks is considered. This is promising for better applicability in many practical applications where the velocity and acceleration signals are easier to obtain than the proportional and velocity ones. First, the necessary and sufficient conditions which ensure solvability are derived. Then the parametric expressions of gain controller and eigenvector matrix are formulated. The proposed approach can offer all the degrees of freedom and has great potential in practical applications. The solution is general and can be applied when mass matrices that can be either singular or nonsingular. In this framework, infinite eigenvalues for descriptor systems are relocated by finite ones. Copyright © 2014 by ASME.

Author Keywords
Active control; Eigenstructure assignment; Feedback stabilization; Second-order descriptor linear systems; Velocity-plus-acceleration feedback

Document Type: Article
Source: Scopus

Atta, A.M.[a] [b] , El-Mahdy, G.A.[a] [c] , Al-Lohedan, H.A.[a] , Ezzat, A.O.[a]
Preparation of crosslinked amphiphilic silver nanogel as thin film corrosion protective layer for steel
(2014) *Molecules*, 19 (7), pp. 10410-10426. Cited 5 times.

DOI: 10.3390/molecules190710410

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Abstract
Monodisperse silver nanoparticles were synthesized by a new developed method via reaction of AgNO3 and oleic acid with the addition of a trace amount of Fe3+ ions. Emulsion polymerization at room temperature was employed to prepare a core-shell silver nanoparticle with controllable particle size. N,N'-methylenebisacrylamide (MBA) and potassium peroxydisulfate (KPS) were used as a crosslinker, and as redox initiator system, respectively for crosslinking polymerization. The structure and morphology of the silver nanogels were characterized by Fourier transform infrared spectroscopy (FTIR), transmission and scanning electron microscopy (TEM and SEM). The effectiveness of the synthesized compounds as corrosion inhibitors for steel in 1 M HCl was investigated by various

electrochemical techniques such as potentiodynamic polarization and electrochemical impedance spectroscopy (EIS). Monolayers of silver nanoparticle were self- Assembled on the fresh active surface of the steel electrode and have been tested as a corrosion inhibitor for steel in 1 M HCl solution. The results of polarization measurements showed that nanogel particles act as a mixed type inhibitor.

Author Keywords
Amphiphilic; Corrosion inhibitors; Nanogel; Silver nanoparticles; Surface tension

Document Type: Article
Source: Scopus

Moneim, A.A.E.
Azadirachta indica attenuates cisplatin-induced neurotoxicity in rats
(2014) *Indian Journal of Pharmacology*, 46 (3), pp. 316-321.

DOI: 10.4103/0253-7613.132182

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Abstract
Objective: The objective of this study is to investigate the neuroprotective effects of Azadirachta indica leaves against cisplatin (CP)-induced neurotoxicity. Materials and Methods: Female Wistar rats were treated with vehicle (control); a single intraperitoneal 5 mg/kg CP (CP group); neem leaves (orally 500 mg/kg) for 5 and 10 days, N5 and N10 groups, respectively; neem leaves (500 mg/kg) for 5 days after CP injection, collagenous protein nitrogen (CPN) group; neem leaves (500 mg/kg) for 5 days before CP injection, noncollagenous protein group and neem leaves in a dose of 500 mg/kg for 5 days before and after CP injection, noncollagenous protein nitrogen group. Rats were sacrificed 5 days after CP injection to determine neural lipid peroxidation (LPO), nitric oxide (NO), and glutathione (GSH) levels. The neuronal antioxidant enzymes were evaluated in brain homogenates. Results: CP injection increased LPO, NO levels and decreased GSH level, whereas neem reversed these effects. Morphological brain damage and apoptosis induction were apparent in the CP group. In the CPN group, the histological damage and apoptosis induction caused by CP was improved, whereas morphological findings of neem before and after CP injection implied a well preserved brain tissue. No changes, in biochemical parameters were observed with neem treated groups. Conclusion: This study suggests that methanolic extract of neem leaves may be of therapeutic benefit when used with CP.

Author Keywords
Apoptosis; Azadirachta indica; Cisplatin; Neurotoxicity; Rats

Document Type: Article
Source: Scopus

Tawakkol, S.M.[a] , Fahmyhayam, N.M.[b] , Lotfy, H.M.[c] , Shehata, A.E.-A.[c]
Stability indicating chromatographic methods for the determination of pharmaceutical dosage forms containing calcium dobesilate in the presence of its interfering substances
(2014) *International Journal of Pharmacy and Pharmaceutical Sciences*, 6 (11), pp. 123-130.

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[c] Analytical Chemistry Department, Cairo University, Egypt

Abstract
Objective: Two simple, accurate and precise chromatographic methods were developed for the determination of calcium dobesilate in the presence of its interfering substances as its degradation product and/or impurity hydroquinone in pharmaceutical dosage forms with lidocaine hydrochloride alone or in combination with dexamethasone acetate.

Methods: The first method is HPTLC-spectrodensitometric one using benzene: methanol: ethyl acetate: ammonia: sodium lauryl sulphate (7: 2.1: 2.5: 0.1: 0.05 v/v/v/v/w) as a developing system and scanned at 220 nm. Second one is an HPLC method where the mixture was separated on an ODS-3 C18 column with flow rate 1.5 ml/min and the mobile phase was phosphate buffer: acetonitrile (35:65 v/v) (adjusted to pH 3.4 with o-phosphoric acid), scanned at 220 nm.

Results: The robustness of the method was determined to assess the effect of small but deliberate variation of the chromatographic conditions on the determination of cited drugs in a presence of interfering substances. Robustness was determined by changing the mobile phase flow rate to 0.5, 1, and 1.5 mLmin-1 pH to 3.5, 4, and 5, and the concentration of acetonitrile in the mobile phase to 60% and 80%. The proposed methods were checked using laboratory-prepared mixtures and were successfully applied for the analysis of pharmaceutical formulations containing the cited drugs and were validated via ICH guidelines.

Conclusion: The proposed methods could be used for the routine analysis of the cited drugs in their pharmaceutical formulation in quality control laboratories.

Author Keywords
Calcium-dobesilate; Dexamethasone acetate; HPTLC-spectrodensitometry; Lidocaine hydrochloride; RP-HPLC

Document Type: Article
Source: Scopus

Soliman, J., Emara, A., Hussien, A.
Dual fuel concept for an innovative co-axial burner, thermal characteristics and combustion performance
(2014) *ASME International Mechanical Engineering Congress and Exposition, Proceedings (IMECE)*, 8B, .

DOI: 10.1115/IMECE2014-39480

Mechanical Power Engineering Department, Faculty of Engineering-Mataria, Helwan University, Cairo, Egypt

Abstract
The demand for industrial burners and gas turbine engines with reduced emission levels, stable combustion conditions and low specific fuel consumption is the goal at the past two decades. A significant challenge is to develop a practical dual fuel corresponded with these requirements in the way to produce an efficient combustion and to comply with environmental concerns and government regulations. The investigated burner consists of eight gaseous jets arranged in two consecutively interacted equal lotus bundles in the axial direction downstream of the flow. These eight jets can be easily moved and directed to penetrate the combustion reaction zone at different axial positions with four inclination angles at the burner axis (θ= 0°, 30°, 45°, and 60°). This axial motion is easily performed by adjusting few screws mounted on the burner end in the way to facilitate the jet interaction inside the surrounded combustion air. The present work aims to demonstrate the flame structure, inflame temperature, and stack emissions at different liquid fuel ratio, gaseous fuel injection locations and jet inclination angles. It is noticed that, the two different fuels at different interaction locations have an influence on the pollutant emissions and temperature as well as the combustion efficiency. In addition, increasing the gaseous fuel reduces the flame size and increases the flame temperature. Copyright © 2014 by ASME.

Author Keywords
Combustion aerodynamics; Combustion stability; Dual fuel burner

Document Type: Conference Paper
Source: Scopus

Morsy, F.A.[a] , El-Sherbiny, S.[a] , Hassan, M.S.[b] , Mohammed, H.F.[b]
Modification and evaluation of Egyptian kaolinite as pigment for paper coating
(2014) *Powder Technology*, 264, pp. 430-438. Cited 4 times.

DOI: 10.1016/j.powtec.2014.05.040

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Abstract
The modification of low quality Egyptian kaolinite to be acceptable as a pigment for paper coating was reported in this work. Sedimentation, chemical bleaching, preparation of organo kaolinite and preparation of nano-kaolinite were the modification methods used in this study. The modified pigments were characterized using X-ray fluorescence, an X-ray diffractometer, Fourier-transform infrared spectroscopy and scanning electron microscopy. The original and modified kaolinites were applied in paper coating mixture. The results of XRF analysis showed that Fe2O3 impurities reduced by using sodium dithionite from 0.41 to 0.25 (wt %). XRD data revealed shifting of basal space of kaolinite from 7.14 to 11.8Å with an intercalation ratio of 80% upon grinding with urea for 5h. Meanwhile, IR spectra showed that NH-CO molecule (refer to urea molecule) exists in the intercalated kaolinite. The characteristic peak of kaolinite completely disappeared during dispersion of kaolinite-urea in paper coating suspension which showed the exfoliation of kaolinite-urea layers through the binder (nano-kaolinite). The SEM images of intercalated kaolinite-urea and exfoliated kaolinite/binder revealed thin flacks with particle size ranging from 500nm and 300nm, respectively. Nano-kaolinite caused a significant decrease in coated paper roughness and an increase in optical properties compared with the original and commercial kaolinite. Air permeability of coated paper increased and was better than commercial kaolinite. Although, nano-kaolinite reduced the mechanical properties of coated paper, it produced coated paper having print density and print gloss higher than the ones containing the original and commercial kaolinite. © 2014 Elsevier B.V.

Author Keywords
Coating; Nano-Egyptian kaolinite; Optical properties; Print quality; SEM; XRD

Document Type: Article
Source: Scopus

El-Mahdy, G.A.[a b] , Al-Lohedan, H.A.[a] , Issa, Z.[a]
Monitoring the corrosion rate of carbon steel under a single droplet of NaCl
(2014) *International Journal of Electrochemical Science*, 9 (12), pp. 7977-7985.

[a] Chemistry Department, College of Science, King Saud University, P.O.Box - 2455, Riyadh, Saudi Arabia
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Abstract
A new design for an experimental set-up is proposed for monitoring the contact angle, droplet height, base diameter, corrosion rate and volume loss under a single droplet of NaCl placed gently on carbon steel surface. The monitoring results indicated that the contact angle and droplet height decreased while the volume losses and the corrosion rate increased as holding time progressed. The droplet diameter remains practically constant over a holding lifetime of the drop. A mechanism describing the successive stages of a corrosion process under a single droplet of NaCl is proposed. © 2014 The Authors.

Author Keywords
Carbon steel; Contact angle; Droplet height; EIS; Polarization resistance

Document Type: Article
Source: Scopus

Ali, A.I.[a] , Senthikuma, V.[b] , Kim, I.-W.[b] , Kim, Y.S.[b c]
The influence of SrTiO3 buffer layer on ferroelectric properties of Al-doped BaTiO3 thin films
(2014) *Journal of Electroceramics*, 33 (1-2), pp. 47-52.

DOI: 10.1007/s10832-014-9914-4

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[c] Department of Physics, Applied Physics and Astronomy, Binghamton University, P.O. Box 6000, Binghamton, NY, United States

Abstract
Fabrication of Al0.01Ba0.99TiO3 (Al-BTO) thin films on SrTiO3/MgO/TiO2/SiO2/Si (STO/MgO) and MgO/TiO2/SiO2/Si (MgO) substrates were comparatively prepared using pulsed laser deposition (PLD). The structures of the prepared thin films were studied using X-ray diffraction (XRD) and field emission scanning electron microscopy (FE-SEM). The SrTiO3 buffer layer between Al-BTO thin film and MgO substrate enhanced the ferroelectric, electrical properties. Moreover, the P-E loops showed a dramatic enhancement in the polarization values from 18 μC/cm2 at 600 kV/cm to 52 μC/cm2 at 780 kV/cm for Al-BTO thin films on SrTiO3/MgO and MgO substrates, respectively. In addition, the dielectric SrTiO3 buffer layer decreased the leakage current from 3 × 10−3 to 12 × 10−6 A/cm2 and increased breakdown electric field from 10 to 30 kV/cm. The electric properties revealed that, the dielectric SrTiO3 buffer layer also decreased the conductivity, mobility and carrier concentrations. The data of Al-BTO thin films on SrTiO3/MgO substrate exhibited remarkably adjusted polarization and leakage current indicating a good ferroelectric property for non-volatile ferroelectric random access memory (FERAM) applications. © 2014, Springer Science+Business Media New York.

Author Keywords
Al-doped BaTiO3; Ferroelectric thin film; Pulsed laser deposition; STO buffer layer

Document Type: Article
Source: Scopus

El-Bakry, A.A., Hammad, I.A., Rafat, F.A.
Polymorphism in Calotropis procera: preliminary genetic variation in plants from different phytogeographical regions of Egypt
(2014) *Rendiconti Lincei*, 25 (4), pp. 471-477.

DOI: 10.1007/s12210-014-0316-y

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Abstract
Calotropis procera (Aiton) W. T. Aiton. (family: Asclepiadaceae) is an important medicinal shrub distributed in the tropical and subtropical regions of the world. In Egypt, it is distributed throughout different phytogeographical regions. Genetic analyses were performed to study polymorphism of 18 individual genotypes collected from six different localities across Egypt (Aswan, New Valley, Cairo-Suez road, Feran, Nuweibaa, and Arish), and to elucidate their population genetic relationships. Five Operon primers successfully generated reproducible polymorphic products. RAPD profiles revealed high levels of polymorphism for the studied individual genotypes (93.45 %). Both number and size of the amplified products varied considerably with different primers and a sum of 100 polymorphic and 7 monomorphic bands were generated in all the individuals under study. A total of 24 unique bands were also identified. The combination of all polymorphic bands generated by all five primers was enough to discriminate between the six different localities. The dendrogram constructed revealed that Aswan (south Nile Valley) and Feran valley (South Sinai mountain area) to be separated in two distinct clusters, while the other four localities in a third cluster. Similarity indices for the genetic distances showed that the highest similarity was (76.03 %) between the genotypes from Cairo-Suez road and Nuweibaa regions, while the lowest was between Feran and Nuweibaa genotypes (63.87 %). The study confirmed the high polymorphic nature of the species and showed that genotypes of the Aswan locality have a highly similar gene pool to genotypes of most localities. South Sinai Feran locality seems to be of a different genetic background. Future studies on material collected from other phytogeographical regions of the world, as well as, using other molecular marker techniques, will contribute to understanding of the species polymorphism and its phytogeographical relationships across different regions of the world. © 2014, Accademia Nazionale dei Lincei.

Author Keywords
Asclepiadaceae; Genetic diversity; Genetic markers; Plant geography; Polymorphism; RAPDs; Sinai

Document Type: Article
Source: Scopus

Barakat, H.M.[a] , El-Adll, M.E.[b] , Aly, A.E.[b]
Prediction intervals of future observations for a sample of random size from any continuous distribution
(2014) *Mathematics and Computers in Simulation*, 97, pp. 1-13. Cited 1 time.

DOI: 10.1016/j.matcom.2013.06.007

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[b] Department of Mathematics, Faculty of Science, Helwan University, Ain Helwan, Cairo, Egypt

Abstract
In this paper, a general method for predicting future observations from any arbitrary continuous distribution is proposed. Two pivotal statistics are developed to construct prediction intervals of future observations in two cases. In the first case, we assume fixed sample size, while in the second case, the sample size is assumed to be positive integer-valued random variable independent of the observations. Explicit forms for the distribution functions of the pivotal statistics are derived. Some special cases for the random sample size are considered. An algorithm is constructed to demonstrate the practical importance of the theoretical results. Moreover, simulation study is applied on some important distributions to investigate the efficiency of the suggested method. Finally, an example for real lifetime data is analyzed, where it is assumed that the distribution of the data is unknown. © 2013 IMACS. Published by Elsevier B.V. All rights reserved.

Author Keywords
Monte Carlo simulation; Order statistics; Predicative interval; Probability coverage; Random sample size

Document Type: Article
Source: Scopus

Safan, M.[a] , Rihan, F.A.[b c]
Mathematical analysis of an SIS model with imperfect vaccination and backward bifurcation
(2014) *Mathematics and Computers in Simulation*, 96, pp. 195-206. Cited 4 times.

DOI: 10.1016/j.matcom.2011.07.007

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[c] Faculty of Science, Helwan University, Cairo, Egypt

Abstract
In this paper, we analyze an SIS epidemic model with partially protective vaccination of efficacy e ε [0, 1]. The model exhibits backward bifurcation for certain parameter values. The primary aim of this paper is to investigate the possibility of eliminating the infections in static as well as exponentially growing populations with a public health strategy based solely on vaccination. The critical vaccination rate ψ* above which the endemic infection dies out and the conditions on model parameters that ensure its existence are obtained. It has been found that eliminating the infection requires an application of control measures other than vaccination to reduce the basic reproduction number to below the reinfection threshold and then vaccinate susceptible individuals with a rate slightly greater than ψ *. The implication is that, generally, even if all newborns get vaccinated immediately after birth, an effective control is not necessarily assured except if the basic reproduction number is reduced to below the reinfection threshold. We further include the fatality of the infection and investigate its impact on the dynamics. Some numerical simulations are given to illustrate the theoretical analysis.

Author Keywords
Backward bifurcation; Controllability; Epidemic model; Exponentially growing population; Vaccination

Document Type: Article
Source: Scopus

Farag, I.S.A.[a] , Girgis, A.S.[b] , Ramadan, A.A.[c] , Moustafa, A.M.[a] , Tiekink, E.R.T.[d]
5-Chloro-5″-(4-chlorobenzylidene)-4′-(4-chlorophenyl) -1″-ethyl-1′-methyldispiro[indoline-3,2′-pyrrolidine- 3′,3″-piperidine]-2,4″-dione
(2014) *Acta Crystallographica Section E: Structure Reports Online*, 70 (1), pp. o43-o44. Cited 2 times.

