Scopus

Documents

Ahmed, I.
Analysis of ventilated disc brake squeal using a 10 dof model
(2012) *SAE Technical Papers*, 7, .

DOI: 10.4271/2012-01-1827

Automotive Technology Department, Faculty of Industrial Education, Helwan University, Cairo, Egypt

Abstract
Squeal of disc brakes is considered as a main source of discomfort for passengers. Typically 1 to 4 kHz noise is considered low frequency squeal and >8 kHz noise is considered high frequency squeal. It is a significant problem in passenger vehicles for the comfort of the passengers and a significant financial problem for industry too. Many manufacturers of brake pad materials spend up to fifty percent of their engineering budgets on noise, vibration and harshness (NVH) issues. Squeal noise is strongly correlated to the squeal index and degree of instability of the brake system assembly. Decreasing this squeal noise to some extent during braking is very important matter for the comfort of passengers. So, a mathematical prediction model of 10-degree-of-freedom has been developed to study the effect of different brake components parameters on the degree of instability and squeal index of the brake system. The model has considered such factors as the distance between clamping bolts of the caliper which was not fully covered previously besides some other factors as width and thickness of the friction material. Complex eigenvalue analysis by MATLAB has been used to predict the unstable frequencies of the ventilated disc brake system assembly. It is evident from the analysis that squeal noise of the brake decreases with increasing semi-distance between the clamping bolts of the caliper and with the increase in friction material thickness. However, the squeal noise decreases with increasing the width of the friction material and Young's modulus of both rotor and friction material. The results also show that the width of the friction material has a major effect on the occurrence of the squeal noise of the brake assembly and as it increases, the squeal index decreases. Copyright © 2012 SAE International.

Document Type: Conference Paper
Source: Scopus

Ali, M.M.I.[a] , Hassan, M.A.M.[b]
Speed sensorless field-oriented control of a six-phase saturated model of induction motors drive with online stator resistance estimation using ANFIS
(2012) *International Journal of Modelling, Identification and Control*, 17 (4), pp. 334-347. Cited 5 times.

DOI: 10.1504/IJMIC.2012.051085

[a] Electric Power and Machines Department, Faculty of Engineering, Helwan University, Sherif Str. 1, Helwan, 11792 Cairo, Egypt
[b] Electric Power and Machines Department, Faculty of Engineering, Cairo University, University Str., 12613 Giza, Egypt

Abstract
In this paper, a field-oriented control-space vector modulation scheme is presented for a six-phase speed and voltage sensorless saturated model of induction motor drive. The new in this paper is that the saturation model of induction motor is taken into consideration. Also, a simple method is introduced to estimate the motor rotor speed and on line estimation of the stator resistance using adaptive neural fuzzy inference system (ANFIS). Finally, some simulation results are presented to verify the effectiveness and capability of the proposed control scheme. Copyright © 2012 Inderscience Enterprises Ltd.

Author Keywords
Adaptive neural fuzzy inference system; ANFIS; Field-oriented control; FOC; Multiphase induction motor; Multiphase induction motors; Online estimation; Speed sensorless

Document Type: Article
Source: Scopus

Ismail, S.S.[a] , El-Mohsen, A.S.A.[b]
Headache in school age children and its possible related expected predisposing factors: An assessment study
(2012) *Life Science Journal*, 9 (1), pp. 617-627.

[a] Pediatric Nursing, Helwan University, Egypt
[b] Community Health Nursing, Helwan University, Egypt

Abstract
Background: Headache is a common symptom with a high prevalence in most epidemiological studies. It is one of the 10 most common reasons for outpatient physician visits. Headaches are common in children and the prevalence increases with increasing age. The aim of the study: was to find out the prevalence of headache among school age children and study different attributes associated with headaches in Ain Helwan district. Method: Descriptive research design was carried out at primary, preparatory and secondary public schools in Ain Helwan district. Subjects: included 378 school age children 10-17 years, from both gender. Sample: A simple random sample was recruited, utilizing the non-probability sampling technique. Tool: The researchers utilized selfadministered interview sheet to collect data in relation to personal information of the studied sample, their eating habits, and life style pattern. Data were collected in the period from beginning of March 2011 till the end of April 2011. Results: revealed that, out of 378, students 221 were complaining from headache (58.5%). No statistically significant differences were detected between middle childhood and late childhood students regarding dizziness during car riding, sensitivity to certain smile, extreme noise, in addition to intensity of headache that increases with climbing stairs, sport, cough, change body posture, activity, teeth or gums' pain, ear problems, nervousness, vision problems and taking vitamins or drugs. Less than three quarters of sample had inadequate or irregular sleep (72.4%) and there were highly statistically significant differences between middle childhood and late childhood students regarding inadequate or irregular sleep and eating chocolate or cheese, skipping meals, drinking caffeine, staying long time in front of TV or computer, ingestion of cold drink or ice cream, smoking, and complying of any unhealthy condition. More than three quarters of the studied sample showed clinical manifestations of headache in stabbing pain followed by pressing headache (83.7% & 77.8 % respectively). Results revealed adverse effects of headache through scholastic achievement, school attendance and daily activity with no significant differences. Conclusion: Headache represents a common disabling health problem among school age children in Ain Helwan district with a prevalence rate of 58.4%. In general, the prevalence of headache increases with age and it is higher in males than females. Stress following staying long time in front of TV or computer was the most common precipitating factor for headache in the study. Recommendation: Health education of the parents and children about the precipitating factors which triggers for headache, and increasing awareness about healthy life style, and early diagnosis and treatment of headache are recommended to avoid its drawbacks on child health and school performance.

Author Keywords
Headache; School age children

Document Type: Article
Source: Scopus

El-Bendary, M.A.M.[a] , El-Tokhy, M.[a] , Abouelazm, A.E.[b] , El-Fishawy, N.A.[b]
Efficient error correction technique improving the efficiency of image transmission over a mobile Bluetooth networks
(2012) *2012 6th International Conference on Sciences of Electronics, Technologies of Information and Telecommunications, SETIT 2012*, art. no. 6481974, pp. 568-572.

DOI: 10.1109/SETIT.2012.6481974

[a] Dept. of Electronics Technology, Faculty of Industrial Education, Helwan University, Cairo, Egypt
[b] Dept. of Communications Engineering, Faculty of Elec. Engineering, Menofia University, Menof, Egypt

Abstract
With increasing the applications fields of low-power short range wireless communication, especially Bluetooth, the most of these applications need transmitting image. This paper proposes improving the colored JPEG image transmission over mobile Bluetooth network using Enhanced Data Rate (EDR) packets with the 2DH3 and 2DM3 EDR Asynchronous Connectionless (ACL) packets. It proposes using efficient error control schemes to improve a transmission of colored images over Bluetooth systems. Also, it proposes different EDR packet formats for this purpose. A comparison study between different propositions is held in the paper to choose an efficient case over mobile Bluetooth network. The simulation experiments are carried over correlated Rayleigh fading channel. Our experiments reveal that the proposed convolutional code with constraint length K=3 and 7 enhances the received colored image over a bad channel. The simulation results show that the convolutional codes are good over correlated fading channel more than the traditional Bluetooth error correction scheme for EDR Bluetooth packets. The paper shows the standard error control scheme of old Bluetooth versions is ineffective in the case of colored JPEG image transmission over the mobile Bluetooth network. The proposed schemes provide packet latency. Also, it reduced the retransmission times with the lost frames reduction at low SNR. © 2012 IEEE.

Author Keywords
Convolutional Codes; error correction techniques; Fading channels; Jackes' model; Mobile Bluetooth terminals

Document Type: Conference Paper
Source: Scopus

Darwish, A.
Agility improvement in cognitive radio under bluetooth paradigm using ant colony metaphor
(2012) *Technological Advancements and Applications in Mobile Ad-Hoc Networks: Research Trends*, pp. 373-390.

DOI: 10.4018/978-1-4666-0321-9.ch020

Computer Science department, Helwan University, Egypt

Abstract
Cognitive radio is a paradigm for wireless communication in which either network or wireless node itself changes particular transmission or reception parameters to execute its tasks efficiently. This parameter alteration is based on observations of several factors from external and internal cognitive radio environment, such as radio frequency spectrum, user behavior, and network state. The chapter presents the relationship between cognitive radio and ant colony. The bio-inspired cognitive radio algorithm is presented. © 2012, IGI Global.

Document Type: Book Chapter
Source: Scopus

El-Bendary, M.A.M.M.[a] , Abou-El-azm, A.E.[b] , El-Fishawy, N.A.[b] , Shawki, F.[b] , Abd-El-Samie, F.E.[b] , El-Tokhy, M.A.R.[a] , Kazemian, H.B.[c]
Performance of the audio signals transmission over wireless networks with the channel interleaving considerations
(2012) *Eurasip Journal on Audio, Speech, and Music Processing*, 2012 (1), art. no. 4, . Cited 2 times.

DOI: 10.1186/1687-4722-2012-4

[a] Department of Communications Technology, Faculty of Industrial Education, Helwan University, Helwan, Egypt
[b] Department of Electronics and Electrical Communications, Faculty of Electronic Engineering, Menoufia University, Menouf 32952, Egypt
[c] Intelligent Systems Research Centre, Faculty of Computing, London Metropolitan University, London, United Kingdom

Abstract
This article studies a vital issue in wireless communications, which is the transmission of audio signals over wireless networks. It presents a novel interleaver scheme for protection against error bursts and reduction the packet loss of the audio signals. The proposed technique in the article is the chaotic interleaver; it is based on chaotic Baker map. It is used as a randomizing data tool to improve the quality of the audio over the mobile communications channels. A comparison study between the proposed chaotic interleaving scheme and the traditional block and convolutional interleaving schemes for audio transmission over uncorrelated and correlated fading channels is presented. The simulation results show the superiority of the proposed chaotic interleaving scheme over the traditional schemes. The simulation results also reveal that the proposed chaotic interleaver improves the quality of the received audio signal. It improves the amount of the throughput over the wireless link through the packet loss reduction. © 2012 Mohamed El-Bendary et al; licensee Springer.

Author Keywords
Bluetooth; Fading channels; Interleaving techniques; Mobility; Wireless networks

Document Type: Article
Source: Scopus

Nasr, T.[a b c] , Taniguchi, Y.[a] , Takaki, T.[a] , Okamura, H.[a] , Sasaki, S.[a]
Properties of oligonucleotide with phenyl-substituted carbocyclic nucleoside analogs for the formation of duplex and triplex DNA
(2012) *Nucleosides, Nucleotides and Nucleic Acids*, 31 (12), pp. 841-860.

DOI: 10.1080/15257770.2012.737970

[a] Graduate School of Pharmaceutical Sciences, Kyushu University, 3-1-1 Maidashi, Higashi-ku, Fukuoka 812-8582,

Japan
[b] Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Helwan University, Helwan, Egypt
[c] Department of Pharmaceutical Chemistry, Faculty of Pharmacy, King Khalid University, Saudi Arabia

Abstract
(1S,3S,4R)-1-Phenyl-1-thymidyl-3-hydroxy-4-hydroxymethylcyclopentane (10) and their analogs were synthesized, incorporated into the oligodeoxynucleotides, and their properties were evaluated for the formation of duplex and triplex DNA. The known chiral cyclopentanone derivative was converted into the corresponding ketimine sulfonamide derivative, which was subjected to a stereoselective PhLi addition. The formed sulfonamide was hydrolyzed to afford the primary amino group, on which the thymine moiety was built. The benzyl protecting groups were removed to form the nucleoside analog having a phenyl group and the thymine unit at the 1 position of a carbocyclic skeleton (10). In the estimation of the oligodeoxynucleotides incorporating 10 for duplex and triplex formation, the carbocyclic nucleoside analog 10 did not show the stabilizing effect for duplex formation; on the other hand, it stabilized the triplex. Therefore, the skeleton of the phenyl-substituted carbocyclic nucleoside analog 10 may be a platform for the formation of stable triplex DNA. © 2012 Copyright Taylor and Francis Group, LLC.

Author Keywords
asymmetric synthesis; carbocyclic nucleoside analog; duplex DNA; Oligonucleotides; triplex DNA

Document Type: Article
Source: Scopus

Ouf, M.S.
Effect of using pozzolanic materials on the properties of Egyptian soils
(2012) *Life Science Journal*, 9 (1), pp. 554-560. Cited 2 times.

Civil Engineering, Helwan University, Cairo, Egypt

Abstract
The possibility to use a large amount of waste materials as a replacement for the imported virgin material in road construction has been recognized. RoadCem is a soil stabiliser provides cheap and more environmentally friendly source of materials for road construction to use with in-situ material. This results in reduction in the required thickness of the pavement consequently reducing costs and contributes to the solution of declining resource of imported materials. An extensive study was carried out on a sample of Egyptian soil. RoadCem as a primary stabiliser with ground granulated blast furnace slag (GGBS), lime and ordinary Portland cement (OPC) were employed. The results revealed that the unconfined compressive strength (UCS) and the modulus of elasticity (E40) of the test soil increased while the free swelling percent (FSP) decreased with an increase in the total stabiliser and the curing period.

Author Keywords
Clay; Lime; RoadCem; Slag; Swelling soil

Document Type: Article
Source: Scopus

Abdel Moneim, A.E.[a] [b]
Evaluating the potential role of pomegranate peel in aluminum-induced oxidative stress and histopathological alterations in brain of female rats
(2012) *Biological Trace Element Research*, 150 (1-3), pp. 328-336. Cited 16 times.

DOI: 10.1007/s12011-012-9498-2

[a] Biomedical Research Center, Health Sciences Technology Park, University of Granada, Avda. del Conocimiento s/n, 18100 Armilla, Granada, Spain
[b] Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

Abstract
Studies have shown that pomegranate, Punica granatum Linn. (Lythraceae), has remarkable biological and medicinal properties. However, the effects of pomegranate peel methanolic extract (PPME) on the aluminum-induced oxidative stress and histopathological change have not been reported yet. To determine the effect of PPME (200 mg/kg bwt) on the aluminum chloride (AlCl3; 34 mg/kg bwt)-induced neurotoxicity, aluminum accumulation in brain and oxidant/antioxidant status were determined. The change of brain structure was investigated with hematoxylin and eosin, and anti-apoptosis effects of PPME were analyzed by immunohistochemistry. The present study showed an indication of carcinogenicity in the AlCl3-treated group representing an increase in tissue tumor markers such as tumor necrosis factor-α and angiogenin and inflammation by inducing an increase in prostaglandin E2 and prostaglandin F2α. PPME protected brain through decreasing the aluminum accumulation and stimulating antioxidant

activities and anti-apoptotic proteins namely Bcl-2. Therefore, these results indicated that pomegranate peel methanolic extract could inhibit aluminum-induced oxidative stress and histopathological alternations in brain of female rats, and these effects may be related to anti-apoptotic and antioxidants activities. © 2012 Springer Science+Business Media, LLC.

Author Keywords
Aluminum chloride; Anti-apoptosis; Brain; Oxidant/antioxidant status; Pomegranate peel; Rats

Document Type: Article
Source: Scopus

Ibrahim, S.M., Salem, S.A., Ismail, M.A., Eladawy, M.
Novel sensitive object-oriented cohesion metric
(2012) *2012 22nd International Conference on Computer Theory and Applications, ICCTA 2012*, art. no. 6523562, pp. 154-159.

DOI: 10.1109/ICCTA.2012.6523562

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

Abstract
The production of well-developed software reduces the cost of the software maintainability. Therefore, many software metrics have been developed to measure the quality of the software design. Measuring class cohesion is considered as one of the most important software quality measurements. Unfortunately, most of approaches that have been proposed on cohesion metrics do not consider the different intersections between class elements in measuring class cohesion. This paper proposes a novel class cohesion metric that considers the different cohesion intersections. Experiments are carried out on more than 35K classes from more than 16 open-source projects using the well known cohesion metrics. The obtained results illustrate that the proposed cohesion metric has the highest discrimination power with a vast difference over all the existing cohesion metrics. Therefore, it is highly recommended to use the proposed metric for evaluating the software design quality. © 2012 IEEE.

Author Keywords
Class Cohesion; Object-Oriented Metrics; Software Measurement; Software Quality

Document Type: Conference Paper
Source: Scopus

Abbass, A.S., Youssif, A.A.A., Ghalwash, A.Z.
Compressed domain video fingerprinting based on macroblocks information
(2012) *Proceedings of the IASTED International Conference on Signal and Image Processing, SIP 2012*, pp. 181-188.

DOI: 10.2316/P.2012.786-057

Faculty of computers and information, Helwan University, Cairo, Egypt

Abstract
"With the development of media technologies, more and more videos are digitally produced, stored and distributed. File sharing of video content on the internet, using hosting services like YouTube" which stated that the upload rate of their server is up to 20 hours of video materials per minute. Therefore, a video fingerprinting system to automatically identify the uploaded video is really is needed. "Illegal distribution of copyrighted videos online is a huge problem especially for commercial businesses. With digital processing tools; videos can be transformed into different versions and distributed on internet. The need for identification and management of video content grows proportionally with the widespread availability of digital videos. Fingerprints are compact content-based signature that summarizes a video signal or another media signal". Several video fingerprinting methods have been proposed for identifying video, in which fingerprints are extracted by analyzing video in both spatial and temporal dimension. However, these conventional methods have one resemblance, in which video decompression is still required for extracting the fingerprint from a compressed video. In practical, faster computational time can be achieved if fingerprint is extracted directly from the compressed domain. So far, too fewer methods are known to propose video fingerprinting in compressed domain. This paper presents a simple but effective video fingerprinting technique that works directly in the compressed. Experimental results show that the proposed fingerprints are highly robust against most signal processing transformations.

Author Keywords
Compressed domainm Perceptual hash; Video fingerprinting

Document Type: Conference Paper
Source: Scopus

Eldeberky, Y.
Nonlinear effects in gravity waves propagating in shallow water
(2012) *Coastal Engineering Journal*, 54 (4), art. no. 1250024, . Cited 2 times.

DOI: 10.1142/S0578563412500246

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

Abstract
Nonlinear energy transfers due to triad interactions change the characteristics of the wave-field in the shoaling region. The degree of nonlinear coupling is examined using numerical simulations based on an accurate set of deterministic evolution equations for the propagation of fully dispersive weakly nonlinear waves. The model validation, using existing experimental measurements for wave transformation over a shoal, showed that it accurately predicts nonlinear energy transfer for irregular waves with large wave-numbers. The bound higher harmonics and nonlinear statistical measures, i.e. the wave skewness and asymmetry, are well simulated by the model in both the shoaling and deshoaling regions. Numerical simulation of steep waves in shallow water with the Ursell number O(1), showed that nonlinear dispersion and phase locking lead to triad interactions even on a horizontal bottom. Nonlinear energy transfers in monochromatic waves lead to rapid spatial recurrence of the primary wave amplitudes. This is in contrast to the case of irregular waves where the Fourier coefficients of the wave-field do not recur due to the presence of innumerable interactions, which are expected to cancel resulting in no spatial evolution of the wave spectrum. © 2012 World Scientific Publishing Company and Japan Society of Civil Engineers.

Author Keywords
dispersive gravity waves; Nonlinear waves; spatial recurrence; triad interactions; wave modeling

Document Type: Article
Source: Scopus

El Sadek Gouhar, S.A.[a] , Abdallah, M.S.[b] , Shousha, W.G.[c] , Shaker, O.G.[d] , Ashour, M.N.I.[e] , Emara, I.A.[f]
Vitamin D receptor gene polymorphisms and their relation to bone mineral density in Egyptian osteoporotic patients
(2012) *Journal of Applied Sciences Research*, 8 (12), pp. 5846-5851.

[a] Medical Biochemisrtry Dept., National Research Center, Cairo, Egypt
[b] Faculty of science, Helwan University, Egypt
[c] Biochemistry Dept., Faculty of science, Helwan University, Egypt
[d] Medical Biochemistry and Molecular Biology Dept., Faculty of Medicine, Cairo University, Egypt
[e] Medical Biochemistry Dept., National Research Center, Cairo, Egypt
[f] Biochemistry Dept., National Institute for Diabetes and Endocrinology, Egypt

Abstract
Objective: VDR gene polymorphisms and their functional significance and potential effects on disease susceptibility have been investigated. The present study was aimed to identify the genetic polymorphism of Vitamin D receptor in osteoporotic patients. Methods: Peripheral blood samples were obtained from 25 osteoporotic females and 25 healthy controls. All subjects were diagnosed by bone mineral density measurement. DNA was extracted and polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) was performed to identify VDR genes (FOKI and BSMI) polymorphism. Results: The frequencies of BB, Bb and bb genotypes (BSMI polymorphism) in (Osteoporotic patients) were 52%, 32% and 16% , respectively.While their frequency in controls was 12%, 24% and 64%, respectively. The BB genotype was higher in patients than in controls (P = 0.0000) while the bb genotype was significantly higher in controls than in patients. Regarding the FOKI polymorphism the frequencies of FF, Ff and ff genotypes in (Osteoporotic patients) were 68%, 12% and 20%, while their frequency in controls was 84%, 16% and 0%, respectively. Subjects carrying either B+ve or f+ve genotype were more risky to develop osteoporosis,(OR 9.33, 1.43) respectively. Conclusions: The BB genotype was higher in all patients than controls and the bb genotype is a protective genotype. The FF genotype was predominant among controls and ff genotype was associated with osteoporosis. Currently, however, the mechanisms by which VDR alleles regulate BMD remain poorly understood.

Author Keywords
Bone mineral density; Gene polymorphism; Osteoporosis; Polymerase chain reaction; Vitamin D receptor

Document Type: Article
Source: Scopus

Haggag, K.[a] , Abd El-Ghaffar, M.A.[b] , Kantouch, F.A.[a] , Hashem, A.I.[c] , Ramadan, A.A.[d] , Mahmoud, Z.M.[a]
Synthesis of glicidyl methacrylate-A crylic acid copolymer via modified microemulsion polymerization and using it as textile pigment printing binder
(2012) *Journal of Applied Sciences Research*, 8 (10), pp. 5169-5176.

[a] Textile Research Division, National Research Centre, Cairo, Egypt
[b] Polymers and pigments Department, National Research Centre, Cairo, Egypt
[c] Chemistry Department, Faculty of Science, Ain Shams University, Cairo, Egypt
[d] Faculty of Applied Arts, Helwan University, Cairo, Egypt

Abstract
Copolymerization of glicidyl methacrylate (GMA) and acrylic acid (AAC) was carried out via modified microemulsion polymerization process for textile pigment printing. Sodium dodecyl sulfate and Potassium persulfate/glucose were used as emulsifier and redox initiator, respectively. The prepared micro emulsion copolymer was characterized via spectroscopic measurements, FT-IR and transmission electron microscope (TEM), in addition to thermal analysis. Effects of polymerization parameters, such as monomer content ratio, initiator and emulsifier concentration on average particle size and size distribution have been studied. The prepared copolymer latex showed high performance physico-mechanical properties in addition TEM analysis showed that the polymer latex nano particle within rang of 35 - 74 nm. The study involved the application of the prepared micro-emulsion co-polymer as binder for pigment printing process onto cotton fabric by using a flat screen technique and the prints were dried and thermal cured. The optimum curing conditions were determined, color strength and fastness properties of pigment printed areas to light, washing, perspiration and crocking were evaluated. In addition stiffness of the prints was also determined.

Author Keywords
Binder; Co-polymer; Micro-emulsion; Nanotechnology; Pigment; Textile printing

Document Type: Article
Source: Scopus

El-Bendary, M.A.M.[a] , Haggag, A.[a] , Shawki, F.[b] , Abd-El-Samie, F.E.[b]
Proposed approach for improving Bluetooth networks security through SVD audio watermarking
(2012) *2012 6th International Conference on Sciences of Electronics, Technologies of Information and Telecommunications, SETIT 2012*, art. no. 6481979, pp. 594-598.

DOI: 10.1109/SETIT.2012.6481979

[a] Dept. of Electronics Technology, Faculty of Industrial Education, Helwan University, Cairo, Egypt
[b] Dept. of Communications Engineering, Faculty of Elec. Engineering, Menofia University, Menof, Egypt

Abstract
Some of applications need multi-level security. The paper proposes a novel approach IEEE 802.15.1 Bluetooth network to provide better secure link for essential applications. It proposes a new approach for audio watermarking using the singular value decomposition (SVD) mathematical technique. This approach is based on embedding the encrypted image in the singular values of the audio signal after transforming it into a 2D format. After watermark embedding, the audio signal is transformed again into a 1-D format. The 1-D audio signal is segmented to Bluetooth packet payload length. That leads to the needs of fragmentation of the image to small segments. In the proposed technique the chaotic encryption is used for encrypt the image. It improves the quality of extracted images as proved experimentally, where it resists the noise and different attacks. The paper uses two type of Bluetooth packets (2DH1 and 2DM1), uncoded Enhanced Data Rate (EDR) and encoded EDR packets respectively. At the receiver the segments are recollected to construct watermark signal. The final step is extracting the image. Experiments of the simulation are carried over fading channel. Experimental results show that the proposed audio watermarking approach maintains the high quality of the audio signal and that the watermark extraction and decryption are possible.

Author Keywords
Audio Watermarking; Copyright Protection; Fading channel; IEEE 802.15.1 (Bluetooth Technology); SVD

Document Type: Conference Paper
Source: Scopus

Eissa, M.M., Mahfouz, M.M.A.
New high-voltage directional and phase selection protection technique based on real power system data
(2012) *IET Generation, Transmission and Distribution*, 6 (11), pp. 1075-1085. Cited 3 times.

DOI: 10.1049/iet-gtd.2012.0319

Electrical Engineering Department, Faculty of Engineering, Helwan University, Helwan, Cairo, Egypt

Abstract
Traditional directional power and current protection requires the current and the voitage to be measured. The directional current protection equipment is only capable for tripping the faulty incomer. While the direction in which the fault occurs is detected by measuring the direction of current flow, or in other words the phase displacement between the current and voltage. This study introduces a directional protection technique with phase selection based on measuring the current only. The correlogram function principle is applied on two successive current cycles. The two cycles are based on the pre- and post-fault current signals. The ability to differentiate between a fault in one direction and others is obtained using the sign of correlogram coefficients while its magnitude is used to identify the faulted phase. A proposed directional relay characteristic with correlogram coefficients calculated pre- and during the fault are also introduced. Different cases of non-symmetrical faults have been studied on a real recorded fault data for 240-kV transmission system at the province of Alberta-Canada. The results showed that the proposed technique is simple and reliable not only to identify the fault direction but also to select the faulted phases. © The Institution of Engineering and Technology 2012.

Document Type: Article
Source: Scopus

EL-Bakry, A.A.[a] , Mostafa, H.A.M.[b] , Eman, A.A.[b]
Antioxidant activity of Rumex vesicarius L. at the vegetative stage of growth
(2012) *Asian Journal of Pharmaceutical and Clinical Research*, 5 (4), pp. 111-117. Cited 5 times.

[a] Botany Department, Helwan University, Helwan, Egypt
[b] Botany Department, National Research Centre, Dokki, Giza, Egypt

Abstract
The present work has been carried out to investigate some biologically active constituents and antioxidant activity of different plant parts of Rumex vesicarius L., at the vegetative stages of growth (early and late vegetative stages). There were variations in the presence and/or amount of these active ingredients within different plant parts in these two stages of growth. Total phenolics in different plant parts, showed that, whole plant parts (at late vegetative stage) were the richest organ in this regard (4.518±0.018mg GAEs/g F.W.). It was found that, all plant parts, at both early and late vegetative stages of growth were rich in anthraquinones and whole plant parts extract (at early vegetative stage) was found to contain the highest amount of anthraquinones (2054±39.600µg/g F.W.). It was found also that, all plant parts, at early vegetative stage of growth were rich in flavonoids. Leaves contained the highest amount of flavonoids (000.25222±31.110 µg/g F.W.). Quantitative estimation of Emodin (using HPLC analysis) revealed that, all plant parts (at both early and late vegetative stages of growth) contained Emodin in high amounts, whole plant parts extract (at early vegetative stages of growth) was found to contain the highest amount (174.793±1.148 µg/g D.W., respectively). Quantitative estimation of Quercetin (using HPLC analysis) revealed that, all plant parts contained Quercetin in high amounts. Leaves extract, at early vegetative stage of growth was found to contain the highest amount of Quercetin (66.360 ±0.575µg/g D.W.).Regarding antioxidant activity studies, using total antioxidant activity and DPPH scavenging activity methods, it was found that, root (at late vegetative stage) extract had the highest amount of total antioxidants (428606.000±4792.885 GAEs as ppm). Results of DPPH scavenging activity studies revealed that, the least IC50 (the highest the effectiveness) was obtained using leaves (at early vegetative stage) extract (IC50= 0.345±0.005 mg/ml).

Author Keywords
Anthraquinones; Antioxidant activity; Emodin; Flavonoids; HLPC; Phenolics; Quercetin; Rumex vesicarius L.

Document Type: Article
Source: Scopus

Keshk, L.I.[a] , El-Moneem, D.S.A.[b]
Effect of nurses' work hours and fatigue on occurrence of medication errors in ICU and medical oncology unit - Cairo University
(2012) *Life Science Journal*, 9 (3), pp. 347-355.

[a] Department of Nursing Administration, Helwan University, Egypt
[b] Department of Medical-Surgical Nursing, Cairo University, Egypt

Abstract

Nurses are responsible for the safety of their patients. So, preventing error and maximizing quality of care for patients requires that those in health care be open to a variety of strategies for modifying work schedules and preventing fatigue that may require changes in long standing behaviors and preferences. Aim: To examine the effect of nurses' work hours and fatigue on occurrence of medication errors. Subject and methods: An exploratory, descriptive design was utilized to accomplish this study. The sample included all available nurses (n=29) were work in the two medical oncology units and (n=20) nurses work in ICU and conducted at the National Cancer Institute (NCI), Cairo- University. Tools for Data Collection were five included Socio demographic data, working hours data sheet, (CIS) chronic fatigue instrument, Need for recovery instrument and Medication errors observational sheet. Results: indicated that there was correlation between working hours and fatigue related to physical activity items in both units. There was correlation between medication errors and concentration fatigue subscale, motivation subscale at the ICU unit. Medication preparation errors and concentration fatigue subscale in the medical unit were also correlated. Conclusion: This study concluded that there was no statistical significant correlation between working hours and medication errors with both wings of errors preparation and administration. Also, the study concluded that correlation between medication preparation and administration errors and concentration fatigue subscale.

Author Keywords
CCU; Fatigue; Medication errors; Nurses' work hours

Document Type: Article
Source: Scopus

Kotb, N.A.
Predicting yarn quality performance based on fibers types and yarn structure
(2012) *Life Science Journal*, 9 (3), pp. 1009-1015. Cited 1 time.

Department of Technical Education, Helwan University, Egypt

Abstract
Egyptian spinning factories are faced to deterioration in their quality capabilities in the last years due to instability in cotton fiber types and quantities. This affects Quality and efficiency of knitting and weaving process as they depend on yarn properties. Instead of working with different types of Egyptian cottons the spinning factories had to process imported cotton types and polyester fibers with their trade names, for the first time, without real information's about their specifications. The aim of this work is to model the dependence of yarn quality (tenacity, evenness and imperfections) obtained within the last years at an Egyptian factory on type of cotton and polyester, twist number/factor, plying, linear density and cotton ratio of the yarn manufactured, through linear regression equations. Models concerning the different cotton fibers, blends of cotton and polyester and both the two groups are obtained. Linear regression equations relating the dependence of yarn properties obtained within the last five years at an Egyptian factory on material and yarn structures was determined, this will enable the factory to plan and improve the yarn quality level. Cotton type, yarn count and twist have the higher effect on all the properties studied also the yarn tensile strength and its variation depend on most of the factors studied. Cotton type Giza 86 give the best yarn properties followed by Giza 90 and Greece cotton fibers respectively of all yarns. A fifty percent of polyester fibers in blended yarns improved the tensile properties beside to evenness.

Author Keywords
Fiber; Performance; Yarn quality; Yarn structure

Document Type: Article
Source: Scopus

Pitz-Paal, R.[a] , Amin, A.[b] , Bettzüge, M.[c] , Eames, P.[d] , Fabrizi, F.[e] , Flamant, G.[f] , Garcia Novo, F.[g] , Holmes, J.[h] , Kribus, A.[i] , Van Der Laan, H.[j] , Lopez, C.[k] , Papagiannakopoulos, P.[l] , Pihl, E.[m] , Smith, P.[n] , Wagner, H.-J.[o]
Concentrating solar power in Europe, the Middle East and North Africa: Achieving its potential
(2012) *EPJ Web of Conferences*, 33, art. no. 03004, . Cited 1 time.

DOI: 10.1051/epjconf/20123303004

[a] DLR, Porz-Wahnheide, Linder Hohe, 51147 Koln, Germany
[b] Helwan University, Faculty of Engineering, 8 Giza Street, Giza 12211, Egypt
[c] University of Cologne, Institute of Energy Economics (EWI), Albertus-Magnus-Platz, D-50923, Cologne, Germany
[d] Loughborough University, Centre for Renewable Energy Systems Technology, Holywell Park, School of Electronic, Electrical and Systems Engineering, Loughborough LE11 3TU, United Kingdom
[e] ENEA - UTRINN - STD, Solar Thermodynamic Laboratory, Via Anguillarese 301, 00123, Rome, Italy
[f] PROMES-CNRS, 7 rue du Four Solaire, Odeillo, 66120 Font Romeu, France
[g] University of Seville, C/ San Fernando 4, 41004 Sevilla, Spain

[h] EASAC, Leopoldina, Postfach 110543, 06019 Halle (Saale), Germany
[i] Tel Aviv University, School of Mechanical Engineering, Faculty of Engineering, Tel Aviv 69978, Israel
[j] Universities of Leiden and Utrecht, Schoener 18, 3961 KZ Wyk by Duurstede, Netherlands
[k] CIEMAT, Avda. Complutense, 40, 28040 Madrid, Spain
[l] University of Crete, Department of Chemistry, 710 03 Heraklion, Crete, Greece
[m] Chalmers University of Technology, Department of Energy and Environment, SE-412 96 Goteborg, Sweden
[n] University College Dublin, Electricity Research Centre, Engineering and Materials Science Centre, Belfield, Dublin 4, Ireland
[o] Ruhr-Universitat Bochum, 44780 Bochum, Germany

Abstract
Concentrating solar power (CSP) is a commercially available renewable energy technology capable of harnessing the immense solar resource in Southern Europe, the Middle East and North Africa (the MENA region), and elsewhere. This paper summarises the findings of a study by the European Academies Science Advisory Council which has examined the current status and development challenges of CSP, and consequently has evaluated the potential contribution of CSP in Europe and the MENA region to 2050. It identifies the actions that will be required by scientists, engineers, policy makers, politicians, business and investors alike, to enable this vast solar resource to make a major contribution to establishing a sustainable energy system. The study concludes that cost reductions of 50-60% in CSP electricity may reasonably be expected in the next 10-15 years, enabling the technology to be cost competitive with fossil-fired power generation at some point between 2020 and 2030. Incorporation of storage delivers added value in enabling CSP to deliver dispatchable power. Incentive schemes will be needed in Europe and MENA countries to enable this point to be achieved. Such schemes should reflect the true value of electricity to the grid, effectively drive R&D, and ensure transparency of performance and cost data. © Owned by the authors 2012.

Document Type: Conference Paper
Source: Scopus

Shawky, D.M.[a] , Ali, A.F.[b]
Defining a measure of cloud computing elasticity
(2012) *ICSCS 2012 - 2012 1st International Conference on Systems and Computer Science*, art. no. 6502449, .

DOI: 10.1109/IConSCS.2012.6502449

[a] Engineering Mathematics Dept., Faculty of Engineering, Cairo University, Giza, Egypt
[b] Biomedical Engineering Dept., Faculty of Engineering, Helwan University, Helwan, Egypt

Abstract
Cloud computing has gathered great attention recently as a method for eliminating or at least reducing expensive setup and maintenance cost of computing resources. Cloud computing has many key characteristics such as reliability, multi-tenancy and rapid elasticity. However, these characteristics suffer from the lack of clear and quantitative measures. In this paper, we provide a preliminary work that can help in providing a set of benchmarks for a cloud computing performance. More specifically, we provide an approach for measuring the elasticity of a cloud. Elasticity of a cloud computing system refers to its ability to expand and contract overtime in response to users' demands. The work presented in this paper is inspired by the definition of elasticity that is used in physics. This definition is adopted to represent the basic features of a cloud computing environment and its parameters that are related to elasticity. Case study shows the adoption methodology and highlights some of the basic parameters affecting elasticity as measured by the proposed approach. © 2012 IEEE.

Author Keywords
cloud computing; computing capacity; elasticity

Document Type: Conference Paper
Source: Scopus

Abdel Kawy, M.A.[a] , Haggag, E.G.[b] , Abdel Motaal, A.A.[a] , Eissa, N.A.[c]
Quality control of certain slimming herbal products present in the Egyptian market
(2012) *Life Science Journal*, 9 (3), pp. 2273-2285.

[a] Pharmacognosy Department, Cairo University, Cairo 11562, Egypt
[b] Pharmacognosy Department, Helwan University, Helwan, 11795, Egypt
[c] Pharmacognosy Department, Future University in Egypt, Cairo, Egypt

Abstract

Two commercial slimming herbal tea products present in the Egyptian market viz; Sekem Herbal Tea (commercial herbal tea-1) and Royal Regime Tea (commercial herbal tea-2) were quality-evaluated compared to two prepared standard mixtures; prepared standard herbal tea-1, composed of mixture of herbs of Sekem Herbal Tea (chicory, marjoram, nettle and senna leaves, liquorices roots, celery fruits and calendula flowers) and prepared standard herbal Tea-2 composed of mixture of herbs of Royal Regime Tea (fennel, senna and chicory). Quality control of both commercial and prepared herbal teas was conducted through microscopical identification of their diagnostic elements, determination of certain heavy metals and pharmacopeial constants and detection of aflatoxins content and total microbial count. Quality control was also conducted through HPLC quantitative estimation of main active constituents of the commercial and prepared standard herbal teas, where results revealed that as for the percentages of sennoside A in commercial herbal tea-1 and its standard tea were 58.87 and 56.70, respectively, while its percentage in commercial herbal tea-2 and its standard tea were 59.30 and 55.17, respectively, as for esculetin percentages in commercial herbal tea-1 and its standard tea were 0.41 and 0.73, respectively, while its percentages in commercial herbal tea-2 and its standard tea was the same 0.17 and as for scopoletin percentage in commercial herbal tea-1 and its standard tea were 0.19 and 0.18, respectively, which all within the reported standard limits. Quality control was also conducted through GC/MS of the volatile oil constituents, the percentage yields of volatile oils, which were obtained by hydrodistillation of both commercial tea-1 and its corresponding standards tea were 1.8 and 2.0 V/W, respectively, while that of commercial tea-2 and its corresponding standard tea were 2.0 and 2.2 V/W, respectively. GC-MS analysis revealed that the major oil components of both commercial teas and their corresponding prepared standard teas were nearly the same with slight significant different percentages. Lipid profile tests (cholesterol, triglycerides and total lipids) were carried out in induced hypercholesteremic rats and after eight weeks of oral treatment with aqueous extracts of commercial teas-1 and -2 and their standard teas, showing significant reduction in cholesterol, triglycerides and total lipids plasma levels. Sekem herbal tea decreased the glucose levels by 10.7% in normoglycemic rats after 30 minutes of glucose oral administration and by 8.3% in STZinduced diabetic rats after 30 days treatment; while it's prepared standard tea caused 5.7 and 4.5% reduction, respectively. Royal Regime Tea decreased the glucose levels in normoglycemic and hyperglycemic rats by 3.0 and 6.0% reduction, respectively; while it's prepared standard tea decreased the blood glucose level by 9.6 and 8.3% in normoglycemic and hyperglycemic rats after 30 minutes and 30 days of treatment, respectively.

Author Keywords
Calendula; Celery; Chicory; Drug evaluation; Fennel; Hypocholesterermic; Hypoglycemic and antidiabetic activity; Liquorice; Marjoram; Nettle; Senna

Document Type: Article
Source: Scopus

Ibrahim, M.A.[a] , Abd Al Thalouth, I.[b] , Salem, A.A.[a] , Kantouch, F.[b] , Soudy, S.F.[a]
Preparation and technological evaluation of methacrylic and polyacrylic Acid/Leucaena gum as a thickener in printing protein fibre
(2012) *Polymers from Renewable Resources*, 3 (4), pp. 153-170.

[a] Faculty of Applied Arts, Helwan University, Textile Dyeing, Printing, and Finishing Department, Dokki, Cairo, Egypt
[b] National Research Centre, Textile Research Division, Dokki, Cairo, Egypt

Abstract
Polymethacrylic or polyacrylic acid/leucaena gum composites were prepared via grafting methacrylic acid monomers onto the galactomannan gum, isolated from leucaena seeds, using ammonium persulphate as an initiator. The rheological properties, in addition to the suitability of the composite for the direct printing of protein fabrics with acid or reactive dyes, were thoroughly investigated. It was found that polymethacrylic or polyacrylic acid/leucaena gum pastes are characterized by a non-Newtonian pseudoplastic behaviour; the apparent viscosity at a constant rate of shear depends on the neutralization and storage process. The prepared composites could be successfully used in printing wool and silk, regardless of the nature of the fabric. The K/S depends on the degree of neutralization of the composite employed as well as the storage time. The colour fastness properties to washing, rubbing and perspiration ranges between good to very good. © Smithers Rapra Technology, 2012.

