

## Documents

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**The role of *Pseudomonas* spp. as a cause of bacteremia in immunocompromised patients and its response to antibiotics in presence or absence of *Candida***

(2014) *Life Science Journal*, 11 (7), art. no. 34, pp. 286-298.

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### Abstract

The present study has demonstrated that the immunocompromised patients in National Cancer Institute (NCI) (Cairo, Egypt) are infected with several microorganisms due to their immunodeficiency as a result of chemotherapy. The study included 435 of immunocompromised patients in NCI. The mean age of patients with infections was  $42.5 \pm 14.7$  years (range, 20 to 72) in adult, and pediatric  $4.1 \pm 3.2$  years (range, 0.5 to 13). The nosocomial infections occurred in 173 patients, these patients infected with Gram positive, Gram negative bacteria and *Candida albicans*. Gram positive bacteria constituted the majority of isolates 70.9% compared with Gram negative bacteria 29.1%. The most effective antibiotics against Gram positive bacteria were found to be Vancomycin Linozolid and Synercid (71.5%), (63.1%) respectively, In case of Gram negative bacteria, the most effective antibiotics were Tobramycin and Amikacin with percentage (88%) and (68%), respectively. The infection with *pseudomonas* spp. in immunocompromised patients occurred 5.8% and we observed that the percentage of infection among females was higher than in males with significant association ( $P= 0.02$ ). The most effective antimicrobial agents against *Pseudomonas* spp. were Imipenem, Meropenam 70%, Tobramycin and levofloxacin 60%.

### Author Keywords

Bacteremia; *Candida*; Immunocompromised patients; Nosocomial bloodstream infections

**Document Type:** Article

**Source:** Scopus

Shaaban, S.

**Optimization of orifice meter's energy consumption**

(2014) *Chemical Engineering Research and Design*, 92 (6), pp. 1005-1015. Cited 2 times.

**DOI:** 10.1016/j.cherd.2013.08.022

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### Abstract

Orifice meters are commonly used in many industrial facilities and pipelines. However, they increase the annual energy consumption and cost due to their high pressure loss. The present research introduces a new design that reduces this high pressure loss by inserting a ring downstream the standard orifice meter. Maximum reduction of pressure loss is achieved by optimizing the downstream ring geometry. Numerical optimization is implemented using CFD simulation together with a genetic algorithm. Accurate CFD simulation is performed to solve the flow field at different downstream ring geometries while the genetic algorithm is used to estimate the optimum ring geometry. Optimization results show 29.8-33.5% reduction of orifice meter pressure loss for a Reynolds number  $Re=1.84 \times 10^4$  to  $8.69 \times 10^4$ . An increase of the discharge coefficient by 17.7-22% is also obtained within the investigated operating range. Both the effect of upstream distance and inlet flow disturbance and distortion are investigated. This investigation shows that the downstream ring reduces the pressure loss of standard orifice meters by 31-33.2% even under high flow disturbance and short upstream length. The proposed design adds many new advantages to the well known standard orifice meters. © 2013 The Institution of Chemical Engineers.

### Author Keywords

CFD; Discharge coefficient; Genetic algorithm; Inlet flow distortion; Losses; Optimization; Orifice meter

**Document Type:** Article

**Source:** Scopus

Hussein, J.S.<sup>a</sup>, El-Khayat, Z.<sup>a</sup>, Morsy, S.<sup>a</sup>, Oraby, F.<sup>a</sup>, Singer, G.<sup>b</sup>

**The effect of fish oil on oxidant/antioxidant status in diabetic rats through the reduction of arachidonic acid in the cell membrane**

(2014) *International Journal of Pharmacy and Pharmaceutical Sciences*, 6 (2), pp. 196-199.

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**Abstract**

Background: Dietary omega-3 fatty acids directly affect arachidonic acid (AA) metabolism because they displace AA from membranes and compete with it for the enzymes that catalyze the biosynthesis of thromboxanes, prostaglandins and leukotrienes. Objective: This study aimed to evaluate the role of fish oil supplementation in reducing the free radicals production through the reduction of arachidonic acid level in erythrocyte membrane in experimental diabetic rats. Methods: Forty eight male albino rats were used in this study and divided into four groups: control, fish oil, diabetic and treated groups. Fish oil and treated groups were administered fish oil in a dose of 1.2 ml /kg bw/day orally for 8 weeks. Urinary 8-hydroxyguanosine and erythrocyte membrane arachidonic acid were estimated by HPLC. Also, urinary isoprostanes and erythrocyte membrane superoxide dismutase were determined. Results: Our results indicated that hyperglycemia in diabetic rats significantly increased urinary 8-hydroxyguanosine and isoprostanes and erythrocyte membrane arachidonic acid, whereas, supplementation of fish oil significantly decreased these values in treated group. Conclusion: Fish oil supplementation has an important role in attenuating the elevation of arachidonic acid (omega-6) in cell membrane phospholipids resulting in a reduction in free radicals production.

**Author Keywords**

8-hydroxyguanosine; Arachidonic acid; Diabetes Mellitus; Fish oil; Isoprostanes

**Document Type:** Article

**Source:** Scopus

Ataya, F.S.<sup>a b</sup>, Al-Jafari, A.A.<sup>a</sup>, Daoud, M.S.<sup>a c</sup>, Al-Hazzani, A.A.<sup>d</sup>, Shehata, A.I.<sup>d</sup>, Saeed, H.M.<sup>a</sup>, Fouad, D.<sup>e f</sup>

**Genomics, phylogeny and in silico analysis of mitochondrial glutathione S-transferase-kappa from the camel Camelus dromedarius**

(2014) *Research in Veterinary Science*, 97 (1), pp. 46-54. Cited 1 time.

**DOI:** 10.1016/j.rvsc.2014.04.004

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**Abstract**

The domesticated one-humped camel, *Camelus dromedarius*, is one of the most important animals in the Arabian Peninsula. For most of its life, this species is exposed to both intrinsic and extrinsic genotoxic factors that cause gross DNA alterations in many organisms. GST enzymes constitute an important supergene family involved in protection against the deleterious effects of oxidative stress and xenobiotics. Cloning the camel mitochondrial GST kappa (GSTK) gene and comparing its structural similarities with different species may aid in understanding its evolutionary relics. We cloned the camel GSTK using RT-PCR. This yielded an open reading frame of 678 nucleotides, encoding a protein of 226 amino acid residues. In a comparative analysis, the cloned GSTK was used to screen orthologues from different organisms. Phylogenetic analysis demonstrated that the camel GSTK apparently evolved from an ancestral GSTK gene that predated the appearance of vertebrates, and it grouped with pig, cattle, dog, horse, human and monkey GSTKs. The calculated molecular weight of the translated ORF was 25.52 kDa and the isoelectric point was 8.4. The deduced cGSTK sequence exhibited high identity with many mammals, such as Bactrian camel (99.55%), pig, cattle and human (>74%), and lower identity with other unrelated organisms, such as frog (*Xenopus tropicalis*, 61%), chicken (*Gallus gallus*, 57%), salmon (*Salmo salar*, 49%), sponge (*Amphimedon queenslandica*, 46%), tick (*Amblyomma maculatum*, 45%) and roundworm (*Caenorhabditis elegans*, 33%). A 3D structure was built based on the crystal structure of the human and rat enzymes. The levels of cGSTK expression in five camel tissues were examined via real-time PCR. The highest level of cGSTK transcripts was found in the camel liver, followed by the testis, spleen, kidney and lung. © 2014 Elsevier Ltd.

**Author Keywords**

Cloning; GST-kappa; One-humped camel; Phylogenetic tree; QPCR; Structure modelling

**Document Type:** Article

**Source:** Scopus

Dkhil, M.A.<sup>a b</sup>, Al-Quraishy, S.<sup>a</sup>

**Evaluation of antiviral activity of berberine against herpes simplex viruses**

(2014) *Journal of Pure and Applied Microbiology*, 8 (SPEC. ISS. 1), pp. 155-159.

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**Abstract**

The different nucleoside analogues such as acyclovir are effective antiviral drugs against herpes simplex virus infections since its introduction. However, with the emergence of acyclovir-resistant, there is a need to develop an alternative antiherpetic drug and natural products could be the potential lead. In this study, the antiviral properties of berberine was evaluated against herpes simplex virus types 1 and 2 (HSV-1, 2) in vitro. HSV-infected Vero cells and cell-free virus suspensions were treated with berberine, and virus yield and infectivity were quantified by direct plaque assay. The results of the present study showed that berberine at 150 µg/ml provided 76.5% inhibition of plaque of HSV-1 and 80% inhibition against HSV-2. These properties suggest that this alkaloid could provide advantage as a topical prophylactic/therapeutic agent for herpes infections.

**Author Keywords**

Antiviral; Berberine; Herpes simplex virus

**Document Type:** Article

**Source:** Scopus

Radwan, M.S., Abu-Elyazeed, O.S.M., Attai, Y.A., Morsy, M.E.

**On the Ignition Delay of Jojoba Bio-Diesel and Its Blends with Gas Oil**

(2014) *SAE Technical Papers*, 2014-October, .

**DOI:** 10.4271/2014-01-2654

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**Abstract**

Jojoba bio-diesel is one of the most promising bio-fuels to replace gas oil in diesel engines. Therefore, the main object of the present work was to measure and correlate the pressure rise ignition delay of jojoba bio-diesel and its blends with gas oil behind incident shock waves in a shock tube. For this purpose, a shock tube test set up was designed and manufactured. It was fully instrumented for delay measurement with two piezo-electric pressure transducers, dual mode charge amplifier, data acquisition card and a computer with suitable LabVIEW software. The test variables included the type of fuel (percentage of Jojoba bio-diesel in the blend with gas oil), equivalence ratio, ignition temperature and ignition pressure. It was found that jojoba bio-diesel exhibited a lower ignition delay in comparison with that of gas oil. Rich or lean mixtures produce long delays, whilst the minimum delay occurred near the stoichiometric mixture. Also, it was found that the ignition delay of jojoba bio-diesel blends with gas oil reduced considerably as the ignition temperatures and pressures increased. An analytical correlation was developed to predict the data. Such correlation predicted the data well, since the values of the measured and the calculated ignition delays were in good agreement. Moreover, the activation energy for each fuel was evaluated using Arrhenius plots. Copyright © 2014 SAE International.

**Document Type:** Conference Paper

**Source:** Scopus

Ali Mohsin, M.E.<sup>a</sup>, Arsad, A.<sup>b</sup>, Fouad, H.<sup>c</sup>, Jawaid, M.<sup>d e</sup>, Alothman, O.Y.<sup>e f</sup>

**Enhanced mechanical and thermal properties of CNT/HDPE nanocomposite using MMT as secondary filler**

(2014) *AIP Conference Proceedings*, 1599, pp. 206-209.

**DOI:** 10.1063/1.4876814

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### Abstract

This study explains the influence of secondary filler on the dispersion of carbon nanotube (CNT) reinforced high density polyethylene (HDPE) nanocomposites (CNT/HDPE). In order to understand the mixed-fillers system, Montmorillonite (MMT) was added to CNT/HDPE nanocomposites. It was followed by investigating their effect on the thermal, mechanical and XRD properties of the aforesaid nanocomposite. Incorporation of 3 wt% each of MMT into CNT/HDPE nanocomposite resulted to the increased values for the tensile and flexural strength, as compared to the pure HDPE matrix. The thermal analysis result showed improved thermal stability of the formulated nanocomposites. © 2014 AIP Publishing LLC.

### Author Keywords

Carbon nanotube and nanocomposite; Montmorillonite; Secondary filler

**Document Type:** Conference Paper

**Source:** Scopus

Ghallab, Y.H.<sup>a b</sup>, Ismail, Y.<sup>a</sup>

### CMOS based lab-on-a-chip: Applications, challenges and future trends

(2014) *IEEE Circuits and Systems Magazine*, 14 (2), art. no. 6818461, pp. 27-47. Cited 1 time.

**DOI:** 10.1109/MCAS.2014.2314264

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### Abstract

Lab-on-a-chip is a technology which changed the traditional way by which biological samples are inspected in laboratories during analyses. This technology promises many advantages including better and improved performance, portability, reliability and cost reduction. A Lab-on-a-chip is composed of three main parts; actuation, sensing and electronics. Typically, hybrid technologies are used for the three parts, representing difficulties in integration and increased cost. However, Complementary Metal Oxide Semiconductor (CMOS) technology allows the functional integration of all parts including sensors, signal conditioning and processing circuits using a single homogeneous technology to develop a fully integrated lab-on-a-chip. CMOS technology is a very well established mass production and cheap technology. Hence, any viable lab-on-a-chip based on CMOS technology will have direct commercial value and application. This article, therefore, focuses on a survey of the most common CMOS based lab-on-a-chip techniques. Also, this article presents and discusses the features of existing CMOS based lab-on-a-chips and their applications at the cell level. Moreover, this article covers the challenges and the future trends in CMOS based lab-on-a-chip technology. © 2014 IEEE.

**Document Type:** Article

**Source:** Scopus

El-Mohsen Ali, S.A., Abdelhafiz Abdelaziz, D.H.

### The protective effects of date seeds on nephrotoxicity induced by carbon tetrachloride in rats

(2014) *International Journal of Pharmaceutical Sciences Review and Research*, 26 (2), pp. 62-68.

Department of Biochemistry and Molecular Biology, Helwan University, Cairo, Egypt

### Abstract

Carbon tetrachloride (CCl<sub>4</sub>) causes generation of reactive oxygen species (ROS) in many tissues other than the liver including the kidney. These Free radicals lead to a number of pathological changes in renal injury. Objective of the study to evaluate the potential effect of date seeds against nephrotoxicity induced by CCl<sub>4</sub> in rats. Twenty-one Rats were divided into three groups, seven each. Group I: negative control. Group II and III (CCl<sub>4</sub> groups): treated with 0.5 ml of 10% CCl<sub>4</sub> in olive oil, rat twice a week. In addition, group III treated with daily aqueous date seeds suspension at a dose of 1gm, kg orally. All groups treated for four weeks. At the end of the experiment, blood samples were collected and used for determination of kidney functions; urea, creatinine and creatinine, albumin ratio. The kidney tissues were subjected to histopathological examination. Malondialdehyde (MDA), reduced glutathione (GSH), nitric oxide (NO), superoxide dismutase (SOD) and glutathione-S-transferase (GST) were evaluated in kidney homogenate. Animals

treated with CCl<sub>4</sub> exhibited significant elevations in kidney function tests, MDA, GSH, NO and exhibited significant decrease in the activities of SOD and GST. The treatment with date seeds has preserved the kidney histology, kidney function close to control values. It significantly restored the activities of SOD and GST and decreased kidney MDA, GSH and NO levels. Dry date seeds confers an appealing nephroprotective effect which might be explained partially via diminishing the generation of MDA and NO and induction of antioxidant systems.

**Author Keywords**

CCl<sub>4</sub>; Date seeds; Nephrotoxicity; Rats

**Document Type:** Article

**Source:** Scopus

Dkhil, M.A.<sup>a b</sup>, Al-Quraishy, S.<sup>a</sup>, Farrag, A.R.H.<sup>c</sup>, Aref, A.M.<sup>d</sup>, Othman, M.S.<sup>e</sup>, Moneim, A.E.A.<sup>b</sup>

**Oxidative stress and apoptosis are markers in renal toxicity following Egyptian cobra (*Naja haje*) envenomation** (2014) *Pakistan Journal of Zoology*, 46 (6), pp. 1719-1730.