DOI: 10.1107/S1600536813033096

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Abstract
Two spiro links are found in the title compound, C31H 28Cl3N3O2, one connecting the piperidine and pyrrolidine rings, and the other connecting the pyrrolidine ring and indole residue. The piperidine ring adopts a half-chair conformation, in which the C atom connected to the spiro-C atom lies 0.741(3)Å out of the plane of the remaining five atoms (r.m.s. deviation = 0.053Å). The pyrrolidine ring has an envelope conformation with the flap atom being the methylene C atom. Centrosymmetric eight-membered {···HNCO}2amide dimers are the most significant feature of the crystal packing. These are connected into layers parallel to (-120) by C-H···O and π-π interactions between pyrrolidine-bound benzene rings [inter-centroid distance = 3.8348(15)Å]. Slipped face-to-face interactions between the edges of pyrrolidine-bound benzene [shortest C···C separation = 3.484(4)Å] connect the layers into a three-dimensional architecture.

Document Type: Article
Source: Scopus

Salah, M.[a] , Cueto, J.A.R.[b] , Valladares, L.F.[b]
An annotated checklist of the aquatic Polyphaga (Coleoptera) of Egypt I. Family Hydraenidae
(2014) *Zootaxa*, 3873 (3), pp. 275-284.

DOI: 10.11646/zootaxa.3873.3.6

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Abstract
Data from previous literature were used to compile a checklist of the Egyptian fauna of Hydraenidae (Coleoptera). The checklist includes data on the type localities, type specimens, descriptors, distributions and previous literature for 15 valid species belonging to 3 genera (Hydraena, Limnebius and Ochthebius). Ochthebius was represented by 13 species, while Hydraena and Limnebius were represented only by a single species for each of them. The present study provides a sum-mary that can serve as the basis for future progress in the knowledge of the Egyptian Hydraenidae.

Author Keywords
Aquatic coleoptera; Checklist; Distribution; Egypt; Hydraenidae

Document Type: Article
Source: Scopus

Abdelmohaymen, M.R.[a] , Arafa, B.A.[a] , El-Refaie, E.-S.M.[b] , Kamal, S.E.[c]
A comparative study on the effect of acids on the hydrophobicity of HTV and LSR polymeric insulators
(2014) *Proceedings of the International Symposium on Electrical Insulating Materials*, art. no. 6870827, pp. 497-499.

DOI: 10.1109/ISEIM.2014.6870827

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Abstract
Overhead transmission lines insulators which located near chemical factories are suffering from industrial pollution that characterized by industrial waste gases produced from the chimneys of these factories. © 2014 The Institute of Electrical Engineers, Japan.

Author Keywords
high-temperature vulcanized; hydrophobicity; liquid silicone rubber; silicone rubber; sulphur oxides

Document Type: Conference Paper
Source: Scopus

Surour, A.A.[a b] , Harbi, H.M.[a] , Ahmed, A.H.[a c]
The Bi'r Tawilah deposit, central western Saudi Arabia: Supergene enrichment of a Pan-African epithermal gold mineralization
(2014) *Journal of African Earth Sciences*, 89, pp. 149-163.

DOI: 10.1016/j.jafrearsci.2013.06.007

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[c] Geology Department, Faculty of Science, Helwan University, Ain Helwan, Egypt

Abstract
The Bi'r Tawilah gold deposit in central western Saudi Arabia represents a Pan-African example of gold mineralization in which both hypogene and supergene ores are recorded. The sulphidic gold ore is hosted in intermediate to felsic intrusions that occur along the N-S trending thrust-fault zone within the so-called "Nabitah orogenic zone". There are four rock units present (from oldest to youngest): serpentinites and related listwaenites, diorites, granitic rocks and porphyries. Hydrothermal alteration consists of chloritization, sericitization, carbonatization and silicification and affects all rock types. Chloritization of biotite results in abundant rutile, whereas sulphidization coincides with carbonatization. The Bi'r Tawilah ore is confined to NW-trending shears (Riedel fractures) related to N-S slip of the pre-existing Tawilah thrust due to activation within the Najd fault system. Samples from the boreholes show macro- and microscopic evidence of shearing such as micro-shear planes and strain shadows of pyrite. Sulphides and gold are present in most rock types. Paragenetically, the sulphides consist of abundant pyrite and relatively lesser amounts of arsenopyrite, in addition to very minor chalcopyrite, sphalerite and galena. In all boreholes, it was noticed that the abundance of arsenopyrite increases with depth.The elevated silver content of electrum (~13-22. wt%) at Bi'r Tawilah is typical of gold deposits and low-sulphidation epithermal deposits. The early mineralization stage took place in proximity to hydrothermally altered intermediate to felsic intrusions. The aerially restricted hydrothermal alteration by carbon-aqueous fluids led to ore remobilization in which gold amounts up to 4.3. g/t. Finally, gold enrichment (up to 5.4. g/t) resulted from supergene alteration that took place during weathering above the water table at a depth of ~20-25. m. © 2013 Elsevier Ltd.

Author Keywords
Bi'r Tawilah prospect; Epigenetic gold; Najd shearing; Saudi Arabia; Supergene gold

Document Type: Article
Source: Scopus

Elsayed, K.[a b] , Miranda, J.[a] , Ghorbaniasl, G.[a] , Lacor, C.[a]
Optimal cyclone geometry using the adjoint methods
(2014) *OPT-i 2014 - 1st International Conference on Engineering and Applied Sciences Optimization,*

Proceedings, pp. 325-351.

[a] Vrije Universiteit Brussel, Department of Mechanical Engineering, Research Group Fluid Mechanics and Thermodynamics, Pleinlaan 2, Brussels, Belgium
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Abstract
The vortex finder is an essential part in gas cyclones. In order to obtain a new vortex finder shape for minimum pressure drop, the discrete adjoint method is employed. The new optimum cyclone will save 66% from the driving power needed for the Stairmand cyclone. A new framework for the grid independence study using the adjoint solver and the grid convergence index is introduced. The proposed framework has been applied successfully on the optimum cyclone. A comparison of numerical simulation of the new cyclone and the Stairmand cyclone confirms the superior performance of the new vortex finder shape compared to the cylindrical shape. The results of this study open new era in the optimization studies of the gas cyclones by using the adjoint methods instead of the traditional techniques. Moreover, the computational costs for the grid independence studies will be reduced via the application of the adjoint methods.

Author Keywords
Adjoint methods; Cyclone separator; GCI; Optimization

Document Type: Conference Paper
Source: Scopus

Allam, S.[a] , Åbom, M.[b]
Fan noise control using microperforated splitter silencers
(2014) *Journal of Vibration and Acoustics, Transactions of the ASME*, 136 (3), art. no. 031017, . Cited 1 time.

DOI: 10.1115/1.4027245

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Abstract
Splitter or baffle silencers are commonly used, for example, in heating ventilation and air conditioning (HVAC) systems and as inlet/outlet silencers on gas turbines. Another application is to reduce noise from the cooling fan inlet for large IC-engines. A splitter silencer can be seen as a periodic arrangement of parallel rectangular absorbers, which can be placed in a rectangular duct. The noise reduction afforded by parallel splitters depends not only on the physical properties of the lining but also upon the angle of incidence of the impinging sound waves, and the splitter and duct dimensions. In this paper, the potential of using splitters made of microperforated plates (MPPs) is investigated, with a particular focus on cooling fan inlet/outlet applications. Copyright © 2014 by ASME.

Document Type: Article
Source: Scopus

Ali, A.S.
The narrator: A smart data offloading system for interactive navigation in museums
(2014) *2014 10th International Computer Engineering Conference: Today Information Society What's Next?, ICENCO 2014*, art. no. 7050448, pp. 149-154.

DOI: 10.1109/ICENCO.2014.7050448

Department of Communications and Electronics, Faculty of Engineering, Helwan University, Egypt

Abstract
Information and Communication Technologies (ICTs) are extremely important for sustainable development for all countries. It can be used to make information available in the right form to the right user at the right time in faster and better way. Archeological sites, museums and old towns are some of the fields that can take great advantages of such technologies. These places need a particular ICTs infrastructure and services to convert these physical locations into useful smart environments. In this paper we present the narrator; a system that assist visitors of such places and automatically delivering them in a smart manner with the required information according to their current position in this site. The key idea of the suggested system is to integrate Location Based Service (LBS) technology, data offloading, Wi-Fi networks and recommender algorithm to realize a smart self-guide system. This system is able to detect visitor

position, create visitor profile, recommend a visiting map, interact with the visitor, and finally offload the textual and multimedia data to visitor's device as if it makes objects of the site able to talk and narrate their story to visitors. The results of our suggested system showed that the narrator guarantees on-demand information delivery for large number of visitors simultaneously in the same site with high QoS and without service interruption or failure. In addition, the proposed system efficiently solves the run down problem due to the limited system bandwidth of the wireless networks. © 2014 IEEE.

Author Keywords
Data offloading; ICT; QoS; Wi-Fi

Document Type: Conference Paper
Source: Scopus

Mahboub, S.M.[a] , Al-Muammar, M.N.[b] , Elareefy, A.A.[c]
Evaluation of the prevalence and correlated factors for decreased bone mass density among pre- and post-menopausal educated working women in Saudi Arabia
(2014) *Journal of Health, Population and Nutrition*, 32 (3), pp. 513-519.

[a] Department of Tropical Health, High Institute of Public Health, Alexandria University, Egypt
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Abstract
Most of the previous studies on osteoporosis have focused on post-menopausal women, and more research is needed to evaluate its prevalence in pre-menopausal women. This study was carried out to evaluate the prevalence and correlated factors for decreased bone mass density among pre- and post-menopausal women. This was a cross-sectional study carried out in Applied Medical Sciences College under King Saud University. All pre- and post-menopausal women working there were invited to participate in the study. Measurement of bone mass density was done by quantitative ultrasound densitometry. One-fourth of the pre-menopausal females had osteopaenia. There was a significant correlation between having osteoporosis and increasing age, fertility period, parity, menopausal duration, gynaecological age, and presence of comorbidity, especially hypertension and diabetes mellitus. Pre-menopausal females had high prevalence of osteopaenia (24.8%), and it is recommended to implement health education campaigns demonstrating the preventive measures of osteoporosis. © International Centre For Diarrhoeal, Disease Research, Bangladesh.

Author Keywords
Calcium; Fertility; Gynaecological age; Osteoporosis; Parity; Pre-menopausal; Saudi Arabia; Soft drink

Document Type: Article
Source: Scopus

Elsarnagawy, T.[a] , Haueisen, J.[b] , Farrag, M.[c] , Ansari, S.G.[d] , Fouad, H.[e f]
Embedded fiber bragg grating based strain sensor as smart costume for vital signal sensing
(2014) *Sensor Letters*, 12 (11), pp. 1669-1674.

DOI: 10.1166/sl.2014.3382

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Abstract
A device based study is carried out using an embedded Fiber Bragg Grating (FBG) strain sensor to simultaneously measure vital signal such as respiration, heartbeat and body motion in the form of a smart costume. The experimental results are modeled and simulated using a specially designed algorithm. The designed system consisted of FBG strain sensor, interrogator, signal interface/ processing unit and optical fiber. When the FBG sensor is used as an embedded sensor, a correction of strain sensitivity due to the influence of the embedding material was applied. The displacement of the reflected wavelength is measured, depending on the intended strain value as a function of heartbeat, body motion and respiration. The achieved results show that the presented FBG vital sign monitor is ideal for embedded and portable mobile technology measurement systems, because of its small size and light weight.

Author Keywords
Embedded sensors; FBG; Fiber optics; Health monitoring; Smart textile

Document Type: Article
Source: Scopus

Abidi, M.H.[a] , Al-Harkan, I.[b] , El-Tamimi, A.M.[b] , Al-Ahmari, A.M.[a b] , Nasr, E.S.A.[b c]
Ant colony optimization for job shop scheduling to minimize the total weighted tardiness
(2014) *IIE Annual Conference and Expo 2014*, pp. 25-34.

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Abstract
In modern manufacturing systems, due date related performance is becoming increasingly important in maintaining a high service reputation. However, compared with the extensive research on make span minimization, research on the total weighted tardiness objective is rather meager, partly because this objective function is more difficult and complex to optimize. In this research work, focus is on the job shop scheduling problem with the objective of minimizing total weighted tardiness. Ant Colony Optimization is a good technique for many combinatorial types of optimization problems like the Travelling Salesman Problem. A combined Shifting Bottleneck and Ant Colony Optimization technique to solve the Job Shop Problem to reduce the total weighted tardiness is implemented successfully. The Shifting Bottleneck heuristic is used to generate an initial solution and then the ant colony optimization is applied for further minimizing the total weighted tardiness in job shops. A Matlab program is developed based on this combined algorithm and it is tested on the standard benchmark sets and compared with the other approaches. The implemented heuristic (named SB-ACO) shows better results when compared with other heuristics such as pure Simulated Annealing, pure Tabu Search and others.

Author Keywords
Ant colony optimization (ACO); Job shop; Shifting bottleneck; Simulated annealing (SA); Weighted tardiness

Document Type: Conference Paper
Source: Scopus

Mahfouz, M.M.A.[a] , El-Sayed, M.A.H.[b]
Static synchronous compensator sizing for enhancement of fault ride-through capability and voltage stabilisation of fixed speed wind farms
(2014) *IET Renewable Power Generation*, 8 (1), pp. 1-9. Cited 1 time.

DOI: 10.1049/iet-rpg.2012.0365

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Abstract
High penetration level of wind energy affects the generation profile of the power systems, which impose more stringent connection requirements of wind farms. The ability of wind power plant to remain connected during grid faults is very important to avoid cascaded outages because of power deficit. FACT devices are considered to be a key technology to accomplish these requirements. The implementation of three-level inverter based on a static synchronous compensator (STATCOM) for the improvement of the ride-through and stability of fixed speed wind farms is analysed here. This brings the challenges for system planner to determine the appropriate STATCOM rating. This study provides a simple approach to evaluate the STATCOM rating for voltage-level regulation at the point of common coupling around its pre-specified value. Vector current control is used as robust control to inject the required reactive power from STATCOM. This study emphasizes also on the analysis of torque speed curve to evaluate the induction generator speed limit and for defining the critical clearing time of the fault according to the selected STATCOM rating. Simulation results under fault conditions are performed to validate the enhancement of wind farm low-voltage ride-through capability and increasing the critical clearing time by installing STATCOM. © The Institution of Engineering and Technology 2013.

Document Type: Article
Source: Scopus

Soliman, H.[a] , Mawgoud, M.A.A.[b]
Factors associated with coping mechanisms among egyptian patients with end stage renal disease and on haemodialysis
(2014) *Psychological Reports*, 114 (2), pp. 390-403.

DOI: 10.2466/15.20.PR0.114k20w6

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Abstract
This study intends to identify factors that influence coping with physical and emotional impacts of haemodialysis on patients in Egypt. A questionnaire was administrated to a random sample of 162 participants, 87 men and 75 women, who had received outpatient treatment in health care clinics in seven Egyptian cities. A regression model was used with four independent variables (view of medical treatment, effect of pain, adjustment to treatment, and satisfaction with life) to explain variance in satisfaction with self and coping. Results show about half the variance in the patients' ability to cope and express satisfaction with the self was explained by the independent variables (R2 = -.55, R2 =.45). Implications contributing to adjustment and coping are presented, showing the need to advance medical service and enhance patients' ability to develop effective strategies. © Psychological Reports 2014.

Document Type: Article
Source: Scopus

El-Sigeny, S.[a] , Mohamed, S.K.[b] , Abou Taleb, M.F.[c d]
Radiation synthesis and characterization of styrene/acrylic acid/organophilic montmorillonite hybrid nanocomposite for sorption of dyes from aqueous solutions
(2014) *Polymer Composites*, 35 (12), pp. 2353-2364. Cited 1 time.

DOI: 10.1002/pc.22902

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Abstract
Organophilic montmorillonite (OMMT) was synthesized by cationic exchange reaction of Na+-MMT and vinyl benzyl triethyl ammonium chloride (VBTAC) as a reactive organic modifier in an aqueous solution. A series of styrene (St)/acrylic acid (AA)/OMMT nanocomposite hydrogel containing different wt% of OMMT was synthesized through in situ polymerization using γ-ray. The samples were characterized using Fourier transform infrared (FTIR), X-ray powder diffraction (XRD), and transmission electron microscope (TEM), whereas thermal stability was examined by thermogravimetric analysis (TGA). The adsorption capacity and rate for both Acid Green B (anionic) and Maxilon C.I. Basic (cationic) dye including adsorption kinetics and isotherm were investigated at 30C. TEM measurements showed spherical nanosized particles of average diameter 30-40 nm and XRD suggested the formation of exfoliated nanocomposite. TGA measurements showed that the addition of OMMT did not enhance the thermal stability where the onset temperature of the degradation for all samples was around 125C. The effect of some important parameters on dye adsorption such as solution pH, initial dye concentration, and contact time was investigated. The equilibrium data obtained in batch experiments were correlated to Langmuir and Freundlich isotherm equations. Results showed that the adsorption of Acid Green B fitted well to the Langmuir model while the adsorption pattern of Maxilon C.I. Basic followed the Freundlich isotherm, which suggests heterogeneity of the adsorption sites on the nanocomposite. POLYM. COMPOS., 35:2353-2364, 2014. © 2014 Society of Plastics Engineers © 2014 Society of Plastics Engineers.

Document Type: Article
Source: Scopus

Al-Sharkawi, I.M.[a b] , El-Naggar, S.A.[b c] , El-Sheikh, K.A.E.-S.[d e] , Al-Wahsw, H.M.[d e]
Susceptibility of hedgehog, Hemiechinus auritus to Schistosoma mansoni under experimental infection
(2014) *Research Journal of Parasitology*, 9 (1), pp. 1-10.