Author Keywords
Galactomannan; Leucaena gum; Polyacrylic acid; Polymethacrylic acid; Printing; Silk.; Wool

Document Type: Article
Source: Scopus

Elsayed, M.S.[a] , El-Araby, M.E.[b] , Serya, R.T.[a] , Abouzid, K.A.M.[a]
Virtual screening and synthesis of new chemical scaffolds as VEGFR-2 kinase inhibitors
(2012) *Arzneimittel-Forschung/Drug Research*, 62 (12), pp. 554-560.

DOI: 10.1055/s-0032-1323759

[a] Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Ainshams University, Abbasia, Cairo, Egypt
[b] Department of Organic Chemistry, Faculty of Pharmacy, Helwan University, Helwan, Egypt

Abstract
Background: VEGFR-2 tyrosine kinase inhibitors are currently receiving high interest in drug discovery process as anticancer agents. We have used virtual screening techniques in order to discover new scaffolds that can be used for developing new VEGFR-2 kinase inhibitors. Method: Similarity ensemble approach was used to reduce the chemical space of ZINC database to select a subset of compounds. A validated structure-based pharmacophore was developed and adopted to screen the selected subset. Initial hits mapped to the pharmacophore were filtered using docking and scoring. Selected compounds were synthesized and biologically tested. Results: Compound 9 showed very good cytotoxicity profile against the NCI 60 cancer cell lines, while compound 8 showed reasonable inhibition of VEGFR-2 tyrosine kinase. Conclusion: Stepwise virtual screening of databases such as ZINC may result in new scaffolds for developing VEGFR-2 kinase inhibitors. © Georg Thieme Verlag KG Stuttgart New York.

Author Keywords
docking; pharmacophore; SEA prediction; VEGFR-2

Document Type: Article
Source: Scopus

Ibrahim, I.A.M.[a] , Zikry, A.A.F.[a] , Sharaf, M.A.[a] , Mark, J.E.[b] , Jacob, K.[c] , Jasiuk, I.M.[d] , Tannenbaumn, R.[c]
Dielectric behavior of Silica/Poly(dimethylsiloxane) nanocomposites. nano size effects
(2012) *IOP Conference Series: Materials Science and Engineering*, 40 (1), art. no. 012011, .

DOI: 10.1088/1757-899X/40/1/012011

[a] Department of Chemistry, College of Science, Helwan University, 11795, Egypt
[b] Department of Chemistry, University of Cincinnati, Cincinnati, OH 45221-0172, United States
[c] School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30332-0245, United States
[d] Department of Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, IL 61801, United States

Abstract
The enhancement of properties of elastomeric composite materials is very much dependent on the size and the surface modification of the reinforcing filler inclusions. It is well accepted that the reinforcement effects are primarily due to molecular interactions of the polymeric matrix and the filler inclusions and it involves both chemical and physical interactions. In the present study, we have incorporated silica nano fillers (Stober silica) into poly(dimethylsiloxane) (PDMS) elastomeric networks. The dielectric properties of the networks were investigated as a function of filler nano filler size, volume fraction, and surface treatment by hexamethyldisilazane. The broad-spectrum dielectric properties (in particular, the dielectric constant, the dielectric loss, and tan δ) were characterized. These properties were found to be dependent on the size of the nano inclusions; thus, the results clearly showed a nano size phenomenon that was a highlight of the present research. Certainly, that can be largely attributed to the high specific surface area of the nano fillers, which significantly leads to a pronounced increase in interfacial interactions. Also, and as would be expected, the dielectric properties of the polymeric networks filled with unmodified particles were different from those for the polymeric networks filled with surface-modified particles. Again, this is mainly attributed to changes in the surface properties. The expected dependence of properties of the nanocomposite networks on the nature of the filler and its concentration has thus been demonstrated. © Published under licence by IOP Publishing Ltd.

Document Type: Conference Paper
Source: Scopus

Ramadan, A.-B.M.[a] , El-Garhy, A.M.[b] , Amer, F.Z.[b] , Hefnawi, M.M.[a]
Forecasting gamma radiation levels using digital image processing
(2012) *Life Science Journal*, 9 (1), pp. 701-710. Cited 2 times.

[a] Department of National Network for Monitoring Radioactivity, Atomic Energy Authority of Egypt, Cairo, Egypt
[b] Department of Electronics, Communications and Computers, Helwan University, Cairo, Egypt

Abstract
This work introduces a new way for data visualization. Its name is "Digital 'application name' Image". Normal digital image is created by digital camera or digital scanner but digital application name image is created by measurements of monitoring data. This work uses the data which is measured by some radiation monitoring stations and classifies it using fuzzy logic rules to create some digital radiation images. The main unique advantage of digital radiation image

is that it expresses thousands of measurements in a very clear form through only one picture while the maximum number of measurements does not exceed 100 for other conventional visualization methods. This feature gives a facility to view one year of all recorded measurements in only one photo. This picture helps the user to observe the behavior of thousands of measurements in few minutes instead of spending few hours in reviewing hundreds of charts for the same measurements. This work also introduces a new way for forecasting Gamma radiation levels. This way uses image restoration technique to predict the gamma levels. Of course, this technique is used after creating digital radiation image. The quality for the output result from this model is at least accepted for forecasting and covering lost data. The main feature from this model is that it needs only one kind of data while other prediction models need at least three kinds of data. Therefore this model covers the common limitation in famous prediction models and saves money, time and effort.

Author Keywords
Data visualization; Digital image processing; Digital radiation image; Environmental forecast

Document Type: Article
Source: Scopus

Ahmed, I.
Modeling of vehicle drum brake for contact analysis using Ansys
(2012) *SAE Technical Papers*, 7, .

DOI: 10.4271/2012-01-1810

Automotive Technology Department, Faculty of Industrial Education, Helwan University, Cairo, Egypt

Abstract
A non-contact analysis of a drum brake based on three-dimensional Finite Element analysis using Ansys is presented. The effect of drum-lining interface stiffness and line pressure on the interface contact is examined. The modal analysis of the vehicle drum brake is also studied to get the natural frequency and instability of the drum. It is shown that the unsymmetric modal analysis is efficient enough to solve this linear problem after transforming the non-linear behaviour of the contact between the drum and the lining to a linear behavior. A linear element which is used in the modal analysis is transferred to non-linear elements which are Targe170 and Conta173 that represent the drum and lining to study the contact analysis. The contact analysis problems are highly non-linear and require significant computer resources to solve it, however, the contact problem give two significant difficulties. Firstly, the region of contact is not known based on the boundary conditions, line pressure, and drum and friction material specifications. Secondly, these contact problems need to take the friction into consideration. It showed that the distribution of the nodal reaction force depends mainly on piston pressure on either the leading or trailing lining. The slotted lining gave a good distribution of the nodal reaction forces compared to plain lining and existing of the slot in the middle of the lining can help in wear removal due to the friction between the lining and the drum. An accurate contact stiffness of 1100 MN/m can give a good representation for the pressure distribution between the lining and the drum. A full contact of the front part of the slotted lining could occur in case of 20, 40, 60 and 80 bar of piston pressure however; a partially contact between the drum and lining can occur in the rear part of the slotted lining.

Document Type: Conference Paper
Source: Scopus

Khalil, M.I., Mansy, M.N., Saad, A.A., Abouel-Seoud, S.A.
Vehicle-road interaction for interior noise measurement and evaluation
(2012) *International Journal of Vehicle Noise and Vibration*, 8 (4), pp. 352-366.

DOI: 10.1504/IJVNV.2012.051540

Automotive Engineering Department, Faculty of Engineering, Helwan University, Ibrahim Abdel-Razek St., El-Naam, Cairo, Egypt

Abstract
Nowadays, one of the most valuable criteria of vehicle quality assessment is based on acoustic emission levels. A vehicle is judged comfortable depending on the noise levels transmitted inside. Consequently, there is a general attention to the design criteria aimed at improving the structural acoustic behaviour, to comply with the increasingly restrictive ergonomic standard. Therefore, it is necessary to investigate the effects of different road surfaces on vehicle interior noise and to investigate a method of predicting road noise from multiple surfaces based on vehicle noise measurement of a single surface. To achieve this objective, the present work evaluates the noise at the vehicle driver's head position. The results demonstrate that differences in the input energy distribution are the primary causes for different subjective impressions of road interior noise over various surfaces, with the exception of very smooth surfacess where tyre tread noise dominates. This obsevation led to the proposition that road surface transfer function (RSFT) could be used to predict road interior noise due to various road surfaces based on a measurement over a

single road surface. Copyright © 2012 Inderscience Enterprises Ltd.

Author Keywords
Design criteria; Driver's head position; Road surface transfer function; Road surfaces; RSFT; Vehicle interior noise

Document Type: Article
Source: Scopus

Yousef, A.[a b] , Barakat, N.A.M.[c d] , Amna, T.[e] , Abdelkareem, M.A.[c] , Unnithan, A.R.[a] , Al-Deyab, S.S.[f] , Kim, H.Y.[c]
Activated carbon/silver-doped polyurethane electrospun nanofibers: Single mat for different pollutants treatment
(2012) *Macromolecular Research*, 20 (12), pp. 1243-1248. Cited 7 times.

DOI: 10.1007/s13233-012-0183-2

[a] Bionano system Engineering Department, Chonbuk National University, Jeonbuk 561-756, South Korea
[b] Faculty of Engineering, Matteria, Helwan University, Cairo, Egypt
[c] Organic Materials and Fiber Engineering Department, Chonbuk National University, Jeonbuk 561-756, South Korea
[d] Chemical Engineering Department, Faculty of Engineering, Minia University, El-Minia, Egypt
[e] Centre of Healthcare development technology, Chonbuk National University, Jeonbuk 561-756, South Korea
[f] Petrochemical Research, College of Science, King Saud University, Riyadh 11451, Saudi Arabia

Abstract
Adsorption ability and antibacterial activity could be created in a single electrospun nanofiber mat. Activated carbon/silver-doped polyurethane electrospun nanofiber mats have been introduced as a novel multifunction nanostructural material. Production of the introduced mat could be achieved by electrospinning of a colloidal solution from polyurethane containing activated carbon nanoparticles and silver nitrate. The high electric field and the presence of N,N-dimethylformamide, which is used as a solvent, led to reduced silver precursor in the silver nanoparticles. The introduced mat revealed good adsorption ability toward methylene blue dye. The presence of silver nanoparticles resulted in good antibacterial activity for the introduced mat since a piece of the mat could completely eliminate Escherichia coli bacteria. Overall, according to the utilized physiochemical characterizations, the introduced mat can be used as a mask or filter media. © The Polymer Society of Korea 2012.

Author Keywords
Antibacterial; Electrospinning; Environmental pollution treatment; Multifunction electrospun mat

Document Type: Article
Source: Scopus

El-Bendary, M.A.M.[a] , El-Tokhy, M.[a] , Kazemian, H.B.[b]
Efficient image transmission over low-power IEEE802.15.1 network over correlated fading channels
(2012) *2012 6th International Conference on Sciences of Electronics, Technologies of Information and Telecommunications, SETIT 2012*, art. no. 6481973, pp. 563-567.

DOI: 10.1109/SETIT.2012.6481973

[a] Dept. of Electronics Technology, Faculty of Industrial Education, Helwan University, Cairo, Egypt
[b] Intelligent Systems Research Centre, Faculty of Computing, London Metropolitan University, London, United Kingdom

Abstract
The paper studies the colored image (JPEG) transmission over mobile Bluetooth network using Enhanced Data Rate (EDR) packets. The paper uses the 2DH3 EDR Asynchronous Connectionless (ACL) packets. It presents the proposed chaotic interleaving technique to improve a transmission of colored images over Bluetooth systems. Also, it studies different interleaving schemes for this purpose. A comparison study between different propositions is held in the paper to choose an effective technique over mobile Bluetooth network. The fragmentation of the transmitted image is discussed. The simulation experiments are carried over correlated Rayleigh fading channel. Our experiments reveal that the proposed chaotic interleaving technique enhances the received colored image. In our simulation, we propose the image compression is lossless type. The experimental results reveal using the encoded EDR Bluetooth packets reduces the dropped packets. Also, the paper shows the standard error control scheme of old versions is ineffective in the case of colored image transmission over mobile Bluetooth network. The paper shows there is an error factor from fragmentation process where it determines the number of packets. JPEG image performs better with using chaotic interleaving. © 2012 IEEE.

Author Keywords

Fading channels; Fragmentation; Interleaving technique; Jakes' model; Mobile Bluetooth terminals

Document Type: Conference Paper
Source: Scopus

El-Bendary, M.A.M.M.[a] , Haggag, A.[a] , Kazemian, H.B.[b]
Activate the CQDDR role for improving throughput over IEEE 802.15.1 wireless links
(2012) *2012 6th International Conference on Sciences of Electronics, Technologies of Information and Telecommunications, SETIT 2012*, art. no. 6481996, pp. 685-689.

DOI: 10.1109/SETIT.2012.6481996

[a] Dept. of Electronics Technology, Faculty of Industrial Education, Helwan University, Cairo, Egypt
[b] Intelligent Systems Research Centre, Faculty of Computing, London Metropolitan University, London, United Kingdom

Abstract
Channel Quality Driven Data Rate (CQDDR) play main role in the throughput factor over IEEE 802.15.1 Bluetooth network. CQDDR is employed to selects the packet size by Received Signal Strength Indicator (RSSI) over Bluetooth network according to channel conditions. This paper tries to improve the throughput over Bluetooth system in classic and Enhanced Data Rate (EDR) packets. The paper studies the adaptive Bluetooth packet format according to CQDDR decision which determines when it can extend the payload (PL) of transmitted packets. This paper proposes transmitting uncoded Access Code (AC) and the header (HD) as optional packets type. Many of proposed packets format are studied in additive White Gaussian Noise (AWGN) and fading channels. Our simulation experiments reveal the capability of extension the PL length by 8 bytes for classic BT and 16 bytes for EDR BT. Also, the experiments reveal ineffectiveness of error control schemes of AC and HD in the case of uncoded packets (DH1). That means in good channel condition the redundant bits can be added to exceed the length of the PL. © 2012 IEEE.

Author Keywords
Classic Bluetooth; CQDDR; EDR packets; IEEE 802.15.1

Document Type: Conference Paper
Source: Scopus

Ellabban, O.[a b] , Abu-Rub, H.[a]
Indirect field oriented control of an induction motor fed by a bidirectional quasi Z-source inverter
(2012) *IECON Proceedings (Industrial Electronics Conference)*, art. no. 6389538, pp. 5297-5302.

DOI: 10.1109/IECON.2012.6389538

[a] Texas AandM University at Qatar, Doha 23874, Qatar
[b] Helwan University, Cairo 11790, Egypt

Abstract
This paper proposes a new closed loop speed control of an induction motor fed by a bidirectional quasi Z-source inverter (BqZSI), the speed control is based on the indirect field oriented control (IFOC) strategy. The IFOC is implemented based on a voltage pulse width modulation (PWM) with voltage decoupling compensation to insert the shoot-through (ST) state within the switching signals. A dual loop controller is designed, based on a third order small signal model, to control the BqZSI capacitor voltage. The proposed speed control method, with reduced DC input voltage compared with the standard adjustable speed drives (ASD) using voltage source inverter (VSI), are able to change the motor speed from zero to the rated speed with the rated load torque. The performance of the proposed speed control methods is verified by MATLAB simulation of a 15 kW induction motor fed by a BqZSI. The simulation results during different operation modes verify the validity of the proposed closed loop speed control method. © 2012 IEEE.

Document Type: Conference Paper
Source: Scopus

El-Hendawy, H.H., Elbaz, R.M., Hamada, M.A.
Effect of temperature on cellular fatty acids and proteins of three gram positive bacterial isolates isolated from soil in Egypt
(2012) *Journal of Applied Sciences Research*, 8 (12), pp. 5780-5788.

Botany and Microbiology Department, Faculty of Science, Helwan University, Ain Helwan-11790, Egypt

Abstract
Three gram positive bacterial isolates, isolated from soil and identified as Bacillus licheniformis, Bacillus circulans and Geobacillus thermoglucosidasius were grown at 20, 35, and 50°C then subjected to cellular fatty acids analysis. Although in different amounts, the fatty acids (10:0), (12:0), (14:0), (16:0) and (17:0) were detected in cells of the three bacterial isolates obtained from all the incubation temperatures. Increasing temperature from 20 to 50°C raised the proportion of the saturated fatty acids by 26.10%, 09.89% and 29.61% in B. licheniformis, B. circulans and G. thermoglucosidasius, respectively. Cellular protein contents and protein banding pattern on SDS-PAGE of the three isolates were estimated at 20, 25, 30, 35, 40, 45 and 50°C. The highest amount of protein concentration in all isolates was obtained at 20°C. In contrast, the highest number of protein bands was not obtained from these treatments.

Author Keywords
Bacillus circulans; Bacillus licheniformis; Bacterial antagonistic activity; Cellular fatty acid analysis; Cellular protein analysis; Geobacillus thermoglucosidasius

Document Type: Article
Source: Scopus

Allam, E.M., Metwalley, S.M.
Fuel cell electric vehicle simulation in Simulink and its use for power management studies
(2012) *International Journal of Electric and Hybrid Vehicles*, 4 (4), pp. 297-313. Cited 1 time.

DOI: 10.1504/IJEHV.2012.053023

Department of Automotive and Tractors Engineering, Faculty of Engineering, Helwan University, P.O. Box 11718, Mataria, Cairo, Egypt

Abstract
This paper discusses the need for modelling and simulation of fuel cell electric vehicles. Different modelling methods are presented with power train component and system modelling examples. The MATLAB/Simulink modelling and simulation of the fuel cell electric vehicle (FCV) are presented in this paper. This simulation tool is meant as a help in the design and evaluation of the hybrid electric vehicle. Components in the driveline can be varied and the effect on the hybrid electric vehicle fuel efficiency can be investigated. Both simulation tools consist of a Simulink vehicle model, where the driveline components are represented as interconnected blocks that are communicating physical signals between each other in the level of seconds. Component parameters are set in an accompanying MATLAB m-file. The demonstration shows different operating modes of the FCV over one complete cycle: accelerating, cruising, recharging the battery while accelerating and regenerative braking. It should run for about one minute when you use the accelerator mode. Copyright © 2012 Inderscience Enterprises Ltd.

Author Keywords
Fuel cell electric vehicle simulation; Hybrid vehicles; Modelling and simulation; Physics-based modelling

Document Type: Article
Source: Scopus

Allam, E.M., Metwalley, S.M.
Hybrid electric vehicle power train using battery model simulation in Simulink and its use for power management studies
(2012) *International Journal of Electric and Hybrid Vehicles*, 4 (4), pp. 359-377.

DOI: 10.1504/IJEHV.2012.053024

Department of Automotive and Tractors Engineering, Faculty of Engineering, Helwan University, P.O. Box 11718, Mataria, Cairo, Egypt

Abstract
This paper discusses the need for modelling and simulation of hybrid electric vehicle (HEV). Different modelling methods are presented with powertrain component and system modelling examples. The MATLAB/Simulink modelling and simulation of the hybrid electric vehicle (HEV) are represented in this paper. This simulation tool is meant as a help in the design and evaluation of the hybrid electric vehicle. Components in the driveline can be varied and the effect on the hybrid electric vehicle efficiency can be investigated. Both simulation tools consist of a Simulink vehicle model, where the driveline components are represented as interconnected blocks that are communicating physical signals between each other in the level of seconds. The demonstration shows different operating modes of the HEV over one complete cycle: accelerating, cruising, recharging the battery while accelerating and regenerative braking. Copyright © 2012 Inderscience Enterprises Ltd.

Author Keywords

Hybrid electric vehicle simulation; Hybrid vehicles; Modelling and simulation; Physics-based modelling

Document Type: Article
Source: Scopus

El-Ebiarie, A.S., Taha, N.
Molecular characterization of serine proteases from both first and third larval instars of Chrysomya megacephala
(2012) *Life Science Journal*, 9 (3), pp. 2086-2093. Cited 2 times.

Zoology and Entomology Dept., Helwan Univ., Ain Helwan, Cairo, Egypt

Abstract
The analysis of excretory/secretory products from third larval instar of C. megacephala using SDS-gel electrophoresis produces a band at 16KDa, band between 16KDa and 23KDa, and a broad band between 23 and 45KDa. The PCR product produced bands at 573 bp for trypsin of both first and third instars of C. megacephala and 715 bp for chymotrypsin of both instars. Comparisons with other dipterans trypsin and chymotrypsin showed that all the C. megacephala sequences have identity with other dipterans sequences.

Author Keywords
Chrysomya megacephala; Excretory/secretory; Larvae; Serine proteases

Document Type: Article
Source: Scopus

Hassanin, H.[a b] , Mohammadkhani, A.[a] , Jiang, K.[a]
Fabrication of hybrid nanostructured arrays using a PDMS/PDMS replication process
(2012) *Lab on a Chip - Miniaturisation for Chemistry and Biology*, 12 (20), pp. 4160-4167. Cited 10 times.

DOI: 10.1039/c21c40512a

[a] School of Mechanical Engineering, University of Birmingham, Edgbaston, Birmingham, B15 2TU, United Kingdom
[b] Helwan University, Ain Helwan, Helwan, Egypt

Abstract
In the study, a novel and low cost nanofabrication process is proposed for producing hybrid polydimethylsiloxane (PDMS) nanostructured arrays. The proposed process involves monolayer selfassembly of polystyrene (PS) spheres, PDMS nanoreplication, thin film coating, and PDMS to PDMS (PDMS/PDMS) replication. A self-assembled monolayer of PS spheres is used as the first template. Second, a PDMS template is achieved by replica moulding. Third, the PDMS template is coated with a platinum or gold layer. Finally, a PDMS nanostructured array is developed by casting PDMS slurry on top of the coated PDMS. The cured PDMS is peeled off and used as a replica surface. In this study, the influences of the coating on the PDMS topography, contact angle of the PDMS slurry and the peeling off ability are discussed in detail. From experimental evaluation, a thickness of at least 20 nm gold layer or 40 nm platinum layer on the surface of the PDMS template improves the contact angle and eases peeling off. The coated PDMS surface is successfully used as a template to achieve the replica with a uniform array via PDMS/PDMS replication process. Both the PDMS template and the replica are free of defects and also undistorted after demoulding with a highly ordered hexagonal arrangement. In addition, the geometry of the nanostructured PDMS can be controlled by changing the thickness of the deposited layer. The simplicity and the controllability of the process show great promise as a robust nanoreplication method for functional applications. © The Royal Society of chemistry 2012.

Document Type: Article
Source: Scopus

Abdel Hamid, R.H.
A GIS-DSS for wind farms industry in Egypt
(2012) *Proceedings of the 2011 International Conference and Utility Exhibition on Power and Energy Systems: Issues and Prospects for Asia, ICUE 2011*, art. no. 6497755, .

DOI: 10.1109/ICUEPES.2011.6497755

Faculty of Engineering at Helwan, Helwan University, Egypt

Abstract
Site selection of wind farms for energy industry in Egypt is a challenge task. It involves multiple criteria investigation (environmental, technological, economical) So far, there is no definite mechanism in Egypt for wind energy farm

decision making that consider all sets of conflicts to optimize the site suitability, the technology potential for optimal cost effective wind energy production before initiating any project. This project establishes a new Geographic Information System (GIS) linked to a Multi Criteria Decision Support System (DSS) for wind farm site selection at a cost effective energy production industry. The surface area of Egypt is about 1,000,000 km2 and the project can be considered as 'Siting Atlas' that can cover the country with enough information of ranking and prioritizing potential wind farm sites at high resolution and economical of initial investment, operational, and the financial cost for private sectors incentives. © 2011 IEEE.

Document Type: Conference Paper
Source: Scopus

Ghany, H.A.[a b] , Mohammed, M.S.[a c]
White noise functional solutions for wick-type stochastic fractional KdV-Burgers-Kuramoto equations
(2012) *Chinese Journal of Physics*, 50 (4), pp. 619-627. Cited 12 times.

[a] Department of Mathematics, Faculty of Science, Taif University, Taif, Saudi Arabia
[b] Department of Mathematics, Helwan University, Cairo, Egypt
[c] Department of Mathematics, Al Azhar University, Cairo, Egypt

Abstract
This paper is devoted to give white noise functional solutions for the Wick-type stochastic generalized fractional KdV-Burgers-Kuramoto equations with space-fractional derivatives. Using the homotopy analysis method (HAM) that was developed for integer-order differential equations, we can find new approximations to the exact solutions of the fractional KdV-Burgers-Kuramoto equations. Moreover, the Hermit transform and the inverse Hermit transform are employed to find the Wick-type stochastic generalized fractional KdV-Burgers-Kuramoto equations with space-fractional derivatives. © 2012 THE PHYSICAL SOCIETY OF THE REPUBLIC OF CHINA.

Document Type: Article
Source: Scopus

Yassin, N.I.[a] , Salem, N.M.[b] , Adawy, M.I.E.[b]
Entropy based video watermarking scheme using wavelet transform and Principle Component Analysis
(2012) *International Conference on Engineering and Technology, ICET 2012 - Conference Booklet*, art. no. 6396128, .

DOI: 10.1109/ICEngTechnol.2012.6396128

[a] National Research Centre., Cairo, Egypt
[b] Faculty of Engineering, Helwan University., Cairo, Egypt

Abstract
In this paper, a comprehensive approach for digital video watermarking is introduced, where a binary watermark image is embedded into the video frames. Each video frame is decomposed into sub-images using 3 level discrete wavelet transform then the Principle Component Analysis (PCA) transformation is applied for some selected blocks. The selection of the blocks depends on calculating the entropy of each block then the maximum entropy blocks were selected. The watermark is embedded into the maximum coefficient of the PCA block. The proposed scheme is tested using a number of video sequences. Experimental results show high imperceptibility and high robustness against several attacks. The computed PSNR achieves high score which is 47.1078 db. © 2012 IEEE.

Author Keywords
Binary watermark; Digital video watermarking; Discrete Wavelet Transform; Image Entropy; Principal Component Analysis

Document Type: Conference Paper
Source: Scopus

Kamel, R.[a] , El Morsy, E.M.[a] , Awad, A.S.[b]
Immunomodulatory effect of candesartan on indomethacin-induced gastric ulcer in rats
(2012) *Immunopharmacology and Immunotoxicology*, 34 (6), pp. 956-961. Cited 1 time.

DOI: 10.3109/08923973.2012.698283

[a] Department of Pharmacology and Toxicology, Faculty of Pharmacy, Helwan University, Ein Helwan, Cairo, Egypt

[b] Department of Pharmacology and Toxicology, Faculty of Pharmacy, Al-Azhar University (Girls), Nasr City, Cairo, Egypt

Abstract
Non steroidal anti-inflammatory drugs (NSAIDs) induce gastric mucosal lesions in part by induction of oxidative stress as well as the activation of inflammatory cells and the production of proinflammatory cytokines. In this study, we examined the protective effect of candesartan (2 and 5mg/kg) on indomethacin-induced gastric mucosa damage. Pretreatment with candesartan for 10 days reduced significantly the ulcer index induced by indomethacin injection. The preventive index of 2mg/kg (76.74%) was higher than that of 5mg/kg (65.11%). Both doses of candesartan were able to reduce significantly the stomach malondialdehyde content compared to indomethacin-treated group. Myeloperoxidase, tumor necrosis factor-α, cytokine-induced neutrophil chemoattractant gastric levels were significantly reduced by 2mg/kg of candesartan more than 5mg/kg. The Th1 cytokine interferon γ was also significantly reduced by both doses of candesartan compared to indomethacin injected group. On the other hand, indomethacin significant decreased the anti-inflammatory cytokine IL-10 gastric level. Pretreatment with candesartan (2 and 5mg/kg) reversed this effect. In conclusion, the present study indicates that pretreatment with candesartan, can protect against the stomach injury induced by indomethacin through its antioxidant and immunomodulatory effects. © 2012 Informa Healthcare USA, Inc.

Author Keywords
Angiotensin receptor blocker; Chemokines; Cytokines; Non steroidal anti-inflammatory drugs; Oxidative stress

Document Type: Article
Source: Scopus

El-Mahdy, G.A.[a b] , Atta, A.M.[b c] , Hegazy, M.M.[a] , Eissa, M.M.[d] , Fathy, A.M.[d] , Sayed, F.M.[b e] , Dyab, A.K.F.[b e] , Hamad-Al-Lohedan[b]
Microscopic studies on the corrosion resistance of reinforced carbon steel
(2012) *International Journal of Electrochemical Science*, 7 (9), pp. 8597-8611. Cited 2 times.

[a] Chemistry Department, Faculty of Science, Helwan University, Cairo, Egypt
[b] Surfactants research Chair, Chemistry department, College of Science, King Saud University, P.O.Box-2455, Riyadh-11451, Saudi Arabia
[c] Polymer chemistry in Petroleum Applications Department, Egyptian petroleum research institute (EPRI), Egypt
[d] Steel Technology Department, Central Metallurgical Research and Development Institute (CMRDI), Minia University, Egypt
[e] Chemistry Department, Faculty of Science, Minia University, Egypt

Abstract
The corrosion resistance of reinforced Carbon steel in saturated Ca(OH)2 solutions has been investigated. The influence of additions of vanadium and titanium micro-alloying elements on the corrosion resistance of carbon steel has been studied using weight loss , open Circuit potential (OCP), potentiodynamic polarization and electrochemical impedance spectroscopy (EIS).. The results obtained from the steady state potential (ESS) and the polarization resistance (Rp) measurements indicated the beneficial addition effects of Ti and V as micro-alloying elements for decreasing the corrosion rate. The grain refining due to micro-alloying additions plays an important role in an improvement of the corrosion resistance of the investigated steel. © 2012 by ESG.

Author Keywords
Carbon steel; Polarization and electrochemical impedance spectroscopy; Titanium; Vanadium

Document Type: Article
Source: Scopus

Salem, S.A.
BOA: A novel optimization algorithm
(2012) *International Conference on Engineering and Technology, ICET 2012 - Conference Booklet*, art. no. 6396156, .

DOI: 10.1109/ICEngTechnol.2012.6396156

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

Abstract
In this paper, a novel algorithm for multimodal function optimization is proposed, which is called Base Optimization Algorithm (BOA). The proposed algorithm uses a combination of basic arithmetic operators along with a displacement parameter to guide and redirect the solutions towards the optimum point. The efficiency of the new algorithm is

demonstrated using standard benchmark functions. A comparison of the results with those of other evolutionary algorithms shows that the proposed algorithm outperforms its competitors. © 2012 IEEE.

Author Keywords
Evolutionary computations; multimodal functions; Optimization

Document Type: Conference Paper
Source: Scopus

Radwan, M.S., Elfeky, S.M.S., Abu-Elyazeed, O.S.M.
An investigation on abnormal combustion, emissions and performance of novel jojoba bio-gasoline and its blends with gasoline in a spark-ignition engine
(2012) *SAE Technical Papers*, 9, . Cited 1 time.

DOI: 10.4271/2012-01-1599

Faculty of Engineering, Mattaria, Helwan University, Mechanical Power Department, Cairo, Egypt

Abstract
The main aim of this work was to study knock, pre-ignition, performance and emissions of an alternative novel jojoba bio-gasoline fuel using a Ricardo E6/MS variable compression ratio spark ignition engine. It was fuelled by different blends of jojoba bio-gasoline and gasoline with an octane of 90. The results gave the effect of equivalence ratio, speed, ignition timing, compression ratio, inlet air pressure and temperature using different blends on detonation, pre-ignition, performance and emissions. The results were correlated to give the designer an access to the tool needed for developing an existing engine or in the design of a new engine. Copyright © 2012 SAE International.

Document Type: Conference Paper
Source: Scopus

Yousef, A.[a b] , Barakat, N.A.M.[c d] , El-Newehy, M.[e] , Kim, H.Y.[c]
Chemically stable electrospun NiCu nanorods@carbon nanofibers for highly efficient dehydrogenation of ammonia borane
(2012) *International Journal of Hydrogen Energy*, 37 (23), pp. 17715-17723. Cited 16 times.

DOI: 10.1016/j.ijhydene.2012.09.038

[a] BioNanosystem Engineering Department, Chonbuk National University, 664-14 1Ga Duckjin-dong, Jeonju 561-756, South Korea
[b] Faculty of Engineering, Matteria Helwan University, Cairo, Egypt
[c] Organic Materials and Fiber Engineering Department, Chonbuk National University, Jeonju 561-756, South Korea
[d] Chemical Engineering Department, Faculty of Engineering, Minia University, El-Minia, Egypt
[e] Department of Chemistry, College of Science, King Saud University, Riyadh 11451, Saudi Arabia

Abstract
We describe the preparation of bimetallic NiCu nanorods (NRs) incorporated on carbon nanofibers (NFs). The synthesis nanofibers were prepared by low cost and facile technique; electrospinning. Typically, sol-gel consisting of nickel acetate, copper acetate, and poly (vinyl alcohol) was electrospun. Sintering of the electrospun nanofiber mats in argon atmosphere led to partial elimination of the utilized polymer and abnormal decomposition of the metallic acetates to finally produce NiCu nanorods incorporated in carbon nanofibers. The as-obtained nanofibers were characterized by SEM, FE-SEM, XRD, TGA, XPS, TEM, and TEM-EDX standard techniques. The introduced bimetallic nanofibers revealed superior catalytic activity toward hydrogen release from ammonia borane. Also, they showed a good chemical stability due to covering the bimetallic nanorods by carbon shells. Interestingly, nanofibers were reused for 6 successive cycles with good catalytic activity. Moreover, the prepared nanofibers showed low activation energy about 28.9 kJ/mol. Finally, development of new catalytic materials in the field of energy is considered as a key objective of the modern research. Copyright © 2012, Hydrogen Energy Publications, LLC. Published by Elsevier Ltd. All rights reserved.

Author Keywords
Ammonia borane; Carbon nanofibers; Electrospinning; Hydrogen release; Nickel copper nanorods

Document Type: Article
Source: Scopus

Dallal, A.H.[a] , Khalifa, A.M.[b] , Fahmy, A.S.[a c]
Accurate analysis of cardiac tagged MRI using combined HARP and optical flow tracking

(2012) *2012 Cairo International Biomedical Engineering Conference, CIBEC 2012*, art. no. 6473313, pp. 130-133. Cited 2 times.

DOI: 10.1109/CIBEC.2012.6473313

[a] Systems and Biomedical Eng. Dept., Cairo University, Egypt
[b] Systems and Biomedical Eng. Dept., Helwan University, Egypt
[c] Center for Informatics Science, Nile University, Egypt

Abstract
In this work, we present a new method for analyzing cardiac tagged Magnetic Resonance Imaging (tMRI). The method combines two major tracking techniques: Harmonic Phase (HARP) and Optical Flow (OF). The results of the two techniques are fused together to accurately estimate the displacement of each myocardium point. The developed methods were tested using numerical MRI phantom at different SNR levels and deformation rates. The results show that the proposed method is more accurate and reliable than the HARP and the OF methods. © 2012 IEEE.

Author Keywords
data fusion; HARP; Myocardium tracking; Optical flow; Tagged MRI

Document Type: Conference Paper
Source: Scopus

El-Kady, M., Mahmoud, D.
Numerical solutions of Fredholm and Volterra integro differential equations via optimal control approach
(2012) *Journal of Applied Sciences Research*, 8 (8), pp. 4296-4307. Cited 1 time.

Faculty of Science, Helwan University, Cairo, Egypt

Abstract
In this paper, a numerical method to solve the Fredholm and Volterra integro differential equation is introduced. The method is based on reformulate the Fredholm differential equation to be Fredholm integral equation and hence converts it to optimal control problem; by the same way the Volterra integro differential equation has been solved. The existence and uniqueness of proposed solution are achieved. Numerical results are given at the end of this paper.

Author Keywords
Fredholm integro differential equations; Optimal control problems; Volterra integro differential equation

Document Type: Article
Source: Scopus

El-Ebiarie, A.S.
Studying the activity of alkaline phosphatase, digestive proteases and some carbohydrate enzymes in the mid-gut of the third instar larvae of Gasterophilus intestinalis and comparing some of them with Pupae
(2012) *Life Science Journal*, 9 (3), pp. 2076-2085. Cited 1 time.

Zoology and Entomology Dept., Helwan Univ., Ain Helwan, Cairo, Egypt

Abstract
Proteinases contained in the mid-gut of the early third instar of Gasterophilus intestinalis have been tentatively identified by midgut hydrolysis of synthetic substrates. Trypsin was identified by maximal hydrolysis of benzoyl-DL-arginine-p-nitroanilide (BApNA) at pH 8 and chymotrypsin by maximal hydrolysis of benzoyl-L-tyrosine ethyl ester (BTEE) at pH 9.Carboxypeptidase A and B were identified by their maximal hydrolysis of hippuryl-DL- phenyllactic acid and hippuryl-L-arginine at pH 9 and 8 respectively. Aminopeptidase was identified by maximal hydrolysis of leucine-p-nitroanilide at pH 9. The activity of alkaline phosphatase and some carbohydrate enzymes (invertase, amylase and trehalase) were determined in the midgut of 3rd instar larvae and pupae of Gasterophilus intestinalis. The activity of alkaline phosphatase as well as the trend of amylase and trehalase activity were higher in the larval stage than that of pupa. There were no significant changes in invertase activity between the larvae and pupae. The results are discussed in view of the utilization of metabolites during metamorphosis.

Author Keywords
Alkaline phosphatase; Carbohydrate enzymes; Digestive proteases; Gasterophilus intestinalis; Larvae; Pupae

Document Type: Article
Source: Scopus

Abdel Moneim, A.E.[a b] , El-Deib, K.M.[c]
The possible protective effects of Physalis peruviana on carbon tetrachloride-induced nephrotoxicity in male albino rats
(2012) *Life Science Journal*, 9 (3), pp. 1038-1052. Cited 11 times.

[a] Biomedical Research Center, University of Granada, Granada, Spain
[b] Department of Zoology and Entomology, Helwan University, Cairo, Egypt
[c] Molecular Drug Evaluation Department, National Organization for Drug Control and Research (NODCAR), Giza, Egypt

Abstract
Physalis peruviana (physalis) has long held a place in folk medicine in the tropical countries where it grows. Here, the aim of this study was to evaluate the potential nephroprotective impact of physalis extract against carbon tetrachloride (CCl4)-induced kidney injury and to explore the possible mechanisms by which this plant exerts its beneficial effects. Rats were randomly divided into equal four groups, eight rats each. I. Control Group: served as Control group. II. Physalis group: rats were treated with Physalis extract in drinking water at a dose of 150 mg/kg b.wt. III. CCl4 group: rats were treated with CCl4 at a dose of 2 mL/Kg b.wt. and IV. CCl4 and physalis group: rats were treated with Physalis extract in drinking water and CCl4 at the previous doses for 12 weeks. At the end of the experiment, blood samples were collected and used for determination of kidney function, namely; uric acid, urea and creatinine, while the kidney tissues were subjected to hematoxylin and eosin and Bcl-2 immunostaining examination. Evaluation of malondialdehyde (MDA), nitric oxide (NO), glutathione (GSH) were conducted and the activity of superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPx) and glutathione-S-transferase (GST) were carried out. Animals treated with CCl4 exhibited significant elevations in kidney function, MDA, NO and exhibited significant decrease in the activities of SOD, CAT, GPx, GST and GSH contents. The combination (both physalis and CCl4) group has preserved the kidney histology, kidney function near to control, exhibited a significant induction in the activities of CAT, SOD and GST, increased the kidney content of GSH and Bcl-2 and conversely showed significant decrease in kidney MDA and NO levels compared to CCl4-treated rats. Physalis confers an appealing nephroprotective effect which might be explained partially via diminishing the generation of MDA and NO, induction of antioxidant systems and Bcl-2.

Author Keywords
Carbon tetrachloride; Nephrotoxicity; Physalis peruviana; Rats

Document Type: Article
Source: Scopus

Zhang, L.[a] , Mohamed, H.H.[b] , Dillert, R.[a] , Bahnemann, D.[a]
Kinetics and mechanisms of charge transfer processes in photocatalytic systems: A review
(2012) *Journal of Photochemistry and Photobiology C: Photochemistry Reviews*, 13 (4), pp. 263-276. Cited 27 times.

DOI: 10.1016/j.jphotochemrev.2012.07.002

[a] Institute of Technical Chemistry, Leibniz University of Hannover, Callinstr. 3, D-30167 Hannover, Germany
[b] Physical Chemistry Department, Helwan University, Ain Helwan, Cairo, Egypt

Abstract
Charge carrier transfer processes are very important and play a vital role in photocatalytic reactions. A fundamental understanding of the kinetics and mechanisms of these charge transfer processes is crucial from the viewpoint of developing efficient photocatalysis systems for large-scale industrialization. In this work, recent efforts concerning the understanding of the kinetics and the mechanisms of the charge transfer in photocatalytic processes have been reviewed. Fundamental aspects involved in these charge transfer processes, such as charge generation, charge trapping, charge recombination, and electron and hole transfer are primarily discussed. Moreover, some recent studies focusing on enhancing the photocatalytic efficiency by improving the charge transfer and separation are also reviewed. © 2012 Elsevier B.V.

Author Keywords
Charge recombination; Charge transfer; Kinetics; Mechanism; Photocatalysis

Document Type: Review
Source: Scopus

Rekaby, A., Youssif, A.A., Eldin, A.
Introducing generic artificial bee colony framework-problems independent framework
(2012) *Proceedings of the 2012 International Conference on Artificial Intelligence, ICAI 2012*, 2, pp. 1009-1013.