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**Abstract**

Snakebite is a serious and important problem in tropical and subtropical countries including Egypt. The venom of Egyptian cobra (*Naja haje*; L.) is complex, and it has been considered as a good source of short neurotoxins and several cytotoxins. In this study, oxidative stress inductions as well as apoptotic effects of the Egyptian cobra crude venom at a dose of 0.025mg/kg (intraperitoneal injection; i.p.) has been investigated in kidney of rats after 4 h. Twelve rats divided into 2 groups, Group I served as control group, Group II received i.p. injection of 0.025mg/kg of crude venom. The venom enhanced lipid peroxidation and nitric oxide productions in the kidney with concomitant reduction in glutathione content and superoxide dismutase, catalase, glutathione peroxidase, glutathione reductase and glutathione-S-transferase activities were inhibited. Moreover, the venom induced a renal injury as indicated by histopathological changes in the kidney tissue with an elevation in serum creatinine and urea. In addition, the renal ultrastructural changes were in the form of blebbing of visceral epithelial cells, and foot process disorganization. Also, the glomerular capillaries lined by hypertrophied endothelial cells. These findings were associated with the pro-apoptotic action in the kidney. The results suggest that Egyptian cobra venom stimulates oxidative stress to induce apoptosis in renal tissue through inhibition of mitochondrial respiration in male rats. Copyright 2014 Zoological Society of Pakistan.

**Author Keywords**

Apoptosis; Egyptian cobra venom; Oxidative stress; Renal toxicity

**Document Type:** Article

**Source:** Scopus

Al Mutairi, F.<sup>a</sup>, Khaled, S.M.<sup>b c</sup>

**The influence of different hydraulics models in treatment of some physical processes in super-critical states of light water reactors accidents**

(2014) *International Journal of Nuclear Energy Science and Technology*, 8 (4), pp. 290-309.

**DOI:** 10.1504/IJNEST.2014.064940

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**Abstract**

This work presents the development and testing of some thermal hydraulic models designed to address the limitations of using the Homogeneous Equilibrium Model (HEM) in predicting and simulating the hydraulic response of the positive reactivity-initiated power excursion accidents in small light water reactors. The neutronic response of such accidents has been investigated based on the neutron diffusion method. Most of the power reactors have a code system to analyse such accidents. Unfortunately, the training and research of Budapest University of Technology (BME) has to build its own code system. In this sense, a number of different 3D space-time-dependent neutron diffusion models with thermal hydraulic feedback have been introduced, compared and tested together and with the point-kinetic REMEG model for this purpose. The results show that the fuel parameters are maintained below

specified limits during the accident so that fuel failure and release of radioactivity will not occur. © 2014 Inderscience Enterprises Ltd.

#### Author Keywords

Accidents; Critical; Diffusion; HEM; Hydraulics; Pointkinetic; Reactivity

**Document Type:** Article

**Source:** Scopus

Helmy, E.M.

#### Political uncertainty challenge to egyptian tourism policy

(2014) *Bridging Tourism Theory and Practice*, 5, pp. 301-315. Cited 1 time.

**DOI:** 10.1108/S2042-14432014000005026

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#### Abstract

This chapter traces the Egyptian tourism policies since the 1980s and showcases patterns of successes and pitfalls of plans instrumented by such policies. It also debates the extent to which Egyptian tourism policies and strategies have been able to cope with the shifting international trends and comprehend the most recent models of development with all its economic, technological, and environmental dimensions. The discussion illustrates different plans/tools employed to achieve broad goals and discusses influences of their implementation. This sheds light on the current uncertain political situation and problems posed by such unstable circumstances. © 2014 by Emerald Group Publishing Limited All rights of reproduction in any form reserved.

#### Author Keywords

Egyptian Tourism policy; Enabling environment; Political instability; Sustainable development

**Document Type:** Article

**Source:** Scopus

Khalil, A.A.<sup>a</sup>, Elnaby, M.M.A.<sup>a</sup>, Saad, E.M.<sup>b</sup>, Al-nahari, A.Y.<sup>c</sup>, Al-Zubi, N.<sup>d</sup>, El-Bendary, M.A.M.<sup>e</sup>, El-Samie, F.E.A.<sup>f</sup>

#### Efficient speaker identification from speech transmitted over Bluetooth networks

(2014) *International Journal of Speech Technology*, 17 (4), pp. 409-416.

**DOI:** 10.1007/s10772-014-9238-4

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#### Abstract

This paper studies the process of speaker identification over Bluetooth networks. Bluetooth channel degradations are considered prior to the speaker identification process. The work in this paper employs Mel-frequency cepstral coefficients for feature extraction. Features are extracted from different transforms of the received speech signals such as the discrete cosine transform (DCT), signal plus DCT, discrete sine transform (DST), signal plus DST, discrete wavelet transform (DWT), and signal plus DWT. A neural network classifier is used in the experiments, while the training phase uses clean speech signals and the testing phase uses degraded signals due to communication over the Bluetooth channel. A comparison is carried out between the different methods of feature extraction showing that the DCT achieves the highest recognition rates. © 2014, Springer Science+Business Media New York.

#### Author Keywords

Bluetooth; DCT; DST; DWT; MFCCs; Speaker identification

**Document Type:** Article

**Source:** Scopus

Dkhil, M.A.<sup>a b</sup>, Abdel-Baki, A.A.S.<sup>a c</sup>, Wunderlich, F.<sup>a d</sup>, Sies, H.<sup>a e</sup>, Al-Quraishy, S.<sup>a</sup>

#### Dietary selenium affects intestinal development of Eimeria papillata in mice

(2014) *Parasitology Research*, 113 (1), pp. 267-274. Cited 5 times.

**DOI:** 10.1007/s00436-013-3653-3

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<sup>e</sup> Department of Biochemistry and Molecular Biology i, Heinrich Heine University, Duesseldorf, Germany

### Abstract

Here, we investigated the effect of the trace element selenium (Se) on course and outcome of *Eimeria papillata*-induced coccidiosis in mice. Male mice were fed on Se-adequate (0.15 ppm), Se-deficient, and Se-high diets (1.0 ppm) for 6 weeks. Mice were orally infected with 1,000 oocysts. The prepatent period lasts for 3 days, but the course of infections varied. At Se-adequate diet, the maximum fecal output of oocysts amounted to 68,300 oocysts/g feces on day 5 p.i. However, fecal shedding of oocysts was accelerated in mice on Se-deficient diet and occurred already on day 4 p.i. By contrast, maximal shedding is impaired in mice on high-Se diet, which takes place on day 5 p.i., but with a decreased output of only 7,300 oocysts/g feces. Light microscopy reveals that all developmental stages are affected: meronts, micro- and macrogamonts, and developing oocysts are increased in comparison with mice fed on selenium-adequate diet. At high Se, the number of parasitic stages in the jejunum is substantially higher than at Se-deficient diet. Se does not affect the number of jejunal Alcian blue-stained goblet cells. Se deficiency increased the number of apoptotic cells in the jejunum. Substantially increased histological injury scores reveal more injuries in jejunum tissue infected by *E. papillata*. Our data indicate that high dietary Se exerts potential anticoccidial activity. This may be taken advantage of in control measures towards Eimeriosis as a feed additive, potentially alleviating the need for concomitantly utilized anti-coccidial drugs in the feed. © 2013 Springer-Verlag Berlin Heidelberg.

**Document Type:** Article

**Source:** Scopus

Chartier, A.T.<sup>a b</sup>, Kinrade, J.<sup>a</sup>, Mitchell, C.N.<sup>a</sup>, Rose, J.A.R.<sup>a</sup>, Jackson, D.R.<sup>a b</sup>, Cilliers, P.<sup>c</sup>, Habarulema, J.-B.<sup>c</sup>, Katamzi, Z.<sup>c</sup>, McKinnell, L.-A.<sup>c</sup>, Matamba, T.<sup>c</sup>, Opperman, B.<sup>c</sup>, Ssessanga, N.<sup>c</sup>, Giday, N.M.<sup>c</sup>, Tyalimpi, V.<sup>c</sup>, Franceschi, G.D.<sup>d</sup>, Romano, V.<sup>d</sup>, Scotto, C.<sup>d</sup>, Notarpietro, R.<sup>e</sup>, Dovis, F.<sup>e</sup>, Avenant, E.<sup>f</sup>, Wonnacott, R.<sup>g</sup>, Oyeyemi, E.<sup>h</sup>, Mahrous, A.<sup>i</sup>, Tsidu, G.M.<sup>j</sup>, Lekamisy, H.<sup>k</sup>, Olwendo, J.O.<sup>l</sup>, Sibanda, P.<sup>m</sup>, Gogie, T.K.<sup>n</sup>, Rabiou, B.<sup>o</sup>, Jong, K.D.<sup>p</sup>, Adewale, A.<sup>q</sup>

### Ionospheric imaging in Africa

(2014) *Radio Science*, 49 (1), pp. 19-27. Cited 1 time.

**DOI:** 10.1002/2013RS005238

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### Abstract

Accurate ionospheric specification is necessary for improving human activities such as radar detection, navigation, and Earth observation. This is of particular importance in Africa, where strong plasma density gradients exist due to the equatorial ionization anomaly. In this paper the accuracy of three-dimensional ionospheric images is assessed over a 2 week test period (2-16 December 2012). These images are produced using differential Global Positioning System (GPS) slant total electron content observations and a time-dependent tomography algorithm. The test period is selected to coincide with a period of increased GPS data availability from the African Geodetic Reference Frame (AFREF) project. A simulation approach that includes the addition of realistic errors is employed in order to provide a

ground truth. Results show that the inclusion of observations from the AFREF archive significantly reduces ionospheric specification errors across the African sector, especially in regions that are poorly served by the permanent network of GPS receivers. The permanent network could be improved by adding extra sites and by reducing the number of service outages that affect the existing sites. Key Points Ionospheric image quality in Africa is assessed Simulated and real data are both used An extended receiver network greatly improves accuracy ©2013. The Authors.

**Author Keywords**

Africa; GPS; imaging; ionosphere; IRI; tomography

**Document Type:** Article

**Source:** Scopus

Garbie, I.H.<sup>a b</sup>

**An experimental investigation on ergonomically designed assembly workstation**

(2014) *International Journal of Industrial and Systems Engineering*, 16 (3), pp. 296-321.

**DOI:** 10.1504/IJISE.2014.060131

<sup>a</sup> Mechanical Engineering Department, College of Engineering at Helwan, Helwan University, Helwan, Cairo, Egypt

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**Abstract**

The main objective of this study was to investigate the effects of designing ergonomically assembly workstation on operator performance. This paper describes these results using factorial design of experimental which were conducted on assembly of a product. A fully adjustable ergonomically designed assembly workstation was used for the experiment. Ten college students were randomly assigned into three experimental factors or parameters (table adjustable, chair adjustable, and gender) to perform the assembly task. Performances of the participants assembling a product are: operator productivity (units/hour); operator satisfaction (degree of comfortable), and operator health (headache). The regression models to measure the operator performance were built based on the experimental investigation to suggest a practical performance measurement of operator. The results show that female subjects are more productive and healthy than male but with lesser satisfaction. © 2014 Inderscience Enterprises Ltd.

**Author Keywords**

Assembly lines; Design of experiments; Ergonomic design

**Document Type:** Article

**Source:** Scopus

Elshandidy, T.<sup>a b</sup>

**Value relevance of accounting information: Evidence from an emerging market**

(2014) *Advances in Accounting*, 30 (1), pp. 176-186.

**DOI:** 10.1016/j.adiac.2014.03.007

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<sup>b</sup> Department of Accounting and Finance, University of Helwan, Egypt

**Abstract**

Without making any distinction of the applicable accounting standards, this paper investigates, firstly, the value relevance of accounting information from 1999 to 2012 in different segments of the Chinese stock market. This investigation includes A-shares, prepared under Chinese Accounting Standards (CAS) for domestic firms; B-shares, prepared under either the International Accounting Standards (IAS) or International Financial Reporting Standards (IFRS) for both domestic and overseas firms; and H-shares prepared under either the IAS or Hong Kong GAAP for Hong Kong and overseas firms. Then, the paper examines whether or not the converged IFRS with CAS, applicable from 2007 onwards, is more value relevant when compared with prior to the 2007's standards (CAS, IAS, Hong Kong GAAP for A-share, B-share, and H-share markets, respectively). Based on 34,020 firm-year observations and after controlling for industry- and year-fixed effects, the findings suggest that accounting information is value relevant with A- and B-share markets, while it is partially relevant with the H-share market. The paper finds that the converged IFRS with CAS is more value relevant in A-shares and B-shares and it is partially more value relevant with the H-share market. These findings have implications for both policymakers and investors since they provide further empirical evidence for the current policy procedure which harmonizes local GAAP with IFRS. © 2014 .

**Author Keywords**

A-, B- and H-shares; Converged IFRS with CAS; Value relevance



**Document Type:** Article  
**Source:** Scopus

Ibrahim, E.-S.H.<sup>a</sup>, Bowman, A.W.<sup>a</sup>, Khalifa, A.M.<sup>b</sup>

**Dual-energy computed tomography versus magnetic resonance imaging for the assessment of iron overload**  
(2014) *Middle East Conference on Biomedical Engineering, MECBME*, art. no. 6783194, pp. 5-8.

**DOI:** 10.1109/MECBME.2014.6783194

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#### Abstract

Iron toxicity is a key factor for tissue damage in iron-overloaded patients, with induced heart failure being the main cause of death. T2\*-weighted magnetic resonance imaging (MRI) has been established as the method of choice for evaluating iron content with strong correlation with biopsy, where T2\* < 20 ms and T2\* < 10 ms at 1.5T indicate iron overload and severe iron overload, respectively. Recently introduced dual-energy computed tomography (DECT) has the potential for evaluating iron overload without energy-dependent CT attenuation or tissue fat effects. This study investigates the performance of DECT for iron mapping in scans of calibrated iron phantoms, and compare the results to MRI T2\* imaging. The results show that DECT has high accuracy for evaluating iron overload, comparable to that of MRI T2\* imaging, which might help in patient staging based on the severity of iron overload, independent of the implemented imaging energy. © 2014 IEEE.

#### Author Keywords

DECT; iron overload; MRI

**Document Type:** Conference Paper

**Source:** Scopus

Attallah, A.M.<sup>a</sup>, El-Far, M.<sup>b</sup>, Omran, M.M.<sup>c</sup>, Abdallah, S.O.<sup>d</sup>, El-desouky, M.A.<sup>d</sup>, El-Dosoky, I.<sup>e</sup>, Abdelrazek, M.A.<sup>a</sup>, Attallah, A.A.<sup>a</sup>, Elweresh, M.A.<sup>a</sup>, Abdel Hameed, G.E.<sup>a</sup>, Shawki, H.A.<sup>a</sup>, Salama, K.S.<sup>a</sup>, El-Waseef, A.M.<sup>b</sup>

**Circulating levels and clinical implications of epithelial membrane antigen and cytokeratin-1 in women with breast cancer: can their ratio improve the results?**

(2014) *Tumor Biology*, 35 (11), pp. 10737-10745. Cited 1 time.