DOI: 10.3923/jp.2014.1.10

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Abstract
This study aims to evaluate the susceptibility of the hedgehog (Hemiechinus auritus) to Schistosoma mansoni under the experimental condition. The susceptibility of this animal to S. mansoni infection was compared to the hamster (Permissive host) infection with the same parasite. In this study, 24 male of both hedgehogs and hamsters were used. Half of animals were infected with 250 S. mansoni cercariae. Eight weeks post infection; animals were sacrificed to determine the total worm burden, total eggs count, granuloma volume. The results revealed that a fecal examination of the infected hedgehogs showed no eggs were detected in the feces. The average of hamster's pre-patent period (the onset of patency) was 44.0±1.0 days. The average of S. mansoni worms recovered from hedgehogs was 31.0±10.0 worms, while the worm recovered from hamsters was 82.0±18.0. The granuloma volume measured from hedgehogs and the hamsters were 74.0±56.0 and 119.0±75.0, respectively. Marked reduction in the some biochemical parameters after the infection with S. mansoni was recorded in infected hedgehogs and hamsters. In conclusion, the hedgehogs showed non possibility for this animal to be a risk for schistosomiasis in the field. © 2014 Academic Journals Inc.

Author Keywords
Experimental; Hemiechinus auritus; Infection; Schistosoma mansoni; Susceptibility

Document Type: Article
Source: Scopus

El-Rewaidy, H.[a] , Khalifa, A.[b] , Fahmy, A.S.[a]
Combining long and short axis myocardial contours for accurate reconstruction of the left ventricular surface
(2014) *Middle East Conference on Biomedical Engineering, MECBME*, art. no. 6783215, pp. 99-102.

DOI: 10.1109/MECBME.2014.6783215

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Abstract
Reconstruction of the left ventricular (LV) surface is required in a number of applications including modeling the LV shape and computing the LV volume. In this work, a new method is presented for accurately reconstructing the LV surface from magnetic resonance images of the heart. The method depends on novel technique for combining the long-axis (LAX) and short-axis (SAX) myocardium contours. A crucial step to achieve this goal is to properly reconstruct the LV surface from the long-axis (LAX) and short-axis (SAX) myocardium contours. This is done using three steps: (1) register the LAX and SAX contours to compensate the patient respiratory motion; (2) non-parametric interpolation of the LV surface at the gaps between SAX slices. To evaluate the proposed methods, out-of-place LAX and SAX myocardial contours was simulated to represent the respiratory motion effect. Then, the LV volume is calculated using the proposed method. The results are compared to the ground truth obtained by the modified Simpson's method. The significance of the methods was proved by calculating its error in calculating the LV volume when only few slices are available, i.e. reduced acquisition. In addition, the method was compared to other available methods using a dataset of 5 patients. © 2014 IEEE.

Document Type: Conference Paper
Source: Scopus

Hassanein, A.S.[a] , Khalifa, A.M.[a] , Al-Atabany, W.[a] , El-Wakad, M.T.[a] , Shapiro, B.[b] , Ibrahim, E.-S.H.[b]
Automatic synthesis of cine viability MRI images for evaluation of coronary heart disease
(2014) *2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2014*, art. no. 6944776, pp. 5117-5120.

DOI: 10.1109/EMBC.2014.6944776

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Abstract
Coronary heart disease (CHD) is the leading cause of death worldwide. Cardiac magnetic resonance imaging (MRI) is a valuable imaging modality, as it can noninvasively provide information about myocardial function, viability, and morphology. Viability delayed-enhancement (DE) images are acquired at a single timeframe while myocardial functional (tagged) images are acquired as a cine loop of timeframes throughout the cardiac cycle. In this work, we propose a method for estimating DE images at all timeframes in the cardiac cycle without additional scan time to show both viability and functional information in the same image. The method is based on generating a dense motion field of the heart from the acquired tagged images, and then applying the extracted field to the acquired DE image. The

developed technique is accurate in generating cine DE images and providing simultaneous information about myocardial viability and wall motion for comprehensive patient evaluation and optimal treatment selection. © 2014 IEEE.

Document Type: Conference Paper
Source: Scopus

Hussein, W.M.[a b] , McGeary, R.P.[a]
Use of ethyl (benzothiazol-2-ylsulfonyl)acetate for malonic ester-type syntheses of carboxylic acids and esters
(2014) *Australian Journal of Chemistry*, 67 (8-9), pp. 1222-1227.

DOI: 10.1071/CH14085

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Abstract
A new methodology for the synthesis of substituted carboxylic acids is described. Alkylation of either ethyl (benzothiazol-2-ylsulfonyl)acetate or ethyl 2-(benzothiazol-2-ylsulfonyl)propionate was achieved with alkyl halides and 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU) in dichloromethane solution. These products were then desulfinated and hydrolysed in one-pot under mild conditions to give substituted acetic acids in good-to-excellent yields. © 2014 CSIRO.

Document Type: Article
Source: Scopus

El-Robaa, A.S.[a b] , Ibrahim, S.M.[a c] , Gaawan, S.M.[a d e] , Malek, C.I.[a f]
Human comfort acceptance criteria of pedestrian bridges
(2014) *Proceedings of the 12th International Conference on Steel, Space and Composite Structures*, pp. 189-198.

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[d] Structures Department, Cairo, Egypt
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Abstract
The assessment of vertical vibrations due to human induced force becomes an inevitable procedure in the design process of footbridges. In past decades the deflection due to live load is limited by span to length ratio and the depth to span length ratio, however such approach had not lead to bridges with acceptable level of vibrations. Nowadays many codes of practices describe the human discomfort in terms of the perceived acceleration of the footbridge or by avoiding specific limit of natural frequency. Many standards apply the concept of baseline curves and its multipliers for specifying floor vibration criteria. The human perception of vibrations is subjective and depends on individual characteristics, psychological influences, and the attitude of people towards the vibration cause. Several standards require a calculation of the dynamic response of a footbridge due to a footfall force; others provide simplified procedures to predict accelerations. The purpose of this study is to investigate the variety of vibration limits and acceptance criteria as stated in international standards and design guides. A comparison study between different methods prescribed in international codes is presented for different pedestrian bridges configurations.

Author Keywords
Human comfort.; Pedestrian bridges; Vibration

Document Type: Conference Paper
Source: Scopus

Ellabban, O.[a b] , Abu-Rub, H.[a]
Switched reluctance motor converter topologies: A review
(2014) *Proceedings of the IEEE International Conference on Industrial Technology*, pp. 840-846.

DOI: 10.1109/ICIT.2014.6895009

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Abstract
Switched reluctance motor (SRM) is on the focus of many researchers and it is becoming a proper alternative to conventional motors. This paper reviews the different power converter topologies developed for the SRM. © 2014 IEEE.

Document Type: Conference Paper
Source: Scopus

Ali, A.I.[a] , Ammar, A.H.[b] , Abdel Moez, A.[c]
Influence of substrate temperature on structural, optical properties and dielectric results of nano- ZnO thin films prepared by Radio Frequency technique
(2014) *Superlattices and Microstructures*, 65, pp. 285-298. Cited 5 times.

DOI: 10.1016/j.spmi.2013.11.007

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[c] Solid State Physics Department, Physical Research Division, National Research Center (NRC), 12622 Dokki, Cairo, Egypt

Abstract
A Radio Frequency (RF) technique was used to prepare ZnO thin films with different substrate temperature under ultra high vacuum. Structure results revealed that these films have crystalline structure. The structure of these films was carried out using X-ray Diffraction and Atomic Force Electron Microscope (AFM). The grain size for these films were determined using AFM photos. The optical parameters such as, optical energy gap, refractive index, extinction coefficient, dielectric loss and dielectric tangent loss for these films were determined. Another important parameters such as dispersion energy, oscillating energy and the ratio between the free carrier concentration/ effective mass (N/m*) were determined optically. It was found that, the substrate temperature for these investigated films plays an important rule for changing an optical and dielectric results of these films. © 2013 Elsevier B.V. All rights reserved.

Author Keywords
Different substrate temperature; Dispersion energy and dielectric constants; Effective mass; Nano-ZnO thin films; Optical properties; RF sputtering; Structure

Document Type: Article
Source: Scopus

Alzayed, N.S.[a] , Kityk, I.V.[b] , Ozga, K.[b] , Fedorchuk, A.O.[c] , Soltan, S.[d e] , Shahabuddin, M.[a] , El-Naggar, A.[a f]
Role of MgB2/Cr2O3 nano-interfaces in photoinduced nonlinear optical treatment of the MgB2 superconducting films
(2014) *Physica E: Low-Dimensional Systems and Nanostructures*, 63, pp. 180-185. Cited 3 times.

DOI: 10.1016/j.physe.2014.05.022

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Abstract
The calculations of the photoinduced nonlinear optical shift with respect to critical temperature for the MgB2 superconducting films (pure and doped by Cr) were performed using the first principle quantum chemical simulations. The principal role of the nano-interfaces between the MgB 2 and Cr2O3 was established, and the nano-interfaces have a thickness varying within the 20-30 nm. The latter was done taking into account their long-range ordering additionally aligned by bicolour optical poling. The bicolour poling was performed by the fundamental 10.6 μm laser beam and its doubled frequency coherent second harmonic generation signal. The so formed internal dc-electric field has introduced additional polarization to the media which re-scale the factor of the electron-phonon interaction including the anharmionic one responsible for the occurrence of charge density non-centrosymmetry and the related

second order nonlinear optical response. The simulations of the IR induced bicolour treatment were performed both for pure as well as MgB2 superconducting films doped by Cr3+. © 2014 Elsevier B.V.

Author Keywords
Photoinduced effects in nanointerfaces; Superconducting nano-films

Document Type: Article
Source: Scopus

Dkhil, M.A.[a] [b]
Role of berberine in ameliorating schistosoma mansoni-induced hepatic injury in mice
(2014) *Biological Research*, 47 (1), art. no. 8, . Cited 4 times.

DOI: 10.1186/0717-6287-47-8

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Abstract
Background: Schistosomiasis is caused by helminth parasites of the genus Schistosoma. Berberine chloride (BER), an isoquinoline alkaloid, has been used in vivo for its antiparasitic, antioxidant and hepatoprotective properties. In this study, the protective effect of BER and praziquantel has been compared for the extent of schistosomiasis- induced oxidative stress in hepatic tissue of mice. Results: S. mansoni was able to induce inflammation and injury to the liver, evidenced (i) by an increase in inflammatory cellular infiltrations, dilated sinusoids and vacuolated hepatocytes, (ii) by decreased levels of alanine and aspartate aminotransferases and increased levels of alkaline phosphatase, γ-glutamyl transferase in the liver homogenate, (iii) by increased production of nitric oxide and thiobarbituric acid reactive substances, and (iv) by lowered glutathione levels and decreased activities of catalase and superoxide dismutase, respectively. All these infection-induced parameters were significantly altered during BER treatment. In particular, berberine counteracted the S. mansoni-induced loss of glutathione and the activities of catalase and superoxide dismutase. Conclusion: Based on these results, it is concluded that berberine could ameliorate pre-existing liver damage and oxidative stress conditions due to schistosomiasis. © 2014 Dkhil; licensee BioMed Central Ltd.

Author Keywords
Berberine; Liver; Mice; Schistosoma mansoni

Document Type: Article
Source: Scopus

Ali, A.[a] , Moussa, A.[b] , Abdelatif, K.[a] , Eissa, M.[a] , Wasfy, S.[a] , Malik, O.P.[b]
Comparative performance of wind turbine driven PMSG with PI-controllers tuned using heuristic optimization algorithms
(2014) *ENERGYCON 2014 - IEEE International Energy Conference*, art. no. 6850416, pp. 120-126.

DOI: 10.1109/ENERGYCON.2014.6850416

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[b] Electrical Engineering Department, U of C, Calgary, Canada

Abstract
An efficient methodology for the tuning of proportional-integral controllers' gains for the generator-side converter of a wind turbine driven permanent magnet synchronous generator using a self-adaptive global best harmony search algorithm is proposed. Performance of the generator with the optimized controller parameters obtained using the proposed algorithm is compared with the parameters obtained using the Ziegler-Nichols technique, bees colony, and simulated annealing algorithms. Studies demonstrate that the performance of the system with the optimized controller parameters permits an improvement of the converter capability. © 2014 IEEE.

Author Keywords
Harmony Search Algorithm; Permanent Magnet Synchronous Generator; PI-Controllers; Power Converter; Renewable Wind Energy

Document Type: Conference Paper
Source: Scopus

Ibrahim, E.-S.H.[a] , Khalifa, A.M.[b] , Eldaly, A.K.[b]

The Influence of the analysis technique on estimating liver iron overload using magnetic resonance imaging T2∗ quantification
(2014) *2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2014*, art. no. 6944658, pp. 4639-4642.

DOI: 10.1109/EMBC.2014.6944658

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[b] Helwan University, Cairo, Egypt

Abstract
Iron toxicity is the major cause of tissue damage in patients with iron overload. Iron deposits mainly in the liver, where its concentration closely correlates with whole body iron overload. Different techniques have been proposed for estimating iron content, with liver biopsy being the gold standard despite its invasiveness and influence by sampling error. Recently, magnetic resonance imaging (MRI) has been established as an effective technique for evaluating iron overload by measuring T2∗ in the liver. However, various factors associated with the adopted analysis technique, mainly the exponential fitting model and signal averaging method, affect the resulting measurements. In this study, we evaluate the influences of these factors on T2∗ measurement in numerical phantom, calibrated phantoms, and nine patients with different degrees of iron overload. The results show different performances among the fitting models and signal averaging methods, which are affected by SNR, image quality and signal homogeneity inside the selected ROI for analysis. © 2014 IEEE.

Document Type: Conference Paper
Source: Scopus

Ali, A.H., Atia, A., Sami, M.
A comparative study of user dependent and independent accelerometer-based gesture recognition algorithms
(2014) *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 8530 LNCS, pp. 119-129.

DOI: 10.1007/978-3-319-07788-8_12

HCI Lab, Faculty of Computer Science and Information Systems, Helwan University, Cairo, Egypt

Abstract
In this paper, we introduce an evaluation of accelerometer-based gesture recognition algorithms in user dependent and independent cases. Gesture recognition has many algorithms and this evaluation includes Hidden Markov Models, Support Vector Machine, K-nearest neighbor, Artificial Neural Network and Dynamic Time Warping. Recognition results are based on acceleration data collected from 12 users. We evaluated the algorithms based on the recognition accuracy related to different number of gestures from two datasets. Evaluation results show that the best accuracy for 8 and 18 gestures is achieved with dynamic time warping and K-nearest neighbor algorithms. © 2014 Springer International Publishing Switzerland.

Author Keywords
Accelerometers; Gesture recognition; Human Computer Interaction

Document Type: Conference Paper
Source: Scopus

Abada, E.A.[a b]
Production and purification of lipase from Pseudomonas sp. AB2 with potential application in biodiesel production
(2014) *Journal of Pure and Applied Microbiology*, 8 (SPEC. ISS. 1), pp. 133-142.

[a] Department of Botany and Microbiology, Faculty of Science, Helwan University, Ain Helwan, Cairo, Egypt
[b] Department of Biology, Faculty of Science, Jazan University, Jazan, Saudi Arabia

Abstract
Lipase produced from microorganisms can be used in many industrial applications, such as detergent formulation, oil/fat degradation, pharmaceutical synthesis, biodiesel and cosmetics production. Pseudomonas sp. AB2 was isolated and identified by 16SrRNA from waste cooking oil (WCO). The lipase showed a molecular weight of 28.6 KDa by SDS-PAGE. The enzyme activity was highest after 24 h at 200 rpm agitation when (4X104 CFU) was used as inoculums. The maximum lipase production was observed at 35°C and pH 7. As the Tributyrine increase the enzyme activity decrease, while the yeast extract increase the activity with concentration higher than 0.5 g/l. The GC analysis

of the WCO showed that the fatty acid profile of the oil was Palmetic (31.79%), Stearic (2.41%), Oleic (65.8%); while the total saturated acid was (34.2%) and unsaturated acid was (65.8%). Pseudomonas sp. AB2 lipase, which exhibited a potential for catalyzing the biodiesel production, was further purified and immobilized on 20.4 mmol of Tetramethoxyorthosilicate (TMOS). The immobilized lipase from Pseudomonas sp. AB2 could be used as a biocatalyst for the application of enzyme-catalyzed biodiesel synthesis.

Author Keywords
Biodiesel; Lipase; Pseudomonas sp.; TMOS; Waste cooking oil

Document Type: Article
Source: Scopus

Rabeh, N.M., Aboraya, A.O.
Hepatoprotective effect of dill (Anethum graveolens L.) and Fennel (foeniculum vulgare) oil on hepatotoxic rats
(2014) *Pakistan Journal of Nutrition*, 13 (6), pp. 303-309.

DOI: 10.3923/pjn.2014.303.309

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Abstract
The present study was carried out to determine the hepatoprotective effect of some herbal oils as Dill (Anethum graveolens L.) and Fennel (foeniculum vulgare) oil seeds against carbon tetrachloride (CCL<inf>4</inf>) that caused hepatotoxicity in rats. The experiment was performed on 30 adult rat that classified into two main groups, the first main group (6 rats) was kept as control (-ve) group while the second main groups (24 rat) were administered a dose of (2 mlCCL<inf>4</inf> /kg b.wt.) twice a week for two weeks to induce chronic damage in the liver then classified into four subgroups (six rats each) as follow, one of them (6 rats) was fed on the basal diet and used as a positive control group (+ve), however, the other three subgroups were fed on basal diets and obtained orally dill oil (1 mllkg), Fennel oil (1 mllkg), mixture of (0.5 dill and 0.5 mllkg fennel) oil, respectively for 4 weeks. The hepatotoxicity produced by CCL<inf>4</inf> administration was found to be inhibited by either Dill (Anethum graveolens L.) or Fennel (foeniculum vulgare) oil or by the mixture of both Dill and Fennel oil with evidence of significant ($p<0.05$) decrease levels of serum AST and ALT and significantly ($p<0.05$) increase the level of serum total protein and albumin. Moreover, Dill and Fennel oil supplementation induced suppression of the increased ALP activity with the concurrent depletion of raised bilirubins suggests the possibility of these oils to have ability to stabilize biliary dysfunction in rat liver during hepatic injury by CCI<inf>4</inf>. On the other hand, the increase in MDA level and the decrease activity of SOD enzymes in liver induced by CCI<inf>4</inf> suggests enhanced lipid peroxidation leading to tissue damage and failure of antioxidant defense mechanism to prevent formation of excessive free radicals. Treatment with either Dill or Fennel oil and their mixture significantly ($p<0.05$) reverses these changes. Also, the studied oils have hyoplipidemic effects. Hence it is likely that the mechanism of hepatoprotection of either Dill or Fennel oil is due to its antioxidant effect. Dill or Fennel oil and their mixtures have a potent hepatoprotective action against CCL<inf>4</inf> induced liver toxicity in rats. So that, the use of Dill and Fennel oil in food formulations may be beneficial to patients who suffer from liver diseases associated with oxidative stress. © Asian Network for Scientific Information, 2014.