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

Abstract
Artificial bee colony algorithm is a new swarm intelligence algorithm. It is inspired from natural bee swarm intelligence concepts to solve the optimization problems. This paper proposes a framework for artificial bee colony algorithm. This framework is problem independent. The usage of this framework in any optimization problem is the goal of this research. This reusability is presented as a part of this paper. The paper introduces the artificial bee colony algorithm. Afterwards, a description of the framework will be provided. Detailed view of the framework and how to be used are shown. The experiments are stated after that. A conclusion is presented at the end of this paper.

Author Keywords
Artificial bee colony algorithm; Generic artificial bee colony framework (GABCF); Problem independent artificial bee colony implementation

Document Type: Conference Paper
Source: Scopus

Youssef, A.M.[a] , Nasr, H.E.[a] , Ramadan, A.M.[b] , Mohamed, W.S.[a]
MMT modified with cationic carbohydrates as deliver carrier for praziquentel drug
(2012) *Egyptian Journal of Chemistry*, 55 (2), pp. 143-159.

[a] Department of Polymers and Pigments, National Research Centre, Helwan, Cairo, Egypt
[b] Chemistry Department, Faculty of Science, Helwan University, Helwan, Cairo, Egypt

Abstract
Utilization of modified MMT in drug delivery is now taking a great attention due to the considerable efficiency and miscellaneous drug type. In this study, different types of cationic carbohydrate are used for MMT to optimize the best for loading and release. Tert- aminated starch (AmS) and chitosan (CS), bearing primary amino groups, are used for modification of MMT to evaluate the feasibility of loading and release of Praziquantel drug with applicable efficiency. The modified clay was characterized by XRD, TGA and SEM. The characterization via XRD and SEM demonstrates that the chitosan has greater exfoliated intercalation properties than the Tert- aminated starch. The loading efficiency of Praziquantel by modified MMT with AmS, and chitosan was 19.5 % and 22.1 % , respectively. Drug release was studied for CS/MMT -Praziquantel hybrid and it was found that the release was directly proportional with the pH of the medium and reached to 82% at pH 7.4 after 6 hr.

Author Keywords
Aminated starch; Chitosan; Drug delivery; MMT; Praziquantel and Characterization

Document Type: Article
Source: Scopus

Tyagi, S.[a] , Abraham, A.[b] , Darwish, A.[c] , Khan, M.A.[d]
Preface
(2012) *International Journal of Intelligent Systems Technologies and Applications*, 11 (3-4), pp. 157-159.

[a] Institute of Management Studies, Lal Quan, Bulandshahar Road, Ghaziabad 201 009, India
[b] Machine Intelligence Research Labs (MIR Labs), Scientific Network for Innovation and Research Excellence, P.O. Box 2259, Auburn, WA 98071, United States
[c] Department of Computer Science, Helwan University, Cairo, Egypt
[d] Centre for Development of Advanced Computing, Ministry of Communications and IT, Govt. of India B-30, Institutional Area, Noida 201307, UP, India

Document Type: Editorial
Source: Scopus

Kotb-El-Sayed, M.-I.[a] , Al-Shoaibi, Z.-Y.[b]
Effects of ambergris on appetite and serum endocrine hormonal levels in skinny sufferers
(2012) *Asian Journal of Pharmaceutical and Clinical Research*, 5 (SUPPL. 3), pp. 138-142. Cited 1 time.

[a] Biochemistry and Molecular Biology Department, Faculty of Pharmacy, Helwan University, P.O. Box 11790, Ain Helwan, Helwan, Cairo, Egypt
[b] Organic Chemistry Department, Faculty of Pharmacy, University of Sana'a, Madbah, P.O. Box 19065, Sana'a, Yemen

Abstract
The current study evaluated the effects of ambergris on some endocrine hormones, serum lipids, body weights and appetite. A total forty subjects were recruited to receive randomly 415 mg /day of either ambergris (Am; n=20) or placebo (PL; = 20) for 4 weeks. Blood samples were used for the assessments of serum lipids, testosterone, estradiol, growth hormone (GH), prolactin, insulin, thyroxin (T4), and cortisol. Data show significant increase in testosterone, estradiol, prolactin, insulin, cortisol, thyroxin (T4) levels and body weights after ambergris dosing only while growth hormone showed non-significant changes in both groups. A significant increase in total cholesterol (Tc), low density lipoprotein cholesterol (LDLc) and high density lipoprotein cholesterol (HDLc) while significant decrease in triglycerides (TGs) levels in ambergris group were observed. We conclude that ambergris ingestion resulted in; increase of both sexual desire and body weights due to its effect on some endocrine hormones.

Author Keywords
Ambergris; Appetite; Insulin; Prolactin; Testosterone

Document Type: Article
Source: Scopus

Hamoud, M., El-Wahab, A.I., Barakat, A.
Elimination of building error in Rapid Manufacturing using iterative off-line building algorithm
(2012) *Proceedings of the 2012 1st International Conference on Innovative Engineering Systems, ICIES 2012*, art. no. 6530873, pp. 219-224.

DOI: 10.1109/ICIES.2012.6530873

Faculty of Engineering, Helwan University, Cairo, Egypt

Abstract
Rapid Manufacturing (RM) is a recent technology which provides new opportunities in the manufacture of highly complex physical models, from a 3D CAD data. Unfortunately, the current CAD/CAM systems don't provide any guidance to the user to predict or eliminate the building error. This paper presents an application study to analyze the dimensional building error of selected model. The study is started by reading the CAD file data, reorienting the model in definite different building orientation angles about its own axes, and then slicing the model with different values of layer thickness. The resulted errors at each layer thickness with different angles are then calculated and finally the suitable building orientation and suitable layer thickness that eliminate the error in Z-direction of the physical model is suggested. This study helps in building a complete physical model without wasting any material depending on its dimensions. It also provides guidance and valuable information to the RM users to get the best choice of process parameters without extra arbitrary trials before the actual building process. © 2012 IEEE.

Author Keywords
Dimensional Error; Optimum Building Orientation; Optimum Layer Thickness; Rapid Manufacturing; Rapid Prototyping

Document Type: Conference Paper
Source: Scopus

Eissa, M.M.[a] , Allam, A.M.[b] , Mahfouz, M.M.A.[a] , Gabbar, H.[c]
Wireless communication requirements selection according to PMUs data transmission standard for smart grid
(2012) *2012 IEEE International Conference on Smart Grid Engineering, SGE 2012*, art. no. 6463974, .

DOI: 10.1109/SGE.2012.6463974

[a] Department of Electrical Machine and Power Engineering, Faculty of Engineering, Helwan University, Egypt
[b] Department of Electronic, Communication and Computer Engineering, Helwan University, Egypt
[c] Faculty of Engineering and Applied Science, University of Ontario Institute of Technology, UOIT, Canada

Abstract
Large power systems are facing new challenges, such as increasing penetration of renewable energy sources, in particular wind generation, growing demands, limited resources, and competitive electricity markets. Under these conditions, the large power systems have to be covered from the reliability of the protection coordination. Wireless communication tool to collect data from different units to cape with the world is proposed to solve the interconnected power system as wide area system from the protection to coordination and then control action. The paper introduces

the communication performance for the wireless scheme used for collecting data from phase measuring units (PMUs). The performance of Long Term Evolution (LTE) from the point of view the communication standard and PMUs data transmission is discussed. PMUs data transmission parameters are studying. These parameters are compared with the performance of LTE communication network. The main wireless communication requirements to be applied on smart gird are given. The estimation of the performance of LTE in terms of latency and Bandwidth based on the standards from 3GPP is given. © 2012 IEEE.

Author Keywords
LTE; PMU; Smart Grid; Wireless

Document Type: Conference Paper
Source: Scopus

Khalil, M.I., El-Morsy, M.S.A., Abouel-Seoud, S.A.
Optimisation of gearbox replacement policy using vibration measurement data
(2012) *International Journal of Vehicle Noise and Vibration*, 8 (4), pp. 337-351.

DOI: 10.1504/IJVNV.2012.051539

Automotive Engineering Department, Faculty of Engineering, Helwan University, Ibrahim Abdel-Razek St., El-Naam, Cairo, Egypt

Abstract
Gearbox system reliability is a critical factor in the success of any industrial project. Poor reliability directly affects both the project's revenue stream through increased operation and maintenance (O&M) costs and reduced availability to the system due to its downtime. Indirectly, the acceptance of the system by the financial and developer communities as a viable enterprise is influenced by the risk associated with the capital equipment reliability; increased risk, or at least the perception of increased risk, is generally accompanied by increased financing fees or interest rates. However, this paper explores a reliability based on a developed an analytical mathematical method for predicting remaining lifetime of cracked gear tooth. The development is focused specifically on the investigation of a generalised statistical method for characterising and predicting system Weibull density function degradation (hazard rate). Using this method, optimal preventive age replacement policy is determined to maximise gearbox system reliability, and consequently an optimal cost analysis can be estimated. A simple geared system is used as a medium for real data collection, where the torsional vibration acceleration was measured and analysed. The results indicate that the knowledge of the remaining lifetime and the optimised replacement cost of the faulty gear can enhance the process of scheduling maintenance, ordering spare parts and using resources; consequently a reduction of maintenance cost.

Author Keywords
Corrective replacement; Cost analysis; Gearbox crack; Hazard function reliability; Optimisation; Preventive replacement; Vibration measurements

Document Type: Article
Source: Scopus

Madkour, T.M.[a] , Hagag, F.M.[a] , Mamdouh, W.[a b] , Azzam, R.A.[c]
Molecular-level modeling and experimental investigation into the high performance nature and low hysteresis of thermoplastic polyurethane/multi-walled carbon nanotube nanocomposites
(2012) *Polymer (United Kingdom)*, 53 (25), pp. 5788-5797. Cited 9 times.

DOI: 10.1016/j.polymer.2012.10.041

[a] American University in Cairo (AUC), School of Sciences and Engineering, Department of Chemistry, AUC Avenue, New Cairo 11835, Egypt
[b] Yousef Jameel Science and Technology Research Center (YJSTRC), American University in Cairo, AUC Avenue, New Cairo 11835, Egypt
[c] Department of Chemistry, Helwan University, Ain-Helwan 11795, Egypt

Abstract
Multi-walled carbon nanotube (MWCNT) reinforced thermoplastic polyurethane (TPU) nanocomposites were prepared using solution casting techniques and exhibited better thermal stability and improved mechanical performance. Scanning electron microscopy indicated a homogeneous dispersion of the carbon nanotubes (CNT) within the polymeric matrix at low filler loadings and a cluster formation at higher loadings. Stress-strain of the MWCNT-TPU nanocomposites showed optimum performance and lowest hysteresis for the 0.5% MWCNT nanocomposites due to the confinement of the TPU chains between the large number of the nanofiller particles. Molecular modeling showed that low MWCNTs content caused the moduli to increase due to the drastic drop in the number of configurational states accessible to the chains, which resulted in a significant decrease in the entropy of the

chains and a corresponding increase in the elastic moduli. Higher MWCNTs loadings caused a restriction in the TPU movement as indicated by its mean-square displacements. The enthalpy of mixing the TPU with MWCNTs was estimated and confirmed the repulsive interactions between the nanoparticles (MWCNT) and the polymeric chains, which created an additional excluded volume that the TPU segments were not allowed to occupy and thus forcing the conformational characteristics of the polymeric chains to deviate away from those of the bulk chains.

Author Keywords
Mooney-Rivlin equation; Multi-walled carbon nanotube; Thermoplastic polyurethane nanocomposites

Document Type: Article
Source: Scopus

Mohamed, H.H.[a b] , Bahnemann, D.W.[b]
The role of electron transfer in photocatalysis: Fact and fictions
(2012) *Applied Catalysis B: Environmental*, 128, pp. 91-104. Cited 26 times.

DOI: 10.1016/j.apcatb.2012.05.045

[a] Chemistry Department, Faculty of Science, Helwan University, Helwan, Cairo, Egypt
[b] Institut für Technische Chemie, Leibniz Universität Hannover, Callinstrasse 3, D-30167, Hannover, Germany

Abstract
Interfacial electron transfer at semiconductor nanoparticles is a fundamental process that is relevant to many applications in photocatalysis such as wastewater cleaning, air cleaning and energy production. Fundamental understanding of the dynamic of the electron transfer is of crucial importance for the understanding of the fundamental concepts of photocatalytic processes and hence results in understanding and industrialization of photocatalytic reactions as well as a rational design of the photocatalytic systems. This review summarizes the progress in understanding electron transfer dynamics from semiconductor nanoparticles to the electron acceptor molecules. The approaches to improve the electron transfer efficiency will be also reviewed. Of particular focus will be the advancement of methodology as well as overview of some new highlights in electron transfer reactions at TiO2/liquid interface. © 2012 Elsevier B.V.

Author Keywords
Electron dynamic techniques; Electron transfer; Kinetic aspects; Mechanistic perspectives; Photocatalysis

Document Type: Article
Source: Scopus

Zefaan, H.
Combustion chamber geometry effects in spark ignition engine exhaust emissions
(2012) *Australian Journal of Mechanical Engineering*, 10 (1), pp. 29-40.

DOI: 10.7158/M11-799.2012.10.1

Automotive and Tractors Engineering Department, Faculty of Engineering, Helwan University, Egypt

Abstract
The paper presents experimental results showing the effect of hemispherical, cylindrical and oval bowls-in-piston on exhaust gases within the cylinder of spark ignition engines. Results indicate that bowls increase both heat transfer and flame speed. Consequently, flame ability must become wide to reduce both engine emissions and cycle combustion variability. Hemispherical effect ranked first on hydrocarbon and carbon monoxide emissions, followed by cylindrical then oval. Nitrogen oxides are in opposite direction, with oval ranked first, followed by cylindrical then hemispherical.

Author Keywords
Bowls-in-piston; Cycle combustion variability and turbulence; Exhaust gases; Flame speed; Flat combustion chamber; Operating parameters; Piston crown; Ricardo engine; Si engine

Document Type: Article
Source: Scopus

El-Sayed, M.I.K., Amin, H.A.-K.
Effect of Catha edulis on insulin, resistin and cortisol levels in type-2 diabetics and nondiabetics
(2012) *American Journal of Biochemistry and Biotechnology*, 8 (3), pp. 157-163. Cited 1 time.

DOI: 10.3844/ajbbsp.2012.157.163

Department of Biochemistry and Molecular Biology, Faculty of Pharmacy, Helwan University, Helwan, P.O. Box 11790, Cairo, Egypt

Abstract
In this study, the biochemical effects of Catha edulis leaves chewing (as psycho stimulant and aphrodisiac) on the serum concentration of resistin, insulin, cortisol, zinc, calcium, copper and blood glucose in both healthy individuals and type 2 diabetic patients were examined. 80 male subjects aged 35-55 years were recruited in this study, 40 of them were previously diagnosed as type 2 diabetics and the other 40 were healthy non-diabetics. The above two groups were subdivided into two subgroups (n = 20) in accordance on whether they were regular and chronic khat chewers or none into NNK; healthy non-khat chewers, NK; healthy khat chewers, DNK; type 2 diabetic non-khat chewers and DK; type 2 diabetic khat chewers. Khat chewing resulted in elevated resistin, cortisol, FBG, PBG levels and HOMA-IR in either diabetics or healthy khat chewers than those of non-khat chewers and generally in diabetics than healthy. In addition, khat chewing resulted in a significant increase in calcium and copper serum levels. In contrast, serum zinc and insulin levels in diabetic chewers were significantly lower than those of diabetic's non-chewers. Catha edulis Forsk chewing adds additional toxic effects to type 2 diabetics by increasing cortisol and resistin levels while decreasing insulin secretion and sensitivity. © 2012 Science Publication.

Author Keywords
Catha edulis Forsk; Cortisol; Diabetes mellitus type 2; Insulin; Resistin

Document Type: Article
Source: Scopus

Abd El-Aziz, M.[a b] , Nabil, T.[a c]
Homotopy analysis solution of hydromagnetic mixed convection flow past an exponentially stretching sheet with hall current
(2012) *Mathematical Problems in Engineering*, 2012, art. no. 454023, . Cited 1 time.

DOI: 10.1155/2012/454023

[a] Mathematics Department, Faculty of Science, King Khalid University, P.O. Box 9004, Abha, Saudi Arabia
[b] Mathematics Department, Faculty of Science, Helwan University, P.O. Box 11795, Cairo, Egypt
[c] Basic Science Department, Faculty of Computers and Informatics, Suez Canal University, Ismailia, Egypt

Abstract
The effect of thermal radiation on steady hydromagnetic heat transfer by mixed convection flow of a viscous incompressible and electrically conducting fluid past an exponentially stretching continuous sheet is examined. Wall temperature and stretching velocity are assumed to vary according to specific exponential forms. An external strong uniform magnetic field is applied perpendicular to the sheet and the Hall effect is taken into consideration. The resulting governing equations are transformed into a system of nonlinear ordinary differential equations using appropriate transformations and then solved analytically by the homotopy analysis method (HAM). The solution is found to be dependent on six governing parameters including the magnetic field parameter M, Hall parameter m, the buoyancy parameter ξ, the radiation parameter R, the parameter of temperature distribution a, and Prandtl number Pr. A systematic study is carried out to illustrate the effects of these major parameters on the velocity and temperature distributions in the boundary layer, the skin-friction coefficients, and the local Nusselt number. © 2012 Mohamed Abd El-Aziz and Tamer Nabil.

Document Type: Article
Source: Scopus

Abdalla, O.H.[a b] , Al-Badwawi, R.[c] , Al-Hadi, H.[c] , Al-Riyami, H.[c] , Al-Nadabi, A.[c]
Steady-state and transient performances of Oman transmission system with 200 MW photovoltaic power plant
(2012) *2012 IEEE Energytech, Energytech 2012*, art. no. 6304669, .

DOI: 10.1109/EnergyTech.2012.6304669

[a] Oman Electricity Transmission Company, P. O. Box 1224, 131, Al-Hamriya, Muscat, Oman
[b] University of Helwan, Egypt
[c] Strategic Planning and Projects Department, Oman Electricity Transmission Company, P.O. Box1224, 131, Al-Hamriya, Muscat, Oman

Abstract
The paper presents steady-state and transient studies to assess the impact of a 200 MW Photovoltaic Power plant (PVPP) connection on the Main Interconnected Transmission System (MITS) of Oman. The PVPP consists mainly of a

large number of solar arrays, DC/DC converters, DC/AC inverters, filters, and step-up transformers. Two proposed locations are considered to connect the PVPP plant to MITS: Manah 132 kV and Adam 132/33 kV grid stations in Al-Dakhiliah region. The transmission grid model of 2016 has been updated to include the simulation of the proposed 200 MW PVPP at either Manah or Adam. The DIgSILENT PowerFactory professional software is used to simulate the system and to obtain the results. The results include percentage of transmission line loadings, percentage of transformer loadings, busbar voltages, grid losses, in addition to 3-phase and 1-phase fault levels. Also, simulation studies have been performed to assess the transmission system transient responses to the PVPP outage. Steady state and transient analyses have shown that the connection of the PVPP plant at Manah or Adam to the transmission system is acceptable. The transient responses have proved that the system remains stable when it is subjected to the PVPP forced outage. © 2012 IEEE.

Author Keywords
Forced Outages; Load Flow; Photovoltaic Power Plant; Short Circuit; Transient Response

Document Type: Conference Paper
Source: Scopus

Mouhamed, M.R.[a] , Rashad, A.M.[a] , Ella Hassanien, A.[b c]
Blind 2D vector data watermarking approach using random table and polar coordinates
(2012) *Proceeding of 2012 International Conference on Uncertainty Reasoning and Knowledge Engineering, URKE 2012*, art. no. 6319586, pp. 67-70.

DOI: 10.1109/URKE.2012.6319586

[a] Helwan University, Faculty of Science, Cairo, Egypt
[b] Cairo University, Faculty of Computers and Information, Cairo, Egypt
[c] Scientific Research Group in Egypt (SRGE), Cairo, Egypt

Abstract
In this paper, a blind robust watermark approach for authentication 2D Map based on random table and polar coordinates mapping is presented. Firstly, All vertices will mapped into polar coordinate system. Then, the watermark is embedded using the random table of the decimal valued of the polar coordinates through the digit substitution of the decimal part. Theoretical analysis and excremental results shows that the presented approach is robust against a various attacks such as rotation, scaling and translation and also good imperceptibility. © 2012 IEEE.

Document Type: Conference Paper
Source: Scopus

Abo-Eldahab, E.[a] , Barakat, E.[a] , Nowar, Kh.[b]
Hall currents and heat transfer effects on peristaltic transport in a vertical asymmetric channel through a porous medium
(2012) *Mathematical Problems in Engineering*, 2012, art. no. 840203, . Cited 3 times.

DOI: 10.1155/2012/840203

[a] Department of Mathematics, Faculty of Science, Helwan University, Helwan 11795, Egypt
[b] Department of Mathematics, Faculty of Science, King Saud University, P.O. Box 2455, Riyadh 11451, Saudi Arabia

Abstract
The influences of Hall currents and heat transfer on peristaltic transport of a Newtonian fluid in a vertical asymmetric channel through a porous medium are investigated theoretically and graphically under assumptions of low Reynolds number and long wavelength. The flow is investigated in a wave frame of reference moving with the velocity of the wave. Analytical solutions have been obtained for temperature, axial velocity, stream function, pressure gradient, and shear stresses. The trapping phenomenon is discussed. Graphical results are sketched for various embedded parameters and interpreted. © 2012 E. Abo-Eldahab et al.

Document Type: Article
Source: Scopus

Feder, D.[a] , Hussein, W.M.[a b] , Clayton, D.J.[a] , Kan, M.-W.[a] , Schenk, G.[a c] , McGeary, R.P.[a d] , Guddat, L.W.[a]
Identification of Purple Acid Phosphatase Inhibitors by Fragment-Based Screening: Promising New Leads for Osteoporosis Therapeutics
(2012) *Chemical Biology and Drug Design*, 80 (5), pp. 665-674. Cited 4 times.

DOI: 10.1111/cbdd.12001

[a] School of Chemistry and Molecular Biosciences, The University of Queensland, Brisbane, QLD 4072, Australia
[b] Pharmaceutical Organic Chemistry Department, Faculty of Pharmacy, Helwan University, Ein Helwan, Helwan, Egypt
[c] Department of Chemistry, National University of Ireland - Maynooth, Maynooth, Co. Kildare, Ireland
[d] School of Pharmacy, The University of Queensland, Brisbane, QLD 4072, Australia

Abstract
Purple acid phosphatases are metalloenzymes found in animals, plants and fungi. They possess a binuclear metal centre to catalyse the hydrolysis of phosphate esters and anhydrides under acidic conditions. In humans, elevated purple acid phosphatases levels in sera are correlated with the progression of osteoporosis and metabolic bone malignancies, making this enzyme a target for the development of new chemotherapeutics to treat bone-related illnesses. To date, little progress has been achieved towards the design of specific and potent inhibitors of this enzyme that have drug-like properties. Here, we have undertaken a fragment-based screening approach using a 500-compound library identifying three inhibitors of purple acid phosphatases with Ki values in the 30-60μm range. Ligand efficiency values are 0.39-0.44kcal/mol per heavy atom. X-ray crystal structures of these compounds in complex with a plant purple acid phosphatases (2.3-2.7Å resolution) have been determined and show that all bind in the active site within contact of the binuclear centre. For one of these compounds, the phenyl ring is positioned within 3.5Å of the binuclear centre. Docking simulations indicate that the three compounds fit into the active site of human purple acid phosphatases. These studies open the way to the design of more potent and selective inhibitors of purple acid phosphatases that can be tested as anti-osteoporotic drug leads. © 2012 John Wiley & Sons A/S.

Author Keywords
Crystallography; Drug design; Fragment screening; Osteoporosis; Purple acid phosphatase; X-ray

Document Type: Article
Source: Scopus

Alsughayer, A.[a] , Elassar, A.-Z.A.[b c] , Al Sagheer, F.[b] , Mustafa, S.[a]
Erratum: Synthesis and characterization of polysulfanilamide and its copolymers: Bioactivity and drug release (Pharmaceutical Chemistry Journal (2012) 46: 7 (418-428))
(2012) *Pharmaceutical Chemistry Journal*, 46 (8), p. 522.

DOI: 10.1007/s11094-012-0824-y

[a] Pharmaceutical Science Department, College of Health Science, Public Authority for Applied Education and Training, Adailiyah, Kuwait
[b] Chemistry Department, Faculty of Science, Kuwait University, P. O. Box 5969, Safat 13060, Kuwait
[c] Chemistry Department, Faculty of Science, Helwan University Ain Helwan, Cairo, Egypt

Document Type: Erratum
Source: Scopus

Mansour, M.S.[a] , Elbaz, A.M.[b] , Samy, M.[c]
The stabilization mechanism of highly stabilized partially premixed flames in a concentric flow conical nozzle burner
(2012) *Experimental Thermal and Fluid Science*, 43, pp. 55-62. Cited 3 times.

DOI: 10.1016/j.expthermflusci.2012.03.017

[a] Mechanical Power Engineering Department, Faculty of Engineering, Cairo University, Egypt
[b] Mechanical Power Engineering Department, Faculty of Engineering Mataria, Helwan University, Egypt
[c] National Institute of Laser Enhanced Sciences, Cairo University, Giza, Egypt

Abstract
Many practical combustion systems are based on the mode of partially premixed flames where the interaction between lean and rich pockets improves the flame stability. In our recent work a highly stabilized concentric flow conical nozzle burner has been designed and developed for partially premixed flames. Flow field, temperature and OH radical measurements were conducted outside the cone. The early region of the flame within the cone affects the stability of the flame. So, the aim of the present work is to study the stabilization mechanism inside the cone based on two dimensional measurements of the flow field and temperature field. Five turbulent partially premixed flames have been investigated at Reynolds numbers range between 8.3×10 3 and 14.5×10 3 and equivalence ratio ranges between 2.5 and 4. The turbulent flow field inside and outside the conical quartz nozzle were obtained using a three-dimensional PIV system. The flow filed at the near region inside the cone shows a recirculation zone suggesting air entrainment along the cone wall. This stream of air is likely to be heated by the flame and thus improves the flame

stability. Thus, the stabilization mechanism of the conical nozzle burner is mainly affected by the flow pattern inside the cone. This flow field structure improves the stability significantly as compared to similar partially premixed flames without cone. The mean temperature field indicated two distinctive regions at early axial distances, the first of a lower central flame temperature and a second region of a higher flame temperature, which located at a shifted radial distances. These two regions are associated with four distinctive regions of temperature fluctuations. The jet equivalence ratio has a limited effect on flow fields and has relatively milder effect on the temperature field. © 2012 Elsevier Inc.

Author Keywords
Flame stabilization; Flow field; Partially premixed flames; PIV; Temperature field; Turbulent flow

Document Type: Article
Source: Scopus

Marzouk, M.S.[a] , Moharram, F.A.[b] , Haggag, E.G.[c] , El-Batran, S.M.[d] , Mahmoud, I.I.[c] , Ibrahim, R.R.[c]
Novel biflavone diglycosides and biological activity of Jatropha multifida leaves
(2012) *Chemistry of Natural Compounds*, 48 (5), pp. 765-770. Cited 1 time.

DOI: 10.1007/s10600-012-0377-z

[a] Department of Pharmacetical Chemistry, College of Pharmacy, King Saud University, P. O. Box 2457, 11451 Riyadh, Saudi Arabia
[b] Department of Pharmaceutical Sciences, College of Clinical Pharmacy (Girls), King Faisal University, P. O. Box 400, 31982 Hofuf, Saudi Arabia
[c] Department of Pharmacognosy, Faculty of Pharmacy, Helwan University, Ain-Helwan, Cairo, Egypt
[d] Department of Pharmacology, Division of Medical Sciences, National Research Centre, Dokki, 12622 Cairo, Egypt

Abstract
Chromatographic separation of the 80% aqueous methanol extract (AME) of Jatropha multifida Linn. leaves has yielded three novel biapigenin di-C-glucosides, i.e., 6,6″-di-C-β-glucopyranosyl-methylene-(8, 8″)biapigenin (7), 3,6″-di-C-β-glucopyranosyl-methylene-(6, 8″)-biapigenin (8), and 6,6″-di-C-β-glucopyranosyl-methylene- (3,8″)-biapigenin (9), named jatrophenols I-III. In addition, seven known polyphenolic metabolites were identified as apigenin 7-O-β-neohespredoside (1), ferulic acid (2), quercetrin (3), vicinin-II (4), isoorientin (5), vitexin (6), and luteolin (10) for the first time from this species. The AME of the plant was reported for the first time to have significant analgesic, anti-inflammatory, and antihypertensive effects. © 2012 Springer Science+Business Media New York.

Author Keywords
analgesic; anti-inflammatory; antihypertensive; biapigenin di-C-glucoside; HR-ESI-MS; Jatropha multifida

Document Type: Article
Source: Scopus

Mohamed, M.H.
Performance investigation of H-rotor Darrieus turbine with new airfoil shapes
(2012) *Energy*, 47 (1), pp. 522-530. Cited 29 times.

DOI: 10.1016/j.energy.2012.08.044

Renewable Energy Lab. of Mechanical Power Engineering Dept., Faculty of Engineering, Helwan University, P.O. 11718, Mattaria, Cairo, Egypt

Abstract
Since millenaries humans have attempted to harness the wind energy through diverse means. Vertical axis wind turbines (VAWTs) were originally considered as very promising, before being superseded by the present, horizontal axis turbines. For various reasons, there is now a resurgence of interests for VAWTs, in particular Darrieus turbines. Using modern design tools and computational approaches, it should be possible to increase considerably the performance of traditional VAWTs, reaching a level almost comparable to that of horizontal axis turbines. Since VAWTs show many specific advantages (compact design, easier connection to gears/generator, easier blade control if needed, lower fatigue...), it is important to check quantitatively the efficiency of such turbines. This is the purpose of the present work, starting from the standard, straight Darrieus turbine (H-rotor). The aerodynamic investigation will be carried out for 20 different airfoils (Symmetric and Non-symmetric) by two-dimensional Computational Fluid Dynamics in order to maximize output torque coefficient and output power coefficient (efficiency). A considerable improvement of the H-rotor Darrieus turbine performance can be obtained in this manner. © 2012 Elsevier Ltd.

Author Keywords
Aerodynamic; Airfoil shape; CFD; Darrieus turbine; Wind energy conversion

Document Type: Article
Source: Scopus

Mahgoub, S.[a] , Youns, M.[a] , Bassyouni, A.[b] , Hassan, Z.[a]
Serum levels of heat shock protein 27 as a potential marker of diabetic nephropathy in Egyptians with type 2 diabetes
(2012) *Journal of Applied Pharmaceutical Science*, 2 (11), pp. 14-20.

DOI: 10.7324/japs.2012.21104

[a] Department of Biochemistry and Molecular Biology, Faculty of Pharmacy, Helwan University, Ain Helwan, Cairo, 11511, Egypt
[b] National Institute of Diabetes and Endocrinology, Kaser Elainy Cairo, Egypt

Abstract
Heat shock protein 27 (Hsp27) is over-expressed after cells exposure to stressful conditions that include oxidative stress like diabetes as well as chronic kidney disease. Here, the serum Hsp27 levels in Egyptian type 2 diabetic subjects with and without diabetic nephropathy (DN) were investigated. Serum Hsp27 levels were determined using The AssayMax Human Hsp27 ELISA kit in 72 individuals: 14 diabetic control subjects, 28 diabetic subjects with hypertension and/or dyslipidemia as risk factors for DN and 30 individuals with different DN stages (DN1= 6, DN2= 9 and DN3= 15 patients) according to the estimated glomeular filtration rate. Serum Hsp27 concentrations were significantly higher in patients at risk to and with DN compared to diabetic control subjects ($p<0.01$). Moreover, before microalbuminuria becomes evident, serum Hsp27 levels showed higher sensitivity and area under the curve compared to common traditional markers for diagnosis of DN as creatinine and microalbuminuria. In conclusion, our results showed, for the first time, that serum Hsp27 concentrations appear to be related to the incidence of DN as a microvascular complication in patients with type 2 diabetes mellitus and we concluded that serum HSP 27 may be used as an early marker for diagnosis of diabetic nephropathy.

Author Keywords
Diabetes mellitus; Diabetic nephropathy; Heat shock proteins; Hsp27

Document Type: Article
Source: Scopus

Ramadan, F.S[a] , Metwalli, F.I[b] , El-Khadragy, A.A[a] , Afify, W.[c]
The subsurface geology and source rocks characteristics of some alam el bueib reservoirs in tut oil field, north western desert, egypt
(2012) *Journal of Applied Sciences Research*, 8 (11), pp. 5388-5409.

[a] Geology Department, Faculty of Science, Zagazig University, Zagazig, Egypt
[b] Geology Department, Faculty of Science, Helwan University, Cairo, Egypt
[c] Khalda Petroleum Company, Cairo, Egypt

Abstract
The present study deals with subsurface geology and source rock characteristics to evaluate Alam El Bueib (AEB) Formation. Basin-mode 1D soft-ware is used for construction and prediction of either geological or geochemical models. On the other hand, calculation of tectonic subsidence and sedimentation rates in the study area through time, using tectonic sedimentation time plots were carried out to make a relation between geological processes and maturation through time. The lithostratigraphic cross sections, thickness variations, and lithofacies of some Alam El Bueib reservoirs are discussed to distinguish the shape, the extent of sedimentary basins and the environment of deposition. The geochemical study assisted in the identification of potential source intervals within Alam El Bueib Formation. The evaluation of the source rocks in the study area includes geochemical parameters; Total Organic Carbon (TOC wt %), Free Hydrocarbon Percent (S1), Residual Petroleum Potentiality (S2), Hydrogen Index (HI) and vitrinite reflectance (Ro %) of TUT-21 well. Besides, the prediction of thermal hydrocarbon maturation, maturity profiles and generation were calculated in the study area. The studied Alam El-Bueib Formation reservoirs include three main units; AEB-1, AEB-2and AEB-3(A, D and E subunits). All tops of Alam El-Bueib units are higher in TUT-3 well (lies in northern part) than the other wells, furthermore horst or anticlinal block found in area around TUT-3 well. These reflected that the north direction in TUT oil field is more prospective than the south direction. Triangle facies maps showed that sandy shale and argillaceous sandstone facies are predominance in the most studied units changing to calcareous shale and argillaceous limestone in the AEB-1 and AEB-2 units respectively. These facies variations reflect continental fluvio-deltaic environment in AEB-3 unit, while AEB-1 and AEB-2 units indicate shallow marine environment. The geochemical results showed that the Alam El Bueib source rock in TUT oil field vary from poor to very good organic richness with kerogen of type III and characterized by immature to mature rocks. As well as, higher tectonic subsidence with high sedimentation rates in the studied area are observed at the Cretaceous and Neogene

ages and hydrocarbon generation for Alam El Bueib Formation started during the Turonian (about 87 My).

Author Keywords
Egypt; Geochemical characteristics; Source rock; Subsurface; TUT oil field; Western desert

Document Type: Article
Source: Scopus

El-Gendy, Y.A.[a b] , Yahia, I.S.[c d f] , Yakuphanoglu, F.[e]
Investigation of nanocrystalline CdS/Si diode using complex impedance spectroscopy
(2012) *Materials Research Bulletin*, 47 (11), pp. 3397-3402. Cited 1 time.

DOI: 10.1016/j.materresbull.2012.07.017

[a] Physics Department, Faculty of Science, Helwan University, Cairo, Egypt
[b] Umm Al-Qura University, University College, Physics Department, Alqunfoza, Saudi Arabia
[c] Department of Physics, Faculty of Education, Ain Shams University, Roxy, Cairo, Egypt
[d] Department of Physics, Faculty of Science, King Khaled University, P.O. Box 9004, Abha, Saudi Arabia
[e] Physics Department, Faculty of Science, Firat University, Elazig, Turkey
[f] Nano-Science and Semiconductor Labs., Department of Physics, Ain Shams University, Roxy, Cairo, Egypt

Abstract
CdS/n-Si device was fabricated via depositing CdS thin film onto pre-cleaned n-silicon substrates. The atomic force microscope was used to examine the crystal size of the deposited films and its roughness. The AC conductivity and the real part of complex impedance Z′as a function of frequency at different temperatures were studied. The AC conductivity dependence of the applied frequency was explained on the basis of the power law relation. The bulk resistance has been calculated at different temperatures from the complex impedance Z″. The temperature dependence of capacitance for CdS/n-Si device at different frequencies was also investigated.

Author Keywords
A. Nanostructures; B. Vapor deposition; C. Atomic force microscopy; D. Electrical properties

Document Type: Article
Source: Scopus

Badawi, A.A.[a] , Sakran, W.S.[b] , Ramadan, M.A.[c] , El-Mancy, S.M.S.[d]
Improvement of the microbiological activity of topical ketoconazole using microemulsion systems
(2012) *Journal of Drug Delivery Science and Technology*, 22 (6), pp. 473-478. Cited 1 time.

[a] Department of Pharmaceutics, Faculty of Pharmacy, Cairo University, Egypt
[b] Department of Pharmaceutics, Faculty of Pharmacy, Helwan University, Egypt
[c] Department of Microbiology, Faculty of Pharmacy, October 6 University, Egypt
[d] Department of Pharmaceutics, Faculty of Pharmacy, October 6 University, Egypt

Abstract
The present study aimed to develop microemulsion formulae for topical delivery of ketoconazole (KTZ) with enhanced microbiological activity to avoid the systemic side effects. Different oils were screened for drug solubility and two oils, namely Labrafil M 2125 and 1PM, were selected. Different surfactants and cosurfactants were screened for development of microemulsions. Pseudoternary phase diagrams of the selected oils were constructed using Tween 80 as surfactant and isopropanol as cosurfactant in the ratio of 3:1. Various KTZ microemulsions were prepared and characterized for their physical stability, microbiological activity, and rheological properties. The prepared microemulsions were clear and the fluid showed Newtonian flow. Assessment of microbiological activity using agar cup diffusion method showed a marked enhancement of antifungal activity compared to a marketed product. Accelerated stability showed that KTZ subjected to severe degradation in microemulsions prepared using Labrafil M 2125 and was more stable in microemulsions prepared using 1PM.

Author Keywords
Ketoconazole; Microbiological activity; Microemulsion; Rheology; Stability; Topical

Document Type: Article
Source: Scopus

El-Bendary, M.A.M.M.[a] , El-Azm, A.E.A.[b] , El-Fishawy, N.A.[b] , Al-Hosarey, F.S.M.[c] , Eltokhy, M.A.R.[a] , El-Samie, F.E.A.[b] , Kazemian, H.B.[d]

JPEG image transmission over mobile network with an efficient channel coding and interleaving

(2012) *International Journal of Electronics*, 99 (11), pp. 1497-1518. Cited 1 time.

DOI: 10.1080/00207217.2012.680786

[a] Faculty of Industrial Education, Department of Communications Technology, Helwan University, Cairo, Egypt
[b] Faculty of Electronic Engineering, Department of Electronics and Electrical Communications, Menoufia University, Menouf 32952, Egypt
[c] Electrical Engineering Department, Faculty of Engineering, King Abdulaziz University, Rabigh, Saudi Arabia
[d] Intelligent Systems Research Centre, Faculty of Computing, London Metropolitan University, London, United Kingdom

Abstract
This article studies improving of coloured JPEG image transmission over mobile wireless personal area network through the Bluetooth networks. This article uses many types of enhanced data rate and asynchronous connectionless packets. It presents a proposed chaotic interleaving technique for improving a transmission of coloured images over burst error environment through merging it with error control scheme. The computational complexity of the used different error control schemes is considered. A comparison study between different scenarios of the image transmission is held in to choose an effective technique. The simulation experiments are carried over the correlated fading channel using the widely accepted Jakes' model. Our experiments reveal that the proposed chaotic interleaving technique enhances quality of the received coloured image. Our simulation results show that the convolutional codes with longer constraint length are effective if its complexity is ignored. It reveals also that the standard error control scheme of old Bluetooth versions is ineffective in the case of coloured image transmission over mobile Bluetooth network. Finally, the proposed scenarios of the standard error control scheme with the chaotic interleaver perform better than the convolutional codes with reducing the complexity. © 2012 Taylor & Francis.

Author Keywords
Computational complexity; Fading channels; Interleaving technique; Jakes model; Mobile bluetooth terminals

Document Type: Article
Source: Scopus

El-Mahallawi, I.[a] , Abdelkader, H.[b] , Yousef, L.[c] , Amer, A.[c] , Mayer, J.[d] , Schwedt, A.[d]

Influence of Al 2O 3 nano-dispersions on microstructure features and mechanical properties of cast and T6 heat-treated Al Si hypoeutectic Alloys

(2012) *Materials Science and Engineering A*, 556, pp. 76-87. Cited 15 times.

DOI: 10.1016/j.msea.2012.06.061

[a] Faculty of Engineering, Cairo University, Gamaa Street, Giza 12613, Egypt
[b] Faculty of Engineering, Helwan University, Egypt
[c] Scientific and Technology Center of Excellence (STCE), Germany
[d] RWTH Aachen University, Germany

Abstract
Cast light metal alloys have retained their importance and unique characteristics as first candidates when cost-function relationship is considered. Hypoeutectic aluminum silicon alloys as (A356) exhibit several specific and interesting properties that qualify them to be used in many automotive and aeronautical applications. Evidence of significant enhancement in the properties of Al-Si cast alloys by incorporating Al 2O 3 nano-particles have been recently presented. The present study aims at developing Al 2O 3 nano-dispersed Al-Si alloys with suitable casting methods that assure the dispersion of the nano-particles. In this work a number of cast samples of A356 were prepared by rheo-casting in a specially designed and built furnace unit allowing for the addition of the Al 2O 3 nano-particles into the molten Al-Si alloy in the semi-solid state with mechanical stirring. The microstructural features and the mechanical properties of the cast and T6 heat treated samples were investigated. The results obtained in this work showed enhancement in the mechanical strength of the Al 2O 3 nano-dispersed alloys, accompanied by significant increase in the elongation percentage, supported by evidence of refined dendrite arms length, and inter-lamellar spacing. © 2012 Elsevier B.V.