**DOI:** 10.1007/s13277-014-2375-1

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<sup>c</sup> Chemistry Department, Helwan University, Cairo, Egypt

<sup>d</sup> Chemistry Department, Cairo University, Giza, Egypt

<sup>e</sup> Pathology Department, Mansoura University, Mansoura, Egypt

#### Abstract

Immunohistochemical studies proved that the presence of breast cancer (BrCa) is accompanied by elevated levels of epithelial membrane antigen (EMA) and decreased levels of cytokeratin-1 (CK1). We, therefore, hypothesize that the serum EMA/CK1 ratio may serve as a promising biomarker for early diagnosis of breast cancer. The circulating levels of EMA and CK1 were determined by Western blot and enzyme-linked immunosorbent assay (ELISA) in sera from 102 women with BrCa and 90 women as controls (40 with benign breast disease and 50 healthy). EMA at 130 kDa and CK1 at 67 kDa were identified, purified, and quantified in sera of BrCa patients using ELISA. EMA/CK1 ratio values were found to discriminate BrCa patients from controls ( $P < 0.0001$ ) with high diagnostic ability (area under the curve [AUC] = 0.901, sensitivity = 82, specificity = 76). The sensitivity and specificity for early-stage ( $\leq T_{inf}2$ ) BrCa were 72 and 76 %, respectively. The ratio values of patients with late-stage ( $> T_{inf}2$ ) tumors were significantly higher than those of patients with early-stage ( $\leq T_{inf}2$ ) tumors. Moreover, higher grades (grades 2–3) were associated with higher values than grade 1 tumors. AUC values in different BrCa patients who had early stage, low grade, or size  $\leq 2$  cm were 0.855, 0.762, and 0.839, respectively. AUC values of patients with positive lymph node or positive distant metastasis were 0.907 and 0.913, respectively. We show for the first time the impact of serum EMA and CK1 ratio in BrCa detection. Differential EMA/CK1 values may serve as a diagnostic marker in early-stage breast cancer patients. © 2014, International Society of Oncology and BioMarkers (ISOBM).

#### Author Keywords

Biomarkers; Breast cancer; CK1; EMA; Serum

**Document Type:** Article

**Source:** Scopus

Abbas, N.S., Ahmed, E.A.

**New approaches for the synthesis and cytotoxicity of thiazoles derived from cyclohexanone**

(2014) *Acta Chimica Slovenica*, 61 (4), pp. 835-843.

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

**Abstract**

A new class of substituted thiazole derivatives 6a-c which showed promising anticancer activity was synthesized via the reaction of cyclohexanone with phenylisothiocyanate with a good yield. The latter compounds reacted with benzendiazonium chloride to form corresponding 5-phenylazothiazole derivatives 8a and 8b, respectively. Moreover, the reaction of thiazole derivatives 6a-c with each of elemental sulfur and either of malononitrile or ethyl cyanoacetate gave the thiophene derivatives 10a-e, respectively. Compounds 10a-e were subjected to a series of heterocyclization reactions to give heterocyclic derivatives. Their cytotoxicity against four human tumor cells lines was measured and showed promising anticancer activity.

**Author Keywords**

Cyclohexanone; Phenylazo; Thiazole; Thiophene

**Document Type:** Article

**Source:** Scopus

Ayoub, N.<sup>a c</sup>, Musharavati, F.<sup>a</sup>, Pokharel, S.<sup>a</sup>, Gabbar, H.A.<sup>b</sup>

**Energy consumption and conservation practices in Qatar - A case study of a hotel building**

(2014) *Energy and Buildings*, 84, pp. 55-69. Cited 2 times.

**DOI:** 10.1016/j.enbuild.2014.07.050

<sup>a</sup> Department of Mechanical and Industrial Engineering, College of Engineering, Qatar University, Doha, Qatar

<sup>b</sup> Faculty of Energy Systems and Nuclear Science, University of Ontario Institute of Technology, ON, Canada

<sup>c</sup> Faculty of Industrial Education, Helwan University, Helwan, Egypt

**Abstract**

This paper considers energy conservation practices in Qatar with special emphasis on commercial buildings. Energy conservation approaches are classified into five main areas and an Energy Conservation Matrix (ECM) database for buildings is developed. The ECM maps the energy conservation techniques/technologies to models versus their application domain. Three scenarios (building envelope design, change in customer behavior, and consideration of renewable energy supply) are analyzed to study different alternatives for efficiency improvement. The analysis is done in a case hotel. The analysis shows that, the energy conservation potential of using envelope redesign for the case study is about 7.5% while conservation through behavior change ranges between 2.74% and 15.80%. The conserved energy potential ranges between 10% and 24.12% of the site energy in the combinatorial scenario that integrated envelope design alternatives with customer behavior change. The renewable energy (RE) scenario conserves energy, indirectly, by using green energies generated from renewable sources. The output shows that due to changes as per the three scenarios, total CO<sub>2</sub> emissions of the building are also reduced. The analysis shows that adoption of 30% RE alternative can reduce emissions by about 27% with respect to the reference scenario. It is believed that the scenarios developed in this paper and the results obtained will motivate the designers to consider alternative designs or redesigns in the large scale commercial buildings. © 2014 Elsevier B.V. All rights reserved.

**Author Keywords**

Behavior change; Commercial buildings; Energy conservation in Qatar; Envelop design; Scenarios

**Document Type:** Article

**Source:** Scopus

Elsied, M.<sup>a</sup>, Oukaour, A.<sup>a</sup>, Gualous, H.<sup>a</sup>, Hassan, R.<sup>b</sup>, Amin, A.<sup>b</sup>

**An advanced energy management of microgrid system based on genetic algorithm**

(2014) *IEEE International Symposium on Industrial Electronics*, art. no. 6865020, pp. 2541-2547.

**DOI:** 10.1109/ISIE.2014.6865020

<sup>a</sup> LUSAC Laboratory, University of Caen Basse-Normandie, Cherbourg, France

<sup>b</sup> Electric Power and Machines Department, Faculty of Engineering-Helwan University, Helwan, Egypt

**Abstract**

Immense growth has happened in the field of microgrid (MG) and the energy management system (EMS) methods in the past decade. It is estimated that there is still a huge potential of growth remaining in the field of EMS in the coming years. The main role of EMS is to autonomously determine hour-by-hour the optimum dispatch of MG and main grid energy to satisfy load demand needs. This paper is focused on developing an advanced EMS model able to determine the optimal operating strategies regarding to energy costs minimization, pollutant emissions reduction, MG system constraints and better utilization of renewable resources of energy such as wind and photovoltaic through daily load demand. The proposed optimization model of EMS is formulated and solved based on genetic algorithm (GA). The efficient performance of the algorithm and its behavior is illustrated and analyzed in detail considering winter load demand profile. © 2014 IEEE.

**Author Keywords**

distributed generators (DGs); energy management system (EMS); genetic algorithm (GA); microgrid (MG)

**Document Type:** Conference Paper

**Source:** Scopus

Ibrahim, A.B.<sup>a</sup>, Mansour, H.H.<sup>b</sup>, Shouman, S.A.<sup>c</sup>, Eissa, A.A.<sup>d</sup>, Abu El Nour, S.M.<sup>b</sup>

**Modulatory effects of l-carnitine on tamoxifen toxicity and oncolytic activity: In vivo study**  
(2014) *Human and Experimental Toxicology*, 33 (9), pp. 968-979.

**DOI:** 10.1177/0960327113506237

<sup>a</sup> Department of Pharmacology, Faculty of Medicine, Zawia University, Libyan Arab Jamahiriya

<sup>b</sup> Department of Health Radiation Research, National Center for Radiation Research and Technology, Atomic Energy Authority, Cairo, Egypt

<sup>c</sup> Department of Cancer Biology, National Cancer Institute, Cairo University, Kasr Alaini Street, Fom Elkhaleg, Cairo, Egypt

<sup>d</sup> Department of Pharmacology and Toxicology, Faculty of Pharmacy, Helwan University, Egypt

**Abstract**

The aim of this study was to investigate the protective effect of l-carnitine (l-CAR) in tamoxifen (TAM)-induced toxicity and antitumor activity. Adult female rats were randomly divided into four groups. Group I was served as control, groups II and III were treated with TAM (10 mg/kg, periorally) and l-CAR (300 mg/kg, intraperitoneally), respectively, while group IV was treated with both compounds. The treatment continued daily for 28 days. Administration of TAM resulted in significant increase in serum lipid profiles, liver enzymes, and bilirubin level. TAM produced a significant increase in lipid peroxides (LPO) level and nonsignificant change in nitrogen oxide (NO(x)) level accompanied with significant decrease in superoxide dismutase (SOD) activity of hepatic and uterus tissues and significant decrease in glutathione (GSH) content of uterus tissue. Administration of l-CAR for 1 h prior to TAM treatment decreased serum lipids and liver enzymes significantly and significantly increased SOD activity in liver and uterus tissues compared with TAM-treated group. Furthermore, it restored LPO and GSH levels and increased NO(x) level in uterus tissue. DNA fragmentation and the apoptotic marker, caspase-3, were not detected in the liver of all treated groups. Histopathologically, alterations in the liver and uterus structures after TAM treatment, which was attenuated after l-CAR administration. The antitumor effect and survival of the combined treatment of Ehrlich ascites carcinoma (EAC)-bearing mice was less than each one alone. l-CAR interestingly increased survival rate of EAC-bearing mice more than TAM-treated group. In conclusion, l-CAR has beneficial effects regarding TAM toxicity; however, it interferes with its antitumor effect. © The Author(s) 2014.

**Author Keywords**

antioxidants; antitumor activity; l-carnitine; organ toxicity; Tamoxifen

**Document Type:** Article

**Source:** Scopus

Adly, A.S., Haggag, M.H., Mostafa, M.-S.M.

**Low intensity laser irradiation influence proliferation of mesenchymal stem cells: Comparison of experimental data to intelligent agent-based model predictions**  
(2014) *Lecture Notes in Control and Information Sciences*, 452, pp. 293-306.

**DOI:** 10.1007/978-3-642-36385-6\_16

Department of Computer Science, Helwan University, Helwan, Egypt

**Abstract**

Over the past several decades, evidences have shown that low intensity laser can stimulate a number of biological

processes, including stem cell proliferation. In order to fully utilize stem cells in research and medical studies, understanding these processes is essential. However, for gaining this fundamental understanding in a rapid and cost-effective manner, model predictions and computer simulations are required as they may yield useful information and represent powerful supportive tools. This chapter provides some of the experiments employed to measure influence of low intensity laser on proliferation of mesenchymal stem cells which can vary considerably according to many parameters and biological conditions such as laser nature of emission, irradiation time, wavelength, and energy density. These experiments were compared to intelligent agent-based model predictions and detailed information about the model description and comparison results are provided. The model was capable of predicting the data for the scenarios fairly well although a few were somewhat problematic. This study recommends a wave length ranging from 600 to 680 nm, and an energy density ranging from 0.3 to 4.0 J/cm<sup>2</sup> for enhancing proliferation of mesenchymal stem cells. © Springer-Verlag Berlin Heidelberg 2014.

#### Author Keywords

Biological systems; Intelligent agent-based model; Low intensity laser irradiation; Mesenchymal stem cells; Proliferation

**Document Type:** Article

**Source:** Scopus

Albatlan, S.A.<sup>a</sup>, Mohamed, E.S.<sup>b</sup>

#### Dynamic analysis and experimental evaluation of variable valve lift system for internal combustion engine with double overhead camshaft

(2014) *International Journal of Vehicle Structures and Systems*, 6 (1-2), pp. 24-31.

**DOI:** 10.4273/ijvss.6.1-2.04

<sup>a</sup> Higher Technological Institute, 6th of October City Campus, Egypt

<sup>b</sup> Helwan University, Mataria, Cairo, Egypt

#### Abstract

In modern four-stroke automobile engine technology, variable valve timing and lift control offer potential benefits for making a high performance engine. Variable valve lift (VVL) system for automotive engines is one of the key technologies to attain improvement of fuel economy, power output and reduction of emission. This paper describes an analytical simulation model of the VVL system. The VVL mechanism with a polynomial cam profile is designed to have maximum lift that is greater than the lift of the conventional mechanism. A dynamic model of VVL mechanism with three degrees of freedom is presented. The N42-BMW cylinder head with Valvetronic VVL of internal combustion engine was used in the test set-up. The motored cylinder head test data focuses on VVL system response and evaluation of the developed VVL mechanism. The performance results of a VVL for an overhead camshaft were investigated on the basis of theoretical simulation and experimental data to verify the validity of the VVL system in the test rig. © 2014. MechAero Foundation for Technical Research & Education Excellence.

#### Author Keywords

Dynamic model; Engine valvetronic; Multibody dynamics; Valve lift regulation; Valvetrain; Variable valve lift

**Document Type:** Article

**Source:** Scopus

Mostafa, A.M.<sup>a b</sup>, Youssef, A.E.<sup>a c</sup>

#### Improving Resource Utilization, Scalability, and Availability in Replication Systems Using Object Ownership Distribution

(2014) *Arabian Journal for Science and Engineering*, 39 (12), pp. 8731-8741. Cited 1 time.

**DOI:** 10.1007/s13369-014-1375-1

<sup>a</sup> College of Computer and Information Sciences, King Saud University, Riyadh, Saudi Arabia

<sup>b</sup> Systems and Computers Department, Alazhar University, Cairo, Egypt

<sup>c</sup> Department of Electronics, Communications, and Computers Engineering, Helwan, Helwan University, Cairo, Egypt

#### Abstract

In Primary Backup Replication (PBR) systems, the primary node exclusively performs the task of maintaining object consistency for the whole object store; this causes imbalanced load distribution (i.e., poor resource utilization) and limits scalability. In addition, system's availability and data accessibility are completely lost in case of primary failure. This paper proposes a novel approach that disjoins the exclusive role of the primary node by allowing all nodes (replicas) of the system share the load of maintaining object consistency. We define "object ownership" as the exclusive right of a replica to permit object update. The replica that has this right is called the "owner" of this object. The main idea in the proposed approach is to distribute the ownership of the objects among replicas in the sense that

each replica owns the objects that are initially created at it (i.e., created by the clients connected to this replica). Hence, the local object store at each replica can be viewed as if it is logically partitioned into different disjoint sets of objects. Each set is owned by a different replica which controls the update requests of the objects in this set. The proposed Object Ownership Distribution (OOD) approach improves load balancing and resource utilization since all nodes share the load of maintaining object store consistency. Furthermore, it improves scalability since any new replica added to the system will eventually share the load with the existing replicas. In addition, system's availability is improved since an owner failure only renders its own objects unavailable while objects owned by other owners are not affected. © 2014, King Fahd University of Petroleum and Minerals.

**Author Keywords**

Availability; Data partitioning; Load balancing; Primary backup replication; Resource utilization; Scalability

**Document Type:** Article

**Source:** Scopus

Atta, A.M.<sup>a b d</sup>, El-Mahdy, G.A.<sup>a c d</sup>, Al-Lohedan, H.A.<sup>a d</sup>, Al-Hussain, S.A.<sup>a c d</sup>

**Corrosion inhibition of mild steel in acidic medium by magnetite Myrrh nanocomposite**

(2014) *International Journal of Electrochemical Science*, 9 (12), pp. 8446-8457. Cited 1 time.