Author Keywords
Antioxidant; Carbon tetrachloride; Dill oil; Fennel oil; Hepatoprotective; Lipid peroxidation; Rats

Document Type: Article
Source: Scopus

Khalil, A.[a b] , Ishita, K.[a] , Ali, T.[a] , Tiwari, R.[a c] , Riachy, R.[a] , Toppino, A.[a d] , Hasabelnaby, S.[a e] , Sayfullin, N.[a] , Oliver, A.G.[c] , Gallucci, J.[f] , Huang, Z.[f] , Tjarks, W.[a]
Iodine monochloride facilitated deglycosylation, anomerization, and isomerization of 3-substituted thymidine analogues
(2014) *Nucleosides, Nucleotides and Nucleic Acids*, 33 (12), pp. 786-799.

DOI: 10.1080/15257770.2014.945648

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Abstract

The reaction of thymidine, 3-mono-, and 3,3′,5′-trialkylsubstitued thymidine analogues with iodine monochloride (ICl) was investigated. Treatment with ICl resulted in rapid deglycosylation, anomerization, and isomerization of thymidine and 3-substituted thymidine analogues under various reaction conditions leading to the formation of the nucleobases as the major products accompanied by minor formation of α-furanosidic-, α-pyranosidic-, and β-pyranosidic nucleosides. On the other hand, 3,3′,5′-trisubstitued thymidine analogues were only deglycosylated and anomerized. These results are similar to those observed for the acidic hydrolysis of the glycoside bond in nucleosides, but were presumably caused by the Lewis acid character of an iodine electrophile.

Author Keywords
3-Substituted thymidine analogues; Anomerization; Deglycosylation; Iodine monochloride; Isomerization

Document Type: Article
Source: Scopus

Ghallab, Y.H.[a] [b] , Ismail, Y.[a]
A CMOS lab-on-a-chip for neuron monitoring and stimulation
(2014) *Technical Proceedings of the 2014 NSTI Nanotechnology Conference and Expo, NSTI-Nanotech 2014*, 2, pp. 223-226.

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Abstract
A lab-on-a-chip is presented in this paper including the results from a fabricated micro-fluidic chip that includes a novel sensor, titled as Differential Electric Field Effect Transistor (DeFET). DeFET is a novel CMOS electric field sensor and it was fabricated based on a standard 0.18-μm Taiwan Semiconductor Manufacturing Company (TSMC) CMOS technology. The proposed lab-on-a-chip can sense and characterize the neuron's action potential with high accuracy and in real time. Experimental results of the proposed lab-on-a-chip are presented and discussed.

Author Keywords
Biological cells; CMOS technology; DeFET sensor; Electric field; Integrated sensors; Lab-on-a-chip; Neurons

Document Type: Conference Paper
Source: Scopus

Tawfik, A.[a] , Zaki, D.[b] , Zahran, M.[c]
Use of sequential UASB/DHS processes for the decolorization of reactive dyes wastewater
(2014) *Sustainable Environment Research*, 24 (2), pp. 129-138.

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Abstract
Decolorization of reactive dyes wastewater in an up-flow anaerobic sludge blanket (UASB) coupled with down-flow hanging sponge (DHS) was investigated with a total hydraulic retention time of 8 h. The UASB and DHS achieved color removal efficiencies of 64 ± 17 and 41 ± 13% respectively, while the overall removal efficiency of the combined system was reached up to 78 ± 12%. For enhancement of the decolourization of the combined system, reactive dye wastewater was supplemented with either 1 mg L-1 cationic or 1 mg L-1 anionic polymer. Results indicated, the overall removal efficiency of color was slightly improved (80 ± 12%) in case of addition of cationic polymer to the influent wastewater. In contrast, the addition of anionic polymer reduced the decolourization process (25 ± 13%). However, the UASB/DHS system achieved similar removals of 65 ± 6, 90 ± 9, 84 ± 7 and 99 ± 1% for chemical oxygen demand, biochemical oxygen demand, total suspended solids and turbidity, respectively.

Author Keywords
DHS; HRT; Polymer; Reactive dyes wastewater; UASB

Document Type: Article
Source: Scopus

Dkhil, M.A.[a] [b] , Delic, D.[c] , Al-Quraishy, S.[a]

In vitro anti-viral activity of orange methanolic peel extract
(2014) *Journal of Pure and Applied Microbiology*, 8 (5), pp. 3891-3896.

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[c] Department of Biology, Heinrich-Heine-University, Duesseldorf, Germany

Abstract
The study aimed to investigate antiviral properties of orange peel methanolic extract against herpes simplex virus type 1 and 2 (HSV-1 and 2) in vitro. HSV-infected Vero cells and cell-free virus suspensions were treated with orange peel extracts, and virus yield and infectivity were quantified by direct plaque assay. The results of the present study showed that orange peel methanolic extract at 100µg/ml provided 68.5% inhibition against HSV-1. In addition, orange methanolic extract at 100 µg/ml provided 72.8% inhibition against HSV-2. The extract showed 100% inhibition against HSV-1 and 2 at 200, 250 and 300 µg/ml. These properties suggest that this orange peel could provide advantage as a topical prophylactic/therapeutic agent for herpes infections.

Author Keywords
Antiviral; Herpes simplex virus; Orange peel

Document Type: Article
Source: Scopus

Mohery, M.[a b] , Abdallah, A.M.[a] , Kelany, A.M.[c d] , Yaghmour, S.J.[a]
Thoron concentration, aerosol characteristics of 212Pb and estimation of equivalent dose
(2014) *Radiation Physics and Chemistry*, 101, pp. 66-72.

DOI: 10.1016/j.radphyschem.2014.04.013

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Abstract
The thoron gas (220Rn) activity concentration as well as activity size distribution of unattached and attached 212Pb to aerosol particles was measured in the open air of Jeddah City, Kingdom of Saudi Arabia. An electroprecipitation method was applied for measuring the 220Rn concentration. A mean activity concentration of 220Rn was determined to be 1.80±0.47Bqm-3. The unattached activities of 212Pb were collected using the wire screen diffusion battery technique while a low-pressure cascade impactor collected the attached activities. The mean activity median thermodynamic diameter (AMTD) of unattached 212Pb was determined to be 1.32nm with a relative mean geometric standard deviation (σg) of 1.45. A mean concentration of unattached activity of 212Pb was found to be 9.48±1.12mBqm-3. A mean unattached fraction (fp) of 0.028±0.002 was obtained at a mean aerosol particle concentration of 29×103cm-3. Sometimes, the fp values were less than the detection limit of 0.009. A mean activity median aerodynamic diameter (AMAD) of the accumulation mode of attached 212Pb was determined to be 352nm with a mean (σg) of 2.6. The mean value of specific air activity concentration of 212Pb associated with that mode was determined to be 310±12mBqm-3. With a dosimetric model calculation (ICRP, 1994) the total and regional deposition fractions, total and regional equivalent doses could be evaluated considering the obtained parameters of the activity size distributions. At a total deposition fraction of about 97% of unattached activities the total equivalent dose to the human lung was determined to be 0.16µSv while a total equivalent dose of 0.44µSv was determined at a total deposition fraction of about 23% for the attached activities. It was found that an unattached fraction of fP≈3% yields to about 27% of the total equivalent dose. © 2014.

Author Keywords
Dose equivalent; Unattached and attached activities

Document Type: Article
Source: Scopus

Salama-Younes, M.[a b] , Guingouain, G.[b] , Le Floch, V.[c] , Somat, A.[b]
Need for cognition, need for closing, need to evaluate: Proposal of scales in French and socio-normative approach of fundamental needs [Besoin de cognition, besoin d'évaluer, besoin de clôture: proposition d'échelles en langue française et approche socio-normative des besoins dits fondamentaux]
(2014) *Revue Europeene de Psychologie Appliquee*, 64 (2), pp. 63-75.

DOI: 10.1016/j.erap.2014.01.001

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Abstract
Introduction and objectives After leading a validation of questionnaires about three fundamental needs in French language (need for cognition, closing and evaluation), we tested in two studies that fundamental needs could be subjected to social constraints and could be considered differently than exclusively like stable personality characteristics and motivational drivers of action. Method Using the paradigm of judges (study 1) and the paradigm of identification (study 2), the results argue for a normative approach, at least as regards the need for cognition and assess. Results The results of the first study show that individuals consider more favorably targets with strong need rather than low need and especially in social contexts with high social utility (that is to say, the professional context in comparison with the friendly context). The results of the second study show that when the questionnaires about needs "as would a person having been previously well or poorly assessed" participants get higher scores high on the need for cognition questionnaire in the first case than in the second. The results regarding the need for closure are more mixed. Conclusion The results are discussed in a socio-normative perspective. © 2014 Published by Elsevier Masson SAS.

Author Keywords
Fundamental needs (cognition, closure, evaluate); Need for closure; Need for cognition; Need to evaluate; Socio-normative perspective; Validation of questionnaires

Document Type: Article
Source: Scopus

Khaled, S.M.[a b] , Ebaid, A.[c] , Al Mutairi, F.[d]
The exact endoscopic effect on the peristaltic flow of a nanofluid
(2014) *Journal of Applied Mathematics*, 2014, art. no. 367526, .

DOI: 10.1155/2014/367526

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Abstract
The problem of the peristaltic flow of a nanofluid under the effect of an endoscope is reinvestigated. The mathematical model is governed by a system of linear and nonlinear partial differential equations with prescribed boundary conditions. Really, the exact solution for any physical problem, if available, is of great importance which inevitably leads to a better understanding of the behaviour of the involved physical phenomena. An attempt for doing so has been done in the present paper, where the temperature equation is solved exactly by the help of Laplace transform and, accordingly, the exact expressions for the nanoparticle concentration, the axial velocity, the pressure gradient, and the pressure rise are established. Furthermore, it is showed in this paper that the physical interpretations of some involved phenomena are found totally different than those previously obtained by the approximate solutions using the homotopy perturbation method. In addition, several comparisons between the current results and the approximate ones have been displayed. Finally, the effect of various parameters on the temperature distribution, the nanoparticle concentration, the pressure gradient, and the pressure rise has been also discussed through graphs. © 2014 S. M. Khaled et al.

Document Type: Article
Source: Scopus

Ansari, Z.A.[a] , Khalid, S.[a] , Khan, A.A.[b] , Fouad, H.[c d] , Ansari, S.G.[a]
Cholesterol biosensor based on neodymium doped manganese titanate nanoparticles
(2014) *Sensor Letters*, 12 (10), pp. 1495-1501. Cited 1 time.

DOI: 10.1166/sl.2014.3387

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[c] Department of Applied Medical Science, Riyadh Community College, King Saud University, Riyadh, Saudi Arabia
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Abstract
Extensive efforts are being made in further enhancement of enzyme based biosensors towards intrinsic selectivity to enzymatic reactions, reliability and possibility of commercialization. A feasibility study of cholesterol oxidase (COx) immobilized neodymium doped MnTiO3 films, for cholesterol sensing is reported here. Initially, Mn-doped TiO2 powder was prepared using aqueous sol-gel method followed by doping with rare earth metal (neodymium). The synthesis resulted in almost spherical particles of ~20-30 nm size, which increases after calcination at 350 °C. X-ray diffraction, UV-Vis, FTIR and Raman scattering results indicated a formation of mixed phases of Mn-TiO2 and neodymium. These powders were screen printed over a pre-printed gold electrode on glass epoxy substrate (SPE) and COx was immobilized on the films by drop casting method. Electrochemical characteristics of the sensors were studied at various cholesterol concentrations (1 mg/dL to 200 mg/dL). It is realized that anodic peak current increases linearly as a function of cholesterol concentration. Doping with neodymium resulted in enhanced sensitivity. The results of various analysis techniques and sensor characteristics are correlated.

Author Keywords
Cholesterol; Doped titanium oxide; Electrochemical sensor; Nanopowder; Rare earth metal

Document Type: Article
Source: Scopus

El-Bendary, M.A.M., El-Tokhy, M.A.R.
Efficient performance and lower complexity of error control schemes for WPAN bluetooth networks
(2014) *Journal of Telecommunications and Information Technology*, 2014 (4), pp. 100-107.

Faculty of Industrial Education, Helwan University, Helwan, Egypt

Abstract
This paper presents a new technique of reduction retransmission time by decreasing the discarded packets and combating the complexity through error control techniques. The work is based on Bluetooth, one of the most common Wireless Personal Area Network. Its early versions employ an expurgated Hamming code for error correction. In this paper, a new packet format using different error correction coding scheme and new formats for the EDR Bluetooth packets are presented. A study for the Packet Error Probability of classic and Enhanced Data Rate (EDR) packets is also presented to indicate the performance. The simulation experiments are performed over Additive White Gaussian Noise (AWGN) and Rayleigh flat-fading channels. The experimental results reveal that the proposed coding scheme for EDR packets enhances the power efficiency of the Bluetooth system and reduce the losses of EDR packets.

Author Keywords
Bluetooth; EDR; Packet loss; Power efficiency; Wireless Personal Area Network

Document Type: Article
Source: Scopus

Farag, H.[a b]
The effectiveness of competing regulatory regimes and the switching effects: Evidence from an emerging market
(2014) *Global Finance Journal*, 25 (2), pp. 136-147. Cited 1 time.

DOI: 10.1016/j.gfj.2014.06.005

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Abstract
I investigate the effectiveness of two competing regulatory regimes and the effect of switching from strict price limits to circuit breakers on volatility spillover, and also on trading interference hypotheses. I find that switching to the circuit breakers' regime increases volatility and disrupts the price discovery mechanism. Stock prices are prevented from reaching their equilibrium levels and traders are unable to obtain their desired positions on limits hit day. Moreover, I find that volatility is spread out over the following 2. days post-limit hits within the strict price limits regime. Finally, the results show that price limits interfere with trading activity and affect investors' beliefs and liquidity positions.

Author Keywords

Circuit breakers; Price limits; Volatility and trading behaviour

Document Type: Article
Source: Scopus

El Dib, R.A.[a b] , Gaara, A.H.[c] , El-Shenawy, S.M.[d] , Micky, J.A.A.[e] , Mohammed, A.A.[d] , Marzouk, M.S.[f g]
Leaf extract of Markhamia platycalyx: Polyphenolic profile, acute toxicity, anti-inflammatory, hepatoprotective and in vitro antioxidant activities
(2014) *Drug Research*, 64 (12), pp. 680-689.

DOI: 10.1055/s-0034-1370965

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Abstract
10 polyphenols were identified from 80% aqueous methanol extract (AME) of Markhamia platycalyx [(Baker) Sprague] leaf. Their structures were characterized as protocatechuic acid (1), E-caffeic acid (2), E-methyl caffeate (3), isoverbascoside (4), verbascoside (5), jacraninoside-I (6), cosmosiin (7), cinaroside (8), luteolin (9) and apigenin (10) based on chemical and extensive spectral studies (UV, ESI-MS, 1H, 13C and 1D/2D NMR). Biological evaluation indicated that AME is non-toxic to the experimental animals. It exhibited a significant inhibition of oedema after 1, 2, 3 and 4-h for all examined doses (250, 500 and 1-000-mg/kg). In comparison with silymarin, the AME demonstrated a significant hepatoprotective effect in the form of high reduction in elevated ALT and AST serum levels in regard to paracetamol treated group. As well as, it revealed a marked significant scavenging activity by 62.9, 82.5, 88.3, 83.7 and 83.7%, for the concentrations 20, 40, 60, 80 and 100-mg/ml of the extract, respectively, relative to L-ascorbic acid (86.8%), which was used as a reference antioxidant drug. © Georg Thieme Verlag KG Stuttgart · New York.

Author Keywords
acute toxicity; anti-inflamatory; Bignoniaceae; hepatoprotection; in vitro antioxidant; Markhamia platycalyx leaf

Document Type: Article
Source: Scopus

Osman, M.E., El-Nasr, A.A., Abdullah, N.H.
Characterization of lipase from Trichoderma viride and its role in the management of pancreatic exocrine insufficiency
(2014) *Life Science Journal*, 11 (8), pp. 1-9.

Botany and Microbiology Department, Helwan University, Cairo, Egypt

Abstract
Lipases of Trichoderma viride were precipitated from the cultural medium with different methods. Acetone precipitation at 60% saturation point was the best one. The enzyme was partially purified by gel filtration chromatography using sephadex G-75. The enzyme was found to be of 25.2 KDa. The maximal activity has been obtained at high temperature (60°C) but the enzyme tolerates temperature up to 45°C. Also, it is characterized by its high stability and activity at the acidic pH values. The maximum activity has been maintained at pH 3 (49.1 unit/ml), with 80% residual activity. Also, it was stable with enhanced activity in the presence of bile salts (124% residual activity was maintained even after 45 min. incubation with 6 mM sodium cholate). Also, lipase enzyme showed nearly 100% residual activity in presence of trypsine enzyme. The enzyme has been tested for its ability in the management of pancreatic exocrine insufficiency using L-arginine induced acute pancreatitis mice models. The enzyme has the ability to decrease the weight loss and enhance fat digestion in this case. The total lipid level in serum after fat diet was enhanced from 837.99 mg/dl, in case of acute pancreatitis group without enzyme supplying, to 949.7 mg/dl, in case of acute pancreatitis group supplied with the enzyme, and a total weight gain of +0.21 gm body weight has been reported after the enzyme supplying for only 4 days.