Author Keywords
Al 2O 3 nano-dispersions; Aluminium silicon hypoeutectic alloys; Grain refinement; SEM micro-analysis; Strength; T6

Document Type: Article
Source: Scopus

Khodeir, A.N.
Towards inflation targeting in Egypt: The relationship between exchange rate and inflation
(2012) *South African Journal of Economic and Management Sciences*, 15 (3), pp. 325-332.

Department of Economics, Helwan University, Egypt

Abstract
Since the Egyptian economy has recently moved towards inflation targeting, it became very important to know whether exchange rate movements have serious inflationary implications or not. To investigate this subject, the study aims to analyse the relevance of inflation with the exchange rate by using the Grangercausality test. Two indicators of inflation will be used, the consumer price index (CPI) and wholesale price index (WPI). In general, the results show a strong relationship between the two variables in a way that maygive support to the application of 'flexible inflation targeting regime instead of strict inflation targeting regime'.

Author Keywords
Exchange rate; Inflation; Inflation targeting; Pass-through effect

Document Type: Article
Source: Scopus

Al-Saeed, T.A.[a] , Khalil, D.A.[b]
Signal-to-noise ratio calculation in a moving-optical-wedge spectrometer
(2012) *Applied Optics*, 51 (30), pp. 7206-7213. Cited 1 time.

DOI: 10.1364/AO.51.007206

[a] Biomedical Engineering Department, Faculty of Engineering, Helwan University, 1 Sherif Street, Helwan, Helwan 11792, Egypt
[b] Electronics and Communications Engineering Department, Faculty of Engineering, Ain-Shams University, 11 Elsarayat Street, Abbassia, Cairo, Cairo 11517, Egypt

Abstract
In this paper we study the signal-to-noise ratio degradation in a moving-optical-wedge interferometer when used as an optical spectrometer. Both the mechanical vibration and temperature fluctuation effects are studied, and the effects are compared to their counterparts in a conventional Michelson interferometer. While the wedge interferometer is found to be more immune to linear translational vibration, it shows much higher sensitivity to rotational vibration. © 2012 Optical Society of America.

Document Type: Article
Source: Scopus

Ibrahim, W.[a] , Hegger, J.[a] , Sherif, A.[b]
Cracking behaviour of RC members strengthened with CFRP strips
(2012) *Concrete Repair, Rehabilitation and Retrofitting III - Proceedings of the 3rd International Conference on Concrete Repair, Rehabilitation and Retrofitting, ICCRRR 2012*, pp. 1228-1235.

[a] RWTH Aachen University, Aachen, Germany
[b] Helwan University, Cairo, Egypt

Abstract
This paper discusses the influence of the reinforcing ratio [A CFRP/A Steel] on the cracking behaviour of RC members reinforced with steel bars [A Steel] and strengthened with near-surface mounted (NSM) carbon strips [A CFRP]. The experimental program involves ten tests to study the crack width, crack spacing and cracking behavior of reinforced concrete members strengthened with NSM carbon strips subjected to cyclic tensile load. The strengthening with NSM carbon strips significantly increases the tensile strength and ductility of RC members. In addition, it significantly reduces the crack width in RC members. The paper proposes a formula for predicting the crack width in reinforced concrete members strengthened with near-surface mounted carbon strips. © 2012 Taylor & Francis Group.

Document Type: Conference Paper
Source: Scopus

Ibrahim, W.[a] , Hegger, J.[a] , Sherif, A.[b]
Tension stiffening of RC members subject to biaxial tensile stresses
(2012) *Life-Cycle and Sustainability of Civil Infrastructure Systems - Proceedings of the 3rd International Symposium on Life-Cycle Civil Engineering, IALCCE 2012*, pp. 1234-1238.

[a] RWTH Aachen University, Aachen, Germany
[b] Helwan University, Cairo, Egypt

Abstract
This paper discusses the contribution of strengthening with near surface mounted (NSM) carbon strips on the tension stiffening and cracking behavior of concrete tension members. The experimental program involves ten uni-axial tests to study the tension stiffening and cracking behavior of reinforced concrete members strengthened with NSM carbon strips subjected to cyclic tensile load. The strengthening with NSM strips significantly increases ductility and tension stiffening of RC members strengthened with carbon strips. In addition, the strengthening with NSM carbon strips significantly reduces the crack spacing and crack width in RC members.

Document Type: Conference Paper
Source: Scopus

Keshta, S.[a] , Metwalli, F.J.[b] , Al Arabi, H.S.[c]
Analysis of petroleum system for exploration and risk reduction in abu Madi/Elqar'a gas field, Nile Delta, Egypt
(2012) *International Journal of Geophysics*, 2012, art. no. 187938, .

DOI: 10.1155/2012/187938

[a] Geology Department, Faculty of Education, Suez Canal University, Arish, Egypt
[b] Geology Department, Faculty of Science, Helwan University, Cairo, Egypt
[c] Geology Department, Faculty of Science, Suez Canal University, Ismailia, Egypt

Abstract
Abu Madi/El Qar'a is a giant field located in the north eastern part of Nile Delta and is an important hydrocarbon province in Egypt, but the origin of hydrocarbons and their migration are not fully understood. In this paper, organic matter content, type, and maturity of source rocks have been evaluated and integrated with the results of basin modeling to improve our understanding of burial history and timing of hydrocarbon generation. Modeling of the empirical data of source rock suggests that the Abu Madi formation entered the oil in the middle to upper Miocene, while the Sidi Salem formation entered the oil window in the lower Miocene. Charge risks increase in the deeper basin megasequences in which migration hydrocarbons must traverse the basin updip. The migration pathways were principally lateral ramps and faults which enabled migration into the shallower middle to upper Miocene reservoirs. Basin modeling that incorporated an analysis of the petroleum system in the Abu Madi/El Qar'a field can help guide the next exploration phase, while oil exploration is now focused along post-late Miocene migration paths. These results suggest that deeper sections may have reservoirs charged with significant unrealized gas potential. © 2012 Said Keshta et al.

Document Type: Article
Source: Scopus

Ouf, M.S.
Towards sustainability: Artificial intelligent based approach for soil stabilization using various pozzolans
(2012) *WIT Transactions on Ecology and the Environment*, 162, pp. 253-262.

DOI: 10.2495/EID120231

Department of Civil Engineering, Helwan University, Cairo, Egypt

Abstract
Due to the gradual depletion in the conventional resources, searching for a more rational road construction approach aimed at reducing the dependence on imported materials while improving the quality and durability of the roads is necessary. A previous study carried out on a sample of Egyptian soil aimed at reducing the road construction cost, protect the environment and achieving sustainability. RoadCem, ground granulated blast furnace slag (GGBS), lime and ordinary Portland cement (OPC) were employed to stabilise the Egyptian clayey soil. The results revealed that the unconfined compressive strength (UCS) of the test soil increased while the free swelling percent (FSP) decreased with an increase in the total stabiliser and the curing period. This paper discusses attempts to reach optimum stabilization through: (1) Recognizing the relationship between the UCS/FSP of stabilized soil and the stabilization parameters using artificial neural network (ANN); and (2) Performing a backward optimization on the developed (ANN) model using general algorithm (GA) to meet practical design preferences. © 2012 WIT Press.

Author Keywords
ANN; Artificial intelligent; Clay; GA; Lime; RoadCem; Slag; Stabilisation; Sustainability; Swelling soil

Document Type: Conference Paper
Source: Scopus

Bakr, I.M.
Sintering of mullite with the aid of wollastonite
(2012) *InterCeram: International Ceramic Review*, pp. 58-62.

Helwan University, Faculty of Engineering, Matteria, Cairo, Egypt

Abstract
The effect of wollastonite additions on the sinterability, microstructure and hardness of mullite was investigated. Mullite powder compacts containing 5 and 10 mass-% wollastonite were sintered at 1,400-1,700 °C for 2 and 3 h soaking times along with wollastonite free compacts. Wollastonite reacted with mullite to form a small amount of anorthite at 1,400 °C firing temperature, which melted at higher temperature. The addition of 10 % wollastonite yielded a sample of 93 % relative density and a hardness of 15.6 GPa when fired at 1,600 °C/2 h. The study of the ternary phase diagram of the CaO-Al 2O 3-SiO 2 system confirmed that the enhancement of sintering is referred to the liquid phase formation. The samples containing wollastonite revealed a strongly different microstructure since they were homogeneous and had an even distribution of mullite grains and voids while the pure mullite samples showed an irregular microstructure.

Author Keywords
Ceramics; Phase diagrams; Sintering; X-ray diffraction

Document Type: Review
Source: Scopus

Mohamed, S.H.[a b] , El-Hagary, M.[a c] , Althoyaib, S.[a]
Growth of β-Ga 2O 3 nanowires and their photocatalytic and optical properties using Pt as a catalyst
(2012) *Journal of Alloys and Compounds*, 537, pp. 291-296. Cited 18 times.

DOI: 10.1016/j.jallcom.2012.05.048

[a] Physics Department, College of Science, Qassim University, P.O. 6644, 51452 Buryadh, Saudi Arabia
[b] Physics Department, Faculty of Science, Sohag University, 82524 Sohag, Egypt
[c] Physics Department, Faculty of Science, Helwan University, 11792 Helwan, Cairo, Egypt

Abstract
Growth of Ga 2O 3 nanowires (NWs) was carried out by vapor-liquid-solid (VLS) on silicon substrates using Pt as a catalyst. Structural analysis revealed that the Ga 2O 3 NWs are single phase nature with monoclinic β-Ga 2O 3 crystal structure. The optical functions of β-Ga 2O 3 NWs films have been determined by ellipsometry investigations from 300-2100 nm. A two layer model employing the Cauchy dispersion model for the main layer and Bruggeman effective medium approximation (BEMA) for the surface layer was found to be sufficient and reasonable. Low refractive index values comparable to those of bulk material, which may ascribed to the low packing density for the films obtained by the used VLS growth method, are obtained. A direct optical band gap value of 3.58 eV was observed. The photocatalytic activity of β-Ga 2O 3 NWs was evaluated by the degradation of methylene blue. The β-Ga 2O 3 NWs showed enhanced photocatalytic activity.

Author Keywords
β-Ga 2O 3 nanowires; Optical properties; Photocatalytic properties; Pt catalyst

Document Type: Article
Source: Scopus

Ghorab, H.Y.[a] , Kenawi, I.M.[b] , Abdel All, Z.G.[c]
Interaction between cements with different composition and superplasticizers [Interacción entre cementos de diferente composición y aditivos superplastificantes]
(2012) *Materiales de Construccion*, 62 (307), pp. 359-380. Cited 5 times.

DOI: 10.3989/mc.2012.63610

[a] Helwan University, Cairo, Egypt
[b] Cairo University, Cairo, Egypt
[c] Arab Dairy Products Co, Cairo, Egypt

Abstract
The slump behavior of ordinary Portland-, pozzolanic (red brick powder)-, sulfate resistant-, and limestone cement pastes caused by ≤1% additions of polycondensates and polycarboxylates superplasticizers are monitored for up to 90 minutes. With the plolycondensates, Portland- and pozzolanic cements gain fluidity at higher dosages than sulfate resistant and limestone cements. Limestone cement shows the best slump retention. The aluminate and sulfate phases play a major role in the fluidity. With the polycarboxylates, all cements gain fluidity with dosages of ≤0.3%. A polycarboxylate with no resonance of methyl methylene proton in the main chain identified in the NMR spectra creates good slump retention. This is explained by a low mobility of the structure and the predominance of the steric effect. The polycarboxylate shows also strong ether bands relative to the ester groups in the IR spectra and a low polydispersity observed in the elution of few low molecular weight species in the HPLC chromatogram.

Author Keywords
Cement; Compatibility; Fluidity; Minislump; Superplasticizers

Document Type: Article
Source: Scopus

Abdel-Baki, A.-A.S.[a b] , Al-Quraishy, S.[a] , Dkhil, M.A.[a c] , Nasr, I.A.[d] , Oliveira, E.[e] , Casal, G.[e f] , Azevedo, C.[a e]
Ultrastructural characteristics of nematopsis sp. Oocysts (Apicomplexa: Porosporidae), a parasite of the clam Meretrix meretrix (Veneridae) from the Arabian Gulf, Saudi Arabia
(2012) *Folia Parasitologica*, 59 (2), pp. 81-86.

[a] Zoology Department, College of Science, King Saud University, 11451 Riyadh, Saudi Arabia
[b] Zoology Department, Faculty of Science, Beni-Suef University, Beni-Suef, Egypt
[c] Department of Zoology and Entomology, Faculty of Science, Helwan University, Egypt
[d] Science Department, Teacher's College, Qassim University, Saudi Arabia
[e] Department of Cell Biology, Institute of Biomedical Sciences (ICBAS/UP) and Laboratory of Pathology, Interdisciplinary Centre of Marine and Environmental Research (CIIMAR/UP), University of Porto, Lg. Abel Salazar no. 2, 4099-123 Porto, Portugal
[f] Departamento de Ciências, Instituto Superior de Ciências da Saúde - Norte (CESPU), 4585-116 Gandra, Portugal

Abstract
This paper describes the fine structure of oocysts of Nematopsis sp. (Apicomplexa, Porosporidae) found in the abductor muscles of seawater clams, Meretrix meretrix (Linnaeus, 1758) (Veneridae), collected near the city of Dammam (6o17′0″N, 50o12′0″E) in the Arabian Gulf off the coast of Saudi Arabia. Oocysts of an ellipsoidal shape were found among myofibrils of the abductor muscles of infected clams. Each oocyst is composed of an oocyst wall surrounding a single uninucleate vermiform sporozoite located in the lumen of the oocyst wall. The thin oocyst wall (0.70-0.85 μm thick) is composed of homogenous electron-lucent material formed by three layers of equal-thickness. The oocyst wall contains a plano-convex opercular-like structure about 2.5 μm in diameter and 0.75-0.90 μm thick, composed of a homogenous material with moderate electron density. The oocyst is of an ellipsoidal shape and is 15.6 ± 0.6 μm long and 11.1 ± 0.7 μm wide. Externally, the oocyst wall is surrounded by a complex dense network of numerous anastomosed microfibrils, which are attached to the oocyst wall, forming 2-3 layers and extending towards the periphery, at some points penetrating amongst the host cells. The myofibrils in some cases show evident aspects of lysis as a consequence of the appearance of lysosome-like vesicles. Lacking knowledge of a complete life cycle and/or molecular data precluded the conclusive identification of this species. © Institute of Parasitology, Biology Centre ASCR.

Author Keywords
Meretrix; Nematopsis; Oocyst; Saudi Arabia; Ultrastructure

Document Type: Article
Source: Scopus

Fattah, M.A.
The use of MSVM and HMM for sentence alignment
(2012) *Journal of Information Processing Systems*, 8 (2), pp. 301-314. Cited 5 times.

DOI: 10.3745/JIPS.2012.8.2.301

Department of Electronics technology, Helwan University, Cairo, Egypt

Abstract
In this paper, two new approaches to align English-Arabic sentences in bilingual parallel corpora based on the Multi-Class Support Vector Machine (MSVM) and the Hidden Markov Model (HMM) classifiers are presented. A feature vector is extracted from the text pair that is under consideration. This vector contains text features such as length, punctuation score, and cognate score values. A set of manually prepared training data was assigned to train the Multi-Class Support Vector Machine and Hidden Markov Model. Another set of data was used for testing. The results of the MSVM and HMM outperform the results of the length based approach. Moreover these new approaches are valid for any language pairs and are quite flexible since the feature vector may contain less, more, or different features, such as a lexical matching feature and Hanzi characters in Japanese-Chinese texts, than the ones used in the current research © 2012 KIPS.

Author Keywords
English/arabic parallel corpus; Hidden Markov model; Machine translation; Multi-class support vector machine; Parallel corpora; Sentence alignment

Document Type: Article
Source: Scopus

Mohamed, H.H.[a b] , Dillert, R.[a] , Bahnemann, D.W.[a]
TiO 2 nanoparticles as electron pools: Single- and multi-step electron transfer processes
(2012) *Journal of Photochemistry and Photobiology A: Chemistry*, 245, pp. 9-17.

DOI: 10.1016/j.jphotochem.2012.06.022

[a] Institut für Technische Chemie, Leibniz Universität Hannover, Callinstrasse 3, D-30167 Hannover, Germany
[b] Helwan University, Faculty of Science, Ain Helwan, Cairo, Egypt

Abstract
The one electron reduction of the viologen compounds methylviologen (MV 2+) and benzylviologen (BV 2+) mediated by electrons loaded on TiO 2 nanoparticles has been studied employing the stopped flow mixing technique. Details of the underlying reaction kinetics such as the concentration and the ionic strength dependence have been studied. The role of V 2+ as an electron relay for the hydrogen production was verified, i.e., the subsequent decay of V •+ was observed in the presence of noble metal nanoparticles (Au n 0, Pt n 0). It could be shown that the latter process is due to the electron transfer from V •+ to adsorbed H + ions on the surface of the metal particles forming H 2. The rate constant of H 2 production in the presence of V 2+ was found to be 3 times higher than that in the V 2+ free system evincing the advantages of multi-step electron transfer processes. © 2012 Elsevier B.V. All rights reserved.

Author Keywords
Electron transfer; Nobel metal nanoparticles; TiO 2; Viologen dications

Document Type: Article
Source: Scopus

Hassan, W.M.[a] , Hashim, A.[b] , Domany, R.A.A.[a]
Plasmid mediated quinolone resistance determinants qnr, aac(6')-Ib-cr, and qep in ESBL-producing Escherichia coli clinical isolates from Egypt
(2012) *Indian Journal of Medical Microbiology*, 30 (4), pp. 442-447. Cited 4 times.

DOI: 10.4103/0255-0857.103766

[a] Department of Microbiology and Immunology, Faculty of Pharmacy, Helwan University, Egypt
[b] Department of Microbiology and Immunology, Faculty of Pharmacy, Cairo University, Egypt

Abstract
Purpose: To characterize the prevalence of plasmid-mediated quinolone resistance determinants qnr, aac(6')-Ib-cr and qep in extended-spectrum β-lactamase (ESBL) -producing E. coli and to determine the association of these determinants with CTX-M group in Cairo, Egypt. Materials and Methods: MICs of 15 antimicrobial agents against 70 E. coli clinical isolates were determined using agar dilution technique according to CLSI. Screening for the qnrA, qnrB, qnrS, aac(6')-Ib, qep and CTX-M genes was carried out by PCR amplification and DNA sequencing. Curing was used to confirm whether qnr, aac(6')-Ib, qep or ESBL-encoding genes were located on plasmids. Results: Out of 70 E. coli clinical isolates, 61 were resistant to at least one antibiotic, 16 (22.8%) were multidrug resistant and 30 (42%) were ESBL producers. Out of 30 ESBL producers E. coli isolates, 8 (26.6%) were positive for qnr genes, and the qnrA1-, qnrB1-and qnrS1-type genes were detected alone or in combination in 5 (16.6%), 7 (23.3%) and 5 (16.6%) isolates, respectively. Seven (23.3%) isolates were positive for aac(6')-Ib-cr and only two (6.6%) isolates were positive for qepA4. Loss of all plasmids upon curing suggested that qnr, aac(6')-Ib-cr , qep A4 and ESBL-encoding genes were

always plasmid mediated. Out of 8 Qnr positive isolates 5 were associated with both CTX-M-1 and CTX-M-9 while 2 from 6 aac(6')-Ib-cr positive isolates were associated with both CTX-M-1 and CTX-M-9. Conclusions: This study highlights the prevalence of quinolone resistance determinants qnr, aac(6')-Ib-cr , qep A4 associated with CTX-M positive E. coli isolates from Egypt. This is the first report of the plasmid mediated fluoroquinolone efflux pump, Qep A from Egypt.

Author Keywords
E. coli; Egypt; Extended-spectrum β-lactamase; Plasmid; Quinolones

Document Type: Article
Source: Scopus

Montaser, A.M.[a] , Mahmoud, K.R.[b] , Elmikati, H.A.[c]
Integration of an optimized E-shaped patch antenna into laptop structure for Bluetooth and notched-UWB standards using optimization techniques
(2012) *Applied Computational Electromagnetics Society Journal*, 27 (10), pp. 786-794. Cited 5 times.

[a] Electrical Engineering Department, Sohag University, Sohag, 82524, Egypt
[b] Department of Electronics and Communications Engineering, Helwan University, Cairo, 11790, Egypt
[c] Department of Electronics and Communications Engineering, Mansoura University, Mansoura 35516, Egypt

Abstract
In this article, an optimized E-shaped patch antenna for Bluetooth (2.4-2.484 GHz) and UWB (3.1-10.6 GHz) applications with WLAN (5.15-5.825 GHz) band-notched characteristics is proposed. The dimensions of the E-shaped structure in addition to the position of the slotted C-shape in the ground plane are optimized using recent optimization techniques such as modified particle swarm optimization (MPSO), bacterial swarm optimization (BSO), and central force optimization (CFO). The optimization algorithms were implemented using MATLAB-software and linked to the CST Microwave Studio Suite® version 2011 to simulate the antenna. Next, the effects of the laptop structure on the antenna radiation characteristics are considered. To validate the results, the antenna structures are simulated by the finite difference time domain method (FDTD). © 2012 ACES.

Author Keywords
E-shape antenna; FDTD method; Notched-UWB; Optimization techniques

Document Type: Article
Source: Scopus

Dkhil, M.A.[a] [b] , Al-Quraishy, S.[a]
Metabolic disturbance and hepatic tissue damage induced by Eimeria papillota infection
(2012) *African Zoology*, 47 (2), pp. 255-260. Cited 6 times.

DOI: 10.3377/004.047.0208

[a] Department of Zoology, College of Science, King Saud University, Riyadh, Saudi Arabia
[b] Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

Abstract
Coccidiosis is a parasitic disease, prevalent all over the world and has a significant impact on poultry production. The current study aimed to investigate the metabolic change as well as the hepatic inflammatory response caused by Eimeria papillata infection. Female Balb/c mice were orally infected with 103 sporulated oocysts of E. papillata. Plasma levels of alanine (ALT) and aspartate (AST) aminotransferases, alkaline phosphatase (ALP), α-glutamyl transferase (α GT), total bilirubin, cholesterol, triglycerides and glucose were assessed, and liver tissue sections were examined under a microscope. The level of CYP3A11, CYP7A1, UGT1A1, and SULT2A1 were determined using quantitative real-time PCR. The data showed that infection of mice with E. papillata induced metabolic disturbance, inflammation and injury of the liver. This was evidenced (i) as increases in inflammatory cellular infiltrations, dilated sinusoids, and vacuolated hepatocytes, (ii) as increased plasma levels of ALT, AST, ALP, α GT, total bilirubin, cholesterol, triglycerides and glucose, (iii) as decreased mRNA expression of CYP3A11, UGT1A1, and SULT2A1, respectively and (iv) as increased mRNA level of CYP7A1. The data provide evidence that E. papillata parasites are able to induce a metabolic disturbances and hepatic tissue injury. Investigation of the expression profile of CYP, UGT and SULT genes in the hepatic tissues may help elucidate the underlying mechanism for regulation of the transcription of genes in the process of pathogenesis.

Author Keywords
Eimeria papillata; gene expression; liver; metabolism; mice

Document Type: Article
Source: Scopus

Metwalley, S.M., Abouel-Seoud, S.A., Farahat, A.M.
Evaluation of urban bi-fuel vehicle exhaust emission during on-road test facilities
(2012) *International Journal of Green Energy*, 9 (7), pp. 622-640.

DOI: 10.1080/15435075.2011.625589

Automotive Department, Faculty of Engineering, Helwan University, Mataria, Maskan el helmia, Cairo, 11718, Egypt

Abstract
Vehicle emissions constitute the main source of atmospheric pollution in modern cities. The increasing number of passenger cars, especially during the last decade, resulted in composite traffic problems with serious consequences on emissions and fuel consumption. However, the present work aims to clear the effect of different operating parameters of the vehicle on their emission characteristics. The on-road emission test procedure was carried out on a newly registered gasoline/CNG bi-fuel vehicle in Egypt market (Hyundai-star) and is now assessed from the European standard driving cycle (ECE-15). The European driving cycle shows the characteristics of vehicles operating conditions for various speeds and acceleration ranges, but does not represent realistic speed-time history of a vehicle in actual traffic. As the driving conditions are different, the assessment results using this driving cycle may not produce realistic amounts of emissions and fuel consumption of the cars under emission tests, which were carried out for urban cycle. Two different fuel injection systems (i.e., multi-point injection (MPI)-sequential and closed-loop venturi-continuous) are used. The vehicle is equipped with infrared gas analyzer and magnetic pickup transducer to measure the concentration of exhaust constituents and engine rotational speed, respectively. The measurements were conducted at different vehicle speed. The results indicate that most of the carbon monoxide (CO), carbon dioxide (CO 2),and unburned total hydrocarbons (THC) emission appears at higher load as well as near the idling speed.

Author Keywords
Bi-fuel; CNG; Driving cycles; Emission; Exhaust emissions; Gasoline; Vehicle

Document Type: Article
Source: Scopus

El-Nahhas, A.
Analytic approximations for flow mass transfer of an upper-convected maxwell fluid
(2012) *Journal of Thermophysics and Heat Transfer*, 26 (4), pp. 673-680. Cited 1 time.

DOI: 10.2514/1.T3787

Faculty of Science, Mathematics Department, Helwan University, Cairo 11795, Egypt

Abstract
In this paper, the homotopy analysis method is applied via a basis that is fractional or fractional in most of its terms to obtain analytic approximations to the strongly nonlinear problem for the mass transfer on the two-dimensional stagnation point flow of an upper-convected Maxwell fluid over a stretching surface. A convergence theorem for the application is presented. Effects on the surface mass transfer, the velocity, and the concentration profiles are performed and discussed. The results show that the velocity increases with the increasing of the stretching ratio and decreases for large values of the magnetic parameter; the magnetic parameter and Deborah number have the opposite effect on the velocity and concentration fields. Also, it is remarked that the concentration decreases with the increasing of the Schmidt parameter, and it has the opposite effect on the destructive and generative chemical reactions

Document Type: Article
Source: Scopus

Self, M.A.[a] , Nasr, M.M.[b]
The influence of embroidery stitches on the properties of textile fabrics
(2012) *Textile Asia*, 43 (9), pp. 27-30.

[a] Department of Apparel Design and Technology, Faculty of Applied Arts, Helwan University, Cairo, Egypt
[b] Department of Fastiion design and Jewellery, College of Family Science, Taibah Universit, Madinah, Saudi Arabia

Document Type: Article
Source: Scopus

Essawy, M.
The implementation of relationship marketing by independent egyptian hotels
(2012) *Tourism and Hospitality Research*, 12 (4), pp. 175-187.

DOI: 10.1177/1467358413477651

Faculty of Tourism and Hotel Management, Helwan University, Cairo, Egypt

Abstract
The aim of this study is to assess the implementation of relationship marketing by independent Egyptian hotels and to determine the organisational and environmental factors affecting its implementation. The study consisted of two phases: A telephone interview and an email survey. Telephone interviews were conducted for the purpose of identifying hotels that are familiar with and/or implementing some sort of relationship marketing. Information generated from the interviews contributed to the selection of 86 hotels for the email survey. Findings revealed that hotel size in terms of the number of employees, financial resources allocated for relationship marketing, business expertise (the period of time the hotel is in the business) and customer pressure are the dominating factors affecting the implementation of relationship marketing. The study provides evidence on the relatively under researched area of independent Egyptian hotels. Appropriate consideration of these factors will help hotels to improve the effectiveness of relationship marketing. Future research should focus on further factors influencing the implementation of relationship marketing and address the customer's perspective. © The Author(s) 2013.

Author Keywords
Egypt; Environmental factors; Independent hotels; Organisational factors; Relationship marketing

Document Type: Article
Source: Scopus

Hussein, W.M.[a b] , Fatahala, S.S.[a] , Mohamed, Z.M.[a] , Mcgeary, R.P.[b c] , Schenk, G.[b d] , Ollis, D.L.[e] , Mohamed, M.S.[a]
Synthesis and Kinetic Testing of Tetrahydropyrimidine-2-thione and Pyrrole Derivatives as Inhibitors of the Metallo-β-lactamase from Klebsiella pneumonia and Pseudomonas aeruginosa
(2012) *Chemical Biology and Drug Design*, 80 (4), pp. 500-515. Cited 12 times.

DOI: 10.1111/j.1747-0285.2012.01440.x

[a] Department of Pharmaceutical Organic Chemistry, Faculty of Pharmacy, Helwan University, Ein Helwan, Helwan, Egypt
[b] School of Chemistry and Molecular Biosciences, University of Queensland, Brisbane, Qld 4072, Australia
[c] School of Pharmacy, University of Queensland, Brisbane, Qld 4072, Australia
[d] Department of Chemistry, National University of Ireland-Maynooth, Maynooth, Co. Kildare, Ireland
[e] Australian National University Research School of Chemistry, Canberra, ACT 0200, Australia

Abstract
Metallo-β-lactamases (MBLs), produced by an increasing number of bacterial pathogens, facilitate the hydrolysis of many commonly used β-lactam antibiotics. There are no clinically useful antagonists against MBLs. Two sets of tetrahydropyrimidine-2-thione and pyrrole derivatives were synthesized and assayed for their inhibitory effects on the catalytic activity of the IMP-1 MBL from Pseudomonas aeruginosa and Klebsiella pneumoniae. Nine compounds tested (1a, 3b, 5c, 6b, 7a, 8a, 11c, 13a, and 16a) showed micromolar inhibition constants (Ki values range from ~20-80μm). Compounds 1c, 2b, and 15a showed only weak inhibition. In silico docking was employed to investigate the binding mode of each enantiomer of the strongest inhibitor, 5c (Ki=19±9μm), as well as 7a (Ki=21±10μm), the strongest inhibitor of the pyrrole series, in the active site of IMP-1. © 2012 John Wiley & Sons A/S.

Author Keywords
Inhibition assays; Metallo-β-lactamases; Pyrrole; Tetrahydropyrimidine-2-thione

Document Type: Article
Source: Scopus

El-Araby, M.[a b] , Omar, A.[b c] , Hassanein, H.H.[d] , El-Helby, A.-G.H.[c] , Abdel-Rahman, A.A.[c]
Design, synthesis and in vivo anti-inflammatory activities of 2,4-diaryl-5-4H-imidazolone derivatives
(2012) *Molecules*, 17 (10), pp. 12262-12275. Cited 3 times.

DOI: 10.3390/molecules171012262

[a] Pharmaceutical Organic Chemistry Department, Faculty of Pharmacy, Helwan University, Cairo 11790, Egypt

[b] Pharmaceutical Chemistry Department, Faculty of Pharmacy, King AbdulAziz University, Jeddah 21589, Saudi Arabia
[c] Pharmaceutical Chemistry Department, Faculty of Pharmacy, Al-Azhar University, Cairo 11884, Egypt
[d] Pharmaceutical Chemistry Department, Faculty of Pharmacy, Cairo University, Cairo 11787, Egypt

Abstract
A series of 2,4-diaryl-5(4H)-imidazolones were prepared and evaluated for their anti-inflammatory activities. Some selected 2,4-diaryl-5(4H)-imidazolones exhibited excellent anti-inflammatory activity in the carrageenan-induced rat paw edema model. Structure Activity Relationships within the series were studied. The substitution at the N-sulfonamide moiety by a small hydrophilic acetyl group resulted in compounds with superior in vivo anti-inflammatory properties. As expected from their COX-2 selectivity, most of the active compounds lacked gastrointestinal toxicity in vivo in rats after a 3-day treatment of 25 mg/kg/day. © 2012 by the authors; licensee MDPI, Basel, Switzerland.

Author Keywords
Anti-inflammatory; COX-2; COX-2 inhibitors; Docking; Imidazolone; Oxazolone; Structure-based design

Document Type: Article
Source: Scopus

El-Hagary, M.[a b] , Emam-Ismail, M.[a c] , Shaaban, E.R.[d] , El-Taher, A.[a d]
Effect of γ-irradiation exposure on optical properties of chalcogenide glasses Se 70S 30-xSb x thin films
(2012) *Radiation Physics and Chemistry*, 81 (10), pp. 1572-1577. Cited 4 times.

DOI: 10.1016/j.radphyschem.2012.05.012

[a] Physics Department, College of Science, Qassim University, P.O. 6644, 5145 Buryadh, Saudi Arabia
[b] Physics Department, Faculty of Science, Helwan University, 11792 Cairo, Egypt
[c] Physics Department, Faculty of Science, Ain Shams University, 11566 Cairo, Egypt
[d] Physics Department, Faculty of Science, Al-Azhar University, 71452 Assuit, Egypt

Abstract
We investigate in the present paper the effect of the γ-irradiation exposure by 100-500kGy doses on the optical properties and single oscillator parameters for chalcogenide glasses Se 70S 30-xSb x (x=0, 12, 18 and 30at%) thin films. These parameters were modeled from transmission spectra data measured by spectrophotometry in the wavelength range 200-2500nm. It was found that the refractive index of the investigated films increases with increasing the doses of γ-radiation. This post-irradiation increase in the refractive index was interpreted in terms of the increase of the density of the investigated films with irradiation due to ionization or atomic displacements. Besides, the refractive index dispersions data of both the as-deposited and γ-irradiated Se 70S 30-xSb x films obeyed the single oscillator model. The calculated single oscillator parameters; oscillator strength E d, static refractive index n o, zero frequency dielectric constant ε o increased after irradiation while the oscillator energy E o, 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 chalcogenide glasses Se 70S 30-xSb x films was found to decrease with increasing the doses of γ-radiation which is attributed to increase of the defects after irradiation. This is confirmed by the decrease in the Urbach energy E e after radiation. The γ-irradiation stimulated increase in the absorption coefficient and change in the optical parameters which can be utilized for industrial dosimetric purposes. © 2012 Elsevier Ltd.

Author Keywords
γ-irradiation; Chalcogenide glasses; Optical properties; Single oscillator parameters

Document Type: Article
Source: Scopus

Eissa, M.M.
Improvement of the differential busbar characteristic to avoid false operation during to CT saturation
(2012) *IET Generation, Transmission and Distribution*, 6 (10), pp. 931-939.

DOI: 10.1049/iet-gtd.2011.0839

Electrical Engineering Department, Faculty of Engineering, Helwan University, Helwan, Cairo, Egypt

Abstract
The proposed technique is based on extracting the windowed wavelet transform of fault generated transients to distinguish between faults in a busbar protection zone from those outside the zone, particularly in case of early and severe current transformer (CT) saturation. Most given techniques are tending to block the differential measurement during the portion of the cycle that a current transformer is saturated. Some other techniques bring more meaning to the breakpoint settings of the operating characteristic. The traditional differential concept is based on the current

magnitude for estimating the restraining and biasing values. The significant imbalance comes from the secondary current of a current transformer with a resistive burden which collapses to zero when saturation occurs and it remains at zero until the time when the next zero crossing would have occurred. The study describes a new technique with improved characteristic and the differential concept does not depend on the current magnitude. The wavelet transform (WT) depends on high frequencies of the faulted signal produced owing to CT saturation. The proposed WT is based on Mexican basis function that was found to be an excellent discriminant for identifying the fault signals during the CT saturation. The time and frequency information during saturation are obtained rather than the current magnitude.

Document Type: Article
Source: Scopus

Attallah, A.M.[a] , Omran, M.M.[b] , Nasif, W.A.[c] , Ghaly, M.F.[d] , El-Shanshoury, A.E.R.R.[e] , Abdalla, M.S.[b] , Sharada, H.M.[b] , Farid, K.[f] , El-Shony, W.[e] , Moussa, E.S.M.[a] , El-Domany, E.B.[a b] , Nour, E.[a] , Eldosoky, I.[g]
Diagnostic Performances of Hepatitis C Virus-NS4 Antigen in Patients with Different Liver Pathologies
(2012) *Archives of Medical Research*, 43 (7), pp. 555-562.

DOI: 10.1016/j.arcmed.2012.09.010

[a] Biotechnology Research Center, New Damietta City, Egypt
[b] Department of Chemistry, Faculty of Science, Helwan University, Egypt
[c] Genetic Engineering and Biotechnology Research Institute, Minufiya University, Minufiya, Egypt
[d] Department of Botany, Faculty of Science, Zagazig University, Zagazig, Egypt
[e] Department of Botany, Faculty of Science, Tanta University, Tanta, Egypt
[f] Tropical Medicine Unit, Faculty of Medicine, Mansoura University, Egypt
[g] Department of Pathology, Faculty of Medicine, Mansoura University, Mansoura, Egypt

Abstract
Background and Aims: Hepatitis C virus (HCV) has emerged as the major pathogen of liver disease worldwide. The aim of this study was to quantitate and evaluate the performance of HCV-NS4 antigen as an alternative approach for confirmation of viremia. Methods: Detection of HCV-NS4 was assessed in 883 patients with chronic hepatitis C. Areas under the ROC curves (AUC) were used to assess and compare diagnostic accuracy of ELISA for HCV-NS4 with quantitative HCV-RNA as a gold standard. Results: HCV-NS4 was identified at 27 kDa using Western blot. AUC for HCV-NS4 detection was 0.95 for all patients with different liver pathologies: 0.93 for liver fibrosis (LF), 0.95 for liver cirrhosis (LC) and 0.98 for hepatocellular carcinoma (HCC). The mean ± SD (μg/mL) of HCV-NS4 in LF was 94.2 ± 55.6; in LC was 99.3 ± 64.8 and in HCC was 124.9 ± 70.3. Conclusions: HCV-NS4 antigen detection using ELISA is a reliable test in the confirmation of HCV infection.

Author Keywords
Diagnosis; HCV; HCV-NS4 antigen; Liver pathologies

Document Type: Article
Source: Scopus

Abdelaziz, T.H.S.
Parametric eigenstructure assignment using state-derivative feedback for linear systems
(2012) *JVC/Journal of Vibration and Control*, 18 (12), pp. 1809-1827. Cited 5 times.

DOI: 10.1177/1077546311423549

Department of Mechanical Engineering, Faculty of Engineering, Helwan University, 1 Sherif Street, 11792 Helwan, Egypt

Abstract
This paper addresses a complete parametric approach for solving the eigenstructure assignment problem using state-derivative feedback for multivariable linear systems. In the present work, both linear control systems with nonsingular and singular open-loop state matrices are treated and the corresponding parametric expressions to the feedback gains are derived. The parametric expressions for gains describe the available degrees-of-freedom offered by the state-derivative feedback in selecting the associated eigenvectors from an admissible class. These freedoms are utilized to improve robustness of the closed-loop system. Accordingly, the sensitivity of the assigned eigenvalues to perturbations in the system and gain matrices is minimized. Finally, a vibration absorber system is introduced to demonstrate the effectiveness of the proposed solution.

Author Keywords

Eigenstructure assignment; feedback stabilization; linear systems; parameterization; robust eigenvalue assignment; state-derivative feedback

Document Type: Article
Source: Scopus

El-Nabarawy, M.A.[a] , Khalifa, E.S.[b]
Underground structure D-wall-soil interactive finite element analytical model for huge TPS2
(2012) *Structures Congress 2012 - Proceedings of the 2012 Structures Congress*, pp. 1853-1870.

DOI: 10.1061/9780784412367.163

[a] Department of Civil Engineering, Helwan University, Cairo, Egypt
[b] Department of Civil Engineering, HTI, Ramadan, Egypt

Abstract
The implementation of finite element models on the last three decades, enable the solution of sophisticated structure-soil interaction. Underground structure diaphragm wall (Dwall) soil interaction is one of the needful for using finite element analytical model. A finite element analytical model is developed in this paper and obtainable to fulfill the huge under ground construction Tunnel Pump Station (TPS2), constructed on Ameria-Cairo-Egypt. The TPS2 is used for collecting the wastewater from Cairo and redistributed this wastewater to the treatment plant. TPS2 is designed for about forty two meter diameter and abut thirty meter underground depth, as wastewater retaining structure. The construction methodology needs to be open-cut with thick plug for restrictive the water table during construction course of action. D-wall with thick plug for the TPS2 is used as preeminent choice for the construction development. The model developed in this paper is strain-induced orthotropic model for concrete representation and spring element to represent the soil-D-wall structure interaction. The behavior of concrete is presented on this paper using concrete crack-controlled serviceability model to satisfy wastewater retaining structure code requirements. The model represent, precisely all compartments of the outer wall, inner wall flooring system in addition to entire columns, ties and core wall. Finite element representation utilizes orthotropic shell elements for walls, core and flooring system, while the beams and columns are represented using axial frame elements. D-wall is considered, on this model, to perform as rigid pad for load transitions between outer soil and outer reinforced concrete wall. The over all behavior of TPS2 is confined by reinforced concrete diaphragm cantilever panels, arranged to perform the circular shape of the open earth-cut off. According to the straining action at different levels; the compression-only spring stiffness is intended, on this model, to take on the true behavior of the soil-over all structure-integrity interaction. All the results are extracted from this model to develop the concrete dimension and reinforcement details according to adopted design code. Finally, this predicted results adopted from finite element implemented model shows good agreements with the expected structure behavior under applied load combinations and state of circumferences. The results and design methodology are well recognized according to extracted results from the adopted finite element model. © ASCE 2012.