<sup>a</sup> Department of Chemistry, College of Science, King Saud University, Riyadh, Saudi Arabia

<sup>b</sup> Egyptian Petroleum Research Institute, 1 Ahmad Elzomor St., Nasr city, Cairo, Egypt

<sup>c</sup> Chemistry Department, Faculty of Science, Helwan University, Helwan, Egypt

<sup>d</sup> Faculty of science, Department of Chemistry, Al-Imam Muhammad Bin Saud Islamic University, Riyadh, Saudi Arabia

**Abstract**

The development of nontoxic effective corrosion inhibitors for metallic substrates is an issue of great importance for protection of metal alloys and components. Surface properties of new stabilized magnetic nanoparticle (MNP) colloids coated with Myrrh gum were investigated. The natural product Myrrh gum was used as capping agent to produce highly dispersed coated magnetite nanoparticles. The structure and morphology of the magnetic nanogel were characterized by transmission electron microscopy (TEM), X-ray diffraction (XRD) and ultrasizer. Drop shape analyzer was used to examine the surface properties of the produced magnetite nanoparticles. The corrosion inhibition efficiencies of aqueous solutions of Myrrh and Myrrh capped magnetite for steel in 1M HCl solution have been investigated at different concentrations of the inhibitor using potentiodynamic polarization and electrochemical impedance spectroscopy measurements. The results showed that corrosion resistance increased by increasing the inhibitor concentration and inhibition efficiencies up to 91% can be obtained. Polarization curves revealed that this compound acts as mixed type inhibitor. The inhibition efficiency calculated from these techniques are in reasonably good agreement. © 2014 The Authors.

**Author Keywords**

Corrosion inhibition; Electrochemical; Magnetite nanoparticle; Myrrh gum; Nanocomposite

**Document Type:** Article

**Source:** Scopus

Al-Ahmari, A.<sup>a c</sup>, Khan, A.A.<sup>a c</sup>, Nasr, E.A.<sup>a b</sup>, Kamrani, A.<sup>d</sup>

**An automatic fixture design system for creating prismatic parts**

(2014) *South African Journal of Industrial Engineering*, 25 (3), pp. 69-83.

<sup>a</sup> Industrial Engineering Department, College of Engineering, King Saud University, Saudi Arabia

<sup>b</sup> Mechanical Engineering Department, Helwan University, Cairo, Egypt

<sup>c</sup> FARCAMT, Advance Manufacturing Institute, King Saud University, Saudi Arabia

<sup>d</sup> Industrial Engineering Department, University of Houston, College of Engineering, Houston, TX, United States

**Abstract**

A modular fixture system is a flexible alternative to a dedicated fixture. In this paper, an automatic modular fixture design system is suggested for creating prismatic parts. The system contains fixture planning, fixture modelling, and fixture assembly. The part geometrical database and process plans are considered as inputs to the system. A rulebased method is applied to assign the feasible locating scheme and the locating and clamping datum. The search strategy is designed to determine the most suitable locating and clamping points. The final fixture assembly is made with the standard fixture components using the CATVBA Editor inside CATIAV5. The proposed methodology is successfully validated with a case study. © 2014 South African Institute of Industrial Engineering. All rights reserved.

**Document Type:** Article**Source:** Scopus

El-Bakry, A.A., Hammad, I.A., Galal, T.M., Ghazi, S.M., Rafat, F.A.

**Polymorphism in *Calotropis procera*: variation of metabolites in populations from different phytogeographical regions of Egypt**(2014) *Rendiconti Lincei*, 25 (4), pp. 461-469.**DOI:** 10.1007/s12210-014-0315-z

Botany Department, Helwan University, Cairo, Egypt

**Abstract**

The present study aimed at investigating the phytochemical polymorphism among and within *Calotropis procera* populations collected from different phytogeographical regions in Egypt. A total of 128 individuals were collected from six different localities (New Valley, Aswan, Wadi Feran, Nuweibaa, Cairo-Suez Road and Al-Arish). There was a significant difference in primary (carbohydrates and proteins) and secondary (cardiac glycosides and flavonoides) metabolites among different populations. The maximum values of carbohydrates (163.0 mg g<sup>-1</sup>) and cardiac glycosides (15.2 mg g<sup>-1</sup>) were recorded in the population from Wadi Feran, while the minimum (90.2, 9.5 mg g<sup>-1</sup>) were recorded from Cairo-Suez road and New Valley, respectively. On the other hand, proteins had its highest concentration (263.8 mg g<sup>-1</sup>) in Aswan and the lowest (186.9 mg g<sup>-1</sup>) from Arish. Flavonoides attained their maximum (1.3 mg g<sup>-1</sup>) in Al-Arish and minimum (0.9 mg g<sup>-1</sup>) in Nuweibaa. Within population, the primary and secondary metabolites had significant variations where carbohydrates ranged between 106.9 and 162.6 mg g<sup>-1</sup>, proteins 217.2 and 273.4 mg g<sup>-1</sup>, cardiac glycosides 11.5 and 16.4 and flavonoides 0.9 and 1.3 mg g<sup>-1</sup>. Phytochemical characteristics classified *C. procera* populations into three clusters: (A) Aswan and Cairo-Suez road, (B) New Valley, Wadi Feran and Nuweibaa and (C) Al-Arish. Proteins had significant negative correlations with soil chlorides, calcium, magnesium and potassium, while flavonoides had significant positive correlation with chlorides, sodium and potassium. The study emphasizes the importance of population studies that may help in relating phytogeographical affinities with plant phytochemical characteristics and local ecological properties. It may also be useful in selecting populations with the maximum concentrations of metabolites for their economic use. © 2014, Accademia Nazionale dei Lincei.

**Author Keywords**

Cardiac glycosides; Flavonoides; Polymorphism; Primary metabolites; Secondary metabolites; Sinai; Sodom apple

**Document Type:** Article**Source:** ScopusGhany, H.A.<sup>a b</sup>, Hyder, A.-A.<sup>c</sup>**Abundant solutions of Wick-type stochastic fractional 2D KdV equations**(2014) *Chinese Physics B*, 23 (6), art. no. 060503, .**DOI:** 10.1088/1674-1056/23/6/060503<sup>a</sup> Department of Mathematics, Faculty of Science, Taif University, Taif, Saudi Arabia<sup>b</sup> Department of Mathematics, Helwan University, Cairo, Egypt<sup>c</sup> Department of Engineering Physics and Mathematics, Faculty of Engineering, Al-Azhar University, Cairo, Egypt**Abstract**

A modified fractional sub-equation method is applied to Wick-type stochastic fractional two-dimensional (2D) KdV equations. With the help of a Hermit transform, we obtain a new set of exact stochastic solutions to Wick-type stochastic fractional 2D KdV equations in the white noise space. These solutions include exponential decay wave solutions, soliton wave solutions, and periodic wave solutions. Two examples are explicitly given to illustrate our approach. © 2014 Chinese Physical Society and IOP Publishing Ltd.

**Author Keywords**

2D KdV equations; fractional calculus; Hermite transform; white noise

**Document Type:** Article**Source:** ScopusAbdelrazek, F.M.<sup>a</sup>, Elkholy, Y.M.<sup>b</sup>, Salah, A.M.<sup>b</sup>, Abdelazeem, N.M.<sup>b</sup>, Metz, P.<sup>c</sup>**Synthesis of some new pyrazole, pyrimidine, pyridazine, and their fused derivatives from 3-oxo-3,n-diphenylpropionamide**(2014) *Journal of Heterocyclic Chemistry*, 51 (3), pp. 824-829. Cited 1 time.

**DOI:** 10.1002/jhet.1700

<sup>a</sup> Chemistry Department, Faculty of Science, Cairo University, Giza, Egypt

<sup>b</sup> Chemistry Department, Faculty of Science, Helwan University, Helwan, Egypt

<sup>c</sup> Institute of Organic Chemistry, TU Dresden, Dresden 01062, Germany

### Abstract

The title compounds were obtained from the reactions of 3-oxo-3,N-diphenylpropionamide 3 with dimethylformamide dimethylacetal followed by hydrazine to afford the pyrazole 7, condensation with benzaldehyde followed by cyclocondensation with guanidine to afford the pyrimidine derivative 13, condensation with active methylenes followed by azo coupling of the products followed by cyclization to afford the pyridazines 17a, 17b. The pyridazinone 17b was explored for the synthesis of some novel pyridazine-fused heterocyclic compounds 19, 21, 24a, 24b, 24c, and 26. All structures were proved via their elemental analyses and spectral data. © 2013 HeteroCorporation.

**Document Type:** Article

**Source:** Scopus

Badr, S.E.A.<sup>a</sup>, Abdelfattah, M.S.<sup>b</sup>, El-Sayed, S.H.<sup>b</sup>, Abd El-Aziz, A.S.E.<sup>b</sup>, Sakr, D.M.<sup>a</sup>

### **Evaluation of anticancer, antimycoplasmal activities and chemical composition of guar (*Cyamopsis tetragonoloba*) seeds extract**

(2014) *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, 5 (3), pp. 413-423. Cited 1 time.

<sup>a</sup> Regional Center for Food and Feed (RCFF), Agriculture Researchers Center, Giza, Egypt

<sup>b</sup> Chemistry department, Faculty of Science, Helwan University, Ain-Helwan, Egypt

### Abstract

The present study investigated the anticancer, antimycoplasmal activities and chemical composition of guar (*Cyamopsis tetragonoloba*) seeds. The anticancer activity of *Cyamopsis tetragonoloba* was determined using sulphorhodamine-B (SRB) assay against human prostate carcinoma cell line (PC3), colon carcinoma cell line (HCT116) and intestinal carcinoma cell line (CACO-2). The results of present study indicated that guar seeds extract possessed anticancer activities against PC-3, HCT116 and CACO-2 cell lines with half maximal inhibitory concentration (IC50) of 40.5, 41.0 and 101.0 µg/ml, respectively. The antibacterial activities of the guar seeds crude extract were determined against mycoplasma bovis and mycoplasma gallisepticum. The chemical constituents were determined by quantifying ash, fat, fibers, moisture, protein and minerals. The results showed that the seeds contained 4.53% ash, 3.32 % fat, 11.06% fiber, 10.0% moisture and 33.25% protein. The most abundant minerals and fatty acids detected in guar seeds were iron (465 ppm) and cis-linoleic acid (53.89 %), respectively. Essential and non essential amino acids were present in guar seeds. HPLC analysis of the carbohydrate profile detected the presence of D-galactose (27.45%) and D-mannose (56.04%) in the seeds. The bioactive compounds found were 2.47 mg/g phenolics and 2.85 mg/g tannins. GC-MS analysis of methanolic extract of guar seeds showed the presence of several metabolites such as 3-hydroxymyristic acid, octadecanoic acid and linolelaidic acid methyl ester.

### Author Keywords

Antimycoplasmal activity; Antitumor activity; Chemical composition; Guar seeds

**Document Type:** Article

**Source:** Scopus

Shamseldin, M.A.<sup>a</sup>, El-Samahy, A.A.<sup>b</sup>

### **Speed control of BLDC motor by using PID control and self-tuning fuzzy PID controller**

(2014) *2014 15th International Workshop on Research and Education in Mechatronics, REM 2014*, art. no. 6920443, .

**DOI:** 10.1109/REM.2014.6920443

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<sup>b</sup> Electrical Power and Machines Department, Helwan University, Cairo, Egypt

### Abstract

This paper presents three different robust controller techniques for high performance brushless DC (BLDC) motor. The purpose is to test the ability of each control technique to force the rotor to follow a preselected speed/position track. This objective should be achieved regardless the parameter variations, and external disturbances. The first technique is conventional PID controller. The second controller technique use genetic algorithm to adjust the PID controller parameters based on three different cost functions. Finally a self-tuning fuzzy PID controller is developed

and tested. These controllers are tested for both speed regulation and speed tracking. Results shows that the proposed self-tuning fuzzy PID controller has better performance. © 2014 IEEE.

**Author Keywords**

Genetic algorithm; PID control; Self-tuning fuzzy PID control

**Document Type:** Conference Paper

**Source:** Scopus

Mohamed, M.S.<sup>a</sup>, Youns, M.M.<sup>b</sup>, Ahmed, N.M.<sup>a</sup>

**Novel indolyl-pyrimidine derivatives: Synthesis, antimicrobial, and antioxidant evaluations**

(2014) *Medicinal Chemistry Research*, 23 (7), pp. 3374-3388. Cited 1 time.

**DOI:** 10.1007/s00044-014-0916-1

<sup>a</sup> Department of Pharmaceutical Organic Chemistry, Faculty of Pharmacy, Helwan University, Ein Helwan, Cairo 11795, Egypt

<sup>b</sup> Department of Biochemistry, Faculty of Pharmacy, Helwan University, Ein Helwan, Cairo 11795, Egypt

**Abstract**

In the present study, a novel series of indolyl-pyrimidines (1-13) were synthesized starting from 4-hydrazinopyrimidine-5-carbonitrile 3. Elemental analysis, IR, <sup>1</sup>H-NMR, <sup>13</sup>C-NMR, and mass spectral data elucidated structure of newly synthesized compounds. All compounds were screened for their in vitro antibacterial, antifungal, and some for antioxidant activities. Compounds 5, 9g, 9i, and 9j showed pronounced antimicrobial activity against *Staphylococcus aureus*, *Bacillus cereus*, *Escherichia coli*, *Candida albicans*, and *Aspergillus flavus* compared to the reference drugs, while compounds 3 and 9g displayed promising free radical scavenging activity and found to be more potent than standard, ascorbic acid (vitamin C). Further, some compounds were evaluated for cytotoxic activity by SRB assay method against human colon carcinoma (CaCo-2) and showed that compounds 4 and 9g were found to be the highly active compared to the reference drug doxorubicin. Their structure and activity relationship were discussed. © 2014 Springer Science+Business Media.

**Author Keywords**

Antimicrobial; Antioxidant activity; Indolyl-pyrimidines; Radical scavenging; SRB assay; Structure activity relationship

**Document Type:** Article

**Source:** Scopus

Ghazy, A.

**Numerical study of the air gap between fire-protective clothing and the skin**

(2014) *Journal of Industrial Textiles*, 44 (2), pp. 257-274.

**DOI:** 10.1177/1528083713483784

Helwan University, Cairo, Egypt

**Abstract**

The analysis of the air gap between fire-protective clothing and the skin plays a crucial role in evaluating the protective performance of the clothing. However, the more accurate the analysis of the air gap, the more complex the air-gap model. This article introduces a novel air-gap model that stands halfway in terms of accuracy and complexity between other two models that already exist in the literature. A comparison between the performances of fire-protective clothing predicted by using the three air-gap models is discussed in this article. Different parameters that affect heat transfer within the air gap and hence the protective performance of the clothing were studied to assess the novel air-gap model compared with the other two models. Despite its simplicity, the novel air-gap model predicted the performance of fire-protective clothing as accurately as the most realistic model. © SAGE Publications 2013 Reprints and permissions: [sagepub.co.uk/journalsPermissions.nav](http://sagepub.co.uk/journalsPermissions.nav).

**Author Keywords**

air-gap model; conduction–radiation; Protective fabrics

**Document Type:** Article

**Source:** Scopus

El-Khadragy, M.F.<sup>a b</sup>, Al-Olayan, E.M.<sup>a</sup>, Abdel Moneim, A.E.<sup>b</sup>

**Neuroprotective effects of *Citrus reticulata* in scopolamine-induced dementia oxidative stress in rats**



(2014) *CNS and Neurological Disorders - Drug Targets*, 13 (4), pp. 684-690. Cited 1 time.