Author Keywords
Bile salts; Lipase; Pancreatitis; Trichoderma viride; Trypsine

Document Type: Article
Source: Scopus

Rihan, F.A.[a b] , Baleanu, D.[c d e] , Lakshmanan, S.[a] , Rakkiyappan, R.[f]
On fractional SIRC model with salmonella bacterial infection
(2014) *Abstract and Applied Analysis*, 2014, art. no. 136263, . Cited 2 times.

DOI: 10.1155/2014/136263

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Abstract
We propose a fractional order SIRC epidemic model to describe the dynamics of Salmonella bacterial infection in animal herds. The infection-free and endemic steady sates, of such model, are asymptotically stable under some conditions. The basic reproduction number 0 is calculated, using next-generation matrix method, in terms of contact rate, recovery rate, and other parameters in the model. The numerical simulations of the fractional order SIRC model are performed by Caputo's derivative and using unconditionally stable implicit scheme. The obtained results give insight to the modelers and infectious disease specialists. © 2014 Fathalla A. Rihan et al.

Document Type: Article
Source: Scopus

Mourad, A.-H.I.[a b] , Dehbi, A.[c]
On use of trilayer low density polyethylene greenhouse cover as substitute for monolayer cover
(2014) *Plastics, Rubber and Composites*, 43 (4), pp. 111-121. Cited 1 time.

DOI: 10.1179/1743289814Y.0000000082

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Abstract
Few attempts are available in the literature on utilising the trilayer low density polyethylene (LDPE) film as new generation of greenhouse cover to substitute the monolayer film that is often used. This paper investigates and compares the degradation behaviour and durability of both covers. The covers are exposed to 7 months of natural withering. The results revealed that the degradation resistance of trilayer film is better than the monolayer film in terms of their mechanical and optical properties. The service lifespan, based on 50% reduction in the property criterion, of the trilayer film is found to be double the service lifespan of the monolayer film. © Institute of Materials, Minerals and Mining 2014.

Author Keywords
Degradation; LDPE greenhouse cover; Mechanical and optical properties; Monolayer film; Natural aging; Service lifespan; Trilayer film

Document Type: Article
Source: Scopus

Lotfy, H.M.[a] , Tawakkol, S.M.[b] , Fahmy, N.M.[c] , Shehata, M.A.[a]
Successive spectrophotometric resolution as a novel technique for the analysis of ternary mixtures of pharmaceuticals
(2014) *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, 121, pp. 313-323. Cited 12 times.

DOI: 10.1016/j.saa.2013.10.090

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Abstract
A novel spectrophotometric technique was developed for the simultaneous determination of ternary mixtures, without prior separation steps. This technique was called successive spectrophotometric resolution technique. The technique was based on either the successive ratio subtraction or successive derivative subtraction. The mathematical explanation of the procedure was illustrated. In order to evaluate the applicability of the methods a model data as well as an experimental data were tested. The results from experimental data related to the simultaneous spectrophotometric determination of lidocaine hydrochloride (LH), calcium dobesilate (CD) and dexamethasone acetate (DA); in the presence of hydroquinone (HQ), the degradation product of calcium dobesilate were discussed. The proposed drugs were determined at their maxima 202 nm, 305 nm, 239 nm and 225 nm for LH, CD, DA and HQ respectively; by successive ratio subtraction coupled with constant multiplication method to obtain the zero order absorption spectra, while by applying successive derivative subtraction they were determined at their first derivative spectra at 210 nm for LH, 320 nm or P292-320 for CD, 256 nm or P225-252 for DA and P 220-233 for HQ respectively. The calibration curves were linear over the concentration range of 2-20 μg/mL for both LH and DA, 6-50 μg/mL for CD, and 3-40 μg/mL for HQ. The proposed methods were checked using laboratory-prepared mixtures and were successfully applied for the analysis of pharmaceutical formulation containing the cited drugs with no interference from other dosage form additives. The proposed methods were validated according to the ICH guidelines. The obtained results were statistically compared with those of the official BP methods for LH, DA, and CD, and with the official USP method for HQ; using student t-test, F-test, and one way ANOVA, showing no significant difference with respect to accuracy and precision.

Author Keywords
Calcium dobesilate; Dexamethasone acetate; Lidocaine hydrochloride; Successive derivative subtraction; Successive ratio subtraction; Successive spectrophotometric resolution technique

Document Type: Article
Source: Scopus

Amrollahi, R.[a b] , Hamdy, M.S.[a c] , Mul, G.[a]
Understanding promotion of photocatalytic activity of TiO2 by Au nanoparticles
(2014) *Journal of Catalysis*, 319, pp. 194-199. Cited 4 times.

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[b] Department of Physics, Iran University of Science and Technology, Tehran, Iran
[c] Chemistry Department, Faculty of Science, Helwan University, Cairo, Egypt

Abstract
Au nanoparticles prepared by deposition-precipitation were evaluated in promoting photocatalytic activity of TiO2 (P25) in the oxidation of methylcyclohexane. At 375 nm and in particular at 425 nm, Au was found to significantly enhance the rate induced by P25. Illumination of Au-promoted P25 at 525 nm did not result in any measureable activity. To validate whether the enhancement at 425 nm is purely catalytic, or if plasmonic effects are relevant, we compared the rates of Au/TiO2 with Pt-promoted TiO2 at 375 and 425 nm. At 375 nm, Pt nanoparticles induced larger catalytic effects than Au nanoparticles, whereas the rate enhancement induced by Pt was much lower than of Au at 425 nm. We assign the thus demonstrated Au based plasmonic phenomena at 425 nm to the so-called plasmon resonance energy transfer, rather than to hot electron transfer, given the absence of activity at 525 nm.

Author Keywords
Au; Hot electrons; Photocatalysis; Plasmon resonance energy transfer (PRET); Selective oxidation; TiO2; Wavelength

Document Type: Article
Source: Scopus

Gomma, H.W.
Modeling and optimal planning for the higher education using control engineering and genetic algorithm
(2014) *2014 IEEE Conference on Control Applications, CCA 2014*, art. no. 6981535, pp. 1491-1496.

DOI: 10.1109/CCA.2014.6981535

Department of Electronics, Communications and Computer Department, Helwan University, Egypt

Abstract

In the last few decades, governments have been allocating considerable resources to plan for their future education systems. To do this, simulation models have been intensively utilized to develop different planning scenarios. Normally, these models are extremely complex and reaching optimum planning scenarios is almost impossible. This paper is trying to introduce more efficient modeling approach that is mainly based engineering control. Also, it introduces a powerful optimization tools namely GA to develop optimal planning scenarios. The results show the ability of the proposed techniques in providing optimal scenarios in an easy fashion when compared with the time consuming manual iteration approach with significant reduction in the government expenditure without sacrificing education quality. © 2014 IEEE.

Author Keywords
Control; Genetic Algorithm; Modeling; Optimization

Document Type: Conference Paper
Source: Scopus

Singer, G.A.M.[a] , Strowitzki, T.[b] , Hussein, J.[c] , Oraby, F.[c]
Identification, isolation and characterization of IGF binding proteins as a secretable proteins of human endometrial stromal cell culture
(2014) *Journal of Applied Pharmaceutical Science*, 4 (6), pp. 001-008.

DOI: 10.7324/JAPS.2014.40601

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Abstract
IGF-1, a high potent mitogenic factor with a dual function is believed to participate with female steroids and other growth factors to prepare endometrium receptivity for successful embryo implantation and further development. Stromal cells forms the functional receptive layer of endometrium structure. Analysis of the conditioned/defined medium of pure cultured human endometrial stromal cells have revealed that stromal cells in a monolayer culture secrete and produce three different types of proteins in a varying amounts. These proteins exhibit a high specificity as well as a high binding affinity for the radiolabeled IGF-1 peptide. The molecular weights of these proteins have been determined by SDS-Page electrophoresis after cross-linking with the radiolegand IGF-1 and then detected with autoradiography. By comparison to the migration of high molecular weights protein markers, these proteins have been identified to correspond to the IGFBP-1 (31 KDa), IGFBP-2 (36 KDa) and IGFBP-3 (45 KDa). The secretion of these binding proteins (IGFBP-1, -2, -3) by endometrial stromal cells may support the view of their biological importance in controlling the delivery and bioavailability of the high mitogen IGF-1 peptide to their nominative type-1 IGF-receptor on cell surface, thereby modulating its action. It seems likely that these IGFBPs may play a key role in switching on/off IGF-1 peptide action , thereby avoiding the uncontrolled proliferation effect of the IGF-1 that favor endometrium cancer development. © 2014 Gamal A. M. Singer et al.

Author Keywords
Cell culture; Endometrial stromal cells; IGFBPs

Document Type: Article
Source: Scopus

Aly, W.I.A.
Reply to "comments on "numerical study on turbulent heat transfer and pressure drop of nanofluid in coiled tube-in-tube heat exchangers" (Wael I.A. Aly, Energy Convers. Manage. 79 (2014) 304-316)"
(2014) *Energy Conversion and Management*, 88, p. 1075.

DOI: 10.1016/j.enconman.2014.09.080

Department of Refrigeration and Air Conditioning Technology, Faculty of Industrial Education, Helwan University, Cairo, Egypt

Document Type: Letter
Source: Scopus

Mohareb, R.M.[a] , Al-Omran, F.[b] , Azzam, R.A.[c]
Heterocyclic ring extension of estrone: Synthesis and cytotoxicity of fused pyran, pyrimidine and thiazole derivatives
(2014) *Steroids*, 84, pp. 46-56. Cited 2 times.

DOI: 10.1016/j.steroids.2014.03.012

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[c] Department of Chemistry, Faculty of Science, Helwan University, Cairo, A.R., Egypt

Abstract
The one pot reaction of estrone with the aromatic aldehydes 2a-c and either of malononitrile or ethyl cyanoacetate afforded the fused pyran derivatives 4a-f. On the other hand, carrying the same reaction using thiourea instead of the cyanomethylene reagent gave the fused pyrimidine derivatives 6a-c. The latter compounds reacted with phenacyl bromide to give the thiazolo[3,2-a] pyrimidine derivatives 8a-c. The reaction of the title compound with bromine gave the monobromo derivative 13 which in turn reacted with either thiourea or cyanothioacetamide to give the thiazole derivatives 14 and 16, respectively. The cytotoxicity of the newly synthesized products was evaluated against six human cancer and normal cell lines where the results showed that compounds 4c, 4f, 6b, 8b, 8c, 10, 13, 16, 18c and 19c exhibited optimal cytotoxic effect against the cancer cell lines, with IC50's in the nM range.

Author Keywords
Cytotoxicity; Estrone; Pyran; Pyrimidine; Thiazole

Document Type: Article
Source: Scopus

Ibrahim, E.-S.H.[a] , Khalifa, A.M.[b] , Eldaly, A.K.[b] , Bowman, A.W.[a]
The effects of the analysis technique on hepatic iron evaluation using T2* mapping with magnetic resonance imaging
(2014) *Middle East Conference on Biomedical Engineering, MECBME*, art. no. 6783196, pp. 13-16.

DOI: 10.1109/MECBME.2014.6783196

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Abstract
Iron toxicity is the major factor for tissue damage and organ failure in patients with iron overload. T2* measurement with magnetic resonance imaging (MRI) has been established as an effective and non-invasive technique for evaluating iron content in the liver. However, different factors related to the adopted image processing criterion affect the resulting measurements. These factors include the exponential fitting model (single exponential, bi-exponential, or exponential + constant) and the size and location of the selected region of interest and whether it includes vasculature, susceptibility artifacts, or is close to the liver boundary. In this study, we investigate the effects of these various factors on T2* measurement using calibrated phantoms with different amounts of iron as well as on patients with different degrees of iron overload. The results show various degrees of similarities and differences between different processing techniques, which should be known by the operator for better selection of the image processing parameters and proper interpretation of the resulting measurements.

Author Keywords
Iron overload; Iron toxicity; Liver; MRI; T2*

Document Type: Conference Paper
Source: Scopus

Shad, A.A.[a] , Ahmad, S.[b] , Ullah, R.[c] , Abdel-Salam, N.M.[d] , Fouad, H.[d e] , Rehman, N.U.[f] , Hussain, H.[f] , Saeed, W.[a]
Phytochemical and biological activities of four wild medicinal plants
(2014) *Scientific World Journal*, 2014, art. no. 857363, . Cited 1 time.

DOI: 10.1155/2014/857363

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[d] Riyadh Community College, King Saud University, Riyadh, Saudi Arabia
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Abstract
The fruits of four wild plants, namely, Capparis decidua, Ficus carica, Syzygium cumini, and Ziziphus jujuba, are separately used as traditional dietary and remedial agents in remote areas of Khyber Pakhtunkhwa, Pakistan. The results of our study on these four plants revealed that the examined fruits were a valuable source of nutraceuticals and exhibited good level of antimicrobial activity. The fruits of these four investigated plants are promising source of polyphenols, flavonoids, alkaloids, terpenoids, and saponins. These four plants' fruits are good sources of iron, zinc, copper, manganese, selenium, and chromium. It was also observed that these fruits are potential source of antioxidant agent and the possible reason could be that these samples had good amount of phytochemicals. Hence, the proper propagation, conservation, and chemical investigation are recommended so that these fruits should be incorporated for the eradication of food and health related problems. © 2014 Anwar Ali Shad et al.

Document Type: Article
Source: Scopus

Daoush, W.M.[a c] , Lim, B.K.[b] , Nam, D.H.[b] , Hong, S.H.[b]
Microstructure and mechanical properties of CNT/Ag nanocomposites fabricated by spark plasma sintering
(2014) *Journal of Experimental Nanoscience*, 9 (6), pp. 588-596. Cited 2 times.

DOI: 10.1080/17458080.2012.680927

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Abstract
Carbon nanotube/silver (CNT/Ag) nanocomposites include CNT volume fraction up to 10 vol.% were prepared by chemical reduction in solution followed by spark plasma sintering. Multiwalled CNTs underwent surface modifications by acid treatments, the Fourier transform infrared spectroscopy data indicated several functional groups loaded on the CNT surface by acid functionalisation. The acid-treated CNTs were sensitised and activated. Silver was deposited on the surface of the activated CNTs by chemical reduction of alkaline silver nitrate solution at room temperature. The microstructures of the prepared CNT/Ag nanocomposite powders were investigated by high-resolution scanning electron microscopy (HRSEM), transmission electron microscopy and X-ray powder diffraction analysis. The results indicated that the produced CNT/Ag nanocomposite powders have coated type morphology. The produced CNT/Ag nanocomposite powders were sintered by spark plasma sintering. It was observed from the microstructure investigations of the sintered materials by HRSEM that the CNTs were distributed in the silver matrix with good homogeneity. The hardness and the tensile properties of the produced CNT/Ag nanocomposites were measured. By increasing the volume fraction of CNTs in the silver matrix, the hardness values increased but the elongation values of the prepared CNT/Ag nanocomposites decreased. In addition, the tensile strength was increased by increasing the CNTs volume fraction up to 7.5 vol.%, but the sample composed of 10 vol.% CNT/Ag was fractured before yielding. © 2014 Copyright Taylor & Francis Group, LLC.

Author Keywords
hardness; multiwalled carbon nanotube; silver deposition; spark plasma sintering; tensile properties

Document Type: Article
Source: Scopus

Martinelli, A.[a] , Bakry, A.[b] , D'Ilario, L.[a] , Francolini, I.[a] , Piozzi, A.[a] , Taresco, V.[a]
Release behavior and antibiofilm activity of usnic acid-loaded carboxylated poly(l-lactide) microparticles
(2014) *European Journal of Pharmaceutics and Biopharmaceutics*, 88 (2), pp. 415-423. Cited 3 times.

DOI: 10.1016/j.ejpb.2014.06.002

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Abstract
The use of controlled drug delivery systems could give a significant contribution to the improvement of therapies against biofilm-based infections. The aim of this study was to develop polymer microparticles, based on carboxylated poly(l-lactide)s, to be employed as carriers for usnic acid (UA), a poorly soluble drug possessing antiviral, antiproliferative and wide spectrum antimicrobial activity. Thanks to polymer surfactant-like structure, 2.4 μm-in-size microparticles were obtained by a surfactant-free oil-in-water emulsion/evaporation method. UA was encapsulated into these microparticles with a high loading efficiency (80%). The drug release kinetics was found to be temperature dependent (the released dose increasing with temperature) and showed bimodal release behavior. By polarized

optical microscopy observations and the application of kinetics models, the initial burst effect was attributed to the delivery of the drug amorphous fraction while the slower release occurring for longer times to the crystalline one, both entrapped in the polymer amorphous phase. UA-loaded microparticles were able to promote the killing of a 24 h-old Staphylococcus epidermidis biofilm more efficaciously than free UA.

Author Keywords
Drug delivery; Microbial biofilm; Microparticles; Polylactide; Staphylococcus epidermidis; Usnic acid

Document Type: Article
Source: Scopus

Garbie, I.H.[a b]
A methodology for the reconfiguration process in manufacturing systems
(2014) *Journal of Manufacturing Technology Management*, 25 (6), pp. 891-915. Cited 3 times.