Author Keywords
Construction; D-wall; Reinforced concrete; Soil-interaction; Underground

Document Type: Conference Paper
Source: Scopus

Rasool, B.K.A.[a] , Fahmy, S.A.[b] , Galeel, O.W.A.[c]
Impact of Chitosan as a disintegrant on the bioavailability of furosemide tablets: In vitro evaluation and in vivo simulation of novel formulations
(2012) *Pakistan Journal of Pharmaceutical Sciences*, 25 (4), pp. 815-822. Cited 3 times.

[a] Department of Pharmaceutics and Pharmacy Practice, Dubai Pharmacy College, Dubai, United Arab Emirates
[b] Department of Pharmaceutics and Industrial Pharmacy, College of Pharmacy, Helwan University, Cairo, Egypt
[c] National Center of Drug Control and Research, Baghdad, Iraq

Abstract
To[D1] determine the effect of chitosan, starch powder, polyvinylpyrrolidone (PVP), Avicel PH 101 powder, Avicel PH 102 granules as a function of different concentrations on the solubility, disintegration and hence dissolution of furosemide from immediate release tablet dosage forms. The tablets were prepared by the wet granulation method and evaluated for hardness, friability, disintegration and in vitro dissolution. Chitosan 7% w/w showed the fastest disintegration of furosemide tablets among the other disintegrants studied. This was attributed to its highest swelling properties and velocity constant of water uptake. The step of adding chitosan during tablet preparation had a great effect on the physical properties and dissolution profiles of the prepared tablets with external addition of chitosan showed best results compared to best results comparing to internal-external or internal addition. The most appropriate force of compression was 4ton /cm2. The selected formula F15 containing 7% w/w chitosan was successful and showed a high significant (p<0.001) enhancement in disintegration and dissolution behaviors of furosemide tablets

in comparison with the commercially available Furosemide® tablets. These results were supported by the simulated data where F15 formula showed the highest plasma concentration C-max 1.89mcg/mL after 0.5 hr compared to C-max 1.05mcg/mL after 1hr for the reference. The present study demonstrated that chitosan is a very good candidate to be used as a tablet disintegrant and was able to enhance the dissolution of poorly absorbable drugs.

Author Keywords
Chitosan; Disintegrants; Dissolution rate; Furosemide; In vivo simulation; Oral tablets

Document Type: Article
Source: Scopus

Ibrahim, N.A.[a] , Eid, B.M.[a] , Youssef, M.A.[b] , El-Sayed, S.A.[b] , Salah, A.M.[b]
Functionalization of cellulose-containing fabrics by plasma and subsequent metal salt treatments
(2012) *Carbohydrate Polymers*, 90 (2), pp. 908-914. Cited 11 times.

DOI: 10.1016/j.carbpol.2012.06.019

[a] Textile Research Division, National Research Center, Cairo, Egypt
[b] Chemistry Department, Faculty of Science, Helwan University, Cairo, Egypt

Abstract
In order to upgrade the UV-protection and antibacterial functional properties of cotton/polyester (80/20), cotton/linen (50/50) and linen/viscose-polyester (50/50) fabric blends, they were treated with different plasma gases (oxygen, air, and argon) followed by subsequent treatment with certain metal salts namely Zn-acetate, Cu-acetate, Al-chloride, and Zr-oxychloride. The obtained results show that the type of plasma gas, the kind of metal salt as well as the nature of the treated substrate play an important role in the extent of enhancing the demanded functional properties. Oxygen plasma treatment followed by Cu-acetate or Zn-acetate treatment gives the best UV-protection or antibacterial activity respectively, keeping other parameters constant. The surface morphology of some untreated and plasma-treated samples was also analyzed by SEM.

Author Keywords
Antibacterial functionality; Cellulose containing fabrics; Metal salts; Plasma treatment; Surface morphology; UV-protection

Document Type: Article
Source: Scopus

Kugler, B.[a b] , Stahl, C.[a] , Treiber, S.[a] , Soltan, S.[c d] , Haug, S.[a] , Schütz, G.[a] , Albrecht, J.[b]
Microstructure and superconducting properties of MgB 2 films prepared by solid state reaction of multilayer precursors of the elements
(2012) *Thin Solid Films*, 520 (23), pp. 6985-6988. Cited 2 times.

DOI: 10.1016/j.tsf.2012.07.089

[a] Max Planck Institute for Intelligent Systems, Heisenbergstr, 3, D-70569 Stuttgart, Germany
[b] Aalen University, Beethovenstr, 1, D-73430 Aalen, Germany
[c] Max Planck Institute for Solid State Research, Heisenbergstr, 1, D-70569 Stuttgart, Germany
[d] Physics Department, Faculty of Science, Helwan University, 11792-Cairo, Egypt

Abstract
Surface morphology and superconducting properties of MgB 2 superconducting thin films prepared by ex-situ annealing of multilayer Mg/B precursors in Mg vapor are studied. Depending on the precursor structure different physical and microstructural properties of the superconductor evolve. Structure and composition of the films are analyzed by scanning electron microscopy and wavelength dispersive x-ray spectroscopy. It is found that certain precursor structures can lead to high quality superconducting films, however, in specific precursor structures mechanical stress leads to the formation of wrinkles strongly affecting the superconducting homogeneity of the films. A correlation between microstructure and superconducting properties, such as pinning or critical current density, can be provided via magneto-optical Faraday microscopy.

Author Keywords
Magnesium diboride; Magneto-optics; Microstructure; Superconductivity; Thin films

Document Type: Article
Source: Scopus

El-Nahhas, A.
Analytic approximations for the flow near the equator of a steady magnetohydrodynamic boundary layer over a rotating sphere
(2012) *Journal of Applied Mechanics, Transactions ASME*, 79 (6), art. no. 064505, .

DOI: 10.1115/1.4006773

Helwan Faculty of Science, Mathematics Department, Helwan University, Helbawy Street, Cairo 11795, Egypt

Abstract
The strongly nonlinear problem for the steady, laminar, viscous incompressible,and electrically conducting fluid near the equator of the boundary layer flow due to a rotating sphere and in the presence of a uniform radial magnetic field is considered. Analytic approximations for this problem are obtained through the application of the homotopy analysis method and via a fractional basis. Variations for velocity and temperature profiles with the change of the suction/blowing, rotational, and magnetic parameters are studied. © 2012 American Society of Mechanical Engineers.

Author Keywords
boundary layers; homotopy analysis method; MHD flow over a rotating sphere; partial differential equations; suction and blowing

Document Type: Article
Source: Scopus

Mahmoud, S.[a b] , Austrell, P.-E.[a] , Jankowski, R.[c]
Simulation of the response of base-isolated buildings under earthquake excitations considering soil flexibility
(2012) *Earthquake Engineering and Engineering Vibration*, 11 (3), pp. 359-374. Cited 15 times.

DOI: 10.1007/s11803-012-0127-z

[a] Department of Construction Sciences, Division of Structural Mechanics, Lund University, Lund, Sweden
[b] Faculty of Engineering at Mataria, Helwan University, Cairo, Egypt
[c] Faculty of Civil and Environmental Engineering, Gdansk University of Technology, Gdansk, Poland

Abstract
The accurate analysis of the seismic response of isolated structures requires incorporation of the flexibility of supporting soil. However, it is often customary to idealize the soil as rigid during the analysis of such structures. In this paper, seismic response time history analyses of base-isolated buildings modelled as linear single degree-of-freedom (SDOF) and multi degree-of-freedom (MDOF) systems with linear and nonlinear base models considering and ignoring the flexibility of supporting soil are conducted. The flexibility of supporting soil is modelled through a lumped parameter model consisting of swaying and rocking spring-dashpots. In the analysis, a large number of parametric studies for different earthquake excitations with three different peak ground acceleration (PGA) levels, different natural periods of the building models, and different shear wave velocities in the soil are considered. For the isolation system, laminated rubber bearings (LRBs) as well as high damping rubber bearings (HDRBs) are used. Responses of the isolated buildings with and without SSI are compared under different ground motions leading to the following conclusions: (1) soil flexibility may considerably influence the stiff superstructure response and may only slightly influence the response of the flexible structures; (2) the use of HDRBs for the isolation system induces higher structural peak responses with SSI compared to the system with LRBs; (3) although the peak response is affected by the incorporation of soil flexibility, it appears insensitive to the variation of shear wave velocity in the soil; (4) the response amplifications of the SDOF system become closer to unit with the increase in the natural period of the building, indicating an inverse relationship between SSI effects and natural periods for all the considered ground motions, base isolations and shear wave velocities; (5) the incorporation of SSI increases the number of significant cycles of large amplitude accelerations for all the stories, especially for earthquakes with low and moderate PGA levels; and (6) buildings with a linear LRB base-isolation system exhibit larger differences in displacement and acceleration amplifications, especially at the level of the lower stories. © 2012 Institute of Engineering Mechanics, China Earthquake Administration and Springer-Verlag Berlin Heidelberg.

Author Keywords
base-isolated buildings; earthquakes; rubber bearings; soil-structure interaction

Document Type: Article
Source: Scopus

Yousef, A.[a b] , Barakat, N.A.M.[c d] , Khalil, K.A.[e] , Unnithan, A.R.[a] , Panthi, G.[a] , Pant, B.[a] , Kim, H.Y.[c]
Photocatalytic release of hydrogen from ammonia borane-complex using Ni(0)-doped TiO 2/C electrospun nanofibers
(2012) *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 410, pp. 59-65. Cited 8 times.

DOI: 10.1016/j.colsurfa.2012.06.017

[a] BioNanosystem Department, Chonbuk National University, Jeonju 561-756, South Korea
[b] Faculty of Engineering, Matteria, Helwan University, Cairo, Egypt
[c] Organic Materials and Fiber Engineering Department, Chonbuk National University, Jeonju 561-756, South Korea
[d] Chemical Engineering Department, Faculty of Engineering, Minia University, El-Minia, Egypt
[e] Mechanical Engineering Department, (NPST), King Saud University, P.O. Box 800, Riyadh 11421, Saudi Arabia

Abstract
Incorporation of the transition metals nanoparticles can strongly modify the physiochemical characteristics of the metal oxides nanostructures. In the literature, preparing this interesting class of materials was achieved by sophisticated processes. In the present study, Ni(0)-doped TiO 2/C nanofibers were successfully prepared by simple, effective, high yield and low cost technique; electrospinning. Calcination of electrospun nanofiber mats composed of titanium isopropoxide, poly(vinyl pyrrolidone) (PVP) and nickel acetate tetrahydrate in Ar/H 2 atmosphere at 700°C led to produce good morphology Ni(0)-doped TiO 2/C nanofibers. The introduced nanofibers revealed distinct performance as a photocatalyst for ammonia-borane hydrolysis due to the synergistic effect of the individual compounds as well as improving the photocatalytic performance of TiO 2. Typically, after 30min (at 25°C), the obtained hydrogen equivalent was 2.1 and 1.1 for Ni(0)-doped TiO 2/C and TiO 2/C nanofibers, respectively. Moreover, the introduced nanofibers behave as an efficient photocatalyst to remove the methylene blue (MB) dye from water. Overall, the present study might open a new avenue to prepare the metal-doped metal oxide nanofibers using simple strategy. © 2012 Elsevier B.V.

Author Keywords
Ammonia borane complex; Dye degradation; Electrospinning; Hydrogen release; Metal-doped nanofibers; Solar energy

Document Type: Article
Source: Scopus

Khalil, B.[a] , Ouarda, T.B.M.J.[b c] , St-Hilaire, A.[b]
Comparison of Record-Extension Techniques for Water Quality Variables
(2012) *Water Resources Management*, 26 (14), pp. 4259-4280. Cited 4 times.

DOI: 10.1007/s11269-012-0143-9

[a] Irrigation and Hydraulics Department, Faculty of Engineering, Helwan University, Cairo, Egypt
[b] Canada Research Chair on the Estimation of Hydrometeorological Variables, INRS-ETE, Québec, QC, Canada
[c] Masdar Institute of Science and Technology, PO Box 54224, Abu Dhabi, United Arab Emirates

Abstract
The extension of records at monthly, weekly or daily time steps at a short-record gauge from another continuously measured gauge is termed "record extension". Ordinary least squares regression (OLS) of the flows, or any hydrological or water quality variable, is a traditional and still common record-extension technique. However, its purpose is to generate optimal estimates of each daily (or monthly) record, rather than the population characteristics, for which the OLS tends to underestimate the variance. The line of organic correlation (LOC) was developed to correct this bias. On the other hand, the Kendall-Theil robust line (KTRL) method has been proposed as an analogue of OLS, its advantage being its robustness in the presence of extreme values. In this study, four record-extension techniques are described, and their properties are explored. These techniques are OLS, LOC, KTRL and a new technique (KTRL2), which includes the advantage of LOC in reducing the bias in estimating the variance and the advantage of KTRL in being robust in the presence of extreme values. A Monte-Carlo study is conducted to examine these four techniques for bias, standard error of moment estimates and full range of percentiles. An empirical examination is made of the preservation of historic water quality concentration characteristics using records from the Nile Delta water quality monitoring network in Egypt. The Monte-Carlo study showed that the OLS and KTRL techniques are shown to have serious deficiencies as record-extension techniques, while the LOC and KTRL2 techniques show results that are nearly similar. Using real water quality records, the KTRL2 is shown to lead to better results than the other techniques. © 2012 Springer Science+Business Media B.V.

Author Keywords
Kendall-Theil Robust Line; Line of organic correlation; Monitoring network; Ordinary least squares; Record extension

Document Type: Article
Source: Scopus

Hassaneen, A.E.[a] , Samuel, S.[b] , Morrey, D.[b]
Soot formation model applied to spark ignition engine
(2012) *SAE Technical Papers*, .

DOI: 10.4271/2012-01-0128

[a] Dept of Auto Tech, Helwan Univ, Egypt
[b] Oxford Brookes Univ, United Kingdom

Abstract
A semi phenomenological and global chemical kinetic model is adopted and applied to predict soot formation in gasoline-fueled spark ignition engines. The adopted model considers acetylene produced from gasoline pyrolysis process as the main precursor for soot inception. The adopted soot model was initially proposed for diffusion flames and this work tries to apply and modify it to gasoline fueled (premixed flame) spark ignition engines. The burned mass fraction and burn rate are used to estimate the instantaneous acetylene, oxygen and Hydroxyl (OH) radical mass fractions at each crank angle of the engine. Experimental data from a single point throttle body injected spark ignition engine is used for validating total particle numbers at different engine operating conditions. The simulation results agree reasonably with the experimental results. Both experimental and predicted results showed that the inception rate increases with the engine load in an exponential form. The model has a tendency to over-predict the soot in the nucleation phase and under-predict the engine out particle numbers. Copyright © 2012 SAE International.

Author Keywords
global chemical kinetics; Keywords spark ignition engine; soot formation mechanism

Document Type: Conference Paper
Source: Scopus

Sultan, T.[a] , Khedr, A.E.[a] , Ali, M.M.R.[b]
Multi-criteria business intelligence approach
(2012) *Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering*, 62 LNICST, pp. 21-28.

DOI: 10.1007/978-3-642-32573-1_4

[a] Faculty of Computers and Information, Helwan University, Helwan, Egypt
[b] Central Lab. of Agriculture Expert Systems (CLAES), ARC, Giza, Egypt

Abstract
Multi Criteria Business Intelligence approach (MCBI) aims to enhancement Business Intelligence Applications (BIA) by applying Multi-Criteria Decision Making (MCDM). MCBI approach contributes to improve Business Intelligence Decision Support System (BIDSS) for BIA. Also MCBI approach presents a standard method to evaluate and select business decisions. The recommended business decision is the suitable and optimal choice to implement. The proposed model for MCBI approach that consists of five major components. The first component is business objectives, problem definition and main goals. The second component is a business heterogeneous data treatment which gathering from different resources and related with different areas. The third component is a unified business intelligence databases. The fourth component is a business intelligence processing. The fifth component is a evaluating the business decisions to select the suitable and optimal solution. © 2012 ICST Institute for Computer Science, Social Informatics and Telecommunications Engineering.

Author Keywords
Analytic Hierarchy Process (AHP); Business Intelligence Applications (BIA); Business Intelligence Decision Support System (BIDSS); Data Warehouse (DW); Decision Support System (DSS); Multi-Criteria Business Intelligence (MCBI); Multi-Criteria Decision making (MCDM); Spider Data Warehouse (SDW)

Document Type: Conference Paper
Source: Scopus

Dorrah, H.T.[a] , El-Garhy, A.M.[b] , El-Shimy, M.E.[c]
PSO based optimized fuzzy controllers for decoupled highly interacted distillation process
(2012) *Ain Shams Engineering Journal*, 3 (3), pp. 251-266. Cited 4 times.

DOI: 10.1016/j.asej.2012.03.002

[a] Department of Electrical Power and Machines, Faculty of Engineering, Cairo University, Giza, Egypt
[b] Department of Electronics, Communications and Computers, Faculty of Engineering, Helwan University, Helwan,

Egypt
[c] Vice Rectorate for Graduate Studies and Research, King Saud University, Riyadh, Saudi Arabia

Abstract
Normally, the highly interacted MIMO process - such as two coupled distillation columns - is decoupled into a group of independent loops and a conventional PID controller is assigned to control each loop. Tuning of conventional PID controllers is very difficult. Scientists consider tuning of PID controllers is an art more than science. In this paper, fuzzy PID controllers are proposed to replace the conventional ones. Moreover, the values of the parameters of the proposed fuzzy PID controllers are optimized using particle swarm optimization (PSO) technique. Sum square errors (SSEs) - for different loops - are used as fitness functions for PSO. SSEs minimization assures optimal values of different fuzzy PID controllers' parameters. For the purpose of validation, PSO is also used to optimize the design of conventional PID controllers. The simulation of the proposed optimized fuzzy PID controllers proves their excellence in improving the transient and steady state characteristics. © 2012 Ain Shams University. Production and hosting by Elsevier B.V.

Author Keywords
Fuzzy Logic Controllers (FLC's); Particle Swarm Optimization (PSO); PID controller; Two coupled distillation columns

Document Type: Article
Source: Scopus

Elsawaf, A.[a] , Ashida, F.[b] , Sakata, S.-I.[c]
Optimum structure design of a multilayer piezo-composite disk for control of thermal stress
(2012) *Journal of Thermal Stresses*, 35 (9), pp. 805-819. Cited 2 times.

DOI: 10.1080/01495739.2012.689233

[a] Mechanical Design Department, Faculty of Engineering, Helwan University, Cairo, Egypt
[b] Department of Mechanical, Electrical, and Electronic Engineering, Shimane University, 1060 Nishikawatsu-cho, Matsue, Shimane 690-8504, Japan
[c] Department of Mechanical Engineering, Kinki University, Higashiosaka, Japan

Abstract
This article deals with a control problem of a thermal stress in a composite circular disk consisting of a transversely isotropic structural layer onto which multiple piezoelectric layers with concentrically arranged electrodes are perfectly bonded. When a prescribed heating temperature distribution acts on the structural layer surface, the optimum structure design of the composite disk is performed so that the maximum thermal stress in the structural layer is minimized subject to constraints on stresses in the piezoelectric layers. A hybrid optimization technique combining the particle swarm optimization with the simplex method is employed for solving the optimum design problem. To resolve the difficulty in solving the problem with many optimization variables, three improvements are added to the hybrid optimization technique and an efficient design method is introduced. For a composite disk constructed of a CFRP layer and cadmium selenide layers, the layer thicknesses, the electrode dimensions, and the voltages applied to the electrodes are determined and the numerical results are presented in tabular and graphical forms. Finally, it is shown from the optimum design results that the highest suppression ratio of the maximum thermal stress reaches 40.8% in the case of a five-layer composite disk and is considered to be almost saturated. © 2012 Copyright Taylor and Francis Group, LLC.

Author Keywords
Composite disk; Hybrid optimization technique; Optimum design; Piezoelectric actuation; Thermal stress control

Document Type: Article
Source: Scopus

Mostafa, H.A.M.[a] , El-Bakry, A.A.[b] , Alam, E.A.[a]
Evaluation of antibacterial activity of different plant parts of rumex vesicarius l. at early and late vegetative stages of growth
(2012) *International Journal of Pharmacy and Pharmaceutical Sciences*, 4 (SUPPL. 4), pp. 426-435.

[a] Botany Department, National Research Centre, Dokki, Giza, Egypt
[b] Botany Department, Faculty of Science, Helwan University, Helwan, Egypt

Abstract
The present work has been carried out to investigate the antibacterial activity of all plant parts of Rumex vesicarius L. at vegetative stages of growth (early and late vegetative stages). Results of antibacterial activity studies of successive extractives solvents (petroleum ether, ether, chloroform, methanol and ethanol) of different plant parts, at vegetative

stages of growth (early and late vegetative stages) revealed that, there were highly significant variations (at 5% and 1% levels) within antibacterial activities of different extracts of different plant parts (50 mg/disc), at these stages of growth. It was found that, methanol extract of leaves (at late vegetative stage) was found to be the most effective against Escherichia coli, Klebsiella pneumoniae and Staphylococcus aureus (inhibition zones = 55.00, 55.00 and 55.00±0.00 mm, activity indexes = 1.76, 1.59 and 1.93, respectively), chloroform and ether extracts of whole plant parts (at early vegetative stage) were found to be the most effective extracts against Pseudomonas aeruginosa and Streptococcus pneumonia, respectively (inhibition zones = 28.75±4.73 and 20.00 ± 0.00 mm, activity indexes = 2.17 and 0.36, respectively). Ether extract of leaves (at early vegetative stage) was found to be the most effective one against Streptococcus pyogenes (inhibition zone = 33.00 ± 11.01 mm, activity index = 1.06).

Author Keywords
Rumex vesicarius L

Document Type: Article
Source: Scopus

Fatthalla, M.I.[a b] , Pedersen, E.B.[a]
Improved DNA clamps by stacking to adjacent nucleobases
(2012) *Helvetica Chimica Acta*, 95 (9), pp. 1538-1547. Cited 4 times.

DOI: 10.1002/hlca.201200130

[a] Nucleic Acid Center, Department of Physics, Chemistry and Pharmacy, University of Southern Denmark, Campusvej 55, DK-5230 Odense M, Denmark
[b] Department of Chemistry, Faculty of Science, Helwan University, 11795 Ain Helwan, Cairo, Egypt

Abstract
Three or four aromatic rings interconnected by acetylene bridges form a stiff conjugated system with sufficient conformational freedom to make it useful to link together the two strands of a DNA clamp. Upon targeting a ssDNA, the conformational flexibility allows better stacking of the linker to the underlying non-planar base triplet in the formed triplex. This type of triplexes has a substantially higher thermal melting temperature which can be further improved by inserting locked nucleic acids (LNAs) in the Hoogsteen part of the clamp. An extremely high sensitivity to mismatches is observed in an octamer triplex when placed in the middle of the sequence. © 2012 Verlag Helvetica Chimica Acta AG, Zürich.

Author Keywords
DNA Clamps; Locked nucleic acid (LNA); Molecular modeling; Oligonucleotides

Document Type: Article
Source: Scopus

Hamdy, M.S.[a b] , Mul, G.[a]
Synthesis, characterization and catalytic performance of Mo-TUD-1 catalysts in epoxidation of cyclohexene
(2012) *Catalysis Science and Technology*, 2 (9), pp. 1894-1900. Cited 10 times.

DOI: 10.1039/c2cy20073b

[a] Faculty of Science and Technology, MESA+ Institute for Nanotechnology, University of Twente, PO Box 217, 7500 AE Enschede, Netherlands
[b] Chemistry Department, Faculty of Science, Helwan University, Cairo, Egypt

Abstract
A new, 3-D mesoporous amorphous molybdenum-containing silica, denoted Mo-TUD-1, was prepared with variable Mo-loading via direct hydrothermal treatment using triethanolamine as a template. Elemental analysis, N 2 sorption measurements, NMR spectroscopy, XRD, UV-Vis spectroscopy, SEM, HR-TEM, and Raman spectroscopy indicated that as a function of increasing loading, the morphology of Mo changes from isolated sites to nano particulates, and finally to crystalline MoO 3 at a loading higher than 5 wt%. The catalytic performance of the Mo-TUD-1 samples was investigated in the liquid phase epoxidation of cyclohexene with TBHP as an oxidant. Mo-TUD-1 with a low molybdenum loading showed a higher TON as compared to samples with a high loading, suggesting that isolated Mo-sites are more active than particulate MoO 3. Stability and reusability of the catalyst containing isolated sites were also investigated. While leaching was observed initially, stable performance was obtained in as many as three subsequent catalytic runs. © 2012 The Royal Society of Chemistry.

Document Type: Article
Source: Scopus

Soliman, A.E.-K.S., Osman, M.A.-M.
Efficiency of using discrete fibers on the shear behavior of R.C. beams
(2012) *Ain Shams Engineering Journal*, 3 (3), pp. 209-217.

DOI: 10.1016/j.asej.2012.03.006

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

Abstract
The shear failure of R.C. beams are brittle and suddenly occurs. Using of discrete glass fibers with concrete mixes enhanced the ductility and deformability of R.C. members. This study aims to understand and evaluate shear behavior of discrete glass fiber concrete beams. The experimental investigation carried out on reinforced concrete beams with discrete glass fiber mixes. The studied parameters included stirrups spacing (50, 75, and 100 mm) and weight percent of discrete glass fiber 0.0%, 0.75%, and 1.5% respectively. The elastic behavior of tested beams at flexural zone was also investigated. Experimental results indicated that the shear strength of tested beams was significantly increased as the percentage of fibers increased. The number of the cracks increased by using discrete fibers and became finer. Moreover, the crack propagation and modes of failure may be changed by using discrete fibers. Finally the discrete glass fibers increase ductility and failure loads of the tested beams. © 2012 Ain Shams University. Production and hosting by Elsevier B.V.

Author Keywords
Concrete beams; Deformability; Discrete glass fiber; Ductility; Shear cracks; Shear strength

Document Type: Article
Source: Scopus

Hafez, D.M.[a b] , Eldin, E.H.S.[a] , Alaziz, A.A.M.A.[b]
A novel unit protective relaying concept based on current signal sequential overlapping derivative transform: Two sides fed transmission line application
(2012) *Ain Shams Engineering Journal*, 3 (3), pp. 267-277.

DOI: 10.1016/j.asej.2012.03.005

[a] Department of Electrical Power and Machine Engineering, Faculty of Engineering, Helwan University, Helwan, Egypt
[b] Department of Electrical Power and Machine Engineering, Faculty of Engineering, Alazhar University, Nasr City, Egypt

Abstract
This paper presents a novel and accurate unit protective relaying concept for EHV transmission lines. The proposed protective concept implements a simple current signal sequential over lapping derivative, SOD transform to detect transmission line transient disturbances. It uses both polarity and magnitude of the first disturbance, arrived at relay location, to identify internal and external faults rapidly. The proposed unit protective relaying concept is applied to two sides fed transmission lines. The simulation results presented show that the protective concept is simple with high reliability, sensitivity and achieve an extra high speed relaying. In addition, it has immunity against the influence of the large capacitance of the line, the saturation of the current transformers and the synchronization problems. © 2012 Ain Shams University. Production and hosting by Elsevier B.V.

Author Keywords
SOD transform; Transient component; Two sides fed transmission line; Unit protection

Document Type: Article
Source: Scopus

Hasabelnaby, S.[a b] , Goudah, A.[b c] , Agarwal, H.K.[b] , Abd Alla, M.S.M.[a] , Tjarks, W.[b]
Synthesis, chemical and enzymatic hydrolysis, and aqueous solubility of amino acid ester prodrugs of 3-carboranyl thymidine analogs for boron neutron capture therapy of brain tumors
(2012) *European Journal of Medicinal Chemistry*, 55, pp. 325-334. Cited 10 times.

DOI: 10.1016/j.ejmech.2012.07.033

[a] Division of Pharmaceutical Organic Chemistry, College of Pharmacy, Helwan University, Ain Helwan, Cairo, Egypt
[b] Division of Medicinal Chemistry and Pharmacognosy, College of Pharmacy, Ohio State University, 500 West 12th Avenue, Columbus, OH 43210, United States
[c] Division of Pharmacology, College of Veterinary Medicine, Cairo University, Giza, Egypt

Abstract
Various water-soluble l-valine-, l-glutamate-, and glycine ester prodrugs of two 3-Carboranyl Thymidine Analogs (3-CTAs), designated N5 and N5-2OH, were synthesized for Boron Neutron Capture Therapy (BNCT) of brain tumors since the water solubilities of the parental compounds proved to be insufficient in preclinical studies. The amino acid ester prodrugs were prepared and stored as hydrochloride salts. The water solubilities of these amino acid ester prodrugs, evaluated in phosphate buffered saline (PBS) at pH 5, pH 6 and pH 7.4, improved 48-6600 times compared with parental N5 and N5-2OH. The stability of the amino acid ester prodrugs was evaluated in PBS at pH 7.4, Bovine serum, and Bovine cerebrospinal fluid (CSF). The rate of the hydrolysis in all three incubation media depended primarily on the amino acid promoiety and, to a lesser extend, on the site of esterification at the deoxyribose portion of the 3-CTAs. In general, 3′-amino acid ester prodrugs were less sensitive to chemical and enzymatic hydrolysis than 5′-amino acid ester prodrugs and the stabilities of the latter decreased in the following order: 5′-valine > 5′-glutamate > 5′-glycine. The rate of the hydrolysis of the 5′-amino acid ester prodrugs in Bovine CSF was overall higher than in PBS and somewhat lower than in Bovine serum. Overall, 5′-glutamate ester prodrug of N5 and the 5′-glycine ester prodrugs of N5 and N5-2OH appeared to be the most promising candidates for preclinical BNCT studies.

Author Keywords
3-Carboranyl thymidine analogs; Amino acid ester prodrugs; Boron neutron capture therapy; Glioblastoma multiforme

Document Type: Article
Source: Scopus

Hosny, A.[a] , Seliem, H.M.[b] , Rizkalla, S.H.[c] , Zia, P.[d]
Development length of unconfined conventional and high-strength steel reinforcing bars
(2012) *ACI Structural Journal*, 109 (5), pp. 655-664. Cited 1 time.

[a] BergerABAM Inc., Houston, TX, United States
[b] Helwan University, Helwan, Egypt
[c] Department of Civil, Construction, and Environmental Engineering, North Carolina State University, United States
[d] North Carolina State University, United States

Abstract
The development length equation specified by ACI 318-08 and the similar equation recommended by ACI 408R-03 are based on extensive test results using conventional reinforcement conforming to ASTM A615/A615M and A706/A706M. With the development of new ASTM A1035/A1035M high-strength steel reinforcement, several studies have been conducted to examine whether the current equations are applicable for the new high-strength reinforcing steel. These studies have shown that the current equations could, in some cases, overestimate the bond strength of high-strength steel bars. This paper proposes a new equation for the bond strength of unconfined reinforcing bars for all three types of steel. The proposed equation for high-strength steel is compared to extensive test data reported in the literature and is found to be more accurate than ACI 318-08 and ACI408R-03 equations specified for conventional reinforcement.

Author Keywords
Bond; Development length; High-strength steel; Reinforcement; Splice length

Document Type: Review
Source: Scopus

Al-Quraishy, S.[a] , Dkhil, M.A.[a b] , Delic, D.[c e] , Abdel-Baki, A.A.[a d] , Wunderlich, F.[c]
Organ-specific testosterone-insensitive response of miRNA expression of C57BL/6 mice to Plasmodium chabaudi malaria
(2012) *Parasitology Research*, 111 (3), pp. 1093-1101. Cited 2 times.

DOI: 10.1007/s00436-012-2937-3

[a] Department of Zoology, College of Science, King Saud University, Riyadh, Saudi Arabia
[b] Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt
[c] Department of Molecular Parasitology, Heinrich-Heine University, Duesseldorf, Germany
[d] Department of Zoology, Faculty of Science, Beni-Suef University, Cairo, Egypt
[e] Max Planck Institute for Neurological Research, Cologne, Germany

Abstract

Increasing evidence critically implicates miRNAs in the pathogenesis of diseases, but little is known in context with infectious diseases. This study investigates as to whether the testosterone-induced persistent susceptibility to bloodstage malaria of Plasmodium chabaudi coincides with changes in miRNA expression of the anti-malaria effectors sites spleen and liver. Female C57BL/6micewere treated with vehicle or testosterone (T) for 3 weeks. Then, T treatment was discontinued for 12 weeks before challenge with 106 P. chabaudi- parasitized erythrocytes. The miRNA expression was examined after 12 weeks of T withdrawal and during infections at peak parasitemia on day 8 p.i. using miRXplore™ microarray technology. P. chabaudi infections induce an organ-specific response of miRNA expression. We can identify 25 miRNA species to be downregulated by more than 2- fold in the spleen and 169 miRNA species in the liver. Among these 194 miRNA species, there are 12 common miRNA species that are downregulated by 0.48-0.14-fold in both spleen and liver, which are miR-194, miR-192, miR-193A- 3P, miR-145, miR-16, miR-99A, miR-99B, miR-15A, miR- 152, let-7G, let-7B, and miR-455-3P. Only in the liver, there is an upregulation of the miR-142-5p by 2.5-fold and miR-342- 3p by 5.1-fold. After 12 weeks of T withdrawal, the spleen exhibits only the miR-200A that is upregulated by 2.7-fold. In the liver, miR-376B, miR-493*, and miR-188-3P are upregulated by 2.4-fold, 2.2-fold, and 2.1-fold, respectively, and miR-347, miR-200A, and miR-200B are downregulated by approximately 0.4-fold. Upon infection, however, these changes are not sustained, i.e., the miRNA expressions of both spleen and liver of T-pretreated mice exhibit the same response to P. chabaudi malaria as that of vehicle-treated control mice. Our data suggest (1) that the P. chabaudi-induced downregulation of miRNA expression in spleen and liver is required to allow the upregulation of their numerous target genes in response to infection, and (2) that the Tinduced persistent susceptibility to P. chabaudi does not affect the responsiveness of miRNA expression in spleen and liver to blood-stage malaria. ©Springer-Verlag 2012.

Document Type: Article
Source: Scopus

Galal, T.M., Fahmy, A.G.
Plant diversity and community structure of Wadi Gimal protected area, Red Sea Coast of Egypt
(2012) *African Journal of Ecology*, 50 (3), pp. 266-276. Cited 3 times.

DOI: 10.1111/j.1365-2028.2012.01320.x

Department of Botany and Microbiology, Faculty of Science, Helwan University, Po Box 11790, Cairo, Egypt

Abstract
The present study deals with the analysis of the floristic composition and plant diversity of Wadi Gimal protectorate. Its major aim is to identify community types and environmental factors that affect their growth and distribution. These quantitative data provide rangers with knowledge that is necessary for monitoring and managing plant communities within the protected areas, as well as restoration of vegetation-depleted habitats. Twenty-seven stands were selected along the length of Wadi and its tributaries. Thirty-five species were recorded in Wadi Gimal; with Poaceae as the dominant family and Phanerophytes dominating over other life forms. Saharo-Arabians were the predominant chorological element. Six vegetation groups were recognized in Wadi Gimal. Zilla spinosa (VG C) which inhabited the Wadi bed had the highest species richness, species turnover, relative evenness and relative concentration of dominance. Capparis sinaica (VG A) which inhabited the mountain slope had the lowest species richness, relative evenness and relative concentration of dominance, while Salvadora persica group had the lowest species turnover. Phoenix dactylifera-Hyphaene thebaica (VG F) which dominated the deltaic part of Wadi, had the highest salinity; whilst Acacia ehrenbergiana (VG E) which dominated the upper-stream part of the Wadi had the lowest value of salinity. © 2012 Blackwell Publishing Ltd.

Author Keywords
Aridity; Desert; Eastern; Management; Monitoring; Vegetation

Document Type: Article
Source: Scopus

Hady, M.A.[a] , Necklawi, M.[b] , Fahim, A.[b] , Bahrawi, M.[a] , Farid, N.[a]
Speckle Photography in Measuring Thermal Expansion
(2012) *Mapan - Journal of Metrology Society of India*, 27 (3), pp. 133-137. Cited 1 time.

DOI: 10.1007/s12647-012-0025-x

[a] Dimensional Metrology, National Institute For Standards, Tersa St, Haram, P.O.B 136, Giza 12211, Egypt
[b] Department of Physics, Faculty of Science, Helwan University, Giza, Egypt

Abstract
Sufficient information on status and behavior of a material used in establishing bridges, rails, and buildings, is of a special significance. In the present work, the material's thermal expansion is the parameter of particular interest. Multiple wavelength speckle photography with digital recording system is a reliable technique for nondestructive testing. The thermal expansion coefficients of different materials such as steel, copper, and aluminum are measured

during heating process. Temperature increase causes variation in interference fringes' separation and direction for each wavelength. The Young's fringes produced by the Fourier transformation of the combined speckle patterns are analyzed and the results are in good precision. The percentage error in the measured thermal expansion values is 3 % which indicate the effectiveness of the proposed system for this purpose.

Author Keywords
Fourier transformation; Multi-wavelength technique; Speckle photography; Thermal expansion

Document Type: Article
Source: Scopus

Halawa, M.[a] , Hasan, A.[a] , Shehab-Eldin, E.H.[b] , El-Refaee, E.M.[b]
Integrated Calibration System for Accurate AC Current Measurements up to 100 kHz
(2012) *Mapan - Journal of Metrology Society of India*, 27 (3), pp. 143-148. Cited 5 times.

DOI: 10.1007/s12647-012-0020-2

[a] National Institute for Standards (NIS), Tersa St., El-Ahram, Box: 136, Giza 12211, Egypt
[b] Faculty of Engineering, Helwan University, Helwan, Egypt

Abstract
This paper describes the establishment of an integrated calibration system for accurate AC current measurements at National Institute of Standards, Egypt. The measurement system consists of a new assembled thermal current converter (TCC) associated with an appropriate hardware and automation software. The system has been used for a wide range of AC current from 5 mA to 20 A at frequencies from 10 Hz to 100 kHz. The assembled TCC at rated current of 5A was modified and recalibrated in PTB, Germany to enhance the system reliability. The estimated uncertainty budget of this system is presented in this paper. © 2012 Metrology Society of India.

Author Keywords
AC current measurement; Automated calibration system; Thermal current converter; Uncertainty analysis

Document Type: Article
Source: Scopus

Shaaban, S., Abdel Hafiz, A.
Effect of duct geometry on Wells turbine performance
(2012) *Energy Conversion and Management*, 61, pp. 51-58. Cited 5 times.

DOI: 10.1016/j.enconman.2012.03.023

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

Abstract
Wells turbines can represent important source of renewable energy for many countries. An essential disadvantage of Wells turbines is their low aerodynamic efficiency and consequently low power produced. In order to enhance the Wells turbine performance, the present research work proposes the use of a symmetrical duct in the form of a venturi tube with turbine rotor located at throat. The effects of duct area ratio and duct angle are investigated in order to optimize Wells turbine performance. The turbine performance is numerically investigated by solving the steady 3D incompressible Reynolds Averaged Navier-Stocks equation (RANS). A substantial improve of the turbine performance is achieved by optimizing the duct geometry. Increasing both the duct area ratio and duct angle increase the acceleration and deceleration upstream and downstream the rotor respectively. The accelerating flow with thinner boundary layer thickness upstream the rotor reduces the flow separation on the rotor suction side. The downstream diffuser reduces the interaction between tip leakage flow and blade suction side. Up to 14% increase in turbine power and 9% increase in turbine efficiency are achieved by optimizing the duct geometry. On other hand, a tangible delay of the turbine stall point is also detected.

Author Keywords
CFD; Performance; Venturi duct; Wells turbine

Document Type: Article
Source: Scopus

Hamid, A.S.[a b]
Study on the electronic structure and Fermi surface of 3d-transition-metal disilisides CoSi 2
(2012) *Applied Physics A: Materials Science and Processing*, 108 (4), pp. 849-855.

DOI: 10.1007/s00339-012-6980-9

[a] Department of Physics, Faculty of Science, Helwan University, Helwan Cairo 12812, Egypt
[b] Deanship of the Educational Services, Qassim University, Buridah, Qassim 81999, Saudi Arabia

Abstract
We have investigated the electronic structure, the momentum density distribution ρ(p), and the Fermi surface FS of single crystals of the Pyrite-type 3d-transition-metal disilisides CoSi 2. The band structure calculations, the density of states DOS, and the FS, in vicinity of Fermi level, have been carried out using the full-potential linearized augmented plane wave FP-LAPW method within generalized gradient approximation GGA for exchange and correlation potential. The measurements have been performed via the 2D angular correlation of annihilation radiation ACAR experiments. ρ(p) has been reconstructed by using the Fourier transformation technique. The FS has been reconstructed within the first Brillion zone BZ through the Locks, Crisp, and West LCW folding procedures. The analysis confirmed that Si 3sp states hybrid with both Co 3d-t 2g and Co 3d-e g states around Γ and X points, respectively. The dimensions of the FS of CoSi 2 have been compared to the present calculations as well as to the earlier results. © 2012 Springer-Verlag.

Document Type: Article
Source: Scopus

Koumy, S.R.E.[a] , Barakat, E.S.I.[a] , Abdelsalam, S.I.[b]
Hall and Porous Boundaries Effects on Peristaltic Transport Through Porous Medium of a Maxwell Model
(2012) *Transport in Porous Media*, 94 (3), pp. 643-658. Cited 6 times.