**DOI:** 10.2174/1871527313666140618105404

<sup>a</sup> Vaccines Research of Infectious Diseases, King Saud University, Riyadh, Saudi Arabia

<sup>b</sup> Department of Zoology and Entomology, Helwan University, Cairo, Egypt

### Abstract

The purpose of the study was to evaluate the potential effects of Citrus reticulata (mandarin) peel methanolic extract (MPME) on memory dysfunction in rats. Memory impairment was produced by scopolamine (1.4 mg/kg, intraperitoneally injected). Brain acetylcholinesterase enzyme (AChE) activity was measured to assess the central cholinergic activity. This study also investigated the effect of scopolamine on norepinephrine, dopamine and serotonin content in rat hippocampus, striatum and cerebral cortex. In addition, the levels of brain lipid peroxidation (LPO), nitric oxide (NO) and glutathione (GSH) were estimated to assess the degree of oxidative stress. Scopolamine administration induced a significant impairment of central cholinergic activity in rats, as indicated by a marked increase in AChE activity. The impairment of the cholinergic system was associated with a significant alternation in brain monoamines. Scopolamine administration also caused oxidant damage (elevation in LPO and NO and reduction in GSH levels). Pretreatment of MPME (250 mg/kg, orally administered) significantly reduced scopolamine-induced alternation in brain monoamines with an attenuation of scopolamine-induced rise in brain AChE activity and brain oxidative stress. It is concluded that administration of mandarin peel extract, demonstrating antioxidant activity, may be of value for dementia exhibiting elevated brain oxidative status. © 2014 Bentham Science Publishers.

### Author Keywords

Citrus reticulata; Dementia; Neuroprotection; Scopolamine

**Document Type:** Article

**Source:** Scopus

Gabry, M.S.<sup>a</sup>, Abdel Kader, D.H.<sup>b</sup>, Moustafa, M.<sup>a</sup>, Elenany, A.A.H.<sup>a</sup>

### **Effect of some antioxidants on the prostate of adult and aged albino rats: A histological and immunohistochemical study**

(2014) *Journal of Applied Pharmaceutical Science*, 4 (2), pp. 17-26.

**DOI:** 10.7324/JAPS.2014.40204

<sup>a</sup> Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

<sup>b</sup> Department of Histology, Faculty of Medicine, Cairo University, Cairo, Egypt

### Abstract

Effect of some antioxidants on the prostate of adult and aged albino rats. Twenty-five adult and twenty-five aged male albino rats were divided into four groups: group I (control group) group II (zinc sulphate treated group), group III (vitamin E) & group IV (vitamin C) zinc administered in doses of 0.2673 mg for adult rat and 0.693 mg for aged rat, vitamin E administered in doses of 0.973 mg for adult rat and 2.52 mg for aged rat, vitamin C administered in doses of 1.215mg for adult rat and 3.15 mg for aged rat. The prostate glands were processed and stained by H&E, Masson trichrome & immunoreaction of androgen receptor for light microscopic examinations. Morphometric analysis for collagen fibers and immunoreaction area percent was performed and statically analyzed. Zinc showed improvements, in which decrease in number of mucosal fold and increase in immunoreactions of nuclear androgen receptor in ventral lobe also, Decrease fibrosis and increase in immunoreactions of nuclear androgen receptor in dorsolateral lobe. vitamin E showed improvements, in which decrease in number of mucosal fold, decrease size of acini, decrease of epithelial heights and increase in immunoreactions of nuclear androgen receptor in ventral lobe also, decrease of epithelial heights, decrease fibrosis and increase in immunoreactions of nuclear androgen receptor in dorsolateral lobe. vitamin C there were improvements, in which decrease in number of mucosal fold, dilatation of acini and slightly increase in immunoreactions of nuclear androgen receptor in ventral lobe also, rarified collagenous fibers and increase in immunoreactions of nuclear androgen receptor in dorsolateral lobe. It also ameliorated blood vessels congestion. Zinc, vitamin E and vitamin C exerted no harmful effects on adult prostate but ameliorated effects against aged prostate. © 2014 Mohamed Sayed Gabry et al.

### Author Keywords

Aging; Prostate; Prostatic hypertrophy; Rat; Vitamin C; Vitamin E; Zinc

**Document Type:** Article

**Source:** Scopus

Musa Saad H.-E., M.<sup>a</sup>, El-Hagary, M.<sup>b c</sup>

### **Structural, electronic and magnetic properties of Mo (4d)-based complex perovskites Ba<sub>2</sub>MMoO<sub>6</sub> (M=Cr and Fe)**

(2014) *Journal of Magnetism and Magnetic Materials*, 360, pp. 229-233. Cited 2 times.

**DOI:** 10.1016/j.jmmm.2014.02.047

<sup>a</sup> Department of Physics, College of Science, Qassim University, Buridah 51452, Saudi Arabia

<sup>b</sup> Physics Department, Faculty of Science, Helwan University, Helwan, Cairo, Egypt

<sup>c</sup> Institut für Festkörperphysik, TU Wien, A-1040 Wien, Austria

### Abstract

We report a study of crystallographic parameters of the Mo-based complex perovskites Ba<sub>2</sub>MMoO<sub>6</sub> (M=Cr and Fe) obtained from analysis of X-ray diffraction (XRD) data and the electronic and magnetic properties prediction using the magnetic measurements and the full-potential linearized muffin-tin orbitals within the plane-wave approximation (LMTO-PLW). The Ba<sub>2</sub>MMoO<sub>6</sub> materials were prepared by the solid state reaction method. XRD analysis reveals that Ba<sub>2</sub>MMoO<sub>6</sub> crystalline in a cubic structure (space group Fm-3m) with lattice parameters (a=8.013 Å) for M=Cr and (a=8.061 Å) for M=Fe. XRD results present a matching of 98% with the theoretical results. The densities of states were calculated using the local spin density approximation (LSDA) and LSDA+U methods. LDOS results show a half-metallic-ferrimagnetic ground state for Ba<sub>2</sub>MMoO<sub>6</sub>, which is in majority due to the 4d-t<sub>2g</sub> and 3d-t<sub>2g</sub> characters. The structural, electronic and magnetic calculation results are in excellent agreement with the experimental and previous theoretical results. © 2014 Elsevier B.V.

### Author Keywords

Complex perovskite; LMTO-PLW; LSDA method; XRD

**Document Type:** Article

**Source:** Scopus

Khalil, B.<sup>a</sup>, Adamowski, J.<sup>a</sup>, El-Din Abdin, A.<sup>b</sup>, Eizeldin, M.<sup>c</sup>

### Estimation of water quality characteristics at ungauged sites using multiple linear regression and canonical correlation analysis

(2014) *American Society of Agricultural and Biological Engineers Annual International Meeting 2014, ASABE 2014*, 1, pp. 322-331.

<sup>a</sup> Bioresource Engineering Department, McGill University, Macdonald Stewart Building, 21111 Lakeshore road, Ste-Anne-de-Bellevue, QC, Canada

<sup>b</sup> National Water Research Center, Cairo, Egypt

<sup>c</sup> Civil Engineering Department, Helwan University, Cairo, Egypt

### Abstract

Detailed water quantity and quality data are important for planning activities related to agriculture, industry, and urban water supply. However, historical records are not always available at sites where information is required. This is due to the inadequate spatial distribution of water-quality monitoring networks. In this paper, a statistical approach for the estimation of water-quality mean values at un-gauged sites is proposed. The proposed approach is based on the cause-effect relationship between different meteorological and anthropogenic (physiographic) characteristics of a drainage basin, and water-quality characteristics. The proposed approach is based on two main steps. The first step is to identify homogeneous drainage basins based on their physiographic and water-quality characteristics. In the second step, a cause-effect relationship is developed using data-driven models for each target ungauged drainage basin. In water-quality, cause-effect studies can be evaluated by canonical correlation analysis, which can be used to evaluate the correlation structure between two sets of variables, the physiographic characteristics and water-quality characteristics. For each target (ungauged) basin, its physiographic characteristics were projected in the canonical physiographic space, and its similar gauged basins (neighbors) were identified. Regression models were then developed using records available at the neighbor gauged basins, and then used to estimate water quality characteristics at the target basin. The data set consisted of 50 drainage basins from the Nile Delta of Egypt, where physiographic characteristics and water-quality data from August 1997 to July 2007 were used to evaluate the proposed approach. Results showed that the canonical neighborhood approach was able to identify similar drainage basins, and along with regression models the proposed approach provided estimates of water quality mean values that were more accurate and precise than using regression without the proposed canonical neighborhood approach. Copyright © (2014) by the American Society of Agricultural & Biological Engineers All rights reserved.

### Author Keywords

Canonical correlation; Homogeneous regions; Nile Delta; Ungauged sites; Water quality

**Document Type:** Conference Paper

**Source:** Scopus

Othman, M.S.<sup>a</sup>, Safwat, G.<sup>a</sup>, Aboulkhair, M.<sup>a</sup>, Abdel Moneim, A.E.<sup>b c</sup>

### The potential effect of berberine in mercury-induced hepatorenal toxicity in albino rats

(2014) *Food and Chemical Toxicology*, 69, pp. 175-181. Cited 11 times.

**DOI:** 10.1016/j.fct.2014.04.012

<sup>a</sup> Faculty of Biotechnology, October University for Modern Science and Arts (MSA), Giza, Egypt

<sup>b</sup> Zoology and Entomology Department, Faculty of Science, Helwan University, Cairo, Egypt

<sup>c</sup> Biochemistry and Molecular Biology Department, Asturias Institute of Biotechnology, University of Oviedo, Oviedo, Spain

### Abstract

Mercury (Hg) is the third most dangerous heavy metal after arsenic and lead. Mercury's toxicity brings serious risks to health through negative pathological and biochemical effects. The study was designed to investigate the possible protective role of berberine (BN) in mercuric chloride (HgCl<sub>2</sub>) induced oxidative stress in hepatic and renal tissues. Adult male albino Wistar rats were exposed to mercuric chloride (HgCl<sub>2</sub>; 0.4mg/kg bwt) for 7days. Treatment with HgCl<sub>2</sub> induced oxidative stress by increasing lipid peroxidation and nitric oxide production along with a concomitant decrease in glutathione and various antioxidant enzymes, namely superoxide dismutase, catalase, glutathione peroxidase and glutathione reductase. HgCl<sub>2</sub> intoxication increased the activities of liver enzymes and the bilirubin level, in addition to the levels of urea and creatinine in serum. BN (100mg/kg bwt) treatment inhibited lipid peroxidation and nitric oxide production, whereas it increased glutathione content. Activities of antioxidant enzymes, superoxide dismutase, catalase, glutathione peroxidase and glutathione reductase, were also restored concomitantly when compared to control after BN administration. BN also inhibited the apoptotic effect of HgCl<sub>2</sub> by increasing the expression of Bcl-2 protein in liver and kidney. Histopathological examination of the liver and kidney tissues proved the protective effect of BN against HgCl<sub>2</sub> toxicity. These results demonstrated that BN augments antioxidant defense against HgCl<sub>2</sub>-induced toxicity and provides evidence that it has therapeutic potential as hepato- and reno-protective agent. © 2014 Elsevier Ltd.

### Author Keywords

Apoptosis; Berberine; Kidney; Liver; Mercuric chloride; Oxidative stress

**Document Type:** Article

**Source:** Scopus

Abdel-Kader, M.M.<sup>a</sup>, El-Sayed, E.M.<sup>a</sup>, Kassem, S.S.<sup>a</sup>, El-Din, S.<sup>b</sup>, Haggag, M.M.<sup>c</sup>, El-Hawary, Z.<sup>a</sup>

**Protective and antioxidant effects of cynara scolymus leaves against carbon tetrachloride toxicity in rats**  
(2014) *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, 5 (5), pp. 1373-1380.

<sup>a</sup> Department of Nutrition and Food Science, National Research Center, Cairo, Egypt

<sup>b</sup> Department of Food Technology, National Research Centre Dokki, Cairo, Egypt

<sup>c</sup> Department of Nutrition and Food Science, Faculty of Home Economics, Helwan University, Cairo, Egypt

### Abstract

*Cynara scolymus* (artichoke) plant has many natural antioxidants. Artichoke leaves extract have multiple pharmacological actions. This study was designed to explore the potential of dietary artichoke leaves in the management of hepatic and renal dysfunctions induced by carbon tetrachloride (CCl<sub>4</sub>) intoxication. Diets containing 20% or 40% artichoke leaves were provided to rats treated with CCl<sub>4</sub> (1ml/kg I.P.). Our data showed that artichoke treatments significantly restored the elevated activities hepatic enzymes; alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP) and lactate dehydrogenase (LDH), in a dose dependent manner. Besides, plasma creatinine, urea and uric acid levels were markedly reduced by artichoke treatments as compared to CCl<sub>4</sub> group. Oxidative stress induced by CCl<sub>4</sub> was extremely managed by artichoke supplementation as the activities of both erythrocytes superoxide dismutase (SOD) and plasma catalase were noticeably increased by artichoke in a dose dependent manner as compared to those of CCl<sub>4</sub> group. These results demonstrate that artichoke leaves have a marked antioxidative and protective potential against CCl<sub>4</sub> intoxication.

### Author Keywords

Artichoke leaves; Carbon tetrachloride; Hepatoprotection; Oxidative stress; Renal protection

**Document Type:** Article

**Source:** Scopus

Atta, A.M.<sup>a b</sup>, El-Mahdy, G.A.<sup>a c</sup>, Al-Lohedan, H.A.<sup>a</sup>, Al Hussain, S.A.<sup>a d</sup>

**Corrosion inhibition of nanocomposite based on acrylamide copolymers /magnetite for steel**  
(2014) *Digest Journal of Nanomaterials and Biostructures*, 9 (2), pp. 627-639. Cited 2 times.

<sup>a</sup> King Saud University, Chemistry Department, College of Science, P.O.Box - 2455, Riyadh - 11451, Saudi Arabia

<sup>b</sup> Petroleum application department, Egyptian petroleum research institute, Cairo, Egypt

<sup>c</sup> Chemistry department, Helwan university, Helwan, Cairo, Egypt

<sup>d</sup> Chemistry department, Al- Imam Muhammad Ibn Saud Islamic University, Saudi Arabia

### Abstract

The methods for the design of highly corrosion resistance nanocomposite on the surface of steel with oxide layers have been described. Self-stabilized magnetic polymeric nanoparticles of coated sodium 2-acrylamido-2-methyl propane sulfonate-co- N-Isopropyl Acrylamide/magnetite, NIPAAm/AMPS-Na/Fe<sub>3</sub>O<sub>4</sub>, was prepared by surfactant-free radical polymerization using N, N-methylenebisacrylamide (MBA as crosslinker, and potassium persulfate (KPS as an initiator in the presence of hydrophilic poly(vinyl pyrrolidone coated magnetite particles. The chemical structures of the modified NIPAAm/AMPS-Na/Fe<sub>3</sub>O<sub>4</sub> were confirmed by FTIR analysis. The morphology and the particle size distributions of the NIPAAm/AMPS-Na/Fe<sub>3</sub>O<sub>4</sub> composite were observed and analyzed by transmission electron microscopy (TEM). The average Fe<sub>3</sub>O<sub>4</sub> content of NIPAAm/AMPS-Na/Fe<sub>3</sub>O<sub>4</sub> was determined by thermogravimetric analysis (TGA). The inhibitive action of NIPAAm/AMPS-Na/magnetite nanogel on corrosion of steel in 1 M HCl solution was investigated through polarization and electrochemical impedance spectroscopy (EIS). The increase in inhibition efficiency with inhibitor concentration is associated with a shift of both cathodic and anodic branches of the polarization curves towards lower current densities and suggested that NIPAAm/AMPS-Na/magnetite nanogel acted as mixed type inhibitor. The results indicate good agreement between the values of inhibition efficiency (IE% as obtained from the impedance technique and polarization measurements.