DOI: 10.1108/JMTM-06-2011-0064

[a] Department of Mechanical and Industrial Engineering, Sultan Qaboos University, Muscat, Oman
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Abstract
Purpose - The purpose of this paper is to propose a "Reconfiguration Methodology" in manufacturing systems that they can become more economically sustainable and can operate efficiency and effectively. This methodology will allow customized flexibility and capacity not only in producing a variety of products (parts) and with changing market demands, but also in changing and reengineering the system itself. Design/methodology/approach - Reconfigurable manufacturing system (RMS) is a philosophy or strategy which was introduced during the last decade to achieve agility in manufacturing systems. Until now, the RMS philosophy was based changing activities such routing, planning, programming of machines, controlling, scheduling, and physical layout or materials handling system. But the RMS concept can be based on the needed reconfiguration level (NRL), operational status of production systems, and new circumstances (NC). The NRL measure is based on the agility level of the manufacturing systems which is based on technology, people, management, and manufacturing strategies. The components of the manufacturing system design (MSD) consist of production system design, plant layout system, and material handling system. Operational status of production systems includes machine capability (flexibility) and capacity (reliability), production volume or demand, and material handling equipment in addition to the plant layout. The NC are also consisting of new product, developing the existing ones, and changing in demand. Findings - Reconfiguration manufacturing systems from one period to another period is highly desired and is considered as a novel manufacturing philosophy and/or strategy toward creating new sustainable manufacturing systems. A new reconfiguration methodology for the manufacturing systems will be analyzed and proposed. Two Case studies will be introduced. Originality/value - The suggestion of a new methodology of reconfiguration including the NRL (configurability index) and the operational status of manufacturing systems with respect to any circumstance is highly considered. The reconfiguration methodology also provides a framework for sustainability in the manufacturing area which mainly focussed on manufacturing systems design.

Author Keywords
Manufacturing strategies; Reconfigurable manufacturing systems

Document Type: Article
Source: Scopus

William, Y., Oraby, W., Metwally, S.
Analysis of Vehicle Lateral Dynamics due to Variable Wind Gusts
(2014) *SAE International Journal of Commercial Vehicles*, 7 (2), .

DOI: 10.4271/2014-01-2449

Helwan University, Egypt

Abstract
This study presents a practical theoretical method to judge the aerodynamic response of buses in the early design stage based on both aerodynamic and design parameters. A constant longitudinal velocity 2-DOF vehicle lateral dynamics model is used to investigate the lateral response of a bus under nine different wind gusts excitations. An appropriate 3-D CFD simulation model of the bus shape results is integrated with carefully chosen design parameters data of a real bus chassis and body to obtain vehicle lateral dynamic response to the prescribed excitations.

Vehicle model validity is carried out then, the 2-DOF vehicle lateral dynamics model has been executed in MATLAB Simulink environment with the selected data. Simulation represents the vehicle in a straight ahead path then entered a gusting wind section of the track with a fixed steering wheel. Vehicle response includes lateral deviation (LD), lateral

acceleration (LA), yaw angle (YA) and yaw rate (YR). Results showed that in case of 25 m/s wind gust [which corresponds to 45° wind relative yaw angle (βw)], the vehicle Lateral Deviation (LD) maintained about 5 m after 4.5 seconds of entering the wind gust. Moreover, vehicle Yaw Rate (YR) reaches a maximum value of about 2.3deg/s during such maneuver simulation time. © 2014 SAE International.

Document Type: Article
Source: Scopus

Akl, M.R.[a] , Elsayed, H.E.[a b] , Ebrahim, H.Y.[a] , Haggag, E.G.[b] , Kamal, A.M.[b] , El Sayed, K.A.[a]
3-O-[N-(p-fluorobenzenesulfonyl)-carbamoyl]-oleanolic acid, a semisynthetic analog of oleanolic acid, induces apoptosis in breast cancer cells
(2014) *European Journal of Pharmacology*, 740, pp. 209-217.

DOI: 10.1016/j.ejphar.2014.07.011

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Abstract
Oleanolic acid (OA), a pentacyclic triterpene acid widely distributed in food and traditional herbal remedies, exhibits diverse therapeutic effects. OA has been subjected to various chemical modifications to optimize its anticancer effect. Among other analogs, 3-O-[N-(p-fluorobenzenesulfonyl)-carbamoyl]-oleanolic acid (PFOA) was semisynthesized from OA. This study evaluates the cytotoxic effects of PFOA on MDA-MB-231, MCF-7, BT-474, and T-47D human breast cancer cells. Acute treatment of PFOA inhibited breast cancer cell viability in a dose-dependent manner. Treatment of PFOA at cytotoxic doses significantly induced apoptosis in cancer cells as shown by flow cytometry analysis. Activation of apoptosis in MCF-7 and BT-474 cells seemed to be initiated through induction of Fas ligand, which resulted in activation of caspase-8 and PARP-1, whereas apoptosis in MDA-MB-231 cells was initiated by the activation of caspase-9, caspase-3 and PARP-1. The mechanism of apoptosis induction in T-47D involves activation of PARP-1. PFOA decreased the expression of EGFR, HER-2, MET and ERα in human breast cancer cell lines. These findings suggest that PFOA inhibits cell growth, activates apoptosis, and decreases the expression of key proteins involved in progression of breast cancer. © 2014 Elsevier B.V.

Author Keywords
Apoptosis; Breast cancer; Caspase-8; Caspase-9; FAS ligand; Oleanolic acid

Document Type: Article
Source: Scopus

Mohamed, N.A.E.[a] , Tohamy, A.A.[a] , Elgamal, B.[b] , Abdel Moneim, A.E.[a]
Ameliorative effect of citrus peel extract on castration-induced oxidative stress in liver and kidney of rats
(2014) *Journal of Applied Pharmaceutical Science*, 4 (7), pp. 64-68.

DOI: 10.7324/JAPS.2014.40711

[a] Zoology and Entomology Department, Faculty of Science, Helwan University, Cairo, Egypt
[b] Clinical pathology Department, National Cancer Institute, Cairo University, Cairo, Egypt

Abstract
The present work aimed to investigate the effect of methanolic extract of citrus peel in the redox status of liver and kidney in castrated rats. Twenty four Wistar albino rats were used. They were divided into 4 groups (n = 6). Group I was used as control. Group II was castration group, Group III was normal rats treated with citrus peel and Group IV was citrus peel castration group. Liver and kidney function and oxidative stress markers were measured. In addition, histopathological changes of liver and kidney were examined. Castration enhanced lipid peroxidation and nitric oxide production in both liver and kidney with concomitant reduction in glutathione. In addition, castration caused liver and kidney injuries as indicated by histopathological changed of the liver and kidney with a disturbance in the functions of liver and kidney. Citrus peel protected liver and kidney through decreasing the oxidative stress stimulating the antioxidant defense system. From the present results, it can be concluded that the decrease in liver and kidney damages during citrus peel treatment may be due to the inhibition of oxidative stress overproduction and maintenance of antioxidant defense mechanisms of this extract. © 2014 Nada A.E. Mohamed et al.

Author Keywords
Castration; Citrus peel; Kidney; Liver; Oxidative stress

Document Type: Article
Source: Scopus

Amin, S., Emara, A., Hussien, A., Shabaka, I.
Thermal structure and flow field characteristics of a modified inverse jet diffusion flame burner
(2014) *ASME International Mechanical Engineering Congress and Exposition, Proceedings (IMECE)*, 7, .

DOI: 10.1115/IMECE2014-38030

Mechanical Power Engineering Department, Faculty of Engineering-Mataria, Helwan University, Cairo, Egypt

Abstract
The study of aerodynamic behavior of turbulent coaxial and annular jets is of great interest in many engineering applications as, for instance, the design of a new generation of industrial burners. This investigation concerns the combustion process in a triple path inverse jet diffusion flame burner in which a gaseous fuel is inserted in the middle of the second jet. A comparison between the middle fuel co-annular jet (COA, case I) and the circumferential arranged fuel ports (CAP, case II) is performed at constant projectile area (as listed in Table. 1). A numerical simulation is conducted to predict the flame structure using ANSYS-CFX program. The present work experimentally investigates the thermal (inflame temperature) conditions as well as other physical properties. The planar flow field was visualized in both burner configurations. The effect of burner loading and velocity ratio of inner to outer air annuals jets on the flame structure is investigated at unity equivalence ratio. The flammability limit is expected to be changed for CAP and COA configurations as the velocity ratio increases since no lifted flame is predicted at high velocities. Copyright © 2014 by ASME.

Document Type: Conference Paper
Source: Scopus

Amin, S., Emara, A., Hussien, A., Shabaka, I.
Modeling of the thermal characteristics of an eccentric multi-stage inverse jet diffusion flame burner
(2014) *ASME International Mechanical Engineering Congress and Exposition, Proceedings (IMECE)*, 8A, .

DOI: 10.1115/IMECE2014-39753

Mechanical Power Engineering Department, Faculty of Engineering-Mataria, Helwan University, Cairo, Egypt

Abstract
The objective of this paper is to study the effect of eccentricity on the thermal characteristics and flow field of a triple-concentric free jet burner. The investigation concerns three values of eccentricity (1.25, 1.88, and 2.5 times the inner-jet diameter); and in addition to the normal centric jet (no eccentricity). Prediction of the reacting flow characteristics and the planar flow visualization for all burners' configurations is simulated with the CFD k-ε turbulence of "ANSYS-CFX". In addition, the finite rate and eddy dissipation model is utilized to simulate the interaction between the chemical reaction and turbulence. The temperature, velocity and turbulence intensity are investigated to simulate the thermal-structure interaction. The results are obtained at a constant momentum rate. It showed significant changes in the coherent structures shed from the annular jets. By increasing the eccentricity, the maximum temperature will be attained more rapidly than centric case. In addition, the mixing point become nearer the burner rim, which increased the flame size and shifted the flame structure. Copyright © 2014 by ASME.

Document Type: Conference Paper
Source: Scopus

Ghorab, H.Y.[a] , Mabrouk, M.R.[a] , Ismail, K.I.[a] , Osman, Y.A.[a] , Abd Elnaby, S.F.[a] , Yousri, K.M.[b] , Ahmed, H.H.[c] , Herfort, D.[d]
The suitability of Portland limestone cement for use in construction applications in Egypt
(2014) *Cement International*, 12 (6), pp. 70-77.

[a] Helwan University, Egyptian Russian University, Egypt
[b] Housing and Building National Research Center, Egypt
[c] Benha University, Egypt
[d] Cementir Holding S.p.A, Denmark

Abstract
The suitability of Portland limestone cement for use in variable applications in Egypt is investigated to support the approval of the Egyptian Concrete Code of Practice for its utilization in structural concrete applications The restriction of its use is due to the durability effect as there are cold areas in the eastern part of the country, and to avoid failure due to uncontrolled workmanship The behavior of cement pastes and mortars with 10 to 30 mass % limestone replacement of CEM I 42,5 R was therefore studied The durability of mortar prisms was investigated in magnesium

sulfate solution at room temperature and 7 °C for 9 months In accordance to the literature, the compressive strength of mortars with up to 15 mass % limestone content are found to be close to the reference and decreases with higher limestone content and with decreasing temperature The expansion decreases with increasing limestone additions Thaumasite forms at the edges of the mortars after 5 months immersion in sulfate solution at 7°C In a parallel investigation series on pure systems, thaumasite was prepared at room temperature. Infrared measurements on mixes of gypsum or ettringite with calcite, silica gel and water indicate that octahedral silicon forms readily at room temperature as hypervalent silica The ettringite offers a nucleation site for its formation The bonding of calcium with the silicon octahedron occurs with increased solubility at lower temperature or by sucrose and by increased lime concentration It is suggested to lower the solubility of lime and its concentration to avoid the formation of a destructive thaumasite.

Document Type: Article
Source: Scopus

Yaman, M.A.[a] , Al-Atabany, W.[b] , Bystrov, A.[a] , Degenaar, P.[a]
FPGA design for dual-spectrum visual scene preparation in retinal prosthesis
(2014) *2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2014*, art. no. 6944671, pp. 4691-4694.

DOI: 10.1109/EMBC.2014.6944671

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[b] Dep. of Biomedical Engineering, Helwan University, Egypt

Abstract
A method of Visual Scene Preparation for the patients suffering Retinitis Pigmentosa is implemented in hardware for the first time. The scene is captured with two cameras, one visible spectrum and one infra-red, in order to distinguish between the live and non-live objects. The live objects are subsequently emphasized in the output image, thus helping a patient to see the most significant detail with the healthy part of the retina. The implementation uses Verilog language and FPGA platform. A system prototype is analyzed and compared to MATLAB results. © 2014 IEEE.

Author Keywords
Anisotropic Diffusion Filter; Augmented Vision; Field Programmable Gate Arrays (FPGA); Image Simplification; Infra-Red Camera; Real Time; Retinal Prosthesis

Document Type: Conference Paper
Source: Scopus

Almajhdi, F.N.[a] , Fouad, H.[b] , Khalil, K.A.[c] , Awad, H.M.[d] , Mohamed, S.H.S.[d] , Elsarnagawy, T.[e] , Albarrag, A.M.[f] , Al-Jassir, F.F.[g] , Abdo, H.S.[c]
In-vitro anticancer and antimicrobial activities of PLGA/silver nanofiber composites prepared by electrospinning
(2014) *Journal of Materials Science: Materials in Medicine*, 25 (4), pp. 1045-1053. Cited 6 times.

DOI: 10.1007/s10856-013-5131-y

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[b] Biomedical Engineering Department, Faculty of Engineering, Helwan University, Helwan, Egypt
[c] Mechanical Engineering Department, College of Engineering, King Saud University, P.O. Box 800, Riyadh 11421, Saudi Arabia
[d] National Research Centre, Dokki, Cairo 12622, Egypt
[e] Faculty of Engineering, Prince Sultan University, Riyadh, Saudi Arabia
[f] Department of Pathology, College of Medicine, King Saud University, Riyadh, Saudi Arabia
[g] College of Medicine, Orthopedic Surgery Research Department, King Saud University, Riyadh, Saudi Arabia

Abstract
In the present work, a series of 0, 1 and 7 wt% silver nano-particles (Ag NPs) incorporated poly lactic-co-glycolic acid (PLGA) nano-fibers were synthesized by the electrospinning process. The PLGA/Ag nano-fibers sheets were characterized using SEM, TEM and DSC analyses. The three synthesized PLGA/silver nano-fiber composites were screened for anticancer activity against liver cancer cell line using MTT and LDH assays. The anticancer activity of PLGA nano-fibers showed a remarkable improvement due to increasing the concentration of the Ag NPs. In addition to the given result, PLGA nano-fibers did not show any cytotoxic effect. However, PLGA nano-fibers that contain 1 % nano silver showed anticancer activity of 8.8 %, through increasing the concentration of the nano silver to 7 % onto PLGA nano-fibers, the anticancer activity was enhanced to a 67.6 %. Furthermore, the antibacterial activities of these three nano-fibers, against the five bacteria strains namely; E.coli o157:H7 ATCC 51659, Staphylococcus aureus ATCC 13565, Bacillus cereus EMCC 1080, Listeria monocytogenes EMCC 1875 and Salmonella typhimurium

ATCC25566 using the disc diffusion method, were evaluated. Sample with an enhanced inhibitory effect was PLGA/Ag NPs (7 %) which inhibited all strains (inhibition zone diameter 10 mm); PLGA/Ag NPs (1 %) sample inhibited only one strain (B. cereus) with zone diameter 8 mm. The PLGA nano-fiber sample has not shown any antimicrobial activity. Based on the anticancer as well as the antimicrobial results in this study, it can be postulated that: PLGA nanofibers containing 7 % nano silver are suitable as anticancer- and antibiotic-drug delivery systems, as they will increase the anticancer as well as the antibiotic drug potency without cytotoxicity effect on the normal cells. These findings also suggest that Ag NPs, of the size (5-10 nm) evaluated in the present study, are appropriate for therapeutic application from a safety standpoint. © 2013 Springer Science+Business Media.

Document Type: Article
Source: Scopus

Shaker, F.M.F.
Internal forces in different types of lateral bracing systems for open steel box girders
(2014) *Middle - East Journal of Scientific Research*, 21 (1), pp. 7-17.

DOI: 10.5829/idosi.mejsr.2014.21.01.21102

Department of Civil Engineering, Faculty of Engineering, Helwan University, Mataria, Cairo, Egypt

Abstract
Trapezoidal composite steel box girders are becoming increasingly popular as a bridge system due to their torsional efficiency and aesthetic appearance. These bridge systems utilize one or more trapezoidal steel girders with a cast-in-place composite concrete roadway. The critical design stage occurs during pouring of the bridge deck, when the steel superstructure must support the weight of the fresh concrete. A lateral bracing system is usually installed at the top flange level to form a quasi-closed box, thereby increasing the torsional stiffness during construction. Typical lateral bracing includes single-diagonal types (SD-W and SD-N) and a crossed-diagonal type (XD). Analytical equations were formulated in previous studies to compute the brace forces in bracing members by taking into account bending and torsional actions of tub girders with single or cross diagonal bracing systems. This paper presents a comparison between brace force values calculated by analytical methods which results from three-dimensional finite element analysis due to the bending and torsion behaviors of trapezoidal box girder systems during construction for straight and horizontally curved bridges. The results of the analytical methods have good accuracy in case of box girders with XD type lateral bracing systems. It has been observed, that there are significant discrepancies between the member forces computed from Fan & Helwig method and those obtained from FEA in case of box girders with lateral bracing including a single diagonal (SD type) bracing system (warren or pratt). On the other hand, the results of member forces computed from Kim & Chai Yoo method have good accuracy. © IDOSI Publications, 2014.

Author Keywords
Ansys; Bracing systems; Finite elements; Steel bridges; Trapezoidal box girder

Document Type: Article
Source: Scopus

Oraby, W., Aly, M.A., El-Demerdash, S., El-Nashar, M.
On the integration of actively controlled longitudinal/lateral dynamics chassis systems
(2014) *SAE Technical Papers*, 1, .