DOI: 10.1007/s11242-012-0016-y

[a] Department of Mathematics, Faculty of Science, Helwan University, Cairo, Egypt
[b] Basic Science Department, Faculty of Engineering, The British University in Egypt, Al-Shorouk City, Misr-Suez Desert Road, P.O. Box 43, Cairo 11837, Egypt

Abstract
Peristaltic motion induced by sinusoidal traveling wave of incompressible, electrically conducting Maxwell fluid in the porous walls of a two-dimensional channel through a porous medium has been investigated in the presence of a constant magnetic field. The Hall effect has been taken into account. Modified Darcy's law has been used in the flow modeling. The fluid entering the flow region through one plate is considered at the same rate as it is leaving through the other plate. The problem is formulated using a perturbation expansion in terms of small amplitude ratio. We have discussed the problem only for free pumping case. This work can be considered as mathematical modeling to the case of gall bladder with stones. Finally, the effects of various parameters of interest are discussed and shown graphically. © 2012 Springer Science+Business Media B.V.

Author Keywords
Hall effect; Maxwell fluid; Peristaltic transport; Porous boundaries; Porous medium

Document Type: Article
Source: Scopus

Abdelhady, M.I.S., Kamal, A.M., Tawfik, N.F., Abdelkhalik, S.M.
Polyphenolic constituents of the methanolic extract of Callistemon viridiflorous leaves and its antimicrobial activity
(2012) *Pharmacognosy Journal*, 4 (31), pp. 47-53.

DOI: 10.5530/pj.2012.31.9

Pharmacognosy Department, Faculty of Pharmacy, Helwan University, Ain Helwan, Cairo, Egypt

Abstract
Introduction: The genus Callistemon (family: Myrtaceae) contains 34 species which are widely distributed in the temperate regions and used in folk medicine. Methods: Chromatographic separation of 80% MeOH extract of the leaves of Callistemon viridiflorus (sims) Sweet (Cv) was performed. Results: Seven known polyphenolic compounds were isolated for the first time from this species: gallic acid, ellagic acid, isoquercetin, hyperin, 1,2:3,4-(bis(s)-hexahydroxy diphenoyl-β-D-glucopyranose, nilocitin and quercetin-3-O-α-L- glucuronopyranoside. The methanolic extract of Cv leaves exhibited a significant anti-microbial activity against the tested microorganisms. © 2012 Pharmacognosy Network Worldwide [Phcog.Net].

Author Keywords
anti-microbial activity; Callistemon viridiflorous; Myrtaceae; polyphenols

Document Type: Article
Source: Scopus

Farahat, E.[a] , Linderholm, H.W.[b]
Ecological impacts of desert plantation forests on biodiversity
(2012) *African Journal of Ecology*, 50 (3), pp. 308-318. Cited 3 times.

DOI: 10.1111/j.1365-2028.2012.01325.x

[a] Botany and Microbiology Department, Faculty of Science, Helwan University, Cairo, 11795, Egypt
[b] Regional Climate Group, Earth Sciences Centre, University of Gothenburg, Box 460 SE- 405 30, Göteborg, Sweden

Abstract
This investigation involves the comparison of the diversity of understorey vegetation of four desert planted forests with the adjacent desert areas. Spatial and temporal variations in species composition and structure were compared, and alpha and beta diversities were compared for the field data collected from sampled sites. The diversity of native desert species decreased from 66% in desert areas to 44% of the total recorded plants inside the forests. Meanwhile, the percentage of agricultural weed species increased in forests to >twofold more than that recorded in desert areas. Plant communities in forest stands shared <50% of their species with adjacent vegetation in desert stands. The percentage of variation in species composition was >340% in some forests compared with the desert areas. Alpha diversity and β-diversity were significantly higher in forest stands than in the desert. Spatial and temporal variations in species diversity were correlated with type of tree canopy and irrigation system. Planted forests had significant negative effects on the diversity of native desert shrubs and trees. Using flood irrigation and more spacing between trees might help in conserving the floristic diversity of desert shrubs and trees at the forest floor. © 2012 Blackwell Publishing Ltd.

Author Keywords
Arid lands; Egypt; Planted forests; Similarity; Species diversity

Document Type: Article
Source: Scopus

Doha, E.H.[a] , Abd-Elhameed, W.M.[a b] , Ahmed, H.M.[c d]
The coefficients of differentiated expansions of double and triple Jacobi polynomials
(2012) *Bulletin of the Iranian Mathematical Society*, 38 (3), pp. 739-766. Cited 2 times.

[a] Department of Mathematics, Faculty of Science, Cairo University, Giza, Egypt
[b] Department of Mathematics, Faculty of Science, King Abdulaziz University, Jeddah, Saudi Arabia
[c] Department of Mathematics, Faculty of Industrial Education, Helwan University, Cairo, Egypt
[d] Department of Mathematics, Faculty of Sciences, Shaqra University, Shaqra, Saudi Arabia

Abstract
Formulae expressing explicitly the coefficients of an expansion of double Jacobi polynomials which has been partially differentiated an arbitrary number of times with respect to its variables in terms of the coefficients of the original expansion are stated and proved. Extension to expansion of triple Jacobi polynomials is given. The results for the special cases of double and triple ultraspherical polynomials are considered. Also the results for Chebyshev polynomials of the first, second, third and fourth kinds and of Legendre polynomials are noted. An application of how to use double Jacobi polynomials for solving Poisson's equation in two variables subject to nonhomogeneous mixed boundary conditions is described. © 2012 Iranian Mathematical Society.

Author Keywords
Hypergeometric series; Jacobi polynomials; Poisson's equation; Spectral methods

Document Type: Article
Source: Scopus

Ghonime, M.G.[a b] , Shamaa, O.R.[a] , Eldomany, R.A.[b] , Gavrilin, M.A.[a] , Wewers, M.D.[a]
Tyrosine phosphatase inhibition induces an ASC-dependent pyroptosis
(2012) *Biochemical and Biophysical Research Communications*, 425 (2), pp. 384-389. Cited 3 times.

DOI: 10.1016/j.bbrc.2012.07.102

[a] Davis Heart and Lung Research Institute, The Ohio State University, Columbus, OH 43210, United States
[b] Microbiology and Immunology Department, Faculty of Pharmacy, Helwan University, Cairo, Egypt

Abstract
Pyroptosis is a type of cell death in which danger associated molecular patterns (DAMPs) and pathogen associated molecular patterns (PAMPs) induce mononuclear phagocytes to activate caspase-1 and release mature IL-1β. Because the tyrosine kinase inhibitor AG126 can prevent DAMP/PAMP induced activation of caspase-1, we hypothesized that tipping the tyrosine kinase/phosphatase balance toward phosphorylation would promote caspase-1 activation and cell death. THP-1 derived macrophages were therefore treated with the potent specific tyrosine phosphatase inhibitor, sodium orthovanadate (OVN) and analyzed for caspase-1 activation and cell death. OVN induced generalized increase in phosphorylated proteins, IL-1β release and cell death in a time and dose dependent pattern. This OVN induced pyroptosis correlated with speck formations that contained the apoptosis-associated speck-like protein containing a caspase recruitment domain (ASC). Culturing the cells in the presence of extracellular K+ (known to inhibit ATP dependent pyroptosis), a caspase inhibitor (ZVAD) or down regulating the expression of ASC with stable expression of siASC prevented the OVN induced pyroptosis. These data demonstrate that pyroptotic death is linked to tyrosine phosphatase activity providing novel targets for future pharmacologic interventions. © 2012 Elsevier Inc.

Author Keywords
ASC; Caspase-1; IL-1β; Inflammasome; Phosphatases; Pyroptosis

Document Type: Article
Source: Scopus

Radwan, N.I.[a] , Salem, N.M.[b] , El Adawy, M.I.[b]
Histogram correlation for video scene change detection
(2012) *Advances in Intelligent and Soft Computing*, 166 AISC (VOL. 1), pp. 765-773. Cited 7 times.

DOI: 10.1007/978-3-642-30157-5_76

[a] National Research Centre, Cairo, Egypt
[b] Faculty of Engineering, Helwan University, Cairo, Egypt

Abstract
In this paper a novel and simple scene change detection algorithm based on the correlation between the frames of the video is proposed. The first frame of the video is taken as a reference frame. The correlation between the histogram of the reference frame and the histogram of all video frames is computed. The plotting of the relationship between the computed correlation values and frame number illustrates the differentiation between scene and motion changes. When the correlation values are constant over a number of frames, so there is a motion scene where the background is not changed. While changing the correlation values over a number of frames indicate a gradual scene change. Changing of these values sharply indicates abrupt scene change. Experimental results show that this method is effective for motion, abrupt and gradual shot transition detection. It achieves an F-measure exceeding 0.89 for gradual shot transition compared with 0.84 when using a PCA based method. © 2012 Springer-Verlag GmbH.

Author Keywords
abrupt transition; correlation; gradual transition; image histogram; scene change detection

Document Type: Conference Paper
Source: Scopus

Okb El Bab, A.S.[b] , Ghany, H.A.[a c] , Mohamed, M.S.[a b]
On positive definite functions and some related functions on hypergroups
(2012) *International Journal of Mathematical Analysis*, 6 (13-16), pp. 599-607. Cited 3 times.

[a] Mathematics Department, Taif University, Hawia(888) Taif, Saudi Arabia
[b] Mathematics Department, Al Azhar University, Naser City, Cairo, Egypt
[c] Mathematics Department, Helwan University, Cairo, Egypt

Abstract
The main tasks in this paper are to prove the stability of the set of all completely monotone functions and the set of all conditionally exponential convex functions on a hypergroup X under multiplication. This paper is also devoted to give an integral representations for the product of two conditionally exponential convex functions on X.

Author Keywords

Completely monotone; Conditionally exponential convex functions; Hypergroup; Positive definite

Document Type: Article
Source: Scopus

Mohamed, M.S., Awad, S.M., Ahmed, N.M.
Anti-cancer activities of 6-aryl -5-cyano-2-thiouracil derivatives
(2012) *Pharma Research*, 6 (2), pp. 54-60. Cited 3 times.

Department, Helwan University, Faculty of Pharmacy, Ain Helwan, Post Code No.11795, Cairo, Egypt

Abstract
In this study, the anticancer activities of ten 6-aryl -5-cyano-2-thiouracil derivatives were evaluated using three human cell lines of Breast (MCF7), Colon (HCT116) and Liver (HEPG2) cancers. All the tested compounds are active against three cell lines. Compound 5 was highly selective to inhibit three cell lines in comparison with the antitumor agent 5-Flurouracil as a control. © 2012 by Sudarshan Publication.

Author Keywords
6-aryl-5-cyano-2-thiouracils; Breast (MCF7); Colon (HCT116) and Liver (HEPG2) cancers

Document Type: Article
Source: Scopus

Abdalla, O.H.[a b] , Al-Badwawi, R.[c] , Al-Hadi, H.[c] , Al-Riyami, H.[c] , Al-Nadabi, A.[c]
Impact of a 200 MW concentrated receiver solar power plant on steady-state and transient performances of Oman transmission system
(2012) *2012 IEEE International Power Engineering and Optimization Conference, PEOCO 2012 - Conference Proceedings*, art. no. 6230897, pp. 401-406.

DOI: 10.1109/PEOCO.2012.6230897

[a] University of Helwan, Egypt
[b] Oman Electricity Transmission Company, P. O. Box 1224, 131, Al-Hamriya, Muscat, Oman
[c] Strategic Planning and Projects Department, Oman Electricity Transmission Company, P.O. Box1224, 131, Al-Hamriya, Muscat, Oman

Abstract
The paper presents steady-state and transient studies to assess the impact of a 200 MW Central Receiver Solar Power Plant (CRSPP) connection on the Main Interconnected Transmission System (MITS) of Oman. The CRSPP consists mainly of a central solar receiver, power tower, thousands of heliostats, molten salt storage tanks, heat exchangers, steam generator, steam turbine, synchronous generator, and step-up transformer. Two proposed locations are considered to connect the CRSPP plant to MITS: Manah 132 kV and Adam 132/33 kV grid stations. The 2015 transmission grid model has been updated to include the simulation of the proposed 200 MW CRSPP using the DIgSILENT PowerFactory professional software. The studies include load flow analysis and short-circuit level calculations in addition to transient responses to three-phase fault and complete CRSPP outage. The results have shown that the connection of the proposed CRSPP plant to the MITS is acceptable. © 2012 IEEE.

Author Keywords
Central Receiver Solar Power Plant; Dynamic Response; Forced Outages; Load Flow; Short Circuit

Document Type: Conference Paper
Source: Scopus

Yassin, A.E.A.[a] , Elfangary, L.M.[b] , Al-Sadek, A.F.[a c]
RGB MAPS: A proposed database for solving metabolic pathway hole
(2012) *2012 8th International Conference on Informatics and Systems, INFOS 2012*, art. no. 6236513, pp. DE44-DE52.

[a] Central Lab for Agricultural Expert Systems, Ministry of Agriculture and Land Reclamation, Giza, Egypt
[b] Faculty of Computers and Information, Helwan University, Cairo, Egypt
[c] Faculty of Computer Science, October University for Modem Science and Art, Egypt

Abstract

Filling pathway hole is a point of research in the field of Bioinformatics especially in metabolic pathway where the analysis of metabolic pathways is an essential topic in understanding the relationship between genotype and phenotype [4]. The pillar of the research cycle is the data collection which precedes the analysis phase to solve the pathway hole. The required data for this area is scattered among different data sources, which represent a problem for the researchers of this area. This paper provides a solution to this obstacle by collecting the required data from various data sources in one database RGB MAPS. Also we have developed a tool that could be used by other researchers to analyze the pathway holes. © 2012 Cairo University.

Document Type: Conference Paper
Source: Scopus

El-Hagary, M.[a] [b] , Soltan, S.[b] [c]
Magnetic behaviour of Fe-doped CdS diluted magnetic semiconducting nanocrystalline thin films
(2012) *Journal of Applied Physics*, 112 (4), art. no. 043907, . Cited 1 time.

DOI: 10.1063/1.4748270

[a] Physics Department, College of Science, Qassim University, P. O. 6644, 5145 Buryadh, Saudi Arabia
[b] Physics Department, Faculty of Science, Helwan University, 11792 Helwan, Cairo, Egypt
[c] Max Plank Institute for Solid State Research, Heisenbergstr. 1, D-70569 Stuttgart, Germany

Abstract
We have investigated the magnetic properties of Fe doped Cd 1-xFe xS diluted magnetic semiconducting nanocrystalline thin films for different doping concentrations (0.05 x 0.2) synthesized by electron beam evaporation technique. X-ray diffraction patterns confirm the existence of single phase nature in all the Fe doped Cd 1-xFe xS samples with hexagonal wurtzite type structure with a strong (002) preferred orientation. Evidence of nanocrystalline nature of the films was observed from the investigation of surface morphology using scanning electron microscopy and atomic force microscopy. Magnetic domains were observed by using magnetic force microscopy at room temperature indicating the existence of ferromagnetism over the film surface. The temperature and field dependent magnetization measurements by using superconducting quantum interference device showed ferromagnetic behavior between room temperature and low temperature (5 K) with a T c at or above room temperature for the nanostructure samples with 0.1 x 0.2. The saturation magnetization for Cd 1-xFe xS system is found to increase with the dopant concentration (x). The exchange interaction between local spin polarized electrons (Fe 3 ions) and conductive electrons according to Ruderman-Kittel-Kasuya-Yosida mechanism, rather than from the Fe oxide impurities, is proposed to be the possible mechanism for ferromagnetism. These results show that the Fe-doped CdS nanocrystalline films can be employed in the fabrication of the nanoscale magnetic device. © 2012 American Institute of Physics.

Document Type: Article
Source: Scopus

Zanfaly, D.S.E.[a] , Darwish, A.[b] , Gomaa, A.G.G.[b] , Youssif, A.A.A.[c]
Heterogeneous data reduction model for payment request file of direct debit processes: Case study: Telecom Egypt
(2012) *2012 8th International Conference on Informatics and Systems, INFOS 2012*, art. no. 6236509, pp. DE8-DE17. Cited 1 time.

[a] Information Systems Department, Faculty of Computers and Information, Helwan University, Cairo, Egypt
[b] Mathematical Department, Computer Science Branch, Helwan University, Cairo, Egypt
[c] Computer Science Department, Faculty of Computers and Information, Helwan University, Cairo, Egypt

Abstract
This paper presents a proposed model regarding Heterogeneous Data Reduction. The model reduces data over a heterogeneous environment through feature selection/extraction. The feature is selected/extracted directly from its data source and prepared without an initial integration for all data sources. After that the selected/extracted prepared feature is integrated into a new reduced data set Feature selection/extraction is made according to business requirements, domain expert feedbacks, and the organization's Service Level Agreement and Corporate Household to give high accuracy results. The proposed model is built by hybrid data reduction techniques: Stepwise Backward Elimination, Stepwise Forward Selection and Decision Tree Induction. Such proposed model building depends on the CRoss Industry Standard Process model of data mining as a reference model The proposed model works with any kind of data types. The model applies to real telecommunication data relating to the Direct Debit processes. It is used to produce a Standard Converted Reduced Payment Request File to just keep on the important attributes. The model helps to cut down the user work time to generate that new data set © 2012 Cairo University.

Author Keywords

Backward Elimination; CRISP; Decision Tree Induction; Direct Debit; Feature Selection; Forward Selection; Heterogeneous Data Reduction; Integration; Telecommunication

Document Type: Conference Paper
Source: Scopus

Elhalawany, B.M.[a] , Abdel-Kader, H.M.[a] , Tageldeen, A.[a] , Ahmed, A.E.S.[a] , Nossair, Z.B.[b]
Vision-based obstacles detection for a mobile robot
(2012) *2012 8th International Conference on Informatics and Systems, INFOS 2012*, art. no. 6236594, pp. MM93-MM99.

[a] Shoubra Faculty of Engineering, Benha University, Cairo, Egypt
[b] Helwan Faculty of Engineering, Helwan University, Helwan, Egypt

Abstract
Vision-based robot navigation systems allow a robot to explore and to navigate in its environment in a way that facilitates path planning and goal-oriented tasks. The vision sensor is mainly used for obstacle detection and avoidance, object detection and tracking, and interaction with users. Usually these systems do not depend solely on vision sensors but use other sensors like sonar and laser range finder. The paper considers an important issue for mobile robots navigation. This issue is the detection of obstacles in front of the robot within a corridor. We proposed and evaluated three algorithms for obstacle detection within a corridor environment using image processing techniques. © 2012 Cairo University.

Document Type: Conference Paper
Source: Scopus

Emam-Ismail, M.[a b] , El-Hagary, M.[a c] , Shaaban, E.R.[d] , Al-Hedeib, A.M.[e]
Microstructure and optical studies of electron beam evaporated ZnSe 1-xTe x nanocrystalline thin films
(2012) *Journal of Alloys and Compounds*, 532, pp. 16-24. Cited 6 times.

DOI: 10.1016/j.jallcom.2012.04.013

[a] Physics Department, Collage of Science, Qassim University, P.O. 6644, 51452 Buryadh, Saudi Arabia
[b] Physics Department, Faculty of Science, Ain Shams University, 11566 Cairo, Egypt
[c] Physics Department, Faculty of Science, Helwan University, Helwan, 11792 Cairo, Egypt
[d] Physics Department, Faculty of Science, Al-Azhar University, 71452 Assuit, Egypt
[e] Physics Department, Collage of Science and Arts, Qassim University, Buryadh, Saudi Arabia

Abstract
Nanocrystalline thin films of ZnSe 1-xTe x (0.0 ≤ x ≤ 1.0) were deposited on glass substrate using electron beam deposition technique. The structure of the prepared films was examined using X-ray diffraction technique and revealed that the deposited films have polycrystalline zinc blend structure with lattice constant, a, increasing linearly from 0.55816 to 0.59989 nm as x varies from 0 to 1. The optical studies of the nanocrystalline ZnSe 1-xTe x films showed that the refractive index increases and fundamental band gap E g decreases from 2.58 to 2.21 eV as the tellurium concentration increases from 0 to 1. Furthermore, it was also found that the variation of E g with composition shows quadratic behavior with bowing parameter equal to 0.105. In addition, the thickness and annealing effects on the structure and optical properties of the deposited films were also investigated. The refractive index dispersion and its dependence on composition were discussed in terms of single oscillator model proposed by Wemple-DiDomenico. © 2012 Elsevier B.V.

Author Keywords
II-VI Semiconductor; Nanomaterial; Optical properties of thin film; Single oscillator model for nanomaterial

Document Type: Article
Source: Scopus

El-Sayed, M.-I.K.[a] , Amin, H.-K.[a] , Al-Kaf, A.-G.[b]
Anti-microbial, anti-oxidant and anti-ulcerogenic effects of shilajit on gastric ulcer in rats
(2012) *American Journal of Biochemistry and Biotechnology*, 8 (1), pp. 26-39. Cited 2 times.

DOI: 10.3844/ajbbsp.2012.26.39

[a] Department of Biochemistry and Molecular Biology, Faculty of Pharmacy, Helwan University, Ain Helwan, Helwan

P.O. Box 11790, Cairo, Egypt
[b] Department of Medicinal Chemistry, Faculty of Pharmacy, Sana'a University, Madbah, P.O. Box 19065, Sana'a, Yemen

Abstract
Problem statement: To evaluate the effects and mechanisms of action involved in anti-ulcer, antioxidant and antimicrobial activities of different native shilajit samples. Approach: Shilajit samples were collected in the mountain region of Yemen (Al-Jouf and Rayma), Russia (Tien-Shan) and India (Kumoan). Stomach ulcers were induced in rats by oro-gastric ingestion of ethanol/HCl. Pre-treatment with ranitidine (100 mg kg-1, p.o.) and shilajit samples (600 mg kg-1, p.o.) occurred for 14 days before the ulcer induction. Plasma lipids, TBARs, SOD, GSH, catalase activity and gastric mucosal histological changes in rat stomach tissue were evaluated. Antimicrobial efficacy of shilajit (500, 300 and 100 µg disc-1) was also studied against fungi, gram positive and negative bacteria. Results: Data had shown the hypo-lipidemic and anti-oxidant effects of studied shilajit samples on ethanol/HCl-induced ulcer model via decreasing TGs, Tc, TBARs while increasing HDLc, SOD, catalase and GSH than saline or ranitidine pre-treated groups. Al-Jouf and Indian shilajit samples inhibit both ulcer score and lesion area by greater percentages than either ranitidine or other samples. Rayma and Russian samples showed a strongest antimicrobial effect than either Al-Jouf or Indian samples. Conclusion/Recommendations: Some of studied shilajit samples have anti-oxidant and anti-ulcer against induced gastric ulcer, while others showed anti-microbial activities against tested microbes; mightily due to combined mechanisms of shilajit's constituents, including hypolipidemic, antioxidant, anti-inflammatory, anti-stress, anti-anxiety, regenerative, repairing and healing mechanisms. © 2012 Science Publications.

Author Keywords
Anti-microbial; Anti-oxidant; Anti-ulcer; Fulvic acid; Shilajit

Document Type: Article
Source: Scopus

Sayed, M.R.[a b] , Fahmy, A.S.[a c]
Evaluation of the cardiac global function from tagged magnetic resonance images
(2012) *Proceedings of the IASTED International Symposia on Imaging and Signal Processing in Health Care and Technology, ISPHT 2012*, pp. 34-38.

DOI: 10.2316/P.2012.771-026

[a] Center for Informatics Science, School of Communication and Information Technology, Nile University, Egypt
[b] Computer Science, School of Computer and Information, Helwan University, Egypt
[c] Systems and Biomedical Engineering, School of Engineering, Cairo University, Cairo, Egypt

Abstract
Tagged Magnetic Resonance (MR) images are considered the gold standard for evaluating the cardiac regional function. Nevertheless, the low myocardium-to-blood contrast in tagged MR images prevents accurate segmentation of the myocardium, and hence, hinders the quantitative assessment of the global function of the heart. In this work, a method for enhancing the myocardium-to-blood contrast in tagged MR images is proposed. First, the tag pattern in each input tagged MR image is removed using technique based on the image texture and the frequency components of the tag pattern to produce two tagless images. Then, these two images are combined to obtain a tagless MR image with high blood-to-myocardium contrast. The proposed method is applied to five patients where the global functional parameters are calculated and compared to those calculated from standard untagged cine MR images of the same subject. The results show that the proposed method has a high potential to be used in evaluating the global functional parameters from tagged MR images.

Author Keywords
Contrast enhancement; Global function; Left ventricle segmentation; Tag removal; Tagged MRI

Document Type: Conference Paper
Source: Scopus

El-Nahhas, A.
Analytic approximations for cooling turbine disks
(2012) *Journal of Fluids Engineering, Transactions of the ASME*, 134 (8), art. no. 081103, .

DOI: 10.1115/1.4006993

Mathematics Department, Helwan Faculty of Science, Helwan University, Helbawy Street, 11795 Cairo, Egypt

Abstract
In this paper, we use the homotopy analysis method as a tool to obtain analytic approximations to the nonlinear

problem of the cooling of turbine disks with a non-Newtonian viscoelastic fluid. The application of this method is executed via a polynomial exponential basis. The effects on velocity and temperature profiles with variations of the cross viscosity parameter, the Reynolds number, and the Prandtl number are discussed. A comparison with corresponding results of the perturbation method is illustrated and also, as a result of application of the homotopy analysis method, an analytic evaluation for the Nusselt number compared to the perturbation method is achieved. © 2012 American Society of Mechanical Engineers.

Author Keywords
channel flows; heat transfer; homotopy analysis method; non-Newtonian fluids; partial differential equations

Document Type: Article
Source: Scopus

El Zawawi, I.K.[a] , Moez, A.A.[a] , Hammad, T.R.[b] , Ibrahim, R.S.[a]
Phase transformation and disorder effect on optical and electrical properties of Zn 3P 2 thin films
(2012) *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, 94, pp. 378-383. Cited 1 time.

DOI: 10.1016/j.saa.2012.03.072

[a] Solid State Physics Department, National Research Center, 12622 Dokki, Cairo, Egypt
[b] Physics Department, Faculty of Science, Helwan University, Helwan, Egypt

Abstract
The phase transformation of zinc phosphide (Zn 3P 2) thin films was detected through isochronal annealing process. The effects on isochronal annealing on the internal structural, optical and electrical properties of deposited Zn 3P 2 thin films have been discussed. The films were prepared by thermal evaporation under constant preparation conditions of vacuum 1.3 × 10 -5 Torr, substrate temperature (300 K), rate of deposition (∼1 nm/s) and film thickness (480 nm). The annealing process was carried out under vacuum for 2 h at different temperatures ranging from 373 to 623 K. X-ray diffraction patterns showed that the as-deposited films and those annealed at temperatures less than 623 K exhibit amorphous structure, while the films annealed at 623 K showed tetragonal polycrystalline structure. The optical transmission and reflection spectra were measured at the wavelength range of 190-2500 nm. The absorption coefficient spectra and the degree of disorder as measured from the absorption edge were determined. The indirect and direct optical energy band gaps were evaluated for indirect allowed and direct allowed transitions for amorphous and polycrystalline films, respectively. The refractive index n o increases with raising the annealing temperature which refers to more condensation in the material. The electrical resistivity for Zn 3P 2 films decreases exponentially with raising the annealing temperature up to 623 K as influenced by structure transformation and decreasing the degree of disorder in the films.

Author Keywords
Electrical properties; Optical properties; X-ray diffraction; Zn 3P 2 thin films

Document Type: Article
Source: Scopus

El Ella, D.A.A.E.[a] , Saleh, K.A.[b] , Hassan, M.[b] , Hamdy, N.[c] , El-Araby, M.E.[d] , Abouzid, K.A.M.[a]
Synthesis and anti-proliferative activity of substituted- anilinoquinazolines and its relation to EGFR inhibition
(2012) *Arzneimittel-Forschung/Drug Research*, 62 (8), pp. 360-366.

DOI: 10.1055/s-0032-1312601

[a] Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Ain Shams University, Abassia, Cairo 11566, Egypt
[b] Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Russian Egyptian University, Cairo, Egypt
[c] Department of Biochemistry, Faculty of Pharmacy, Ain Shams University, Cairo, Egypt
[d] Department of Pharmaceutical Organic Chemistry, Faculty of Pharmacy, Helwan University, Helwan, Egypt

Abstract
4-Anilinoquinazoline is a privileged scaffold in developing small molecule inhibitors of tyrosine kinases (TK) especially epidermal growth factor receptor (EGFR). 2 series belonging to 3'-substituted-4-anilinoquinazoline scaffold were synthesized and screened in vitro on isolated and a breast cancer cell line. The research aims at exploring the activity of compounds having diverse substituents at 3' position of the aniline moiety. Generally, the meta-substituted-anilinoquinazolines exhibited significant inhibitory activity against isolated enzyme as well as MCF-7 cancer cell line. For instance, compound 10b inhibited >99% of EGFR activities at 10 M concentration. 6 of the tested compounds exhibited range of anti-proliferative activity below 10 M potency. In particular, compounds 6e and 10b displayed the highest activity among the tested compounds with IC 50 values equal to 8.6 and 4.84 M, respectively. Structure-based tools were utilized to rationalize EGFR-TK binding of compound 10b since it is the most active compound in the

enzyme inhibition test. © Georg Thieme Verlag KG Stuttgart.New York.

Author Keywords
anilinoquinazoline; anti-cancer; EGFR inhibitors; quinazoline; structure-based design; tyrosine kinase inhibitors

Document Type: Article
Source: Scopus

Ragheb, A.A.[a] , Nassar, S.H.[a] , Abd El-Thalouth, I.[a] , Ibrahim, M.A.[b] , Shahin, A.A.[a]
Preparation, characterization and technological evaluation of CMC derived from rice-straw as thickening agents in discharge, discharge-resist and burn-out printing
(2012) *Carbohydrate Polymers*, 89 (4), pp. 1044-1049. Cited 8 times.

DOI: 10.1016/j.carbpol.2012.03.054

[a] National Research Centre, Textile Division, Dokki, Cairo, Egypt
[b] Faculty of Applied Arts, Helwan University, Cairo, Egypt

Abstract
Carboxymethyl cellulose samples of different D.S. values were prepared from rice straw via pulping followed by etherification with monochloroacetic acid under the catalytic action of sodium hydroxide. The prepared derivatives were assessed for D.S., rheological properties as well as suitability as thickening agents in different printing styles. It was found that carboxymethyl cellulose derived from rice straw is characterized by a non-Newtonian pseudoplastic behavior and its apparent viscosity at any specific rate of shear depends on the D.S. All the prepared derivatives could be used successfully as thickening agents in discharge and/or discharge/resist printing of cotton fabrics. Furthermore, they could be used also as thickening agent for burn-out printing style of wool/polyester blended fabrics using sodium hydroxide. Attractive samples could be obtained via using these techniques. © 2012 Elsevier Ltd. All rights reserved.

Author Keywords
Burn out; Carboxymethylcellulose; Discharge; Printing; Resist

Document Type: Article
Source: Scopus

Driza, N.[a] , Blanco-Canosa, S.[a] , Bakr, M.[a e] , Soltan, S.[a b] , Khalid, M.[a f] , Mustafa, L.[a] , Kawashima, K.[a] , Christiani, G.[a] , Habermeier, H.-U.[a] , Khaliullin, G.[a] , Ulrich, C.[a c d] , Le Tacon, M.[a] , Keimer, B.[a]
Long-range transfer of electron-phonon coupling in oxide superlattices
(2012) *Nature Materials*, 11 (8), pp. 675-681. Cited 15 times.

DOI: 10.1038/nmat3378

[a] Max-Planck-Institut für Festkörperforschung, Heisenbergstraße 1, D-70569 Stuttgart, Germany
[b] Faculty of Science, Helwan University, 11795-Cairo, Egypt
[c] University of New SouthWales, School of Physics, Sydney, NSW 2052, Australia
[d] Bragg Institute, Australian Nuclear Science and Technology Organization, Locked Bag 2001, Kirrawee, DC NSW 2232, Australia
[e] Zentrum für Synchrotronstrahlung, TU Dortmund, D-44221 Dortmund, Germany
[f] Division of Superconductivity and Magnetism, University of Leipzig, D-04103 Leipzig, Germany

Abstract
The electron-phonon interaction is of central importance for the electrical and thermal properties of solids, and its influence on superconductivity, colossal magnetoresistance and other many-body phenomena in correlated-electron materials is the subject of intense research at present. However, the non-local nature of the interactions between valence electrons and lattice ions, often compounded by a plethora of vibrational modes, presents formidable challenges for attempts to experimentally control and theoretically describe the physical properties of complex materials. Here we report a Raman scattering study of the lattice dynamics in superlattices of the high-temperature superconductor YBa 2Cu 3O 7 (YBCO) and the colossal- magnetoresistance compound La 2/3Ca 1/3 MNO 3 that suggests a new approach to this problem. We find that a rotational mode of the MnO 6 octahedra in La 2/3Ca 1/3MnO 3 experiences pronounced superconductivity-induced line-shape anomalies, which scale linearly with the thickness of the YBCO layers over a remarkably long range of several tens of nanometres. The transfer of the electron-phonon coupling between superlattice layers can be understood as a consequence of long-range Coulomb forces in conjunction with an orbital reconstruction at the interface. The superlattice geometry thus provides new opportunities for controlled modification of the electron-phonon interaction in complex materials. © 2012 Macmillan Publishers Limited. All rights reserved.

Document Type: Review
Source: Scopus

Abutaleb, M.M.
Design and simulation of novel TLG-SET based configurable logic cells
(2012) *Microelectronics Journal*, 43 (8), pp. 537-545. Cited 6 times.

DOI: 10.1016/j.mejo.2012.05.005

Department of Communication and Electronics Engineering, Helwan University, Cairo, Egypt

Abstract
Single electron tunneling circuits seem to be promising candidates as basic circuit elements of the next generation ultra-dense VLSI and ULSI circuits for their ultra-low power consumption, ultra-small size, and rich functionality. In this paper, design and simulation of novel configurable logic cells (CLCs) using single electron tunneling (SET) technology based threshold logic gate (TLG) are presented. The proposed CLC can realize all Boolean logic functions by configuring the control bits without changing the structure of the circuit and the parameters of TLG-SET based design. The logic operation of the circuit is simulated using Monte Carlo simulation. According to the simulation results, the circuit operation based on the transfer of single electrons between adjacent islands is stable.

Author Keywords
Configurable logic cells (CLCs); Nanoelectronics; Single electron tunneling (SET) technology; Threshold logic gate (TLG)

Document Type: Article
Source: Scopus

Elhakeem, A.[a] , Hegazy, T.[b]
Building asset management with deficiency tracking and integrated life cycle optimisation
(2012) *Structure and Infrastructure Engineering*, 8 (8), pp. 729-738.

DOI: 10.1080/15732471003777071

[a] Civil Engineering Department, Helwan University, Cairo, Egypt
[b] Civil Engineering Department, University of Waterloo, Waterloo, ON, N2L 3G1, Canada

Abstract
This paper introduces a comprehensive building asset management system with a unique formulation in which all functions from inspection, to deterioration modelling, and life cycle analysis, track the dynamics of building deficiencies. The system also incorporates an integrated life cycle analysis that determines both the optimum repair-types and the optimum repair-timings for a large network of buildings with hundreds of components. To handle the large-scale optimisation involved, a two-phase optimisation procedure has been introduced and its powerful performance validated on various size networks. The paper provides a description of the proposed asset management system and discusses its implementation in a user-friendly prototype that suits a large school board in North America. The proposed asset management system is innovative and helps organisations with large building assets improve the overall condition of their inventory with highest return on the limited repair budget.

Author Keywords
asset management; buildings; capital renewal; computer application; life cycle analysis; optimisation

Document Type: Article
Source: Scopus

El Hosamy, M.[a] , Shokry, G.M.[a] , Mohammed, R.M.[a] , El Dean, S.K.[b]
Dyeing and improvement of antimicrobial characteristics of polyester/cotton blend fabrics
(2012) *Melliand International*, 18 (3), pp. 168-170.

[a] Helwan University, Giza, Egypt
[b] National Institute of Standard, Giza, Egypt

Abstract

Recent advances in textile chemistry have approached textile surface modification to impart antimicrobial activity. The present work aims to evaluate and improve the antimicrobial activity of the treated polyester/cotton blend fabrics with an environmental process using gamma rays and chitosan as a natural cationic agent as well as to study their affect on the physical properties such as the tensile strength, the elongation and the crease recovery of the fabrics used. Anionic dyes (direct, reactive, acid) were applied to polyester/cotton fabrics depending on the treatment used.

Document Type: Article
Source: Scopus

Said, U.Z.[a] , Saada, H.N.[a] , Abd-Alla, M.S.[b] , Elsayed, M.E.[b] , Amin, A.M.[a]
Hesperidin attenuates brain biochemical changes of irradiated rats
(2012) *International Journal of Radiation Biology*, 88 (8), pp. 613-618. Cited 5 times.

DOI: 10.3109/09553002.2012.694008

[a] Radiation Biology Department, National Center for Radiation Research and Technology (NCRRT), Atomic Energy Authority, 3, Ahmad el Zomor St., El Zohour Sector, Madinet Nasr, Cairo, Egypt
[b] Chemistry Department, Faculty of Sciences, Helwan University, Cairo, Egypt

Abstract
Purpose: The purpose of this study was to evaluate the efficacy of hesperidin (HES), a citrus flavonoid, against the severity of biochemical disorders in the cerebral hemispheres of irradiated rats. Material and methods: Hesperidin (50 mg/kg body weight) was administered to male albino rats via gavages during 10 successive days before whole body exposure to gamma rays (5 Gy) and during 14 days after irradiation. The animals were sacrificed on the 14th day post-irradiation. Results: The results demonstrated a significant increase of the levels of thiobarbituric acid reactive substances (TBARS), protein carbonyls (CO), and advanced oxidation protein products (AOPP), associated to significant decreases of total superoxide dismutase (tSOD) and catalase (CAT) activities, and reduced thiols content in the cerebral hemispheres of irradiated rats indicating oxidative stress. A significant decrease of the serotonin (5-HT), dopamine (DA), norepinephrine (NE) and epinephrine (EPI) contents and a significant increase of the activity of monoamine oxidase (MAO) were recorded, also, indicating alterations in the metabolism of monoamines. Moreover, a significant decrease of the activities of glutamate dehydrogenase (GDH) and creatine phophokinase (CPK), and a significant increase of calcium ions (Ca 2) levels were recorded in the mitochondria. Hesperidin treatment has significantly attenuated oxidative stress, monoamines alterations and mitochondrial damage in the cerebral hemispheres of irradiated rats. Conclusion: It could be concluded that hesperidin might attenuate the severity of radiation-induced biochemical disorders in brain tissues. © 2012 Informa UK, Ltd.

Author Keywords
Brain; Ionizing radiation; Oxidative stress; Radioprotectors

Document Type: Article
Source: Scopus

Metwaly, M.S.[a] , Dkhil, M.A.[a b] , Al-Quraishy, S.[a]
The potential role of Phoenix dactylifera on Eimeria papillata-induced infection in mice
(2012) *Parasitology Research*, 111 (2), pp. 681-687. Cited 10 times.

DOI: 10.1007/s00436-012-2887-9

[a] Department of Zoology, College of Science, King Saud University, P.O. Box: 2455, Riyadh 11451, Saudi Arabia
[b] Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

Abstract
Coccidiosis is a common infectious disease in poultry causing major economic losses. Here, we investigated the effect of Khodary date fruit aqueous extract (4 ml/kg) on the outcome of coccidiosis caused by Eimeria papillata in Swiss Albino mice. Date fruit extract was able to decrease the intracellular development by lowering the faecal output of E. papillata oocysts from 8.7±0.5×103 to 6.6±0.4×103 oocysts per gram faeces. Also, date extract caused a great diminish in body weight of infected mice from 19.3 to 3.2%. The number of parasitic stages in the intestinal villi of the infected mice was reduced to about 52% after treatment with date extract. The infection was associated with marked histopathological lesions of the murine jejunum in the form of inflammation, vacuolation of the epithelium, and destruction of some villi. Also, the number of goblet cells within the infected villi was significantly lowered (P≤0.05). These changes lead to an oxidative damage of the infected tissue. Moreover, infection induced a disturbance in both protein and carbohydrate content in the infected mice. Treatment of mice with date extract could improve the above-studied parameters. On the basis of the above results it can be hypothesized that date fruit can protect against coccidiosis-induced infection, this hypothesis can be revealed by the anti-inflammatory activity of date protecting host tissue from injuries induced by the parasite, and hence it is recommended to be used as an excellent food additive. © Springer-Verlag 2012.

Document Type: Article
Source: Scopus

Sobaih, A.E.E.[a] , Ritchie, C.[b] , Jones, E.[b]
Consulting the oracle?: Applications of modified Delphi technique to qualitative research in the hospitality industry
(2012) *International Journal of Contemporary Hospitality Management*, 24 (6), pp. 886-906. Cited 4 times.