### Author Keywords

Corrosion inhibitor; Magnetite; Nanocomposite; Nanogels; Nanoparticle; Sodium 2-acrylamido-2-methyl propane sulfonate-co-n-isopropyl acrylamide

**Document Type:** Article

**Source:** Scopus

Mohamed, T.A.A., El-Sabban, S., Khalaf, G.A.F.M.

**Multi-granularity grooming using timing information in optical networks with waveband and TDM switching**

(2014) *Ain Shams Engineering Journal*, 5 (2), pp. 433-448.

**DOI:** 10.1016/j.asej.2013.12.003

Helwan University, Elshorbagy - Boulaq El- Dakrou, Ahmed Ali Ismail Street, No. 28, Giza 12614, Egypt

### Abstract

In this paper, we incorporate the idea of waveband switching in Mixed Line Rates (MLR) network design to address the problem of dynamic traffic grooming in waveband switching networks by investigating a cost function which take the effect of call holding time on the time slot assignment process of in WDM-TDM. Use has been made of Markov model in order to predict the wavelength congestion. A routing algorithm is developed based on the Markov modeling. The results are compared with existing routing algorithms - Available Shortest Path (ASP) and Online Traffic Grooming Algorithm (OTGA). Validation results have shown that the performance of the proposed system is significantly improved in terms of bandwidth blocking ratio, network utilization as well as port saving due to wavebanding. © 2013 Production and hosting by Elsevier B.V.

### Author Keywords

Dynamic traffic grooming; Holding time; Markov chain; Optical Time Slot Interchanger (OTSI); Transient probability; Waveband switching (WBS)

**Document Type:** Article

**Source:** Scopus

Gharry, H.A.<sup>a b</sup>

**Analytical approach to exact solutions for the wick-type stochastic space-time fractional KdV equation**

(2014) *Chinese Physics Letters*, 31 (6), art. no. 060503, .

**DOI:** 10.1088/0256-307X/31/6/060503

<sup>a</sup> Department of Mathematics, Faculty of Industrial Education America (11282), Helwan University, Cairo, Egypt

<sup>b</sup> Department of Mathematics, Faculty of Science, Taif University, Hawea(888), Taif, Saudi Arabia

### Abstract

This study is devoted to giving an analytical approach to exact solutions for the Wick-type stochastic spacetime fractional KdV equation. By means of Hermite transform, white noise theory, and the fractional Riccati equation method, we derive white noise functional solutions for the Wick-type stochastic space-time fractional KdV equations.

Exact traveling wave solutions for the variable coefficients space-time fractional KdV equations are given by using the fractional Riccati equation method. The obtained results include soliton-like, periodic, and rational solutions. © 2014 Chinese Physical Society and IOP Publishing Ltd.

**Document Type:** Article

**Source:** Scopus

Kassab, R.B.<sup>a b c</sup>, Bauomy, A.A.<sup>a</sup>

**The neuroprotective efficiency of the aqueous extract of clove (*Syzygium aromaticum*) in aluminium-induced neurotoxicity**

(2014) *International Journal of Pharmacy and Pharmaceutical Sciences*, 6 (5), pp. 503-508.

<sup>a</sup> Zoology and Entomology Department, Helwan University, Cairo, Egypt

<sup>b</sup> Free Radicals Pathophysiology Department, Institute of Biophysics, Academy of Sciences of the Czech Republic, Czech Republic

<sup>c</sup> Department of Experimental Biology, Masaryk University, Brno, Czech Republic

**Abstract**

**Objective:** The goal of the current work is to study the possible neuroprotective effect of aqueous extract of clove (*Syzygium aromaticum*) on ions homeostasis, acetylcholinesterase (AChE) activity and the oxidative status in different brain regions of adult male Wistar albino rats which were intoxicated by aluminium chloride (AlCl<sub>3</sub>). **Methods:** Rats were divided into four groups, Group I was received normal saline; Group II was administered orally with AlCl<sub>3</sub> (150 mg/kg b. wt.); Group III was received aqueous extract of clove (200 mg/kg b. wt.) and Group IV was received combined treatment with AlCl<sub>3</sub> and clove. All the groups were treated for 14 days. **Results:** The treatment with AlCl<sub>3</sub> caused a significant elevation in the concentration of aluminium (Al) and calcium (Ca<sup>2+</sup>) ions, AChE, malondialdehyde (MDA) and nitrite/nitrate levels, while a significant reduction in the level of magnesium (Mg<sup>+</sup>) and sodium (Na<sup>+</sup>) ions, reduced glutathione (GSH) and glutathione peroxidase (GPx) activity was observed. Meanwhile, the combined treatment with AlCl<sub>3</sub> and clove was found to restore the investigated parameters to be near the normal values. **Conclusion:** The results presented here, indicate that the toxic effects of AlCl<sub>3</sub> could be mediated through modifying the intracellular brain ions homeostasis, cholinergic dysfunction and oxidative damage in rat brains which may lead to impaired neuronal function. Taken together the results of this study also showed that clove offers neuroprotection against AlCl<sub>3</sub>-induced neurotoxicity.

**Author Keywords**

Acetylcholinesterase; Aluminium; Clove; Ions; Oxidative stress and rats

**Document Type:** Article

**Source:** Scopus

Al-Quraishy, S.<sup>a</sup>, Metwaly, M.S.<sup>a</sup>, Dkhil, M.A.<sup>a b</sup>, Gewik, M.M.<sup>a</sup>, Hassan, A.-M.S.<sup>c</sup>, Zrieq, R.<sup>d</sup>

**Palm pollen as growth and metabolic enhancer during the course of murine intestinal eimeriosis**

(2014) *Pakistan Journal of Zoology*, 46 (2), pp. 423-430. Cited 1 time.

<sup>a</sup> Department of Zoology, College of Science, King Saud University, Riyadh, Saudi Arabia

<sup>b</sup> Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

<sup>c</sup> Department of Biochemistry, Faculty of Agriculture, Fayoum University, Egypt

<sup>d</sup> Department of Biology, Faculty of Science for Girls at Alfaysalyah, King Abdulaziz University, Saudi Arabia

**Abstract**

The current study was designed to evaluate the antagonistic effect of palm pollen extract (PPE) against *Eimeria papillata*-induced growth depression and metabolic disturbance in laboratory mice. Swiss albino mice were randomly divided into three groups. The first group represents control non-infected animals. Second and third groups were orally infected with 1.5×10<sup>3</sup> sporulated *E. papillata* oocysts. The 3rd group was treated with a daily dose (150 mg/kg) of PPE for five successive days. All animals were sacrificed on day 5 p.i., and samples were collected. Control non-infected mice had an average gain in their weights by about 18%, while infected mice lost their weights by about 7%. Upon treatment of infected mice with PPE, there was an average weight gain of about 5%. A state of disturbance in nutrient levels and systemic inflammatory response had been induced as a result of *E. papillata* infection. Blood glucose level and total proteins were elevated with concurrent decrease of carbohydrate and protein content in jejunum tissue. Also, infection caused hyperlipidemic status and disturbance in metal ion concentrations. Moreover, plasma enzymatic activities of lactate dehydrogenase, alanine transaminase and alkaline phosphatase were significantly elevated as a consequence of *E. papillata* infection. PPE could effectively restore carbohydrate, proteins, lipids and metal ions near to their normal values with diminishing the activity of the mentioned enzymatic biomarkers of inflammation. Finally, palm pollens can be used as an excellent food supplement to ameliorate the induced

metabolic disturbance and growth depression associated with the intestinal coccidial infections. Copyright 2014 Zoological Society of Pakistan.

**Author Keywords**

Coccidiosis; Eimeria papillata; Growth and metabolic enhancer; Mice; Palm pollen

**Document Type:** Article

**Source:** Scopus

Abdel Dayem, A.M.<sup>b</sup>, Nabil Metwally, M.<sup>b</sup>, Alghamdi, A.S.<sup>a</sup>, Marzouk, E.M.<sup>c</sup>

**Numerical simulation and experimental validation of integrated solar combined power plant**

(2014) *Energy Procedia*, 50, pp. 290-305.

**DOI:** 10.1016/j.egypro.2014.06.036

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<sup>b</sup> Assigned from Faculty of Eng. (Mattaria), Helwan University, Cairo, Egypt

<sup>c</sup> Faculty of Engineering, Alexandria University, Cairo, Egypt

**Abstract**

Combined cycle power plant has the highest efficiency due to recovery heat efficient use. Utilizing solar heating of parabolic troughs can improve the overall efficiency of such plants. Different plants of such technology were successfully installed around the world and one of these plants is the Kurymat plant, which was recently installed south Cairo, Egypt. In the plant the exit flue gases from a gas turbine is used to produce superheated steam into a steam turbine without any supplementary firing. The gasturbine always works in full load where the steam cycle power is maximized during the day when the solar field performance is maximized. Parabolic trough solar collectors are used to generate the steam during the day time, where the steam mass flow rate is controlled to improve the power produced. A detailed performance model of the integrated combined cycle of Kuraymat plant is created in TRNSYS simulation environment. A numerical simulation of the plant was established and its predicted performance is compared with the measured data of the Kuraymat plant. The numerical results are in close agreement with the measured ones. Annual performance of the validated simulated plant is presented under weather data of Makkah, 21.29 °N. The power of gas-turbine is improved to 72 MW along the year while the steam-turbine power is increased to about 52 MW that is about 44% of total power. The solar fraction of the plant was estimated at about 25%. The model demonstrates the capability to perform detailed analysis and is very useful for evaluating proposed systems. © 2014 Elsevier Ltd.

**Author Keywords**

Integrated solar combined cycles; Numerical simulation; Parabolic trough; TRNSYS software

**Document Type:** Conference Paper

**Source:** Scopus

Atta, A.M.<sup>a b</sup>, El-Mahdy, G.A.<sup>a c</sup>, Al-Lohedan, H.A.<sup>a</sup>, Tawfeek, A.M.<sup>d</sup>, Abdel-Khalek, A.A.<sup>e</sup>

**Synthesis and characterization of poly (Sodium 2-acrylamido-2-methyl propane sulfonate)/clay nanocomposit on steel in aggressive medium**

(2014) *Digest Journal of Nanomaterials and Biostructures*, 9 (2), pp. 531-541. Cited 2 times.

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<sup>d</sup> College of Science, King Saud University, Riyadh, Saudi Arabia

<sup>e</sup> Chemistry department, Beni Suef University, Beni Suef, Egypt

**Abstract**

Waterborne bioactive materials PNa- AMPS /MMT has been successfully prepared by effectively dispersing inorganic nanolayers of Na<sup>+</sup>-MMT clay in crosslinked PNa- AMPS matrix through direct aqueous solution dispersion technique. The prepared nanogel was characterized by Fourier transform infrared (FTIR), X-ray diffraction (XRD) patterns and transmission electron microscopy (TEM). The corrosion inhibition activity of PNa-AMPS /MMT towards steel corrosion in chloride containing environment has been investigated by polarization and electrochemical impedance spectroscopy (EIS) methods. Polarization measurements indicate that PNa-AMPS /MMT acts as a mixed type-inhibitor and the inhibition efficiency increases with inhibitor concentration. The results of potentiodynamic polarization and EIS measurements clearly showed that the inhibition mechanism involves blocking of the steel surface by inhibitor

molecules via adsorption.

**Author Keywords**

Nanoclay; Nanocomposite; Nanogel; Sodium 2-acrylamido-2-methylpropane sulfonate

**Document Type:** Article

**Source:** Scopus

El-Rewaidy, H.<sup>a</sup>, Khalifa, A.<sup>b</sup>, Fahmy, A.S.<sup>a c</sup>

**Accurate estimation of the myocardium global function from reduced magnetic resonance image acquisitions** (2014) *2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2014*, art. no. 6945172, pp. 6728-6731.

**DOI:** 10.1109/EMBC.2014.6945172

<sup>a</sup> Systems and Biomedical Engineering Department, Cairo University, Egypt

<sup>b</sup> Systems and Biomedical Engineering Department, Helwan University, Egypt

<sup>c</sup> Center of Informatics Science, Nile University, Egypt

**Abstract**

Evaluating the heart global function from magnetic resonance images is based on estimating a number of functional parameters such as the left ventricular (LV) volume, LV mass, ejection fraction, and stroke volume. Estimating these parameters requires accurate calculation of the volumes enclosed by the inner and outer surfaces of the LV chamber at the max contraction and relaxation states of the heart. Currently, this is achieved through acquisition and segmentation of a large number of short-axis (SAX) views of the LV, which is time-consuming and expensive. Reducing the number of acquisitions results in undersampling the LV surfaces and hence increases the calculation errors. In this work, we describe and evaluate a method for estimating the cardiac parameters from a small number of image acquisitions that includes one long-axis (LAX) view of the LV. In this method, the LAX contour is used to swipe the SAX contours to fill in the missed LV surface between the SAX slices. Results on 25 patients and CT phantoms shows that, given the same number of slices, the proposed method is superior to other methods. © 2014 IEEE.

**Document Type:** Conference Paper

**Source:** Scopus

Rashad, M.M.<sup>a</sup>, Ismail, A.A.<sup>a</sup>, Osama, I.<sup>a</sup>, Ibrahim, I.A.<sup>a</sup>, Kandil, A.-H.T.<sup>b</sup>

**Decomposition of methylene blue on transition metals doped SnO<sub>2</sub> Nanoparticles** (2014) *Clean - Soil, Air, Water*, 42 (5), pp. 657-663. Cited 2 times.

**DOI:** 10.1002/clen.201300032

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<sup>b</sup> Faculty of Science, Department of Chemistry, Helwan University, Cairo, Egypt

**Abstract**

Transition metals (M=Zn, Ni, Co, and Mn) doped stannic oxide MxSn<sub>1-x</sub>O<sub>2</sub> at x=0.1, 0.2, and 0.3 molar ratios have been successfully prepared. The results revealed that X-ray diffraction peaks position exhibited the rutile tetragonal structure of cassiterite phase of SnO<sub>2</sub> and there are no extra peaks of doped metal oxides at 0.1 and 0.2 molar ratio. However, secondary phase of doped metal oxides ZnO, NiO, Co<sub>3</sub>O<sub>4</sub>, and Mn<sub>2</sub>O<sub>3</sub> were detected at 0.3 molar ratio. The average particles size of undoped SnO<sub>2</sub> and doped samples were amounted to be ~5.8, 7.8, 11.8, 14.3, and 17.4nm for SnO<sub>2</sub>, Zn<sub>0.3</sub>Sn<sub>0.7</sub>O<sub>2</sub>, Ni<sub>0.3</sub>Sn<sub>0.7</sub>O<sub>2</sub>, Co<sub>0.3</sub>Sn<sub>0.7</sub>O<sub>2</sub>, and Mn<sub>0.3</sub>Sn<sub>0.7</sub>O<sub>2</sub> samples, respectively. The prepared samples have been evaluated by photodegradation of methylene blue (MB). The results indicated that Zn<sup>2+</sup> doping SnO<sub>2</sub> (Zn<sub>0.3</sub>Sn<sub>0.7</sub>O<sub>2</sub>) was remarked the highest photocatalytic activity for the MB photodegradation. The improvement in the photocatalytic activity of Zn<sub>0.3</sub>Sn<sub>0.7</sub>O<sub>2</sub> is attributed to hetero-junctions of the ZnO/SnO<sub>2</sub>. The effect of doping Ni, Co, and Mn ions on the photocatalytic properties are insignificant in the photocatalytic activity of SnO<sub>2</sub>. The recycling tests indicated that ZnO/SnO<sub>2</sub> was quite stable and there is no decrease in photocatalytic activity after five times repetition, indicating a promising catalyst for commercial applications. © 2014 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

**Author Keywords**

Doped; Dye; Photocatalysts

**Document Type:** Article

**Source:** Scopus

Salem, A.<sup>a b</sup>, Elsied, M.F.<sup>b c</sup>, Druant, J.<sup>a</sup>, De Belie, F.<sup>a</sup>, Oukaour, A.<sup>c</sup>, Gualous, H.<sup>c</sup>, Melkebeek, J.<sup>a</sup>  
**An advanced multilevel converter topology with reduced switching elements**  
(2014) *Proceedings, IECON 2014 - 40th Annual Conference of the IEEE Industrial Electronics Society*, art. no. 7048655, pp. 1201-1207.