DOI: 10.4271/2014-01-0864

Automotive Engineering Department, Faculty of Engineering at Mataria, Helwan University., 11718, Cairo, Egypt

Abstract
Integral Control strategy for vehicle chassis systems had been of great interest for vehicle designers in the last decade. This paper represents the interaction of longitudinal control and lateral control. In other words the traction control system and handling control system. Definitely, tire properties are playing a vital role in such interaction as it is responsible for the generated forces in both directions. A seven degrees of freedom half vehicle model is derived and used to investigate this interaction. The vehicle body is represented as a rigid body with three degrees of freedom, lateral and longitudinal, and yaw motions. The other four degrees are the two rotation motion of the front wheel and the rear wheel. This two motions for each wheel are spin motion and the steering motion. The traction controller is designed to modulate engine torque through adjusting the throttle angle of the engine upon utilized adhesion condition at the driving road wheels. The active four steering (4WS) control system is designed to enhance vehicle lateral dynamics through controlling rear steer angle. The optimal and fuzzy logic control theories are used to design the system controllers. The integrated model connects the two systems via the Magic Formula Tire Model to represent the tire non-linearity during augmented longitudinal and lateral dynamic attitudes. The simulation results helped to understand the effects of each chassis system on the other system. Moreover, this simulation highlights the importance of taking these effects into account when designing the integrated controller for improved vehicle overall performance. Copyright © 2014 SAE International.

Document Type: Conference Paper
Source: Scopus

Afify, A.A.[a c] , Bazid, M.A.A.[b]
MHD falkner-skan flow and heat transfer characteristics of nanofluids over a wedge with heat source/sink effects
(2014) *Journal of Computational and Theoretical Nanoscience*, 11 (8), pp. 1844-1852.

DOI: 10.1166/jctn.2014.3578

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Abstract
The steady of MHD boundary layer flow and heat transfer of nanofluids over a moving wedge under the effect of non-uniform heat source (or sink) has been investigated numerically. Three different types of nanoparticles, namely Copper Cu, Alumina Al2O3, and Titania TiO2 are considered by using water as a base fluid with Prandtl number Pr = 6.2. The set of governing boundary layer equations and the boundary condition are transformed into a set of nonlinear ordinary differential equations with the relevant boundary conditions. The transformed equations are solved numerically by using Keller-Box method. Favorable comparison with previously published work is performed. Numerical results for velocity and temperature profiles as well as skin friction coefficient and Nusselt number are presented through graphs and tables for pertinent parameters to show interesting aspects of the solution. Copyright © 2014 American Scientific Publishers.

Author Keywords
Boundary layer; MHD; Nanofluids; Non-uniform heat source/sink

Document Type: Article
Source: Scopus

Tantawy, S.F.
A New Procedure for Solving Integer Linear Programming Problems
(2014) *Arabian Journal for Science and Engineering*, 39 (6), pp. 5265-5269. Cited 1 time.

DOI: 10.1007/s13369-014-1079-6

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Abstract
This paper presents a new procedure for solving the integer linear programming problem when the objective function is a linear function and the set of constraints is in the form of linear inequality constraints. The proposed procedure is based on the conjugate gradient projection method together with the use of the spirit of Gomory cut. The main idea behind our method is to move through the feasible region through a sequence of points in the direction that improves the objective function. Since methods based on vertex information may have difficulties as the problem size increases, therefore, the present method can be considered as an interior point method, which had been proved to be less sensitive to problem size. A simple production example is given to clarify the theory of this new procedure. © 2014 King Fahd University of Petroleum and Minerals.

Author Keywords
Conjugate gradient; Integer linear programming; Linear program

Document Type: Article
Source: Scopus

Sharaf Eldin, A.[a] , ElNahry, A.H.[b] , Elsayed, A.[c] , Ibrahim, R.E.[b]
A new pedagogical design for geo-informatics courses using an e-training support system
(2014) *Education and Information Technologies*, 19 (2), pp. 451-467.

DOI: 10.1007/s10639-012-9243-7

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Cairo, Egypt
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Abstract
The current study seeks to introduce a new pedagogical design for geo-informatics courses using an e-training support system. Laurillard's conversational approach based on conceptual representation for both instructor and learner was used to form the framework. As the current study specifically interested in training as a special form for learning, so, we sought methods and strategies to integrate requirements of both company and employee into the design of training programs. Therefore, a competency perspective was adopted into the conversational framework to use learning design that leads to learning activities tightly related to the needs of the company and employee. The above framework has been developed with special consideration to the underpinning pedagogical principles and the needs of lifelong learning that continues after the training has been completed. The implementation of the developed framework needs a special computerized system, so an e-training support system (ETSS) was developed to realize the framework. ETSS is an open source and standard-based infrastructure to enable and foster competence development and exchange of learning activities and learning units. Although the domain of the current study focuses on geo-informatics, ETSS is applicable to any other domain. The developed framework through its ETSS implementation were evaluated in a typical training environment. The results indicated that the best method in training was the training with the developed system with 91.5 % in comparison with the traditional training method with 81.4 %. © 2013 Springer Science+Business Media New York.

Author Keywords
Competency based model; Conversational theory; E-Training Support System; Improving classroom teaching; Training program structure

Document Type: Article
Source: Scopus

Barhoum, A.[a b] , El-Sheikh, S.M.[c] , Morsy, F.[b] , El-Sherbiny, S.[b] , Reniers, F.[d] , Dufour, T.[d] , Delplancke, M.P.[e] , Van Assche, G.[a] , Rahier, H.[a]
Preparation and characterization of ultra-hydrophobic calcium carbonate nanoparticles
(2014) *IOP Conference Series: Materials Science and Engineering*, 64 (1), art. no. 012037, .

DOI: 10.1088/1757-899X/64/1/012037

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Abstract
Anionic surfactants based on fatty acids are usually used to modify the particle surface properties of CaCO<inf>3</inf> with the aim to enhance its dispersion and compatibility with polymer matrices. In this study sodium oleate was used for the preparation of ultrahydrophobic CaCO<inf>3</inf> nanoparticles using a wet carbonation route. The effect of sodium oleate on the characteristics, particle size, morphology, surface potential, thermal decomposition and hydrophobicity of CaCO<inf>3</inf>, was investigated using X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), transmission electron microscopy (TEM), Zeta potential, thermogravimetric analysis (TGA) and water contact angle measurement (WCA). The results showed that the addition of 2 wt% sodium oleate helps in reducing the particle size from 2 μm length scalenohedral particles to 45 nm rhombohedral particles and modifying of the hydrophobic property of CaCO<inf>3</inf>.

Document Type: Conference Paper
Source: Scopus

Ebaid, A.[a] , Al Mutairi, F.[b] , Khaled, S.M.[c d]
Effect of velocity slip boundary condition on the flow and heat transfer of Cu-Water and TiO<inf>2</inf>-Water nanofluids in the presence of a magnetic field
(2014) *Advances in Mathematical Physics*, 2014, art. no. 538950, .

DOI: 10.1155/2014/538950

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Abstract
In nanofluid mechanics, it has been proven recently that the no slip condition at the boundary is no longer valid which is the reason that we consider the effect of such slip condition on the flow and heat transfer of two types of nanofluids. The present paper considers the effect of the velocity slip condition on the flow and heat transfer of the Cu-water and the TiO<inf>2</inf>-water nanofluids over stretching/shrinking sheets in the presence of a magnetic field. The exact expression for the fluid velocity is obtained in terms of the exponential function, while an effective analytical procedure is suggested and successfully applied to obtain the exact temperature in terms of the generalized incomplete gamma function. It is found in this paper that the Cu-water nanofluid is slower than the TiO<inf>2</inf>-water nanofluid for both cases of the stretching/shrinking sheets. However, the temperature of the Cu-water nanofluid is always higher than the temperature of the TiO<inf>2</inf>-water nanofluid. In the case of shrinking sheet the dual solutions have been obtained at particular values of the physical parameters. In addition, the effect of various physical parameters on such dual solutions is discussed through the graphs. © 2014 Abdelhalim Ebaid et al.

Document Type: Article
Source: Scopus

Perečko, T.[a] , Kassab, R.B.[a b] , Vašíček, O.[a] , Pekarová, M.[a] , Jančinová, V.[c] , Lojek, A.[a]
The effects of chloroquine and hydroxychloroquine on nitric oxide production in RAW 264.7 and bone marrow-derived macrophages
(2014) *Folia Biologica (Czech Republic)*, 60, pp. 39-44.

[a] Institute of Biophysics, Academy of Sciences of the Czech Republic, V. V. I., Královopolská 135, Brno, Czech Republic
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Abstract
Chloroquine, an antimalarial drug, can also be used in the regulation of the immune system, e.g. it is used in the treatment of autoimmune diseases. In this study we investigated the effects of chloroquine and its hydroxy-derivative on nitric oxide (NO) production in two different cell types: (i) immortalized mouse macrophage cell line RAW 264.7 and (ii) mouse bone marrow-derived macrophages (BMDM). The cells were treated with different concentrations (1-100 μM) of chloroquine or hydroxychloroquine and stimulated with lipopolysaccharide for 24 h to induce NO production. Measurement of nitrites by the Griess reaction was used to evaluate the production of NO. Expression of inducible NO synthase was evaluated with Western blot and ATP-cytotoxicity test was used to measure the viability of the cells. Our results showed that both chloroquine and its hydroxy-derivative inhibited NO production in both cell types. However, based on the results of LD50these inhibitory effects of both derivatives were due to their cytotoxicity. The LD50values for chloroquine were 24.77 μM (RAW 264.7) and 24.86 μM (BMDM), the LD50for hydroxychloroquine were 13.28 μM (RAW 264.7) and 13.98 μM (BMDM). In conclusion, hydroxychloroquine was more cytotoxic than its parent molecule. Comparing the two cell types tested, our data suggest that there are no differences in cytotoxicity of chloroquine or hydroxychloroquine for primary cells (BMDM) or immortalized cell line (RAW 264.7).

Author Keywords
Chloroquine; Cytotoxicity; Hydroxychloroquine; Macrophages; NO production

Document Type: Article
Source: Scopus

Almajwal, A.[a] , Elsadek, M.F.[a b]
Anti-hepatotoxic prospect of Panax Ginseng extract and/or Selenium against D-galactosamine-induced liver injury in experimental rats
(2014) *Progress in Nutrition*, 16 (1), pp. 16-24.

[a] Department of Community Health Sciences, College of Applied Medical Sciences, King Saud University, P.O.Box 10219, Riyadh, 11433, Saudi Arabia
[b] Nutrition and Food Science Dept., Faculty of Home Economics, Helwan University, Egypt

Abstract
The present study was performed to examine hepatoprotective effect of White Panax Ginseng ethanol extract (WPGE) and/or Selenium (Sel) against D-galactosamine-induced liver injury in rats. The rats received a single dose of D-Galactosamine (D-GalN) (200 mg/kg, i.p) one day before sacrifice to induce hepatotoxicity; the ethanol extract of White Panax Ginseng (240 mg/kg body weight), Selenium (0.4 mg/Kg body weight) individually and combination of

(WPGE + Sel) were administered for 6 weeks. It was found that D-GalN induced hepatic damage resulted in a significant increase in the activity of AST, ALT and ALP. Results also showed that increased levels of serum cholesterol, triglycerides, low density lipoprotein (LDL-C) and very low density lipoprotein (VLDL-C) while decreased level of high density lipoprotein (HDL-C) in D-GalN induced rats. In addition the antioxidant activities such as reduced glutathione (GSH), vitamin E, superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPx) were decreased in D-GalN-induced rats' tissues. WPGE and Sel individually and combination (WPGE + Sel) treatments attenuated the abnormal lipid metabolism, increased oxidative stress, reduced antioxidants and also having protective activity against D-GalN induced hepatotoxicity in rats especially for the (WPGE + Sel) combined group which revealed the best results of all treatments. Thus the present study provides a scientific rationale for the traditional use of this plant extract and Sel in the management of liver diseases.

Author Keywords
Antioxidants; D-galactosamine (D-GalN); Hepatoprotective; Liver injury; White ginseng selenium

Document Type: Article
Source: Scopus

Gaballah, N.M.[a] , Zikry, A.F.[a] , Khalifa, M.G.[b] , Farag, A.B.[a] , El-Hussiny, N.A.[c] , Shalabi, M.E.H.[c]
Kinetic reduction of mill scale via hydrogen
(2014) *Science of Sintering*, 46 (1), pp. 107-116.

DOI: 10.2298/SOS1401107G

[a] Helwan University, Egypt
[b] El-Tabbin Metallurgical Institute, Cairo, Egypt
[c] Central Metallurgical Research and Development Institute, Cairo, Egypt

Abstract
Mill scale is very attractive industrial waste since it is rich in iron (about = 72% Fe) and it is suiTab. for direct recycling to the blast furnace via sintering plant. In this paper the characterizations of raw materials were studied by different methods of analyses. The produced briquettes were reduced with different amounts of hydrogen at varying temperatures, and the reduction kinetics was determined. Two models were applied and the energy of activation was calculated.

Author Keywords
Mill scale; Reduction by hydrogen

Document Type: Article
Source: Scopus

Ellabban, O.[a b] , Dousoky, G.M.[a c] , Abu-Rub, H.[a]
Partial resonant ac-link converters - A review
(2014) *Proceedings of the IEEE International Conference on Industrial Technology*, pp. 247-252. Cited 1 time.

DOI: 10.1109/ICIT.2014.6894875

[a] Electrical and Computer Engineering Department, Texas AandM University at Qatar, Doha, Qatar
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Abstract
During the last few years, the partial resonant ac-link converters have gained a significant consideration due to their outstanding advantages. Compared to other types of power converters, these ac-link converters are compact in size, reliable, efficient, and they guaranty longer life time and bidirectional power flow. In addition to that, they can be used for dc/ac, ac/dc, ac/ac, or dc/dc applications with multi-phase and/or multi-port operation. Furthermore, they provide buck/boost operations. Due to these merits, this paper will provide an up-to-date review of such converters. Their principle of operation, control, topology modifications and applications will be presented. © 2014 IEEE.

Author Keywords
AC-link converter; battery charger; grid connection; partial resonant converter; soft switching

Document Type: Conference Paper
Source: Scopus

Shaltout, K.H.[a] , Galal, T.M.[b] , El-Komi, T.M.[a]
Biomass, nutrients and nutritive value of Persicaria salicifolia Willd. in the water courses of Nile Delta, Egypt
(2014) *Rendiconti Lincei*, 25 (2), pp. 167-179.

DOI: 10.1007/s12210-013-0269-6

[a] Botany Department, Faculty of Science, Tanta University, Tanta, Egypt
[b] Botany Department, Faculty of Science, Helwan University, Cairo, Egypt

Abstract
In the present study, we evaluate the biomass and nutritive value of the living and dead shoots of Persicaria salicifolia and their capacity to accumulate heavy metals and nutrients to be used as phytoremediator. The living and dead parts attained their highest phytomass during autumn. The dead parts accumulated higher amounts of copper, manganese and zinc than the living parts. On the other hand, the living parts had higher amounts of carbohydrates, ether extract, crude fibers and total protein. Due to its higher nutritive value, the living parts were considered excellent forage. Furthermore, the plant in the drains accumulates more nutrients and heavy metals than that in the canals. Some constituents (calcium, iron, digestible crude protein and crude fibers) had significant positive correlation with phytomass. The ability of the dead parts of P. salicifolia to accumulate higher values of nutrients renders this plant as a powerful phytoremediator for removal of pollutants from the aquatic ecosystems. © 2013 Accademia Nazionale dei Lincei.

Author Keywords
Aquatic plants; Nutrients; Phenology; Phytomass; Phytoremediation

Document Type: Article
Source: Scopus

El Zawawi, I.K.[a] , Abdel Moez, A.[a] , Hammad, T.R.[b] , Ibrahim, R.S.[a]
Influence of substrates porosity on the optical behavior of Zn 3P2 nanorod thin films
(2014) *Superlattices and Microstructures*, 75, pp. 183-194.

DOI: 10.1016/j.spmi.2014.07.001

[a] Solid State Physics Department, National Research Centre, 12311 Dokki, Cairo, Egypt
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Abstract
Zn3P2 nanostructural films were prepared by inert gas condensation technique with constant argon gas flow rate of 3 × 10 -1 Torr, 300 K substrate temperature and film thickness of 50 nm. The films were deposited on different porosity glass substrates. The porosity of substrates carried out by etching with dilute HF acid, was detected through the average pore size estimated from SEM image. The X-ray diffraction (XRD) patterns showed that the deposited films have nanocrystalline tetragonal structure with broad lines (400) and (303). The Transmission Electron Microscope (TEM) micro graphs showed that, these investigated films deposited on untreated glass substrates have nanorod particles with length of ∼41.2 nm and ∼5.4 nm width. The porosity of the used substrate affects strongly the optical behavior of the Zn3P2 nanorod films. The optical transmission and reflection of Zn3P2 thin films deposited on substrates with different time of etching were measured and showed highest absorption spectra for films of highest substrate porosity. The optical energy gap decreased with increasing porosity of substrates. The porosity of substrates affects the oscillating energy, dispersion energy and oscillator strength. The ratio of free carrier concentration/effective mass (N/m*) were determined for all investigated samples. © 2014 Published by Elsevier Ltd.

Author Keywords
Nanorod films; Optical properties; Structural properties; Transmission Electron Microscope (TEM)

Document Type: Article
Source: Scopus

Abada, E.A.[a] [b]
Production optimization of extracellular amidase enzyme by newly isolated Pseudomonas putida AP-2 from agricultural soil
(2014) *Rendiconti Lincei*, 25 (4), pp. 523-530.