DOI: 10.1108/09596111211247227

[a] Faculty of Tourism and Hotel Management, Helwan University, Cairo, Egypt
[b] Cardiff School of Management, Cardiff Metropolitan University, Cardiff, United Kingdom

Abstract
Purpose: The Delphi technique is used to achieve consensus among experts and/or gain judgment on complex matters. This paper aims to discuss the classical Delphi and its advantages and disadvantages in qualitative research, particularly in hospitality. Design/methodology/approach: The classical Delphi is characterized by the involvement of experts and its iterative nature. In an industry with high turnover and limited pools of specialist expertise this can lead to problems of attrition and management of the process. The paper presents two qualitative hospitality research case studies in which the classical Delphi is successfully modified to overcome its limitations. Findings: Identifying potential problems early in the research process enables critical design decisions to be made. Case one used a parallel expert group with similar experience to develop a research instrument for a limited number of prestigious experts well-acquainted with one another who might have reached specious consensus through channels not accessible to the researcher. Case two enabled the addition of new experts to an expert panel to overcome attrition in successive Delphi rounds. Practical implications: Despite its growing popularity in social science, Delphi has rarely been used in qualitative hospitality research. The modifications suggested in this paper can enhance the robustness of the classical Delphi technique for qualitative hospitality research. Originality/value: The paper shows how the classical Delphi technique can be successfully modified for use in qualitative hospitality research. © Emerald Group Publishing Limited.

Author Keywords
Delphi method; Experts; Hospitality management; Modified Delphi technique; Qualitative research; Research design; Research methods

Document Type: Article
Source: Scopus

El-Mahdy, G.A.[a b] , Hegazy, M.M.[a] , Eissa, M.M.[c] , Fathy, A.M.[c] , Sayed, F.M.[a] , El-Manakhly, N.[d] , Hamad-Al-Lohedan[b]
Influence of heat and laser treatments on the corrodibility of the reinforced carbon steel
(2012) *International Journal of Electrochemical Science*, 7 (8), pp. 6677-6692.

[a] Chemistry Department, Faculty of Science, Helwan University, Cairo, Egypt
[b] Surfactants research Chair, Chemistry Department, College of Science, King Saud University, P.O.Box - 2455, Riyadh - 11451, Saudi Arabia
[c] Steel Technology Department, Central Metallurgical Research and Development Institute (CMRDI), Egypt
[d] Electrochemistry and Corrosion lab, National Research Centre (NRC), Egypt

Abstract
The influence of heat and laser treatments on the corrosion behavior of reinforced carbon steel was investigated in calcium hydroxide solution using weight loss, photodynamic polarization measurements, X-ray diffraction (XRD) and Scanning Electron Microscope (SEM). Heat and laser treatments play an important role for improvement of the mechanical and corrosion resistance of the reinforced carbon steel. The corrosion rate of laser alloyed sample is very close to that of the sample treated with low heat treatment (900 oC) and is lower than that experienced for the sample treated at higher one (1200 oC). The results may be attributed to uneven distribution of Ti and V micro-alloying element throughout the surface and low grain refinement for treated sample at high heat treatment (1200 oC). © 2012 by ESG.

Author Keywords
Heat Treatment; Laser; Micro-Alloyed Steel; Polarization; Sem; Titanium; Vanadium; Xrd

Document Type: Article
Source: Scopus

El-Mezayen, H.A., Toson, S.A., Darwish, H., El-Badry, E.
Discriminant function based on parameters of hyaluronic acid metabolism and nitric oxide to differentiate metastatic from non-metastatic colorectal cancer patients.
(2012) *Tumour biology : the journal of the International Society for Oncodevelopmental Biology and Medicine*, 33 (4), pp. 995-1004.

DOI: 10.1007/s13277-012-0332-4

Chemistry Department, Helwan University, Cairo, Egypt,

Abstract
Colorectal cancer (CRC) is one of the most common causes of cancer-related deaths worldwide. Because there is currently no useful serological marker for metastatic colorectal cancer, the search for simple biomarkers for colorectal cancer diagnosis and prognosis is needed. Hyaluronic acid level was determined by ELISA; in addition to its degrading enzymes, degradation products and nitric oxide were determined by standard techniques in 185 CRC patients with and without metastases. Statistical analyses were performed by logistic regression and receiver-operating characteristic (ROC) curves. The multivariate discriminate analysis (MDA) selects a function based on absolute values of six biochemical markers; score = [-0.62 (numerical constant) + hyaluronic acid (pg/l) × 0.002 + hyaluronidase (mg N-acetyl glucosamine/ml/18 h) × 0.009-β-glucuronidase (μmol/ml/min) × 0.07 + N-acetyl-β-D-glucosaminidase (μmol/ml/min) × 0.019-glucuronic acid (μg/dl) × 0.001 + nitric oxide (μmol/l) × 0.01]. The selected MDA function correctly classified 92% of the metastatic CRC patients at a discriminate cut-off score = 0.24 (i.e., less than 0.24 indicated patients with non-metastatic colon cancer, and greater than 0.24 indicated patients with metastatic colon cancer with high degrees of sensitivity (100%) and specificity (93%)). The positive predictive and negative predictive values were also high (81% and 85%, respectively). Colorectal cancer patients can be simply and efficiently classified into metastatic or non-metastatic using their MDA score.

Document Type: Article
Source: Scopus

Abu-Gharbieh, E.[a] , Fahmy, S.[b]
Adherence to surgical site infection guidelines in cardiac surgery in a tertiary hospital in Dubai, United Arab Emirates
(2012) *Tropical Journal of Pharmaceutical Research*, 11 (4), pp. 657-664. Cited 1 time.

[a] Dubai Pharmacy College, Dubai, United Arab Emirates
[b] Helwan University, Helwan, Egypt

Abstract
Purpose: To assess the appropriateness and compliance of antibiotic prophylaxis practices in cardiac surgery in a tertiary hospital in United Arab Emirates (UAE) using three international guidelines. Methods: A retrospective study was performed by reviewing patients' files admitted for cardiac surgery between January 2008 and February 2010. The study evaluated the adherence of health care professionals to three international guidelines with regard to antibiotic prophylaxis. The guidelines were National Surgical Infection Prevention Project (NSIPP), Society of Thoracic Surgeons (STS) and American College of Cardiology/American Heart Association (ACC/AHA). Patients' records were reviewed for antibiotics used for prophylaxis, frequency of administration, timing and number of doses. Results: A total of 92 patients were included in the study. Based on the international guidelines, only 89.1 and 79.3% of the patients received the recommended pre- and post-operative antibiotics, respectively. On the other hand, 93.5% of the patients received the right antibiotic dose while the total duration of all antimicrobial agents used for prophylaxis was concordant with the guidelines (48 h) in only 67.4% of the patients. Conclusion: Adherence to international antimicrobial prophylaxis guidelines for cardiac surgery was found to be suboptimal in the study hospital in Dubai. Various interventions are needed via developing local evidence-based protocols in collaboration with surgeons, and also to strengthen regulations for ensuring adherence to these guidelines.

Author Keywords
Antimicrobial prophylaxis; Cardiac surgery; International guidelines

Document Type: Review
Source: Scopus

Mohamed, M.S.[a] [b] , Ghany, H.A.[c]
Analytic approximations for fractional-order hyperchaotic system
(2012) *Journal of Advanced Research in Dynamical and Control Systems*, 3 (3), pp. 1-12. Cited 1 time.

[a] Mathematics Department, Faculty of Science, Taif University, Hawia, Taif, Saudi Arabia
[b] Mathematics Department, Faculty of Science, Al-Azhar University, Nasr City (11884), Cairo, Egypt
[c] Mathematics Department, Faculty of Industrial Education, Helwan University, Cairo, Egypt

Abstract
In this paper, the numerical analytic solution for the fractional order hyperchaotic system is obtained the step homotopy analysis method (SHAM). The fractional derivatives are describing by Caputo's sense. Exact and/or approximate analytical solutions of these equations are obtained. An analytical form of the solution within each time interval is given which is not possible using standard numerical method. © 2011 Institute of Advanced Scientic Research.

Author Keywords
Caputo's fractional derivative; Fractional-order hyperchaotic system; Homotopy analysis method; Hyperchaotic system

Document Type: Article
Source: Scopus

Mohamed, M.S.[a b] , Hemida, K.M.[b] , Ghany, H.A.[a c]
Analytic approximations for fractional-order modified coupled dynamous system
(2012) *Journal of Advanced Research in Dynamical and Control Systems*, 4 (1), pp. 37-47.

[a] Mathematics Department, Faculty of Science, Taif University Hawia(888), Taif, Saudi Arabia
[b] Mathematics Department, Faculty of Science, Al-Azhar University, Nasr City, Cairo, Egypt
[c] Mathematics Department, Faculty of Industrial Education, Helwan University, Cairo, Egypt

Abstract
Based on the homotopy analysis method (HAM), a scheme is developed to obtain analytic approximations for fractional order modified coupled dynamous system. The system has an interesting dynamic behavior, such as fixed points, periodic motions, chaotic motions, and transient chaos. The fractional derivatives are describing by Caputo's sense. Exact and/or approximate analytical solutions of these equations are obtained. The HAM contains a certain auxiliary parameter which provides us with a simple way to adjust and control the convergence region and rate of convergence of the series solution. © 2011 Institute of Advanced Scientic Research.

Author Keywords
Caputo's fractional derivative; Fractional order modified coupled dynamous system; Homotopy analysis method

Document Type: Article
Source: Scopus

Kopp, B.T.[a] , Abdulrahman, B.A.[b c] , Khweek, A.A.[b] , Kumar, S.B.[b] , Akhter, A.[b] , Montione, R.[d] , Tazi, M.F.[b] , Caution, K.[b] , McCoy, K.[a] , Amer, A.O.[b]
Exaggerated inflammatory responses mediated by Burkholderia cenocepacia in human macrophages derived from Cystic fibrosis patients
(2012) *Biochemical and Biophysical Research Communications*, 424 (2), pp. 221-227. Cited 4 times.

DOI: 10.1016/j.bbrc.2012.06.066

[a] Section of Pediatric Pulmonology, Nationwide Children's Hospital, Columbus, OH, United States
[b] Department of Microbial Infection and Immunity, The Department of Internal Medicine, The Ohio State University, Columbus, OH, United States
[c] Biochemistry and Molecular Biology Department, Faculty of Pharmacy, Helwan University, Helwan, Egypt
[d] Campus Microscopy and Imaging Facility, The Ohio State University, Columbus, OH, United States

Abstract
Cystic fibrosis (CF) is accompanied with heightened inflammation worsened by drug resistant Burkholderia cenocepacia. Human CF macrophage responses to B. cenocepacia are poorly characterized and variable in the literature. Therefore, we examined human macrophage responses to the epidemic B. cenocepacia J2315 strain in order to identify novel anti-inflammatory targets. Peripheral blood monocyte derived macrophages were obtained from 23 CF and 27 non-CF donors. Macrophages were infected with B. cenocepacia J2315 and analyzed for cytokines, cytotoxicity, and microscopy. CF macrophages demonstrated significant increases in IL-1β, IL-10, MCP-1, and IFN-γ production in comparison to non-CF controls. CF patients on prednisone exhibited globally diminished cytokines

compared to controls and other CF patients. CF macrophages also displayed increased bacterial burden and cell death. In conclusion, CF macrophages demonstrate exaggerated IL-1β, IL-10, MCP-1, and IFN-γ production and cell death during B. cenocepacia infection. Treatment with corticosteroids acutely suppressed cytokine responses. © 2012 Elsevier Inc.

Author Keywords
Burkholderia; CF; CGD; Corticosteroids; Cystic fibrosis; IFN-γ; IL-1β; IL-10; LDH; Macrophage; MCP-1; MDM

Document Type: Article
Source: Scopus

Hadhoud, M.M.A.[a] , Eladawy, M.I.[b] , Farag, A.[a]
Region of interest localization of cardiac structure from cine MRI images
(2012) *Proceedings of the 9th International Conference on Information Technology, ITNG 2012*, art. no. 6209140, pp. 14-17.

DOI: 10.1109/ITNG.2012.10

[a] Biomedical Engineering Department, Faculty of Engineering, Helwan University, Cairo, Egypt
[b] Communication and Electronics Department, Faculty of Engineering, Helwan University, Cairo, Egypt

Abstract
In this paper, we present a new method for localizing the position of the heart from Cine MRI images. This method depends on calculating the summation of the difference between images of a specific slice that we work on it, then applying thresholding on the resulting image to get the region of interest. To validate our method, we compare between our results and results of another method used in localizing the position of the heart which depends on the standard deviation. We worked on images of 14 different patients, come from STACOM database. We achieved by this method good results in determining the position of the heart. This method has different advantages like: it works on different contrast images, fast, and fully automatic. © 2012 IEEE.

Author Keywords
Cardiac MRI; Medical Imaging

Document Type: Conference Paper
Source: Scopus

Hassanein, T.F.[a b] , Koumanova, B.[a]
Binary mixture sorption of basic dyes onto wheat straw
(2012) *Bulgarian Chemical Communications*, 44 (2), pp. 131-138. Cited 1 time.

[a] University of Chemical Technology and Metallurgy, Department of Chemical Engineering, 8 Kliment Ohridski blvd., Sofia 1756, Bulgaria
[b] Helwan University, Faculty of Science, Department of Chemistry, 211795, Helwan, Egypt

Abstract
Simultaneous adsorption of Basic Blue 3 (BB 3) and Basic Red 18 (BR 18) onto wheat straw (WS) from a binary system was studied and compared with a single dye system in a batch mode. The single-component Langmuir and Freundlich isotherm models were applied to the adsorption equilibrium data for single-component and binary-component systems. The equilibrium adsorption for the binary system was also analyzed by using multi-component modified Langmuir and Sheindorf-Rebuhn-Sheintuch (SRS) models. Equilibrium data of BB 3 in single and binary systems fitted more adequately to the Freundlich adsorption isotherm. For BR 18, the Langmuir model was the best one for fitting the adsorption equilibrium in single and binary systems. The pseudo-first order and pseudo-second order models were employed to fit the experimental data for the adsorption kinetics of BB 3 and BR 18 on WS from single-and binary-component systems. The pseudo-second-order model provided better correlation for the adsorption process in single- and binary-component systems. Adsorption results from the binary system indicated the competitive adsorption between dyes. The maximum adsorption capacities of WS for BB 3 and BR 18 dyes in single solution system were found as 90.91 mg g -1 and 142.86 mg g -1, respectively, while in binary mixture they decreased to 76.92 mg g -1 and 111.11 mg g -1, respectively, as a result of their antagonistic behavior. © 2012 Bulgarian Academy of Sciences.

Author Keywords
Adsorption; Basic dyes; Binary mixture; Equilibrium; Kinetics; Wheat straw

Document Type: Article
Source: Scopus

Salama, N.N.[a] , El Ries, M.A.[a] , Toubar, S.[b] , Abd El Hamid, M.[a] , Walash, M.I.[c]
Thermoanalytical investigation of some sulfone-containing drugs
(2012) *Journal of Analytical Methods in Chemistry*, 1 (1), art. no. 439082, . Cited 1 time.

DOI: 10.1155/2012/439082

[a] Pharmaceutical Chemistry Department, National Organization for Drug Control and Research, Pyramids Avenue, Giza, Egypt
[b] Analytical Chemistry Department, Faculty of Pharmacy, Helwan University, Cairo 1860, Egypt
[c] Analytical Chemistry Department, Faculty of Pharmacy, Mansoura University, Mansoura 35516, Egypt

Abstract
The thermal behavior of some sulfone-containing drugs, namely, dapsone (DDS), dimethylsulfone (MSM), and topiramate (TOP) in drug substances, and products were investigated using different thermal techniques. These include thermogravimetry (TGA), derivative thermogravimetry (DTG), differential thermal analysis (DTA), and differential scanning calorimetry (DSC). The thermogravimetric data allowed the determination of the kinetic parameters: activation energy (E a), frequency factor (A), and reaction order (n). The thermal degradation of dapsone and topiramate was followed a first-order kinetic behavior. The calculated data evidenced a zero-order kinetic for dimethylsulfone. The relative thermal stabilities of the studied drugs have been evaluated and follow the order DDS > TOP > MSM. The purity was determined using DSC for the studied compounds, in drug substances and products. The results were in agreement with the recommended pharmacopoeia and manufacturer methods. DSC curves obtained from the tablets suggest compatibility between the drugs, excipients and/or coformulated drugs. The fragmentation pathway of dapsone with mass spectrometry was taken as example, to correlate the thermal decomposition with the resulted MS-EI. The decomposition modes were investigated, and the possible fragmentation pathways were suggested by mass spectrometry. © 2012 Nahla N. Salama et al.

Document Type: Article
Source: Scopus

Mourad, A.-H.I.[a c] , Khourshid, A.[b] , Sharef, T.[b]
Gas tungsten arc and laser beam welding processes effects on duplex stainless steel 2205 properties
(2012) *Materials Science and Engineering A*, 549, pp. 105-113. Cited 12 times.

DOI: 10.1016/j.msea.2012.04.012

[a] Mechanical Engineering Department, Faculty of Engineering, United Arab Emirates University, Al-Ain, P.O. Box. 17555, United Arab Emirates
[b] Mechanical Design and Production Department, Faculty of Engineering, Tanta University, Tanta, Egypt
[c] Mechanical Design Department, Faculty of Engineering, Mataria, Helwan University, P.O. Box 11718, Cairo, Egypt

Abstract
A comparative study on the influence of gas tungsten arc welding (GTAW) and carbon dioxide laser beam welding (LBW) processes on the size and microstructure of fusion zone FZ then, on the mechanical and corrosion properties of duplex stainless steel DSS grade 2205 plates of 6.4. mm thickness was investigated. Autogenous butt welded joints were made using both GTAW and LBW. The GTA welded joint was made using well established welding parameters (i.e., current ampere of 110. A, voltage of 12. V, welding speed of 0.15. m/min and argon shielding rate of 15. l/min). While optimum LBW parameters were used (i.e., welding speed of 0.5. m/min, defocusing distance of 0.0. mm, argon shielding flow rate of 20. l/min and maximum output laser power of 8. kW). The results achieved in this investigation disclose that welding process play an important role in obtaining satisfactory weld properties. In comparison with GTAW, LBW has produced welded joint with a significant decrease in FZ size and acceptable weld profile. The ferrite-austenite balance of both weld metal WM and heat affected zone (HAZ) are influenced by heat input which is a function of welding process. In comparison with LBW, GTAW has resulted in ferrite-austenite balance close to that of base metal BM due to higher heat input in GTAW. However, properties of LB welded joint, particularly corrosion resistance are much better than that of GTA welded joint. The measured corrosion rates for LBW and GTAW joints are 0.05334. mm/year and 0.2456. mm/year, respectively. This is related to the relatively small size of both WM and HAZ produced in the case of LBW. In other words, properties of welded joints are remarkably influenced by FZ size rather than the produced austenite-ferrite balance. © 2012 Elsevier B.V.

Author Keywords
Corrosion resistance; Duplex stainless steel; Fusion zone configuration; GTA welding; Laser beam welding; Mechanical properties; Microstructure

Document Type: Article
Source: Scopus

Emam-Ismail, M.[a b] , El-Hagary, M.[a c] , Shaaban, E.R.[a d] , Althoyaib, S.[a]
Structural and optical investigation of nanocrystalline Zn 1-xNi xS diluted magnetic semiconductor thin films
(2012) *Journal of Alloys and Compounds*, 529, pp. 113-121. Cited 8 times.

DOI: 10.1016/j.jallcom.2012.03.027

[a] Physics Department, College of Science, Qassim University, P.O. 6644, 51452 Buryadh, Saudi Arabia
[b] Physics Department, Faculty of Science, Ain Shams University, Cairo 11566, Egypt
[c] Physics Department, Faculty of Science, Helwan University, Helwan, Cairo 11792, Egypt
[d] Physics Department, Faculty of Science, Al-Azhar University, Assuit 71452, Egypt

Abstract
We have investigated the structural and optical properties of nanocrystalline Zn 1-xNi xS (0.005 ≤ x ≤ 0.2) diluted magnetic semiconductor thin films synthesized by electron beam deposition technique. All the deposited films crystallize in zincblend type structure. The structure parameters of the nanosize deposited films are extracted by X-ray diffraction and atomic force microscopy techniques and found to vary from 14 nm to 17.5 nm. The X-ray diffraction measurements show that the highest solubility limit of Ni in ZnS matrix is found to be ≈15%. In a wide spectral range, the refractive index and refractive index dispersion of the nanocrystalline Zn 1-xNi xS films have been calculated from transmission or reflection spectra using wavenumber method and found to increase with increasing Ni concentration. The increase of the refractive index dispersion of Zn 1-xNi xS with Ni concentration has been ascribed to the corresponding change in the net polarizability of the whole system. Through the higher wavenumber region (2 × 10 +4 cm -1 to 2.5 × 10 +4 cm -1), the group velocity factor is found to increase with increasing Ni concentration. In addition, for fixed Ni concentration (x = 0.005) the refractive index and refractive index dispersion are found to increase with increasing film thickness. Wemple and DiDomenico single oscillator model was used to explain the increases of the refractive index dispersion with Ni concentration based on variation of coordination number of the Zn 1-xNi xS system. The optical transition is found to be direct transition with optical energy gap Egopt decreases with increasing Ni concentration. The reduction of Egopt with increasing Ni concentration is explained by considering the sp-d interaction of the Ni ions in ZnS matrix. The results reported here show that Ni doped ZnS nanocrystalline films can be employed in the fabrication of nanoscale optical and magneto-optical devices.

Author Keywords
Absorption and reflection; Atomic force microscope (AFM); Light transmission; Nanostructured materials; Optical materials; Optical properties; Semiconductors; Thin films; Vapor deposition; X-ray diffraction

Document Type: Article
Source: Scopus

Daoush, W.M.[a c] , Imae, T.[b c c]
Syntheses and characterizations of multiwalled carbon nanotubes-supported palladium nanocomposites
(2012) *Journal of Materials Research*, 27 (13), pp. 1680-1687. Cited 7 times.

DOI: 10.1557/jmr.2012.123

[a] Department of Powder Technology, Central Metallurgical R and D Institute, Helwan, Cairo, Egypt
[b] Graduate Institute of Applied Science and Technology, Honors College, National Taiwan University of Science and Technology, Taipei 10607, Taiwan
[c] Department of Production Technology, Helwan University, Cairo, Egypt

Abstract
Multiwalled carbon nanotubes/Pd nanoparticles (CNT/Pd) were prepared by different four synthesis techniques. After the chemical oxidation of CNTs, the infrared absorption data indicated the existence of several functional groups loaded on the CNTs surfaces. The first Pd deposition technique went through the processes of Sn sensitization and Pd deposition on the functionalized surfaces of CNTs. The second method was Pd deposition by polyol process. The third method was Pd deposition using hydrazine in acidic media. In the fourth method, fourth generation poly(amidoamine) dendrimer and sodium borohydride were used as an intermediator between Pd and the surfaces of CNTs and as a reducing agent of the palladium chloride, respectively. It was observed from transmission electron microscope analysis of the produced CNT/Pd nanoparticles that the Pd particles on the CNTs prepared by the fourth method had the smallest average particle size of 3 nm. The Pd contents in the produced CNT/Pd nanocomposite powders were determined by thermogravimetric analysis.

Author Keywords
carbon nanotube/Pd nanocomposite; dendrimer; hydrazine; metallization; polyol process; sensitization

Document Type: Article
Source: Scopus

Tayea, M.S.[a] , Emam, M.A.A.[a] , Shaaban, S.M.[a] , El-Demerdash, S.M.[a] , Galal Rabee, M.[b]
Dynamic performance of electro-hydraulic steering system for off-road vehicles
(2012) *International Journal of Vehicle Structures and Systems*, 4 (1), pp. 1-9.

DOI: 10.4273/ijvss.4.1.01

[a] Automotive and Tractor Engineering Dept., Helwan University, Egypt
[b] Manufacturing and Production Technology Dept., Modern Academy for Engineering and Technology, Cairo, Egypt

Abstract
The dynamic characteristics of an Electro-hydraulic (EH) steering system plays an important role in realizing an accurate steering control for an automatically guided vehicles. In this paper, a mathematical model has been developed for EH steering system that includes EH servo valve with mechanical feedback, steering actuation cylinders and associated steering linkages. A proportional-integral controller has been designed to improve the dynamic performance of EH steering system for off-road vehicles. The simulated system models using SIMULINK were validated using experimental tests. The control of steering angle using the proposed proportional-integral controller has been demonstrated for different soil conditions. © 2012. MechAero Foundation for Technical Research & Education Excellence.

Author Keywords
EH steering system; Kinematic model; Off-road vehicles; Proportional integral controller; Simulink

Document Type: Article
Source: Scopus

Yousef, M.T.[a] , Ali, H.E.I.[b] , Habashy, S.M.[b] , Saad, E.M.[b]
C40. Improved potential field controller for obstacle avoidance in mobile robots
(2012) *National Radio Science Conference, NRSC, Proceedings*, art. no. 6208558, pp. 495-502.

DOI: 10.1109/NRSC.2012.6208558

[a] Tibben Institute for Metallurgical Studies, Cairo, Egypt
[b] Faculty of Engineering, Helwan University, Cairo, Egypt

Abstract
In this paper, improved potential field controller suitable for obstacle avoidance is proposed. Genetic algorithms are used to improve the potential field controller by optimizing the forces applied to the robot making the robot path much smoother. A measure of smoothness is used to guide the genetic algorithm optimizer during its search. Of course more smoothing gives less distance and more speed to reach the goal. The optimized controller is simulated on Windows Vista using Matlab Software. Many cases including environments with single obstacle up to three obstacles and multi-knee corridor are simulated. Results are compared to previous work, illustrating the superiority of the proposed work. © 2012 IEEE.

Author Keywords
Artificial potential field; Genetic Algorithm; Mobile robot; Motion optimization; Obstacle avoidance; Relative distance; Virtual sensor

Document Type: Conference Paper
Source: Scopus

Ghany, H.A.[a] [b] , Fathallah, A.[c]
Exact solutions for KDV-burger equations with an application of white-noise analysis
(2012) *International Journal of Pure and Applied Mathematics*, 78 (1), pp. 17-27. Cited 1 time.

[a] Department of Mathematics, Helwan University, Cairo, Egypt
[b] Department of Mathematics, Taif University, Taif, Saudi Arabia
[c] Department of Mathematics, Misr International University, Cairo, Egypt

Abstract
In this paper we will give exact solutions of the variable coefficient KdV-Burger equations ut + α(t)uu x + β(t)u xx + γ(t)u xxx = 0, where α(t), β(t) and γ(t) are bounded measurable or integrable functions on ℝ+. Moreover, using the Hermite transform and the homogeneous balance principle, the white noise functional solutions for the Wick-type stochastic

KdV-Burger equations are explicitly obtained. © 2012 Academic Publications, Ltd.

Author Keywords
Hermite transform; KdV-Burger equation; Modified tanh-coth method; White noise; Wick-type stochastic nonlinear differential equations

Document Type: Article
Source: Scopus

Montaser, A.M.[a] , Mahmoud, K.R.[b] , Elmikati, H.A.[c]
B17. Planar inverted-F antenna array performance for smart handsets including the interaction with a human hand-head
(2012) *National Radio Science Conference, NRSC, Proceedings*, art. no. 6208517, pp. 141-148.

DOI: 10.1109/NRSC.2012.6208517

[a] Sohag University, Sohag, Egypt
[b] Helwan University, Helwan, Egypt
[c] Mansoura University, Mansoura 35516, Egypt

Abstract
In this paper the interaction of the planar inverted-F antenna array, mounted on a mobile handset, with a human hand-head phantom is investigatedin the 1.9 GHz band. The hybrid approach involving the particle swarm optimization (PSO) and Nelder-Mead (NM) algorithm is considered to optimize the complex excitations of the adaptive array elements in a mutual coupling environment for different beamforming synthesis. Firstly, the effect of the human hand-head on the handset radiation characteristics is studied. Then, the spatial peak specific absorption rate (SAR) values of 4-element antenna arrays for mobile handsets in the vicinity of a human hand-head are evaluated numerically for different scenarios. The antenna is analyzed completely using finite difference time domain (FDTD)while the interaction is performed using the CST Microwave Studio software. © 2012 IEEE.

Author Keywords
Hybrid Particle swarm optimization - Nelder Mead (PSO-NM); Planar inverted-F antenna (PIFA); Specific absorption rate (SAR)

Document Type: Conference Paper
Source: Scopus

Montaser, A.M.[a] , Mahmoud, K.R.[b] , Elmikati, H.A.[c]
B15. Tri-band slotted bow-tie antenna design for RFID reader using hybrid CFO-NM algorithm
(2012) *National Radio Science Conference, NRSC, Proceedings*, art. no. 6208515, pp. 119-126. Cited 3 times.

DOI: 10.1109/NRSC.2012.6208515

[a] Sohag University, Sohag, Egypt
[b] Helwan University, Helwan, Egypt
[c] Mansoura University, Mansoura 35516, Egypt

Abstract
In this article, a dual bow-tie slot antenna for 915/2450/5800 MHz triple band RFID applications is presented. The size of the proposed antenna is determined by the middle resonant frequency. The lower and upper operating frequencies are obtained by inserting metal strip pairs near the ends of the slotted dual bow-tie without increasing the overall antenna area. The hybrid approach involving Central Force Optimization and Nelder-Mead (CFO-NM) algorithm is considered to optimize the antenna dimensions. The CFO-NM algorithm program was implemented using MATLAB-software which linked to the CST Microwave studio software to simulate the antenna. In addition the optimized antenna is simulated by the Finite Difference Time Domain (FDTD) method to validate the results. © 2012 IEEE.

Author Keywords
FDTD; Hybrid CFO-NM algorithm; RFID; Slotted bow-tie antenna

Document Type: Conference Paper
Source: Scopus

Konsowa, H.G.[a] , Saad, E.M.[a] , Awadalla, M.H.A.[a b]
C37. Updating multicore processor simulator to support dynamic design in fetch stage

(2012) *National Radio Science Conference, NRSC, Proceedings*, art. no. 6208555, pp. 471-476.

DOI: 10.1109/NRSC.2012.6208555

[a] Faculty of Engineering, Helwan University, Cairo, Egypt
[b] Electrical and Computer Engineering Department, Sultan Qaboos University, Muscat, Oman

Abstract
During the early design space exploration phase of the microprocessor design process, a variety of enhancements and design options are evaluated by analyzing the performance model of the microprocessor. Current multicore processor is based on complex designs, integrating different components on a single chip, such as hardware threads, processor cores, memory hierarchy or interconnection networks. The permanent need to enhance the performance of multicore motivates the development of dynamic design, using historical data of previous runs to predict new value of architecture parameter. Some basic notions multicore processors architectures are affected by the problem of long-latency instructions stalling the processor pipeline. In this paper, the simulation multicore tool, multi2sim is adapted to cope with multicore processor dynamic design by adding dynamic feature in the policy of thread selection in fetch stage. © 2012 IEEE.

Author Keywords
Fetch policy; Multicore design; Performance; Simulation architecture

Document Type: Conference Paper
Source: Scopus

Shaaban, E.R.[a] , Abd El-Sadek, M.S.[b] , El-Hagary, M.[c d] , Yahia, I.S.[e]
Spectroscopic ellipsometry investigations of the optical constants of nanocrystalline SnS thin films
(2012) *Physica Scripta*, 86 (1), art. no. 015702, . Cited 11 times.

DOI: 10.1088/0031-8949/86/01/015702

[a] Department of Physics, Faculty of Science, Al-Azahar University, Assiut 71542, Egypt
[b] Physics Department, Faculty of Science, SouthValley University, Qena 83523, Egypt
[c] Physics Department, College of Science, Qassim University, P O 6644, 5145 Buryadh, Saudi Arabia
[d] Physics Department, Faculty of Science, Helwan University, 11792 Helwan, Cairo, Egypt
[e] Department of Physics, Faculty of Education, Ain Shams University, Roxy, Cairo, Egypt

Abstract
Different thicknesses of tin sulfide (SnS) thin films were deposited onto highly cleaned glass substrates by the thermal evaporation technique. Their structural characteristics were studied by x-ray diffraction (XRD). The XRD investigation shows that SnS films are polycrystalline with an orthorhombic-type structure. The microstructure parameters, e.g. crystallite size and microstrain, were calculated. It is observed that the crystallite size increases and the microstrain decreases with increasing the film thickness. The optical constants (n, k) and film thicknesses of SnS thin films were obtained by fitting the ellipsometric parameters (ψ and Δ) data using three-layer model systems in the wavelength range of 400-1800nm. It is found that the refractive index n increases with an increase of the film thickness. The possible optical transition in these films is found to be direct and indirect transitions. Both direct and indirect energy gaps increase with increasing the film thickness. © 2012 The Royal Swedish Academy of Sciences.

Document Type: Article
Source: Scopus

Sharada, H.M.[a] , Abdalla, M.S.[a] , Amin, A.I.[a] , El Khouly, S.A.[b] , El-Sherif, H.A.[c]
Plasma levels of oxidation protein products in type 2 diabetic patients with Nephropathy
(2012) *Australian Journal of Basic and Applied Sciences*, 6 (7), pp. 537-544. Cited 1 time.

[a] Chemistry Department, Faculty of Science, Helwan University, Helwan, Egypt
[b] Clinical Pathology Department, National Institute of Diabetes and Endocrinology, Egypt
[c] Medical Biochemistry Department, National Research Center, Giza, Egypt

Abstract
Advanced oxidation protein products (AOPP) are forms of oxidatidativAdvanced oxidation protein products (AOPP) are forms of oxidatidatively modified albumin and have recently been investigated as indicators of oxidative stress. They are increased in different disorders, including diabetes mellitus, as a result of hyperglycaemia, oxidative stress and hypoxia. The aim of the present study was to determine the plasma levels of AOPP in the patients with type 2 diabetes mellitus (T2DM) and to estimate its relation and connection with the degree of nephropathy. Plasma levels of

AOPP were determined by ELISA Assay in 90 individuals, 60 patients with T2DM and 30 healthy control subjects. The urinary albumin/creatinine ratio (ACR) was used as the reference to define the stage of kidney dysfunction by the assessment of the degree of albuminuria. T2DM patients were divided into three groups according to the value of ACR; twenty patients with normoalbuminuria, twenty three patients with microalbuminuria and seventeen patients with macroalbuminuria. There was a significant increase in the mean levels of total cholesterol and triglycerides in both normoalbuminuria and macroalbuminuria groups compared to the control group. A significant increase in the mean levels of triglycerides and HDL-cholesterol was found in microalbuminuria group compared to the control group. Diabetic patients had significantly higher levels of AOPP in comparison with the control group. AOPP was increasing progressively and significantly from normoalbuminuria, through microalbuminuria to macroalbuminuria. In the current study, the diagnostic utility of AOPP was determined by means of receiver operating characteristic (ROC) curve analysis which indicates that the elevation of AOPP is a useful marker for the presence of nephropathy. There was a high significant positive correlation between AOPP levels and triglycerides in microalbuminuria group. Plasma AOPP correlated significantly with both of serum creatinine and ACR. In conclusion, AOPP may be helpful clinical markers for estimating kidney dysfunction, as well as AOPP is better able to identify diabetic patients with nephropathy. We suggest that AOPP is almost ideal for discriminating between T2DM patients with micro- and macroalbuminuria.

Author Keywords
Advanced oxidation protein products; Nephropathy; Type 2 diabetes mellitus

Document Type: Article
Source: Scopus

Abdel-Baki, A.S.[a b] , Al-Quraishy, S.[a] , Al-Qahtani, H.[a] , Dkhil, M.A.[a c] , Azevedo, C.[a d]
Morphological and ultrastructural description of Pleistophora dammami sp. n. infecting the intestinal wall of Saurida undosquamis from the Arabian Gulf, Saudi Arabia
(2012) *Parasitology Research*, 111 (1), pp. 413-418.

DOI: 10.1007/s00436-012-2855-4

[a] Zoology Department, College of Science, King Saud University, Riyadh 11451, Saudi Arabia
[b] Zoology Department, Faculty of Science, Beni-Suef University, Beni-Suef, Egypt
[c] Department of Zoology and Entomology, Faculty of Science, Helwan University, Helwan, Egypt
[d] Department of Cell Biology, Institute of Biomedical Sciences (ICBAS/UP), University of Porto, Lg. Abel Salazar no. 2, Porto 4099-123, Portugal

Abstract
Pleistophora dammami sp. n. is described from Saurida undosquamis from the Arabian Gulf in Saudi Arabia. Infection appeared as whitish cysts in the intestinal wall. Cysts ranged in size from 1 to 4 mm. The prevalence of the infection across both fish sexes was 17.5% (24/420). Two kinds of spores were recognized, microspores and macrospores, and each were ovoid in shape. The microspores measured ~2.5∈×∈2.0 μm in size, while the macrospores measured ~6.0∈×∈3.0 μm. Ultrastructurally, the parasite did not form xenoma but it formed cysts surrounded by thick cyst wall. All stages of development as meronts, sporonts, sporoblast and spores occurred in the cytoplasm of the host cells within sporophorous vesicles. The stages of development occurred asynchronously and thus all stages were randomly distributed within the cysts. Meronts were elliptical and multinucleated, with unpaired nuclei which constantly divided giving rise to new sporonts. During the transition to sporonts, the border of the meronts increased in thickness to form dense discontinuous cell coat. Later, the sporont divided into sporoblast cells which gradually differentiated the typical organelles of the spores. In mature spores, the polar filament was arranged in 20-24 coils in two rows either side of the posterior vacuole. All ultrastructural and morphological criteria indicate that the described species belongs to the genus Pleistophora. © 2012 Springer-Verlag.

Document Type: Article
Source: Scopus

Arida, H.[a b] , Hassan, R.[a c] , El-Naggar, A.[a d]
Quality Assessment of Honey Using Modern Analytical Tools
(2012) *Analytical Letters*, 45 (11), pp. 1526-1536. Cited 1 time.

DOI: 10.1080/00032719.2012.675492

[a] Pharmaceutical Chemistry Department, Pharmacy College, Taif University, 888-Taif, Saudi Arabia
[b] Hot Laboratories Center, Atomic Energy Authority, Cairo, Egypt
[c] Chemistry Department, Faculty of Science, Helwan University, Cairo, Egypt
[d] Egyptian Petroleum Research Institute, Nasr City, Cairo, Egypt

Abstract

The quality of eighteen honey samples collected from the Western district of Saudi Arabia was assessed according to the International Honey regulatory standards using modern analytical methods. A number of quality criteria were measured to determine the botanical and geographical origin of honey. Hydroxymethylfurfural (HMF) as an adulteration marker was analyzed and detected quantitatively via high performance liquid chromatography (HPLC). The moisture content was assessed by Karl Fisher coulometric method using an automatic potentiometric titrator. While, mineral content and toxic heavy metal ions were determined using an inductively coupled plasma-atomic emission spectrometry (ICP-AES) technique after microwave digestion. All the investigated honey samples were of good quality. The elements with the highest frequency were K, Se, and Cd. High content of Cd and Se were found in samples (7 and 9). The maximum residues limit of the most dangerous metal for the human health lead was below European Standards.

Author Keywords
HMF; Honey quality; ICP-AES; Karl fisher; Mineral content; Toxic metal

Document Type: Article
Source: Scopus

Shaaban, S.
Insight analysis of biplane wells turbine performance
(2012) *Energy Conversion and Management*, 59, pp. 50-57. Cited 1 time.

DOI: 10.1016/j.enconman.2012.02.006

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

Abstract
Wells turbines are very promising in converting wave energy. Improving the design and performance of Wells turbines requires deep understanding of the energy conversion process and losses mechanisms of these energy convertors. The performance of a biplane Wells turbine having 45°stagger angle between rotors is numerically investigated. The turbine performance is simulated by solving the steady 3D incompressible Reynolds Averaged Navier-Stocks equation (RANS). The present numerical investigation shows that the upstream rotor significantly affects the downstream rotor performance even at high gap-to-chord ratio (G/c = 1.4). The contribution of the downstream rotor in the overall biplane Wells turbine performance is limited. The downstream rotor torque represents 10-30% of the total turbine torque and the upstream rotor efficiency is 1.5-5 times the downstream rotor efficiency at normal operating conditions. Exergy analysis shows that the downstream rotor is the main component that reduces the turbine second law efficiency. The blade exergy increases from hub to tip and decreases from leading edge to trailing edge. Therefore, 3D blade profile optimization is essential for substantial improvement of the energy conversion process. Improving the design of the inter-rotors zone can significantly improve biplane Wells turbine performance. Future biplane Wells turbine designs should focus essentially on improving the downstream rotor performance.

Author Keywords
Aerodynamic; Biplane; CFD; Energy; Exergy; Wells turbine

Document Type: Article
Source: Scopus

Mohamed, H.M.[a b] , Masmoudi, R.[b]
Effect of test parameters on flexural strength of circular fiber-reinforced polymer-confined concrete beams
(2012) *Journal of Reinforced Plastics and Composites*, 31 (13), pp. 897-914. Cited 1 time.

DOI: 10.1177/0731684412450083

[a] Civil Engineering Department, University of Sherbrooke, QC, Canada
[b] Civil Engineering Department, Helwan University, Cairo, Egypt

Abstract
This paper presents experimental results of a study conducted to investigate the use of filament-wound fiber-reinforced polymer tubes as a stay-in-place structural formwork for concrete beams. The experimental study was carried out on a total of seven concrete-filled fiber-reinforced polymer tube beams of 213 mm diameter and 2000 mm long. Five concrete-filled fiber-reinforced polymer tube beams and two control specimens without tube were tested under four-point bending. One control specimen was reinforced with spiral steel while the other had no transverse reinforcement. The test parameters used in this investigation include the type of internal reinforcement (steel or glass fiber-reinforced polymer bars), the type of transverse reinforcement (spiral-steel or fiber-reinforced polymer tube), fiber-reinforced polymer tube thickness and the concrete compressive strength. The fiber orientations of the tubes were mainly in the hoop direction. The test result indicated that the two control specimens failed in shear; however, using glass fiber-reinforced polymer tubes instead of transverse spiral-steel changed the mode of failure of the five

concrete-filled fiber-reinforced polymer tube beams to flexural failure. The experimental cracking moments of the steel and fiber-reinforced polymer-concrete-filled fiber-reinforced polymer tube beams were compared to theoretical predictions provided by North American codes, design guidelines and the available equations in the literature. The test results indicate that the fiber-reinforced polymer tube enhances the crack and ultimate moment capacities of the test specimens, whereas it provides a longitudinal reinforcement in the tension side. In addition, improvement to the crack moment equation is suggested to account for the effect of confinement.