**DOI:** 10.1109/IECON.2014.7048655

<sup>a</sup> Department of Electrical Energy, Systems and Automation, Ghent University, Belgium

<sup>b</sup> Electrical Power and Machines Department, Helwan University, Egypt

<sup>c</sup> LUSAC, Université de Caen Basse Normandie, Cherbourg-Octeville, France

#### Abstract

Smart grid applications, renewable energy utilization and electric vehicles (EVs) are attracting researchers due to their importance nowadays as well as in the future. An efficient power electronic converter is a main and common topic for research in this area. In this paper, a prototype of the electrical part of a power-train for EVs using an advanced multilevel converter topology is introduced, discussed and analysed. A comparison between the advanced converter, two-level and conventional multilevel converter topology is discussed as well. A switch function model is derived and discussed for the proposed converter. A mathematical model for the converter supplied by a fuel-cell (FC) and boost-converter (BC) is implemented with Matlab/Simulink. The simulation results are analysed to evaluate the converter. The evaluation is based on the harmonic analysis and power loss calculations. The converters are tested at different switching frequencies to show the effect of this variable on the converter loss. The results indicate that the proposed converter is 1.32% more efficient compared to conventional five-level DCC. Moreover, the lowest harmonic content, for all of the studied converters, is the proposed one. © 2014 IEEE.

#### Author Keywords

Diode-clamped-converter; Multilevel converter; T5 converter

**Document Type:** Conference Paper

**Source:** Scopus

Abdelsalam, S.S.<sup>a</sup>, El-Naggar, H.M.<sup>b</sup>

#### **LRFD for large-diameter bored piles in Egypt**

(2014) *Geotechnical Special Publication*, (234 GSP), pp. 900-910.

**DOI:** 10.1061/9780784413272.088

<sup>a</sup> Civil Engineering Dep't, Faculty of Engineering, British University in Egypt, Cairo-Suez Road, Al-Sherouk City, 11837, Egypt

<sup>b</sup> Civil Engineering Dep't, El-Mataria Faculty of Engineering, Helwan University, Cairo, 11790, Egypt

#### Abstract

The main goal of this study is to implement the load and resistance factors design (LRFD) approach for large-diameter bored piles considering the use of various static analysis methods available in the AASHTO specifications and the Egyptian code of practice. Exclusively, reliability-based LRFD resistance factors were calibrated for the O'Neill and Reese, the ECDF, and the Brown et al. methods using a wide range of soil types-knowing that these design methods are used in the current AASHTO specifications, the 2001 Egyptian code, and the 2010 FHWA design manual for deep foundations, respectively. The analysis was based on a newly developed national electronic database that consists of information from more than 90 static load tests. From the main findings, the values of the resistance factors for the 2001 ECDF method ranged from 0.86 to 0.41. However, the 2010 FHWA method generally provided higher efficiency compared with the 2007 AASHTO method and the 2001 ECDF in sand, clay, and mixed soils. © 2014 American Society of Civil Engineers.

**Document Type:** Conference Paper

**Source:** Scopus

El-Sheshtawy, H.S.<sup>a</sup>, Mohammed, S.Z.<sup>a</sup>, Abdallah, R.I.<sup>a</sup>, Azzam, R.A.<sup>b</sup>, Abdelfattah, M.S.<sup>b</sup>, Meki, A.A.<sup>a</sup>

#### **Biodegradation of crude oil enhancing by using nanoliposome**

(2014) *Life Science Journal*, 11 (11), pp. 243-255.

<sup>a</sup> Egyptian Petroleum Research Institute, Nasr City, 11727 Cairo, Egypt

<sup>b</sup> Department of Chemistry, Helwan University, Egypt

#### Abstract

The present study is to replace the chemical surfactants that used for treatment the oil spill with alternate substrates.



These substrates such as industries wastes which contain high level of phospholipids e.g. waste of soybean oil can be used in preparation of nano-liposome. Moreover, the use of waste contributes towards a reduction in environmental pollution and the economic valuation of such products. The nano-liposome and nano-surfactant associated nano-liposome was tested to enhance the biodegradation process by applying essential nutrients for bacterial growth. The percentage biodegradation of crude oil by six bacterial strains were estimated by gravimetric analysis. The bacterial strains were degraded the crude oil in range from (35 to 60 %) after 7 days of incubation period. The medium containing mixed bacterial consortium (*Pseudomonas xanthomarina*, *Pseudomonas stutzeri* and *Bacillus subtilis spizizenii*) in the presence of nano-liposome as natural surfactant gave the higher percentage of degradation at 60 %. On the other hand, the presences of nano-tween80 associated nano-liposome was enhanced the biodegradation process of n-paraffins more than iso-paraffins by some microorganisms. On contrary, the percentage degradation of iso-paraffins increased by other bacterial isolates when using the nanoliposome only.

#### Author Keywords

Biodegradation; Chemical surfactant; Crude oil; Dsl; Liposome; Nanotween80; Tem

**Document Type:** Article

**Source:** Scopus

Al-Olayan, E.M.<sup>a</sup>, El-Khadragy, M.F.<sup>a b</sup>, Aref, A.M.<sup>c</sup>, Othman, M.S.<sup>d</sup>, Kassab, R.B.<sup>b e</sup>, Abdel Moneim, A.E.<sup>b f</sup>

#### **The potential protective effect of physalis peruviana L. against carbon tetrachloride-induced hepatotoxicity in rats is mediated by suppression of oxidative stress and downregulation of MMP-9 expression**

(2014) *Oxidative Medicine and Cellular Longevity*, 2014, art. no. 381413, . Cited 4 times.

**DOI:** 10.1155/2014/381413

<sup>a</sup> Zoology Department, Faculty of Science, King Saud University, Riyadh 11451, Saudi Arabia

<sup>b</sup> Zoology and Entomology Department, Faculty of Science, Helwan University, Cairo 11795, Egypt

<sup>c</sup> Biological Science Department, Faculty of Dentistry, Modern Sciences and Arts (MSA) University, Giza 12111, Egypt

<sup>d</sup> Biochemistry and Molecular Biology Department, Faculty of Biotechnology, Modern Sciences and Arts (MSA) University, Giza 12111, Egypt

<sup>e</sup> Experimental Biology Department, Faculty of Science, Masaryk University, 62500 Brno, Czech Republic

<sup>f</sup> Biochemistry and Molecular Biology Department, Asturias Institute of Biotechnology, University of Oviedo, 33006 Oviedo, Spain

#### Abstract

The active constituent profile in Cape gooseberry (*Physalis peruviana* L.) juice was determined by GC-MS. Quercetin and kaempferol were active components in the juice. In this study we have evaluated its potential protective effect on hepatic injury and fibrosis induced by carbon tetrachloride (CCl<sub>4</sub>). Twenty-eight rats divided into 4 groups: Group I served as control group, and Group II received weekly i.p. injection of 2 mL CCl<sub>4</sub>/kg bwt for 12 weeks. Group III were supplemented with *Physalis* juice via the drinking water. The animals of Group IV received *Physalis* juice as Group III and also were intraperitoneally injected weekly with 2 mL CCl<sub>4</sub>/kg bwt for 12 weeks. Hepatoprotective effect was evaluated by improvement in liver enzymes serum levels, reduction in collagen areas, downregulation in expression of the fibrotic marker MMP-9, reduction in the peroxidative marker malonaldehyde and the inflammatory marker nitric oxide, and restoration of the activity of antioxidant enzymatic and nonenzymatic systems, namely, glutathione content, superoxide dismutase, catalase, glutathione-S-transferase, glutathione peroxidase, and glutathione reductase activities. The results show that the potential hepatoprotective effects of *Physalis peruviana* may be due to *physalis* acts by promotion of processes that restore hepatolobular architecture and through the inhibition of oxidative stress pathway. © 2014 Ebtisam M. Al-Olayan et al.

**Document Type:** Article

**Source:** Scopus

Naeem Rabeh, M., Marwa Ibrahim, E.

#### **Antihypercholesterolemic effects of beet (*Beta vulgaris* L.) root waste extract on hypercholesterolemia rats and its antioxidant potential properties**

(2014) *Pakistan Journal of Nutrition*, 13 (9), pp. 500-505.

**DOI:** 10.3923/pjn.2014.500.505

Department of Nutrition and Food Science, Helwan University, Cairo, Egypt

#### Abstract

The methanolic extract of beet (*Beta vulgaris* L.) root waste was investigated for its possible antihypercholesterolemic in cholesterol rich diet-induced hypercholesterolemia in male adult albino rats and its antioxidant potential. Different in vitro assays used for determining antioxidant potential of extracts of pulp wastes were: 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging activity and total antioxidant capacity. Thirty five adult male albino rats were

randomly divided into two main groups, the first main group (control negative: 7 rats each) fed on basal diet only, while the second main group (28 rat) fed on hypercholesterolemic diet (basal diet, 1% cholesterol, 0.25% bile salt and 15% beef tallow) for 1 month to raise the lipid profile level. After that, these hypercholesterolemic rats divided into four subgroups as follow the first subgroup (control positive) fed on hypercholesterolemic diet only, while the other three subgroups fed on hypercholesterolemic diet and administered orally with beet root waste extract (BRWE) at a dose of 200, 400 and 600 mg/kg/day, respectively. Lipid profile was measured in serum of rats. The results indicated that, administration with extract of beet root waste at the doses of 200, 400 and 600 mg/kg b.w for 30 day showed a significant ( $p < 0.05$ ) decrease in total cholesterol, triglycerides, LDL-c and caused also a significant ( $p < 0.05$ ) increase in HDL-c level. Total phenols were analyzed in the extract of BRWE and the results showed a high content of total phenols and antioxidant capacity. The DPPH scavenging activity  $IC_{50}$  values of the methanolic extracts were (253  $\mu\text{g/mL}$ ). These findings indicate that the extract has a significant antihypercholesterolemic and antioxidant potential and/or free radical scavenging properties in hypercholesterolemic rats possibly exerted by the phytoconstituents present in the beet root waste. So, these results pave the way for utilization of bio-wastes from the food industry. © Asian Network for Scientific Information, 2014.

**Author Keywords**

Antioxidant capacity; Beet root Pulp; Beta vulgaris; DPPH; Hypercholesterolemia; Lipid profile; rats

**Document Type:** Article

**Source:** Scopus

Mohamed, E.S.<sup>a</sup>, Albatlan, S.A.<sup>b</sup>

**Analysis and testing for slip characteristics of artificial hydraulic circuit based push-belt continuously variable transmission**

(2014) *International Journal of Vehicle Structures and Systems*, 6 (1-2), pp. 8-16.

**DOI:** 10.4273/ijvss.6.1-2.02

<sup>a</sup> Helwan University, Mataria, Cairo, Egypt

<sup>b</sup> Higher Technological Institute, 6th of October City Campus, Egypt

**Abstract**

Applying a Continuously Variable Transmission (CVT) in an automotive driveline has several advantages. A CVT can operate at a wider range of transmission ratios, therefore the engine can be operated more efficiently than with a stepped transmission. The present research focuses on the influence of loading conditions on the slip behaviour and torque transmission of the CVT. The CVT model is developed to investigate the range of clamping forces needed to initiate the transmission and to successfully meet the oil pressure requirements. An analytical approach is used to calculate the possible transmission efficiency and traction coefficient of the push belt CVT. The experimental setup and the instrumentation are presented in detail. The measured results are presented in more detail for the V-belt type variator and oil pressure reapplication by a separate hydraulic unit and reduction ratio of CVT. © 2014. MechAero Foundation for Technical Research & Education Excellence.

**Author Keywords**

Clamping force; Continuously variable transmission; Metal-push belt; Modelling; Slip characteristics

**Document Type:** Article

**Source:** Scopus

El-Mahdy, T.S.

**Expression of ampC, oprD, and mexA, Outer membrane protein analysis and carbapenemases in multidrug resistant clinical isolates of Pseudomonas aeruginosa from Egypt**

(2014) *Journal of Chemotherapy*, 26 (6), pp. 379-381.

**DOI:** 10.1179/1973947814Y.0000000195

Department of Microbiology and Immunology, Helwan University, Cairo, Egypt

**Document Type:** Article

**Source:** Scopus

Gomaa, A.<sup>a</sup>, Aly, W.I.A.<sup>a</sup>, Omara, M.<sup>b</sup>, Abdelmagied, M.<sup>a</sup>

**Correlations for heat transfer coefficient and pressure drop in the annulus of concentric helical coils**

(2014) *Heat and Mass Transfer/Waerme- und Stoffuebertragung*, 50 (4), pp. 583-586.

**DOI:** 10.1007/s00231-013-1258-0

<sup>a</sup> Department of Refrigeration and Air-Conditioning Technology, Faculty of Industrial Education, Helwan University, 11282 Cairo, Egypt

<sup>b</sup> Department of Mechanical Engineering, Faculty of Industrial Education, Suez Canal University, Suez, Egypt

### Abstract

Heat transfer and pressure drop characteristics in the annulus of concentric helical coils heat exchangers were experimentally investigated. The effects of coil curvature ratio, flow configuration, number of turns and addition of surfactant were investigated. Five test coils were designed and manufactured to study the effect of different parameters on heat transfer and pressure drop. The liquids used in the present study were water and oleyl-dihydroxy-ethyl-amine-oxide (ODEAO, C<sub>22</sub>H<sub>45</sub>NO<sub>3</sub> = 371) non-ionic aqua surfactant solution flowing through the annulus side. The inner side Reynolds number range 11,000-27,000 and the annulus side range 5,000-19,000. The results showed that the annulus Nusselt number decreases as annulus curvature ratio increases and increases when number of turns decrease. Moreover, the friction factor increases with the curvature ratio and also increases as number of turns decreases. Both Nusselt number and friction factor decrease when ODEAO concentration increases. © 2013 Springer-Verlag Berlin Heidelberg.

**Document Type:** Article

**Source:** Scopus

El-Morsy, A.-W.<sup>a b</sup>, Shafeek, H.<sup>a c</sup>, Alshehri, A.<sup>a</sup>, Gutub, S.A.<sup>a</sup>

**Implementation of quality management system by utilizing ISO 9001:2008 model in the emerging faculties** (2014) *Life Science Journal*, 11 (8), pp. 119-125.