DOI: 10.1007/s12210-014-0347-4

[a] Department of Botany and Microbiology, Helwan University, Ain Helwan, Cairo, Egypt
[b] Department of Biology, Jazan University, Jazan, Saudi Arabia

Abstract
Amidases are ubiquitous enzymes that have received increased attention due to their wide range of biotechnological applications, especially in industries for the synthesis of wide variety of carboxylic and hydroxamic acids, which find applications in pharmaceuticals, agrochemicals and waste water treatments. In the present study, 40 bacterial isolates were screened for extracellular amidase-producing capability, and on the basis of color development, 5 isolates were selected for amidase production in broth media. Based on enzyme production, one of the most potent isolates identified as Pseudomonas putida AP-2 was selected for further study. The effects of media composition and various fermentation conditions for optimization of amidase production were studied. The maximum extracellular amidase production was obtained at 30 °C and pH 8.0 after 36 h of incubation in shaking condition. Among the substrate, acetamide was the best; however, P. putida AP-2 also utilized acrylamide which is a known carcinogen. Regarding carbon sources, glucose was the best, while peptone was found the best nitrogen source. The isolated bacterium, P. putida AP-2, is also tolerant to number of heavy metals at higher levels so this may also be applied for field application in contaminated soil. © 2014, Accademia Nazionale dei Lincei.

Author Keywords
Amidase; Bioremediation; Heavy metal tolerance; Production optimization; Pseudomonas putida

Document Type: Article
Source: Scopus

Abd El-Hafiz, M.M., Emam, M.A.A., Oraby, W.A.H., Shaaban, S.
Axle torque distribution control for enhancing mobility of off-road vehicles
(2014) *International Journal of Heavy Vehicle Systems*, 21 (3), pp. 208-220.

DOI: 10.1504/IJHVS.2014.066080

Faculty of Engineering - Mataria, Automotive Engineering Dept., Helwan University, Masakin El-Helmia, Cairo, Egypt

Abstract
Axle torque distribution control systems can considerably improve vehicles' mobility. However, when a vehicle attempts to move on a low adhesion terrain, it often loses its energy through low-adhesion wheel spinning by dissipating the same amount of energy it biases to high-adhesion wheel. To overcome this problem, electronically controlled limited slip differentials (LSDs) applied at the driven wheels enables optimum torque distribution between axle wheels. This paper presents a device that controls the applied force on multi-plate clutches located between driven axle and stationary hub. When a vehicle is driving over split adhesion roads, the device brakes the spinning wheel over low adhesion and biases more torque to the wheel over good adhesion. This improves vehicle mobility and reduces the power losses. A test rig has been designed and constructed to investigate the device characteristics. Obtained results show the various benefits that could be gained when a controllable multi plate clutch is implemented with simple differential driving axle. The system can offer power saving better than both passive differential and even LSD. Copyright © 2014 Inderscience Enterprises Ltd.

Author Keywords
Limited slip differentials; LSD; Mobility; Off-road vehicle; Torque distribution devices

Document Type: Article
Source: Scopus

Yassin, N.I.[a] , Salem, N.M.[b] , El Adawy, M.I.[c]
QIM blind video watermarking scheme based on Wavelet transform and principal component analysis
(2014) *Alexandria Engineering Journal*, 53 (4), pp. 833-842.

DOI: 10.1016/j.aej.2014.07.008

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Abstract
In this paper, a blind scheme for digital video watermarking is proposed. The security of the scheme is established by using one secret key in the retrieval of the watermark. Discrete Wavelet Transform (DWT) is applied on each video frame decomposing it into a number of sub-bands. Maximum entropy blocks are selected and transformed using Principal Component Analysis (PCA). Quantization Index Modulation (QIM) is used to quantize the maximum coefficient of the PCA blocks of each sub-band. Then, the watermark is embedded into the selected suitable quantizer values. The proposed scheme is tested using a number of video sequences. Experimental results show high imperceptibility. The computed average PSNR exceeds 45 dB. Finally, the scheme is applied on two medical videos. The proposed scheme shows high robustness against several attacks such as JPEG coding, Gaussian noise addition,

histogram equalization, gamma correction, and contrast adjustment in both cases of regular videos and medical videos. © 2014 Production and hosting by Elsevier B.V.

Author Keywords
Analysis; Binary watermark; Blind watermarking; Component; Discrete; Image entropy; Index; Modulation; Principal; Quantization; Transform; Wavelet

Document Type: Article
Source: Scopus

Saleh, M.[a] , Kumar, G.[a] , Abdel-Baki, A.-A.[b c] , Dkhil, M.[b d] , El-Matbouli, M.[a] , Al-Quraishy, S.[b]
Development of a novel in vitro method for drug development for fish; application to test efficacy of antimicrosporidian compounds
(2014) *Veterinary Record*, 175 (22), p. 561. Cited 1 time.

DOI: 10.1136/vr.102604

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Abstract
Few drugs are approved for treating diseases caused by parasites in minor species such as fish. This is due, in part, to the expense of drug development and to the comparatively small market. In vivo effectiveness trials for antiparasitic drugs are costly, time consuming and require ethics approval, therefore an in vitro screening approach is a cost-effective alternative to finding promising drug candidates. We developed an in vitro testing system to test antimicrosporidial compounds against a microsporidian pathogen Heterosporis saurida. Five antiparasitic compounds, albendazole, fumagillin, TNP-70, nitazoxanide and lufenuron, were assayed for antimicrosporidial activity. All compounds reduced the number of H saurida spores in infected cells when applied at a concentration that did not appear to be toxic to the host cells. Albendazole inhibited replication of H saurida by >60 per cent, fumagillin and its analogue TNP-470 inhibited H saurida >80 per cent, nitazoxanide and lufenuron inhibited growth >70 per cent. The data suggest that both fumagillin and its analogous TNP-70 hold the best promise as therapeutic agents against H saurida. The ability to use fish cell cultures to assess drugs against H saurida demonstrates an approach that may be helpful to evaluate other drugs on different microsporidia and host cells.

Document Type: Article
Source: Scopus

Sultan, T.I., Nasr, M.M., Amin, S.E.-S.
Learning objects reusability effectiveness metric (LOREM)
(2014) *Research Journal of Applied Sciences, Engineering and Technology*, 7 (12), pp. 2475-2482.

Information Systems Department, Faculty of Computers and Information, Helwan University, Cairo, Egypt

Abstract
In this research we aim to propose an advanced metric to evaluate the effectiveness of learning objects in order to be reused in new contexts. By the way learning objects reusability is achieving economic benefits from educational technology as it saving time and improving quality, but in case of choosing unsuitable learning object it may be less benefit than creating the learning object from scratch. Actually learning objects reusability can facilitate systems development and adaptation. By surveying the current evaluation metrics, we found that while they cover essential aspects, they enables all reviewers of learning objects to evaluate all criteria without paying attention to their roles in creating the learning object which affect their capability to evaluate specific criteria. Our proposed Approach (LOREM) is evaluating learning objects based on a group of Aspects which measure their level of effectiveness in order to be reused in other contexts. LOREM classifies reviewers into 3 categories; 1. Academic Group: (Subject Expert Matter "SME" and Instructor). 2. Technical Group: (Instructional Designer "ID", LO Developer and LO Designer). 3. Students group. The authorization of reviewers in these several categories are differentiated according to reviewer's type, e.g., (Instructor, LO Developer) and their area of expert (their expertise subjects) for academic and students reviewers. © Maxwell Scientific Organization, 2014.

Author Keywords
Evaluation metrics; Learning objects; Learning objects evaluation; Reusability; Reusability effectiveness

Document Type: Article
Source: Scopus

Kumar, A.[a] , Ansari, Z.A.[a] , Fouad, H.[b c] , Umar, A.[d] , Ansari, S.G.[a e]
Oxidative stress control in E. coli and S. aureus cells using amines adsorbed ZnO
(2014) *Science of Advanced Materials*, 6 (6), pp. 1236-1243. Cited 2 times.

DOI: 10.1166/sam.2014.1882

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[e] King Saud University, Riyadh, 11437, Saudi Arabia

Abstract
In this study, Escherichia coli (E. coli) and Staphyllococcous aureus (S. aureus) were cultured with and without surface modified (amine adsorbed/functionalized) zinc oxide nanoparticles (ZnO-NPs) to control metabolic oxidative stress during normal bacterial culture in liquid media. Surface modification was done with different amines like isopropylamine (IPA), diethylamine (DEA) and triethylamine (TEA) via sol-gel method. Morphological observations using FESEM showed spherical particles of less than 10 nm size with fairly uniform shape and size distribution of crystalline nature. Material composition of the synthesized powder and functionalization of amine on ZnO-NPs was analyzed using FTIR and UV-Visible studies. It is observed that in the presence of DEA adsorbed ZnO-NPs, bacterial cells increased notably which acted as more anti-oxidative than the IPA and TEA adsorbed ZnO-NPs in both the bacterial types. A dose dependent study and the dose-response relationship were determined to obtain MIC value by obtaining growth curves. It was observed that the bacterial cells grew more than the positive control at lower concentrations between 0.5-2 mM in DEA and TEA adsorbed ZnO-NPs supplemented medium in both strains. Such behavior is correlated to the different amine concentrations on ZnO surface and resultant variation in generation of reactive oxygen species (ROS). Based on chemical and bacterial culture experiments, reaction mechanism for the oxidative stress management is proposed. © 2014 by American Scientific Publishers.

Author Keywords
Amines; E. coli; Nanoparticles; Oxidative stress; S. aureus; Zinc oxide

Document Type: Article
Source: Scopus

El-Mahdy, T.S.
The extended-spectrum AmpC genotype of Pseudomonas aeruginosa strains from egypt: An underlying threat to anti-pseudomonal treatment options
(2014) *Journal of Chemotherapy*, 26 (3), pp. 187-189. Cited 1 time.

DOI: 10.1179/1973947813Y.0000000119

Helwan University, Egypt

Document Type: Note
Source: Scopus

Farag, M.A.[a] , Abdelfattah, M.S.[b] , Badr, S.E.A.[c] , Wessjohann, L.A.[d]
Profiling the chemical content of Ficus lyrata extracts via UPLC-PDA-qTOF-MS and chemometrics
(2014) *Natural Product Research*, 28 (19), pp. 1549-1556. Cited 1 time.

DOI: 10.1080/14786419.2014.926353

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Abstract
This study attempts to elucidate the secondary metabolite profiles of Ficus lyrata leaves and fruits grown in Egypt. Non-targeted metabolite profiling via ultra performance liquid chromatography (UPLC)-qTOF-MS was used to identify various chemical classes in F. lyrata fruits and leaves (i.e. flavonoids, phenolic acids and fatty acids) analysed by chemometrics. A total of 72 metabolites were evaluated via a UPLC-qTOF-MS-based metabolomic study. Seventeen

flavonoids were characterised and tentatively identified with the main constituents being catechins/procyanidins, O- and C-linked flavonoid glycosides. The major procyanidins were dimers and trimers comprising (epi)catechin and (epi)afzelechin units, whereas the predominant flavones were C-glycosides of luteolin and apigenin. Aside from these major flavonoid classes, a group of benzoic acids, caffeoylquinic acids, fatty acid and sphingolipids were also annotated. This study provides the most complete map for polyphenol distribution in F. lyrata leaves and fruits and the basis for future investigation of its fruits nutritional value or possible nutraceutical uses. © 2014 Taylor & Francis.

Author Keywords
fatty acids; Ficus lyrata; flavonoids; metabolite profiling; PCA; UPLC/MS

Document Type: Article
Source: Scopus

Shimeis, A.[a b] , Amory-Mazaudier, C.[b c] , Fleury, R.[d] , Mahrous, A.M.[a] , Hassan, A.F.[a]
Transient variations of vertical total electron content over some African stations from 2002 to 2012
(2014) *Advances in Space Research*, 54 (11), pp. 2159-2171.

DOI: 10.1016/j.asr.2014.07.038

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Abstract
This paper presents the vertical total electron content vTEC variations for three African stations, located at mid-low and equatorial latitudes, and operating since more than 10 years. The vTEC of the middle latitude GPS station in Alexandria, Egypt (31.2167°N; 29.9667°E, geographic) is compared to the vTEC of two others GPS stations: the first one in Rabat/Morocco (33.9981°N; 353.1457°E, geographic), and the second in Libreville/Gabon (0.3539°N; 9.6721°E, geographic). Our results discussed the diurnal, seasonal, and solar cycle dependences of vTEC at the local ionospheric conditions, during different phases of solar cycle in the light of the classification of Legrand and Simon. The vTEC over Alexandria exhibits the well-known equinoctial asymmetry which changes with the phases of the solar cycle; the spring vTEC is larger than that of autumn during the maximum, decreasing and minimum phases of solar cycle 23. During the increasing phase of solar cycle 24, it is the contrary. The diurnal variation of the vTEC presents multiple maxima during the equinox from 2005 to 2008 and during the summer solstice from 2006 to 2012. A nighttime vTEC enhancement and winter anomaly are also observed. During the deep solar minimum (2006-2009) the diurnal variation of the vTEC observed over Alexandria is similar to the diurnal variation observed during quiet magnetic period at equatorial latitudes. We observed also that the amplitude of vTEC at Libreville is larger than the amplitude of vTEC observed at Alexandria and Rabat, indeed Libreville is near the southern crest of the Equatorial Ionization anomaly. Finally, the correlation coefficient between vTEC and the sunspot number Rz is high and changes with solar cycle phases.

Author Keywords
Equinoctial asymmetry; Ionosphere; Solar cycle

Document Type: Article
Source: Scopus

Dkhil, M.A.[a] , Al-Quraishy, S.[b] , Al-Khalifa, M.S.[c]
The effect of Babesia divergens infection on the spleen of Mongolian gerbils
(2014) *BioMed research international*, 2014, p. 483854. Cited 1 time.

DOI: 10.1155/2014/483854

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Abstract
Babesiosis is caused by intraerythrocytic protozoan parasites transmitted by ticks and affects a wide range of domestic and wild animals and occasionally humans. The current study aimed to investigate the effect of B. divergens infected erythrocytes on spleen histopathology, cell cycle alteration, and the presence of oxidative stress. Mongolian gerbils were challenged with 5 × 10(6) Babesia divergens infected erythrocytes. Parasitemia reached approximately 77% at day 5 postinfection. Infection also induced injury of the spleen. This was evidenced with (i) increases in

cellular damage of the spleen, (ii) decrease in antioxidant capacity as indicated by decreased glutathione, catalase, and superoxide dismutase levels, (iii) increased production of malondialdehyde and nitric oxide derived products (nitrite/nitrate), and (iv) increased lactic acid dehydrogenase activity and protein carbonyl content in the spleen. Infection interfered with normal cell cycle of the spleen cells at G0/G1, S, and G2/M phases. On the basis of the above results it can be hypothesized that B. divergens infected erythrocytes could alter the spleen histopathology and cause cell cycle alteration and induce oxidative stress in splenic tissue.

Document Type: Article
Source: Scopus

Yousef, M.T.[a] , Ali, H.E.I.[b] , Habashy, S.M.[b] , Saad, E.M.[b]
Adaptive controller based PSO with virtual sensor for obstacle avoidance in dynamic environments
(2014) *National Radio Science Conference, NRSC, Proceedings*, art. no. 6835080, pp. 228-235.

DOI: 10.1109/NRSC.2014.6835080

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Abstract
In this paper, an Adaptation of Advanced Artificial Potential Field (AAPF) controller based on Particle Swarm Optimization (PSO) algorithm is proposed. It plans the robot's motion in cluttered and dynamic environments to make the robot reaches to its goal. The PSO is used to optimize the factors of the forces applied on the robot to guide the robot towards to the right path. The optimization process is done by selecting the optimum values of these factors. A measure of smoothness is used to guide the PSO algorithm during the optimization process. The PSO is reused once a change in the environment is occurred. This scheme makes the robot able to reach to its target with shortest path and avoidance of the obstacles whatever changed environment. Shortest path means more smoothness and minimum time. The proposed adaptive AAPF controller uses the concept of virtual sensor. The virtual sensor's calculations are modified in this paper. The proposed system is simulated on Windows Vista using MATLAB Software at different workspaces, and compared with another not adaptive system. © 2014 IEEE.

Author Keywords
artificial potential field controller; obstacle avoidance; odometry; particle swarm optimization; robot motion; virtual sensor

Document Type: Conference Paper
Source: Scopus

Saddar, E.[a] , El-Tawoosy, M.[b] , Motaleb, H.A.[b]
Preparation and biological evaluation of radioiodinated risperidone and lamotrigine as models for brain imaging agents
(2014) *Journal of Radioanalytical and Nuclear Chemistry*, 301 (1), pp. 189-196.

DOI: 10.1007/s10967-014-3139-5

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Abstract
Risperidone and lamotrigine were successfully labeled with 125I via direct electrophilic substitution reaction at 80°C with maximum labeling yields of 89 ± 3.75 and 97.5 ± 1.0 %, respectively. Stability of 125I-risperidone was up to 6 h while that of 125I- lamotrigine was up to 24 h. Biodistribution studies showed that maximum uptakes of 125I-risperidone and 125I-lamotrigine in the brain of mice were 4.35 ± 0.17 and 2.51 ± 0.18 % of the injected activity/g tissue organ at 10 min post-injection, respectively. Both radioiodinated drugs showed higher brain uptake and stability compared to commercially available technetium-99m d,l-hexamethyl propyleneamine oxime. © 2014 Akadémiai Kiadó.

Author Keywords
Biodistribution study; Brain imaging; Radioiodinated risperidone and lamotrigine

Document Type: Article
Source: Scopus

Youness, E.A.[a] , Emam, O.E.[b] , Hafez, M.S.[c]
Fuzzy Bi-level multi-objective fractional integer programming

(2014) *Applied Mathematics and Information Sciences*, 8 (6), pp. 2857-2863.

DOI: 10.12785/amis/080622

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Abstract
We present an algorithm to solve a bi-level multi-objective fractional integer programming problem involving fuzzy numbers in the right-hand side of the constraints. The suggested algorithm combine the method of Taylor series together with the Kuhn Tucker conditions to solve fuzzy bi-level multi-objective fractional integer programming problem (FBLMOFIPP) then Gomory cuts are added till the integer solution is obtained. An illustrative example is discussed to demonstrate the correctness of the proposed solution method. © 2014 NSP Natural Sciences Publishing Cor.

Author Keywords
Bi-level programming; Fractional programming; Fuzzy programming; Integer programming; Multi-objective programming

Document Type: Article
Source: Scopus