Author Keywords
Beam; concrete; confinement; fiber reinforced polymer; flexural; tube

Document Type: Article
Source: Scopus

Ahmed, H.H.[a] , Abdalla, M.S.[b] , Eskander, E.F.[a] , Al-Khadragy, M.F.[c] , Massoud, M.N.[a]
Hypolipidemic influence of Sargassum subrepandum: Mechanism of action
(2012) *European Review for Medical and Pharmacological Sciences*, 16 (SUPPL. 3), pp. 112-120.

[a] Hormones Department, National Research Centre, Dokki, Cairo, Egypt
[b] Chemistry Department, Faculty of Science, Helwan University, Helwan, Egypt
[c] Zoology and Entamology Department, Faculty of Science, Helwan University, Helwan, Egypt

Abstract
OBJECTIVES, This study aimed to elucidate the role and mode of action of Sargassum subrepandum methanolic extract in management of dyslipidemia in adult female rats. MATERIAL AND METHODS, Forty adult female Sprague Dawley rats were assigned into four groups: (1) lean control rats fed on standard diet, (2) dyslipidemia control fed on the atherogenic diet, (3) lean rats orally administered with 100 mg/kg b. wt of Sargassum subrepandum methanolic extract and (4) dyslipidemia rats orally administered with Sargassum subrepandum methanolic extract. Plasma lipid profile, serum MDA, NO, leptin, TNFalpha and adiponectin levels were demonstrated in the all studied groups. RESULTS, The results showed that feeding of rats with athrogenic diet caused significant elevation in plasma cholesterol, triglyceride, LDL, serum MDA, NO, leptin and TNF-alpha levels while, it produced significant decline in plasma HDL and serum adiponectin levels compared with lean control rats. However, treatment of dyslipidemia rats with Sargassum subrepandum methanolic extract induced significant improvement of plasma lipid profile, marked decrease in serum MDA, NO, leptin, TNF-alpha level in concomitant with remarkable increase in serum adiponectin level. CONCLUSIONS, These results indicated that Sargassum subrepandum extract plays a vital role in ameliorating dyslipidemia and its complications particularly oxidative stress and implication. This could be attributed to the hypolipidemic effect, antilipidperoxidative activity and antinflammatory property of Sargassum subrepandum methanolic extract.

Author Keywords
Adipokines; Dyslipidemia; Inflammation; Oxidative stress; Sargassum subrepandum

Document Type: Review
Source: Scopus

Metwalley, S.M., Allam, E.M., Abouel-Seoud, S.A.
Hardware core design for a regenerative braking system implemented on an extended range series hybrid ambulance microbus
(2012) *International Journal of Electric and Hybrid Vehicles*, 4 (1), pp. 54-68. Cited 1 time.

DOI: 10.1504/IJEHV.2012.047844

Department of Automotive and Tractors Engineering, Faculty of Engineering, Helwan University, P.O. Box 11718, Mataria, Cairo, Egypt

Abstract
Regenerative braking systems provide an efficient method to assist series hybrid ambulance microbus better fuel economy while lowering exhaust emissions. This paper describes design of hardware core for a regenerative braking system implemented on an extended range series hybrid ambulance microbus (Zhang et al., 2008). Results indicate that a professional to standard wiring concept where applied to connect the components together to make a complete series hybrid model in a way to have full manual control of power flow over the entire driveline. The significant amount of energy that is expended to get a vehicle moving at a certain speed is currently converted into heat by the friction brakes in the process of stopping that vehicle. Regenerative braking technologies are ones that are able to store some of this kinetic energy into usable forms of potential energy and then release it in a fashion that will help get the vehicle moving again.

Author Keywords
Control strategy; Hybrid electric vehicle; Regenerative braking; Series-parallel

Document Type: Article
Source: Scopus

Ahmed, H.H.[a] , Metwally, F.M.[b] , Mahdy, E.-S.M.[c] , Shosha, W.G.[c] , Ramadan, S.S.[c]
Clinical value of serum hepatocyte growth factor, B-cell lymphoma-2 and nitric oxide in primary breast cancer patients
(2012) *European Review for Medical and Pharmacological Sciences*, 16 (7), pp. 958-965. Cited 3 times.

[a] Hormones Department, National Research Centre, Cairo, Egypt
[b] Environmental and Occupational Medicine Department, National Research Centre, Cairo, Egypt
[c] Biochemistry Department, Faculty of Science, Helwan University, Cairo, Egypt

Abstract
OBJECTIVES, The present study was undertaken to determine the clinical significance of serum levels of HGF, Bcl-2 and NO in the diagnosis and prognosis of breast cancer patients. PATIENTS AND METHODS, Forty four primary invasive breast cancer patients and fifteen health control subjects were enrolled in the present study. Serum HGF, Bcl-2 and No levels were assayed and correlated with clinico pathological parameters. ROS curve analysis was also done for each biochemical marker. RESULTS, The mean level of HGF was 1198.79 ± 76.32 pg/ml versus 884.67 ± 66.88 pg/ml for the control (p = 0.026). The HGF levels were significantly elevated in the patients with increasing the tumor stage (p = 0.036). In addition, HGF levels were markedly increased in negative estrogen receptor patients (p = 0.039). The mean level of Bcl-2 in patients was 12.83 ± 1.97 ng/ml versus 5.09 ± 0.40 ng/ml in control (p = 0.027). Levels of Bcl-2 were elevated but not statistically significant in patients with grade I (GI) tumors, negative nodes, ER negative tumors and postmenopausal patients (p = 0.4, 0.8, 0.7 and 0.5, respectively). The patients mean serum levels of NO were 63.07 ± 4.14 μmol/L versus 43.99 ± 4.21 μmol/L in control (p = 0.014). The levels of NO were elevated but also not statistically significant in patients with tumor size I, GI tumors, ER negative tumors, positive nodes, stage II tumors and postmenopausal patients (p = 0.3, 0.6, 0.3, 0.7, 0.3 and 0.2 respectively). From the ROC curve analysis, it was observed that the area under curve for HGF, Bcl-2 and NO was 0.695, 0.842 and 0.711, respectively. This result indicates the good validity of the above biomarkers especially Bcl-2 to discriminate the ER positive from the negative tumors in primary breast cancer patients. CONCLUSION, This study demonstrates that the serum levels of HGF, Bcl-2 or NO may help in the diagnosis of breast cancer patients and may aid in disease prognosis. However, larger study with more patients are required.

Author Keywords
Bcl-2; Breast cancer; Diagnosis; HGF; NO; Prognosis

Document Type: Review
Source: Scopus

Hassaneen, A.[a] , Munack, A.[b] , Ruschel, Y.[b] , Schroeder, O.[b] , Krahl, J.[c]
Fuel economy and emission characteristics of Gas-to-Liquid (GTL) and Rapeseed Methyl Ester (RME) as alternative fuels for diesel engines
(2012) *Fuel*, 97, pp. 125-130. Cited 24 times.

DOI: 10.1016/j.fuel.2012.01.077

[a] Dept of Automotive Technology, Faculty of Industrial Education, Helwan University, ElSawah street, Alameeria, Cairo, Egypt
[b] Institute of Agriculture Technology and Biosystems Engineering, VTI, Germany
[c] University of Applied Science-Coburg, Coburg, Germany

Abstract
The effect of RME (Rapeseed Methyl Ester) biodiesel and GTL (Gas-to-Liquid) fuels on the fuel consumption and emission characteristics including particulate matter of diesel engine was investigated. The engine tests were carried out based on the ESC 13-mode test procedure. Particulate Matter (PM) distribution was analyzed using the scanning mobility particle seizer (SMPS). Compared to the base line diesel fuel;biodiesel (RME) emitted up to 70% less specific CO;up to 50% less specific HC;and 60% less specific PM emissions. For RME fuel;the majority of the particle numbers were in the diameter range of 10-30 nm. For the conventional diesel and GTL fuels;the majority of PM emissions were in the diameter range of 30-200 nm. The GTL fuel emitted slightly less specific CO;HC;NO x;and PM than the conventional diesel fuel. The major deficit of the biodiesel fuel was its higher specific fuel consumption rate that was in the range up to 15% (by weight) higher than the other fuels. A relatively higher NO x and CO 2 emission at most of the engine loads was encountered for biodiesel fuel. The CO 2 emission of the GTL fuel was up to 5% lower than the specific CO 2 emission of the other two fuels.

Author Keywords
Emissions; Fuel economy; GTL; Particulates; RME biodiesel

Document Type: Article
Source: Scopus

Abdul-Kader, A.M.[a b] , El-Gendy, Y.A.[a b] , Al-Rashdy, A.A.[c]
Improve the physical and chemical properties of biocompatible polymer material by MeV He ion beam
(2012) *Radiation Physics and Chemistry*, 81 (7), pp. 798-802. Cited 5 times.

DOI: 10.1016/j.radphyschem.2012.04.009

[a] Umm Al-Qura University, University College, Physics Department, Alqunfoza, Saudi Arabia
[b] Helwan University, Faculty of Science, Physics Department, Ain Helwan, Helwan, Egypt
[c] Umm Al-Qura University, University College, Chemistry Department, Alqunfoza, Saudi Arabia

Abstract
There is a high interest in improving the hydrophilicity of polymer surfaces due to their wide use for technological purposes. In this study Ultra High Molecular Weight Polyethylene (UHMWPE) as a biocompatible material was bombarded with 1MeV He ions to the fluences ranging from 1×10 13 to 5×10 14cm -2. The pristine and ion beam modified samples were investigated by photoluminescence (PL), ultraviolet-visible (UV-vis) spectroscopy and Fourier Transform Infrared Spectroscopy (FTIR). The changes of wettability and surface free energy were determined by the contact angle measurements. The obtained results showed that the ion bombardment induced decrease in integrated luminescence intensity and decrease in the transmittance with increase of ion fluence as well. This is might be attributed to degradation of polymer surface and/or creation of new electronic levels in the forbidden gap. The FTIR spectral studies indicate that the ion beam induces chemical modifications within the bombarded UHMWPE. Formation of carbonyl groups (C=O) on the polymer surface was studied. Direct relationship of the wettability and surface free energy of the bombarded polymer with the ion fluences was observed. © 2012 Elsevier Ltd.

Author Keywords
Biocompatibility; Biocompatible polymer; Ion beam bombardment; Photoluminescence; Surface modification; UHMWPE

Document Type: Article
Source: Scopus

Alzahraa Mohammad, F.[a] , Yehia, S.[b] , Aly, S.H.[a]
A first-principle study of the magnetic, electronic and elastic properties of the hypothetical YFe 5 compound
(2012) *Physica B: Condensed Matter*, 407 (13), pp. 2486-2489.

DOI: 10.1016/j.physb.2012.03.050

[a] Department of Physics, Mansoura University, Damietta Branch, New Damietta, Damietta 34517, Egypt
[b] Department of Physics, Faculty of Science, Helwan University, Cairo, Egypt

Abstract
We present a DFT-based study of the magnetic properties, electronic structure and bulk modulus of YFe 5 at ambient and higher hydrostatic pressures. The LSDA and GGA approximations, as implemented in the electronic structure code FPLO-09, are used throughout the scalar relativistic calculation in this work. Charge and spin density maps using the WIEN2k are also reported for the equilibrium lattice constants. Our study shows that the magnetic phase of this hypothetical compound is more stable than the nonmagnetic phase, and that the application of pressure on magnetic YFe 5 has a prominent effect on its magnetic and electronic properties, e.g. the reduction of the magnetic moment and finally the disappearance of ferromagnetism. © 2012 Elsevier B.V. All rights reserved.

Author Keywords
DFT; Elastic properties; Electronic properties; FPLO-09; Magnetic properties; YFe 5 compound

Document Type: Article
Source: Scopus

Chen, W.[a] , Gallas, B.D.[a] , Yousef, W.A.[b]
Classifier variability: Accounting for training and testing
(2012) *Pattern Recognition*, 45 (7), pp. 2661-2671. Cited 3 times.

DOI: 10.1016/j.patcog.2011.12.024

[a] Office of Science and Engineering Laboratories, Center for Devices and Radiological Health, Food and Drug Administration, 10903 New Hampshire Avenue, Silver Spring, MD 20993, United States
[b] Human Computer Interaction Lab., Faculty of Computers and Information, Helwan University, Egypt

Abstract
We categorize the statistical assessment of classifiers into three levels: assessing the classification performance and its testing variability conditional on a fixed training set, assessing the performance and its variability that accounts for both training and testing, and assessing the performance averaging over training sets and its variability that accounts for both training and testing. We derived analytical expressions for the variance of the estimated AUC and provide freely available software implemented with an efficient computation algorithm. Our approach can be applied to assess any classifier that has ordinal (continuous or discrete) outputs. Applications to simulated and real datasets are presented to illustrate our methods.

Author Keywords
AUC; Classifier evaluation; Classifier stability; Training variability; U-statistics

Document Type: Article
Source: Scopus

Ewais, E.M.M.[a] , Besisa, D.H.A.[a] , Zaki, Z.I.[a] , Kandil, A.E.H.T.[b]
Tailoring of functionally graded zirconia-mullite/alumina ceramics
(2012) *Journal of the European Ceramic Society*, 32 (8), pp. 1561-1573. Cited 6 times.

DOI: 10.1016/j.jeurceramsoc.2012.01.016

[a] Refarctory and Ceramic Materials Division (RCMD), Advanced Materials Department, Central Metallurgical R and D Institute (CMRDI), P.O. Box 87, Helwan, 11421 Cairo, Egypt
[b] Chemistry Department, Faculty of Science, Helwan University, Egypt

Abstract
A new tailored zirconia-mullite/(0-100. vol%) alumina as functionally graded ceramics (FGCs) was designed and synthesized by reaction sintering of zircon and alumina. Zircon and alumina powder mixtures were mixed, stacked, compacted in a cylindrical die and sintered. The sintered samples made of 11 layers and varied gradually in composition by 10. vol% from one layer to the other layer (i.e. from zirconia-mullite layer to alumina layer) resulted in continuous functionally graded ceramics without sharp interfaces. Phase composition and densification behaviors of the samples were investigated. Microstructure, mechanical and thermal properties of FGC and its non-layered composites were studied. Results showed that the tailored FGZM/A gave continuous homogenous structure with highly improved physical, mechanical and thermal properties. The different properties of tailored FGZM/A recorded average values or rather better of its non-layered composites which gave a new way for material design. © 2012 Elsevier Ltd.

Author Keywords
FGZM/A; Mechanical properties; Microstructure; Sintering; Thermal properties

Document Type: Article
Source: Scopus

El-Bitar, T.[a] , Soliman, S.[b] , Ghobrial, M.[c]
Strain hardening and ductility of α-brass containing 0.55 % Si cartridge case
(2012) *World of Metallurgy - ERZMETALL*, 65 (4), pp. 255-260.

[a] Plastic Deformation Department, Central Metallurgical R and D Institute (CMRDI), Egypt
[b] Helwan Company for Engineering Industries F99, Egypt
[c] Mechanical Engineering Department, Faculty of Engineering, Helwan University, Egypt

Abstract
Tapered discs of α-brass alloy containing 23.48 % Zn and 0.55 % Si were subjected to annealing process at 580°C for 60 min then air cooled. Multi step drawing and intermediate annealing cycles are used for processing a cartridge case with 110 mm diameter base. Sometimes, wall cracking happens during the throat drawing step. Consequently, an integrated study was carried out to optimize the deformation parameters that affect the cartridge quality. The current article is dealing with the strain hardening and ductility behavior during tensile testing at different strain rates as a primary data necessary for finite element analysis. Numerous tensile specimens were taken from discs in the

rolling direction, perpendicular and 45° inclined to rolling direction. Testing were carried out with different cross head speeds representing different strain rates (0.003,0.006,0.007 and 0.010 s -1). Numerical values of engineering stress-engineering strain are obtained for each test. Computational equations were used to evaluate the true stress-true strain. Modified formula was used to evaluate true stress after necking. Further evaluations were conducted for strain hardening detection through the strain hardening exponent n parameter. Micro-graphical investigation was used to explain and subsidize test results. It is found that grain coarsening accompanies pre-annealing of roundels at high temperature (620°C) for long time (90 min) and leads to non-equal deformability in different directions, whereas lower annealing temperature (580°C) and time (60 min) lead to recrystallization, with equal deformability properties. Logarithmic presentation of true stress-true strain data showed three identified zones; early deformation zone has a strain hardening parameter n = 1.3. 2 nd zone lays in the range 2.24 % to 11.63 % engineering strain with a lower n (0.37). Higher than 11.63 % engineering strain, n equals 0.653.

Author Keywords
α-brass 0.55% Si; Annealing; Cartridge case; Strain hardening parameter-Ductility; True stress-true strain; Uniaxial strain

Document Type: Review
Source: Scopus

Wu, F.-L.[a] , Hussein, W.M.[a b] , Ross, B.P.[c] , McGeary, R.P.[a c]
2-mercaptobenzothiazole and its derivatives: Syntheses, reactions and applications
(2012) *Current Organic Chemistry*, 16 (13), pp. 1555-1580. Cited 4 times.

DOI: 10.2174/138527212800840964

[a] University of Queensland, School of Chemistry and Molecular Biosciences, Brisbane, QLD 4072, Australia
[b] Pharmaceutical Organic Chemistry Department, Faculty of Pharmacy, Helwan University, Ein Helwan, Egypt
[c] University of Queensland, School of Pharmacy, Brisbane, QLD 4072, Australia

Abstract
2-Mercaptobenzothiazole has found widespread industrial applications for the vulcanisation of rubber and, more recently, as a key component of the modified Julia olefination reaction. This review surveys the chemistry of 2-mercaptobenzothiazole, including its aromatic substitution reactions, redox chemistry and factors governing the regioselectivity of its alkylation reactions. In addition, the emerging synthetic uses of this heterocycle, including its application to the deoxygenation of epoxides, and the preparation of alkynes, are described. © 2012 Bentham Science Publishers.

Author Keywords
2-mercaptobenzothiazole; Enantioselective additions; Epoxide deoxygenation; Julia olefination; Tautomerism; Vulcanisation

Document Type: Review
Source: Scopus

El-Kady, M.
Efficient reconstructed Legendre algorithm for solving linear-quadratic optimal control problems
(2012) *Applied Mathematics Letters*, 25 (7), pp. 1034-1040.

DOI: 10.1016/j.aml.2012.02.065

Department of Mathematics, Faculty of Science, Helwan University, Cairo, Egypt

Abstract
In this paper, a new numerical approach via reconstructed Legendre orthogonal polynomials (LOPs) is presented to solve the linear quadratic optimal control problems (LQPs). By using the elegant operational properties of orthogonal polynomials, a computationally attractive algorithm is developed for calculating LQP. A numerical example illustrates the techniques and demonstrates the accuracy and efficiency of these controllers. © 2012 Elsevier Ltd. All rights reserved.

Author Keywords
Legendre polynomials; Linear quadratic optimal control; Orthogonal functions

Document Type: Article
Source: Scopus

Mohammad, M.A.[a] , Zeeneldin, A.A.[b] , Abd Elmageed, Z.Y.[c] , Khalil, E.H.[d] , Mahdy, S.M.E.[d] , Sharada, H.M.[d] , Sharawy, S.K.[a] , Abdel-Wahab, A.-H.A.[a]

Clinical relevance of cyclooxygenase-2 and matrix metalloproteinases (MMP-2 and MT1-MMP) in human breast cancer tissue

(2012) *Molecular and Cellular Biochemistry*, 366 (1-2), pp. 269-275. Cited 6 times.

DOI: 10.1007/s11010-012-1305-z

[a] Department of Cancer Biology, National Cancer Institute, Cairo University, 1 Kasr El-Aini St, Cairo, Egypt
[b] Department of Medical Oncology, National Cancer Institute, Cairo University, Cairo, Egypt
[c] Department of Urology and Oncology, Tulane University Medical Center, New Orleans, LA 70112, United States
[d] Department of Chemistry, Faculty of Science, Helwan University, Helwan, Egypt

Abstract
Breast cancer (BC) is the most common neoplasm among women in most developed countries, including Egypt. Elevated levels of certain proteins in human BC are associated with unfavorable prognosis and progressive stages of the disease. The aim of our study was to evaluate the protein expression profile and prognostic significance of cyclooxygenase-2 (COX-2), matrix metalloproteinase-2 (MMP-2), MMP-9 and membrane type 1-MMP (MT1-MMP) and their interaction in operable BC patients. The protein expression of COX-2, MMP-2 and MT1-MMP were evaluated by western blot technique, whereas enzymatic activity of MMP-2 and MMP-9 was determined by zymography in 47 breast cancer patients as well as normal adjacent tissues. Also, the correlation between these proteins and age, tumor size, LN stage, TNM stage, estrogen receptor, progesterone receptor, disease-free survival, and overall survival (OS) has been investigated. As compared to adjacent normal tissues, COX-2, MMP-2 and MT1-MMP were over-expressed in 43, 64, and 60 % of tumor tissues, respectively. In the same pattern, the activity of MMP-2 (62 %) and MMP-9 (45 %) was elevated in BC tissues. Multivariate analysis showed a positive correlation between the protein expression of COX-2, MMP-2, and MT1-MMP and the activity of MMP-2 and MMP-9 in BC patients. However, the enzymatic activity showed no correlation with clinicopathological features. This study confirms the preclinical evidence that COX-2 increased the expression of MT1-MMP, which in turn activates MMP-2. The lack of correlation with clinicopathological features, OS or disease-free survival ascertains the complexity of tumor progression and metastasis with many pro- and counter regulatory factors. © 2012 Springer Science+Business Media, LLC.

Author Keywords
Breast cancer; Cox-2; MMPs; MT1-MMP; Western blot; Zymography

Document Type: Article
Source: Scopus

Ali, Z.H.

Effect of pre and post nursing intervention on the occurrence of tension headache among surgical patients undergoing spinal anesthesia

(2012) *Journal of Anesthesia and Clinical Research*, 3 (7), .

DOI: 10.4172/2155-6148.1000223

University of Helwan, Egypt

Abstract
Spinal anesthesia is a frequently performed procedure in medical emergencies and anesthesia. Tension headache after lumbar puncture is a common occurrence (32%) and carries a considerable morbidity, with symptoms lasting for several days, at times severe enough to immobilize. The aim of this study is to assess the effect of pre and post nursing intervention on the occurrence of tension headache among surgical patients undergoing spinal anesthesia. This quasi-experimental study was conducted in El-Naser Health Insurance Hospital; in Helwan city in Egypt, 60 adult patients admitted for lower abdominal surgery using spinal anesthesia were recruited. The only exclusion criterion was pregnancy in female patients. Participants were alternatively assigned to either the intervention or control groups, ending with 30 patients in each group. The data collection tools consisted of two tools. Tool 1 was concerned with characterization of the pain and patient's personal data. The second tool was a visual analog scale (VAS). The researchers designed a structured pre-spinal anesthetic nursing intervention to be applied to the study group. Control group received the routine nursing intervention only. The results revealed that the incidence of tensions headache became significantly lower in the study group, reaching its lowest rate (3.3%) by the end of the third day, compared to 76.7% in the control group ($p<0.001$) the mean duration of tension headache was shorter in the study (22.1 ± 34.0 hours) than in the control (111.2 ± 55.9 hours) group, $p<0.001$ as well patients in the study and control groups also demonstrated statistically significant differences in the experience of symptoms associated with tension headache ($p < 0.001$). In conclusion, the structured nursing measures before and after the procedure was successful in decreasing the incidence and duration of this tension headache and its associated symptoms. Therefore, it is recommended to generalize these structured nursing measures in hospitals to be included in the routine pre-operative and post-operative nursing care for patients undergoing lower abdominal surgery with spinal anesthesia. © 2012 Ali ZH.

Author Keywords
Post spinal anesthesia; Spinal anesthesia; Tension headache

Document Type: Article
Source: Scopus

Ammar, M.K.[a] , El Shaboury, S.M.[b] , Amin, M.R.[c]
Third-order secular Solution of the variational equations of motion of a satellite in orbit around a non-spherical planet
(2012) *Astrophysics and Space Science*, 340 (1), pp. 43-61. Cited 3 times.

DOI: 10.1007/s10509-012-1038-1

[a] Math. Dept. Fac. of Sci., Helwan University, P.O. 11957, Cairo, Egypt
[b] Math. Dept. Fac. of Sci., Ain Shams University, Cairo, Egypt
[c] Theoretical Physics Dept., National Research Center, Cairo, Egypt

Abstract
We constructed an analytical theory of satellite motion up to the third order relative to the oblateness parameter of the Earth (J 2). Equations of secular variations was developed for the first three orbital elements (a, e, i) of an artificial satellite. The secular variations are solved in a closed form. © 2012 Springer Science+Business Media B.V.

Author Keywords
Earth oblateness; Lagrange equations of motion; Orbit Perturbation; Satellite earth orbit; Secular variations

Document Type: Article
Source: Scopus

Sorour, A.S.[a] , El-Maksoud, M.M.A.[b]
Relationship between musculoskeletal disorders, job demands, and burnout among emergency nurses
(2012) *Advanced Emergency Nursing Journal*, 34 (3), pp. 272-282. Cited 5 times.

DOI: 10.1097/TME.0b013e31826211e1

[a] Faculty of Nursing, Zagazig University, Zagazig, Egypt
[b] Faculty of Nursing, Helwan University, Helwan, Cairo, Egypt

Abstract
Musculoskeletal disorders (MSDs) represent one of the most common occupational problems in nursing. MSDs can negatively impact one's quality of life. The aim of the study was to investigate the relationship between MSDs, job demands, and burnout among emergency nurses. The researchers hypothesized that increased job demands were associated with more MSDs and consequently higher levels of burnout. The study was conducted on a convenience sample of 58 nurses working in the emergency departments of Zagazig University Hospital and Al-Ahrar, Hospital Egypt from October to December 2010, using a cross-sectional analytic design. Data were collected using a self-administered questionnaire that included the Standardized Nordic Questionnaire, the Job Content Questionnaire, and the Maslach Burnout Inventory. The results revealed that 32.8% of the nurses were overweight and 17.2% were obese. The most common sites of pain were the neck (67.2%), shoulder (65.5%), and lower back (63.8%). Lower back pain was the most common site affected (72.4%) with a mean 5.1 on a scale ranging from 0 to 13. A positive correlation existed between the scores of job demand and burnout ($r = 0.340$, $p < 0.01$), and the number of reported MSDs with the score of job demand ($r = 0.33$, $p < 0.05$). Multiple linear stepwise regression analysis identified the score of job demand and the severity of lower back pain as positive independent predictors of the burnout whereas the job demand score was the independent predictor of the number of MSDs. This study documents an increased prevalence of MSDs among emergency nurses, as predicted by increased job demand and associated with a higher level of burnout. Hence, it is important for hospital and nursing administrators to address the factors contributing to job stress and burnout, with emphasis on job satisfaction and work organization to alleviate the burden of psychosocial factors in this setting. © 2012 Lippincott Williams & Wilkins.

Author Keywords
burnout in nurses; emergency nurse burnout; job demands; musculoskeletal disorders

Document Type: Article
Source: Scopus

Abdelaziz, M.O.[a] , Bonura, C.[b] , Aleo, A.[b] , El-Domany, R.A.[a] , Fasciana, T.[b] , Mammina, C.[b]

OXA-163-producing Klebsiella pneumoniae in Cairo, Egypt, in 2009 and 2010
(2012) *Journal of Clinical Microbiology*, 50 (7), pp. 2489-2491. Cited 10 times.

DOI: 10.1128/JCM.06710-11

[a] Department of Microbiology and Immunology, Faculty of Pharmacy, Helwan University, Cairo, Egypt
[b] Department of Sciences for Health Promotion G. D'Alessandro, University of Palermo, Palermo, Italy

Abstract
Two genetically unrelated OXA-163-carrying Klebsiella pneumoniae strains were identified from two infection cases in June 2009 and May 2010 in Cairo, Egypt. OXA-163-producing Enterobacteriaceae had been previously reported in Argentina only. Both patients had no history of travel abroad. The emergence of this newly recognized OXA-48-related β-lactamase able to hydrolyze cephalosporins and carbapenems is especially worrying in a geographic area where OXA-48 is endemic and effective surveillance for antibiotic resistance is largely unaffordable. Copyright © 2012, American Society for Microbiology. All Rights Reserved.

Document Type: Article
Source: Scopus

El Khouly, S.A.[a] , Sharada, H.M.[a] , Abdalla, M.S.[a] , Amin, A.I.[b] , El-Sherif, H.A.[c]
Advanced glycation end products in Egyptian type 2 diabetic patients with nephropathy
(2012) *Australian Journal of Basic and Applied Sciences*, 6 (7), pp. 545-552.

[a] Chemistry Department, Faculty of Science, Helwan University, Helwan, Egypt
[b] Clinical Pathology Department, National Institute of Diabetes and Endocrinology, Egypt
[c] Medical Biochemistry Department, National Research Center, Giza, Egypt

Abstract
In diabetes mellitus, hyperglycaemia accelerates non-enzymatic glycation and oxidative stress leading to damage of macromolecules, among others proteins. This manifests in the increased levels of advanced glycation end products (AGE). The aim of the present study was to assess the plasma levels of AGE in the patients with type 2 diabetes mellitus (T2DM) and to estimate its relation and connection with the degree of nephropathy. Plasma levels of AGE were determined by ELISA Assay in 90 individuals, 60 patients with T2DM and 30 healthy control subjects. The urinary albumin/creatinine ratio (ACR) was used as the reference to define the stage of kidney dysfunction by the assessment of the degree of albuminuria. T2DM patients were divided into three groups according to the value of ACR; twenty patients with normoalbuminuria, twenty three patients with microalbuminuria and seventeen patients with macroalbuminuria. There was a significant increase in the mean levels of total cholesterol and triglycerides in both normoalbuminuria and macroalbuminuria groups compared to the control group. A significant increase in the mean levels of triglycerides and HDL-cholesterol was found in microalbuminuria group compared to the control group. Diabetic patients had significantly higher levels of AGE in comparison with the control group. AGE was increasing progressively and significantly from normoalbuminuria, through microalbuminuria to macroalbuminuria. In the current study, the diagnostic utility of AGE was determined by means of receiver operating characteristic (ROC) curve analysis which indicates that the elevation of AGE is a useful marker for the presence of nephropathy. There was a significant negative correlation between AGE levels and HDL-cholesterol. Highly significant correlation was observed between plasma AGE and ACR but no significant correlation was detected with serum creatinine concentration. In conclusion, there was a correlation between plasma levels of AGE and nephropathy severity in T2DM patients, measured by the degree of albuminuria. Therefore, plasma AGE could reflect the progression of kidney damage in the diabetic patients.

Author Keywords
Advanced glycation end products; Nephropathy; Type 2 diabetes mellitus

Document Type: Article
Source: Scopus

Abdelfattah, M.S.[a b] , Toume, K.[a] , Arai, M.A.[a] , Masu, H.[c] , Ishibashi, M.[a]
Katorazone, a new yellow pigment with a 2-azaquinone-phenylhydrazone structure produced by Streptomyces sp. IFM 11299
(2012) *Tetrahedron Letters*, 53 (26), pp. 3346-3348. Cited 10 times.

DOI: 10.1016/j.tetlet.2012.04.073

[a] Graduate School of Pharmaceutical Sciences, Chiba University, 1-8-1 Inohana, Chuo-ku, Chiba 260-8675, Japan
[b] Chemistry Department, Faculty of Science, Helwan University, Cairo 11795, Egypt

[c] Chemical Analysis Center, Chiba University, 1-33 Yayoi-cho, Inage-ku, Chiba 263-8522, Japan

Abstract
An unusual alkaloid with a 2-azaquinone-phenylhydrazone structure, katorazone (1), and other metabolites were isolated from the ethyl acetate extract of Streptomyces sp. IFM 11299. The chemical structure of katorazone (1) was elucidated by 1D and 2D NMR analyses together with HR-ESI mass spectrometry. Katorazone (1) showed a synergistic effect in combination with TRAIL and decreased the viability of human gastric adenocarcinoma (AGS) cells.

Author Keywords
Azaquinone; Phenylhydrazone; Streptomyces

Document Type: Article
Source: Scopus

Eissa, M.M.
Protection technique for complex distribution smart grid using wireless token ring protocol
(2012) *IEEE Transactions on Smart Grid*, 3 (3), art. no. 6220263, pp. 1106-1118. Cited 7 times.

DOI: 10.1109/TSG.2012.2203833

Electrical Power Engineering Department, Faculty of Engineering, University of Helwan, Cairo 11421, Egypt

Abstract
Distributed generation is expected to increase sharply as more and more renewable are integrated to power system with the realization of smart grid, consequently complex distribution smart grid is given. The traditional protection devices cannot be able to protect complex power system configuration due to many fault current loops will feed the fault point. Relays based on standalone decisions cannot provide reliable and correct action when used on a complex distribution system. This paper proposes new protection philosophy using wireless technology. Data sharing among relays to obtain reliable and accurate decision are introduced. Wireless Token Ring Protocol (WTRP) as a wireless local area network (LAN) protocol inspired by the IEEE 802.4 Token Bus Protocol is used for data sharing. WTRP is selected to improve efficiency by reducing the number of retransmissions due to collisions. WTRP architecture and protocol are described to verify operation. MATLAB simulation program is used to simulate the data exchange protocol between relays in a ring for a specified amount of time.

Author Keywords
IEEE802.4; smart grid; wireless communication; wireless token ring protocol

Document Type: Article
Source: Scopus

Alhamdani, M.S.S.[a] , Youns, M.[b] , Buchholz, M.[c] , Gress, T.M.[c] , Beckers, M.-C.[d] , Maréchal, D.[d] , Bauer, A.[a] , Schröder, C.[a] , Hoheisel, J.D.[a]
Immunoassay-based proteome profiling of 24 pancreatic cancer cell lines
(2012) *Journal of Proteomics*, 75 (12), pp. 3747-3759. Cited 8 times.

DOI: 10.1016/j.jprot.2012.04.042

[a] Division of Functional Genome Analysis, Deutsches Krebsforschungszentrum (DKFZ), Im Neuenheimer Feld 580, Heidelberg, Germany
[b] Department of Biochemistry and Molecular Biology, Faculty of Pharmacy, University of Helwan, Ain Helwan, Cairo, Egypt
[c] Department of Gastroenterology and Endocrinology, University Hospital Marburg, Baldinger Strasse, Marburg, Germany
[d] Eurogentec, Liège Science Park, Rue Bois Saint-Jean, 5, Seraing, Belgium

Abstract
Pancreatic ductal adenocarcinoma is one of the most deadly forms of cancers, with a mortality that is almost identical to incidence. The inability to predict, detect or diagnose the disease early and its resistance to all current treatment modalities but surgery are the prime challenges to changing the devastating prognosis. Also, relatively little is known about pancreatic carcinogenesis. In order to better understand relevant aspects of pathophysiology, differentiation, and transformation, we analysed the cellular proteomes of 24 pancreatic cancer cell lines and two controls using an antibody microarray that targets 741 cancer-related proteins. In this analysis, 72 distinct disease marker proteins were identified that had not been described before. Additionally, categorizing cancer cells in accordance to their original location (primary tumour, liver metastases, or ascites) was made possible. A comparison of the cells' degree of differentiation (well, moderately, or poorly differentiated) resulted in unique marker sets of high relevance. Last, 187

proteins were differentially expressed in primary versus metastatic cancer cells, of which the majority is functionally related to cellular movement. © 2012 Elsevier B.V.

Author Keywords
Antibody microarray; Oncoproteomics; Pancreatic cancer; Pancreatic cancer cell lines; Pancreatic ductal adenocarcinoma

Document Type: Article
Source: Scopus

Keshk, L.I.[a] , Qalawa, S.A.[b] , Aly, A.A.[c]
Performance obstacles experiences among critical care nurses in Damanhur teaching hospital
(2012) *Life Science Journal*, 9 (2), pp. 1044-1054.

[a] Department of nursing administration, Helwan University, Egypt
[b] Department of Medical-Surgical Nursing, Port said University, Egypt
[c] Department of Medical-Surgical Nursing, Damanhour University, Egypt

Abstract
The work environment of intensive care nurses may have substantial impact on both nursing outcomes and patient safety. Performance obstacles are the factors that hinder intensive care nurses' capacity to perform their jobs and that are associated closely with their immediate work environment. Aim: To identify the performance obstacles experienced by critical care nurses in their work environment that covers all elements of the work system model. Subject and methods: An exploratory, descriptive design was utilized. The sample included all available nurses (n=60). Data was collected by using questionnaire performance obstacles. It was conducted in Damanhur teaching hospital in Damanhur city in 2 critical care units. Results: indicated that nurses experience in critical care units a wide variety of performance obstacles that cover all elements of the work system model. Conclusion: Performance obstacles represent the following elements of the work system: environment (6 obstacles), organization (7 obstacles), technologies or tools (4 obstacles), and task (4 obstacles). © 2012. Zhengzhou University, Marsland Press.

Author Keywords
Critical care; Intensive care; Nurses; Performance obstacles; Work environment

Document Type: Article
Source: Scopus

Dakrory, A.I.[a] , Ali, R.S.[b] , Issa, A.Z.[a]
Anatomical studied on the cranial nerves of Liza Ramada (Family: Mugilidae) nervus glossopharyngeus
(2012) *Life Science Journal*, 9 (2), pp. 86-93.

[a] Department of Zoology, Cairo University, Egypt
[b] Department of Zoology, Helwan University, Egypt

Abstract
This study deals with the nervus glossopharyngeus of Liza ramada. The microscopic observations showed that, the nervus glosspharyngeus arises by one root and leaves the cranial cavity through its own foramen. It gives visceromotor fibres for the first levator arcualis branchialis muscles. It has single extracranially located epibranchial (petrosal) ganglion. The ramus pretrematicus carries general viscerosensory fibres for the epithelial lining of the pharynx and special ones for the taste buds.The ramus posttrematicus carries both general viscerosensory fibres for the epithelial lining of the pharynx and special ones for the gill filaments, as well as visceromotor fibres for the first adductor arcualis branchialis and the first obliquus ventralis muscle. © 2012. Zhengzhou University, Marsland Press.

Author Keywords
Liza ramada; Nervus glossopharyngeus

Document Type: Article
Source: Scopus

Bishr, M.M.[a] , Haggag, E.G.[b] , Moawed, M.M.[c] , Salama, O.M.[d]
Characterization of fennel fruits: Types and quality (I)
(2012) *Life Science Journal*, 9 (2), pp. 611-616. Cited 1 time.

[a] Research and Development Dept, Arab Co. for Pharm. and Med. Plants (MEPACO), Iran
[b] Pharmacognosy Dept., Helwan University, Cairo, Egypt
[c] Botany Dept, Ain Shams University, Cairo, Egypt
[d] Pharmacognosy Dept, Future University, Cairo, Egypt

Abstract
Four samples of different fennel fruit cultivars (F 1-F 4), obtained from El-Fayoum, Egypt (F 1), El- Menia, Egypt (F 2), Sudan, El-Khartoum (F 3), and Germany (F 4) were cultivated in MEPACO's Farm (Arab Co. for Pharm. and Med. Plants, Cairo, Egypt) and the obtained fruits were subjected to macro- and micromorphological stereomicroscopic examination as well as GC-MS analysis of their volatile oils. The aim of the study is to determine the differences in the macro- and micro- characters of different fruit cultivars as well as their oil constitutes. The results show different exomorphic parameters viz. shape, color, dimensions and surface sculpture. Also the stereomicroscopic examination showed differences in the epicarp, mesocarp; vitti and endosperm. GC-MS analysis of volatile oils of (F 1-F 4) showed on comparing three parameters; fenchone, estragole and trans-anethole that F 4 has the highest percentage of trans-anethole (78.98%), while F 1 and F 2 have close values (1.05 and 1.02%, respectively) followed by F 3 (3.02%). F 4 has the lowest percentage of estragole (3.97%); while (F 1-F 3) have higher values (78.58, 64.81 and 25.79%, respectively). Also F 4 has doubled the percentage of fenchone (6.73%) of F 1 and F 2 (2.54 and 2.57%, respectively), while F 3 has 0.69%. Thus results show that the two cultivars growing in Egypt (F 1 and F 2) have almost the same ratios of the compared parameters while, the Sudan cultivar F 3 is closer to F 1 and F 2 than it is to F 4. Also the three cultivars (F 1-F 3) are far from specification of sweet fennel oil but close to bitter fennel oil. The German cultivar (F 4) has the best oil quality as a sweet fennel. Investigation of the powdered samples (F 1-F 4) showed that only F 4 is different in having higher abundant fragments of reticulate parenchyma cells with ratio of 1:3 {F 4:(F 1-F 3)}. In conclusion: These findings are of pharmaceutical-industrial value helping in the production of herbal pharmaceutical products of fennel fruit and/or oil of known higher quality.

Author Keywords
Anethole; Estragole; Fenchone; Foeniculum vulgare; Stereomicroscopic examination

Document Type: Article
Source: Scopus