<sup>a</sup> King Abdulaziz University, Saudi Arabia

<sup>b</sup> Helwan University, Egypt

<sup>c</sup> Industrial College of Education, Suez Canal University, Egypt

### Abstract

This study aims to have first-hand knowledge for implementing quality management system based on the international standard ISO 9001:2008 for academic institutions which considered as the cornerstone toward establishing total quality management system including the basis of academic accreditation requirements. This work uses a case study approach to examine implementation of QMS in HE issue and conducts a review of the closely related models. The study also provides a complete plans and strategies to assist and support their initiatives to achieve quality system. Faculty of Engineering-Rabigh at King Abdulaziz University is considered as the real case study to implement the main features of the quality management system in the educational sectors. The study shows how to identify the stages of applying quality in higher educational institutions, in particular emerging faculty. It concludes that quality management system based on the ISO 9001:2008 can provide a foundation for total quality management and academic accreditation with particular attention to conform all stakeholders' requirements. HE institutions should attempt to increase quality and excellence by applying a total quality management.

### Author Keywords

Higher education institutions; ISO 9001:2008; Quality management system

**Document Type:** Review

**Source:** Scopus

Farag, H.<sup>a b</sup>

**Investor overreaction and unobservable portfolios: evidence from an emerging market** (2014) *Applied Financial Economics*, 24 (20), pp. 1313-1322. Cited 1 time.

**DOI:** 10.1080/09603107.2014.925058

<sup>a</sup> Birmingham Business School, University of Birmingham, Birmingham, United Kingdom

<sup>b</sup> Helwan University, Cairo, Egypt

### Abstract

We use the system GMM to explore both cross sectional variations and time-series effects within the post-event period for losers and winners portfolios. Some of these effects are not observable, but ignoring them lays the estimation open to bias from concealed heterogeneity amongst companies and periods. Using daily data on a sample of companies which experienced dramatic 1-day price changes, we find strong evidence of price reversal. We also find that unobservable portfolios outperform traditional size portfolios. © 2014 © 2014 Taylor & Francis.

### Author Keywords

price reversal; system GMM; unobservable effects

**Document Type:** Article

**Source:** Scopus

Sharawy, S.M.<sup>a b</sup>, Badr, A.<sup>c</sup>

**Relationships of Astragalus L. in section Sesamei based on morphological criteria and molecular markers**  
(2014) *Bangladesh Journal of Plant Taxonomy*, 21 (1), pp. 1-12.

<sup>a</sup> Botany Department, Faculty of Science, Ain Shams University, Cairo, Egypt

<sup>b</sup> Biology department, Faculty of Science, Hail University, Hail, Saudi Arabia

<sup>c</sup> Botany and Microbiology Department, Faculty of Science, Helwan University, Cairo, Egypt

#### Abstract

The relationships among five species and two varieties of *Astragalus* L. in the section *Sesamei* (Fabaceae) from Egypt and Saudi Arabia have been reassessed based on morphological variation and molecular polymorphism as revealed by RAPD and ISSR fingerprinting. The analysis of morphological variation delimited the examined taxa into two groups; one comprising samples representing *A. sinaicus*, *A. asterias* and *A. schimperi*, and the other is comprised of two samples of *A. stella* and six samples representing *A. tribuloides*. The grouping of *A. asterias* and *A. schimperi* based on morphological criteria indicates affinities between them that were not reflected in their previous treatments. Both morphological criteria and molecular markers indicated considerable distance between the samples of *A. stella* and *A. tribuloides*. The multiform nature of *A. tribuloides* is confirmed as *A. tribuloides* var. *mareoticus* is clearly differentiated from the type *A. tribuloides* and *A. tribuloides* var. *minutus*. © 2014 Bangladesh Association of Plant Taxonomists.

#### Author Keywords

*Astragalus*; Fabaceae; ISSR; RAPD; Section *sesamei*

**Document Type:** Article

**Source:** Scopus

Sherif, N.E.<sup>a</sup>, Metwaly, M.S.<sup>a b</sup>, Al-Quraishy, S.<sup>b</sup>, Dkhil, M.A.<sup>b c</sup>

**In-vitro and in-vivo anticoccidial activities of berberine against murine *Eimeria papillata* infection**  
(2014) *Journal of Pure and Applied Microbiology*, 8 (SPEC. ISS. 1), pp. 233-238. Cited 1 time.

<sup>a</sup> Department of Zoology, Faculty of Science, Suez Canal University, Ismailia, Egypt

<sup>b</sup> Department of Zoology, College of Science, King Saud University, Riyadh, Saudi Arabia

<sup>c</sup> Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

#### Abstract

Intestinal Eimerian infections are considered to be one of the most highly distributed protozoan parasitic infections among farms and domestic animals, and cause huge economic losses in the field of animal farming and meat production. All recent trends to fight infectious diseases depend upon using treatment of natural origins instead of synthetic drug therapy. Berberine is a plant derived isoquinoline alkaloid with wide spectrum pharmacological and antimicrobial activities. The current study was designed to elucidate the in-vitro and in-vivo anticoccidial activities of berberine chloride against murine intestinal *Eimeria papillata* infection. In-vitro measurements showed that berberine could significantly reduce the viability and sporulation percent of *E. papillata* unsporulated oocyst. In addition, berberine showed a pronounced in-vivo anticoccidial activity as revealed by reducing the number of zygotes and developing oocysts within intestinal villi by about 90% and that of schizonts and gamonts by 58% and 30% respectively. Moreover, berberine treatment of *E. papillata* infected mice showed a great increase in the total antioxidant capacity within jejunum tissue. Finally, the results of the study proved both in-vitro and in-vivo anticoccidial activities of berberine chloride against the murine intestinal *E. papillata* infection, and could effectively correct the induced disruption in the antioxidant capacity within jejunum tissue by such infection.

#### Author Keywords

Anticoccidial; Berberine; *Eimeria papillata*; In-vitro; In-vivo

**Document Type:** Article

**Source:** Scopus

Afify, A.A.<sup>a</sup>, Uddin, M.J.<sup>b</sup>, Ferdows, M.<sup>c</sup>

**Scaling group transformation for MHD boundary layer flow over permeable stretching sheet in presence of slip**

**flow with Newtonian heating effects**

(2014) *Applied Mathematics and Mechanics (English Edition)*, 35 (11), pp. 1375-1386.

**DOI:** 10.1007/s10483-014-1873-7

<sup>a</sup> Department of Mathematics, Helwan University, Cairo, Egypt

<sup>b</sup> American International University-Bangladesh, Dhaka, Bangladesh

<sup>c</sup> Department of Mathematics, University of Dhaka, Dhaka, Bangladesh

**Abstract**

Taking into account the slip flow effects, Newtonian heating, and thermal radiation, two-dimensional magnetohydrodynamic (MHD) flows and heat transfer past a permeable stretching sheet are investigated numerically. We use one parameter group transformation to develop similarity transformation. By using the similarity transformation, we transform the governing boundary layer equations along with the boundary conditions into ordinary differential equations with relevant boundary conditions. The obtained ordinary differential equations are solved with the fourth-fifth order Runge-Kutta-Fehlberg method using MAPLE 13. The present paper is compared with a published one. Good agreement is obtained. Numerical results for dimensionless velocity, temperature distributions, skin friction factor, and heat transfer rates are discussed for various values of controlling parameters. © 2014, Shanghai University and Springer-Verlag Berlin Heidelberg.

**Author Keywords**

boundary layer; heat transfer; Lie group analysis; magnetohydrodynamic (MHD); Newtonian heating; slip flow

**Document Type:** Article

**Source:** Scopus

El-Habit, O.H.<sup>a</sup>, Abdel Moneim, A.E.<sup>a b</sup>

**Testing the genotoxicity, cytotoxicity, and oxidative stress of cadmium and nickel and their additive effect in male mice**

(2014) *Biological Trace Element Research*, 159 (1-3), pp. 364-372. Cited 4 times.

**DOI:** 10.1007/s12011-014-0016-6

<sup>a</sup> Zoology and Entomology Department, Faculty of Science, Helwan University, Cairo, Egypt

<sup>b</sup> Biochemistry and Molecular Biology Department, Asturias Institute of Biotechnology, University of Oviedo, 33006 Oviedo, Spain

**Abstract**

The present study was aimed to investigate the ability of cadmium (Cd) and nickel (Ni) to induce genotoxicity, cytotoxicity, and oxidative stress in bone marrow cells of male mice. Aneuploidy and chromosomal aberrations (CA) showed that Cd is a stronger mutagen than Ni. Cd and Ni increased significantly the incidences of micronucleated polychromatic erythrocytes (PCEs). Also, the ratio of polychromatic erythrocytes to normochromatic erythrocytes (PCE/NCE) suggests that treatment with higher doses of the two metals increased the cytotoxicity. Numerical chromosomal aberrations increased hypoploidy with the treatment which reached two to three times of the frequency of hyperploidy. The results showed that both Cd and Ni are aneugenic that act on kinetochores and cause malsegregation of chromosomes as well as being clastogenic. Both Cd and Ni increased single-break aberrations and also Cd and Ni were found to induce significant DNA damage in mouse bone marrow cells as assessed by the comet assay. In addition to the cytotoxicity results, biochemical analysis in bone marrow revealed a dose-dependent increase of oxidative stress markers. According to the results obtained, genotoxicity and cytotoxicity effects of cadmium and nickel in vivo are dose-dependent and are associated with oxidative stress and their combined effect is less than their expected additive effect, and it could be concluded that there are no synergistic effects resulting from the combined application of both metals. © 2014 Springer Science+Business Media.

**Author Keywords**

Cadmium; Cytotoxicity; Genotoxicity; Nickel; Oxidative stress

**Document Type:** Article

**Source:** Scopus

Garbie, I.H.<sup>a b</sup>

**Assessing sustainability practices and implementation in manufacturing firms**

(2014) *CIE 2014 - 44th International Conference on Computers and Industrial Engineering and IMSS 2014 - 9th International Symposium on Intelligent Manufacturing and Service Systems, Joint International Symposium on "The Social Impacts of Developments in Information, Manufacturing and Service Systems" - Proceedings*, pp. 2508-2518.

<sup>a</sup> Department of Mechanical and Industrial Engineering, Sultan Qaboos University, Oman

<sup>b</sup> Department of Mechanical Engineering at Helwan, Helwan University, Helwan, Cairo, Egypt

### Abstract

Nowadays, manufacturing firms are needed to be evaluated regarding their sustainability practices and implementation. There are four main frameworks for assessing sustainability practices and implementation: Awareness; drivers; barriers and relevance of sustainability indicators. Although they are used individually, incorporating them in one mathematical model is highly appreciated. Evaluating awareness; identifying drivers and barriers and assessing relevance of sustainability indicators are considered the most important objectives. As the major goal of this paper is to assess the level of practice and implementing sustainability, frameworks for performance measurement will be analyzed and presented, and the aggregated assessment will be introduced. The proposed frameworks will be also demonstrated with a real life case study.

### Author Keywords

Assessment; Sustainability practices

**Document Type:** Conference Paper

**Source:** Scopus

Elbarawy, Y.M.<sup>a</sup>, Mohamed, R.F.<sup>b</sup>, Ghali, N.I.<sup>a</sup>

### Improving social network community detection using DBSCAN algorithm

(2014) *2014 World Symposium on Computer Applications and Research, WSCAR 2014*, art. no. 6916792, .

**DOI:** 10.1109/WSCAR.2014.6916792

<sup>a</sup> Faculty of Science, Al-Azhar University, Cairo, Egypt

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### Abstract

Social networks depict the interactions between individuals or entities and are represented by a graph of interconnected nodes. The study of such graphs leads to understanding of this data and concluding different communities. Among the different clustering algorithms, DBSCAN is an effective unsupervised clustering algorithm which is implemented in this work to emphasize community detection in social network. The results specifies the number of high influence members represented by core, less influence represented by border and members with no influence in the groups represented by outliers. By eliminating the outliers the dataset will be noise free to deal with it. © 2014 IEEE.

**Document Type:** Conference Paper

**Source:** Scopus

Ansari, S.G.<sup>a</sup>, Khan, A.A.<sup>b</sup>, Fouad, H.<sup>c d</sup>, Ansari, Z.A.<sup>a</sup>

### Feasibility Study of Sn-doped titanate nanotubes as a suitable matrix for glucose sensing

(2014) *Sensor Letters*, 12 (12), pp. 1765-1768.

**DOI:** 10.1166/sl.2014.3400

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<sup>b</sup> Central Instrumentation Facility, Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi, India

<sup>c</sup> Department of Applied Medical Science, King Saud University, P.O. Box 28095, Riyadh, Saudi Arabia

<sup>d</sup> Biomedical Engineering Department, Faculty of Engineering, Helwan University, P. O. Box 11792, Helwan, Egypt

### Abstract

Glucose sensing properties of tin doped titanate nanotubes (Sn-TNT) are presented here. Initially, the commercial nanoparticles of TiO<sub>2</sub> were hydrothermally treated at 150 °C for 48 h. Hydrothermal method resulted in the conversion of particles to tubular structure, as observed from scanning electron microscope, then another reaction was carried out to dope with Sn using SnCl<sub>2</sub>xH<sub>2</sub>O as a source material. Sn-TNT films were deposited by screen printed method on electropolished aluminum substrate. Glucose oxidase (GOx) was immobilized by physical adsorption on Sn-TNT films by soaking in glucose solution for 5 h. GOx immobilization resulted in increased film conductivity as observed from I-V studies. The GOx immobilized films were characterized for glucose sensing in the concentration range of 0 to 360 mg/dL. GOx immobilization resulted in drastic change in sensitivity as compared to without GOx films. Increasing sensitivity was found with glucose concentration upto 250 mg/dL after that saturation was noticed in response. Copyright © 2014 American Scientific Publishers

### Author Keywords

Biosensor; Glucose; Nanostructure; Tin-doped; Titanate nanotube

**Document Type:** Article

**Source:** Scopus

Dawoud, M., Hashem, F.M.

**Comparative Study on the Suitability of Two Techniques for Measuring the Transfer of Lipophilic Drug Models from Lipid Nanoparticles to Lipophilic Acceptors**

(2014) *Ageing International*, 15 (6), pp. 1551-1561.

**DOI:** 10.1208/s12249-014-0179-7

Department of Pharmaceutics and Industrial Pharmacy, Helwan University, Cairo, Egypt

**Abstract**

Due to their particle size in the submicrometer range, lipid nanoparticles are suitable for parenteral administration. In order to obtain information on their potential in vivo performance, a simple and effective in vitro assay to evaluate the drug release behavior of such particles is required. This study compares the use of different experimental setups for this purpose. Lipid nanoparticles from trimyristin which were loaded with fluorescent lipophilic drug models (a temoporfin and Nile red) were used as donor particles. The transfer of the two drug models to multilamellar vesicles (MLV) and emulsion droplets as lipophilic acceptor compartments was examined. The determination of the transferred substance was performed either after separation by centrifugation or by an in situ flow cytometric technique. The transfer of temoporfin was slow to the acceptor MLV and very rapid to the acceptor emulsion. With both acceptors, the transfer of temoporfin stopped at a concentration much lower than the theoretical equilibrium values. The transfer of the less lipophilic drug Nile red was very rapid to both acceptors with equilibrium concentrations close to the expected values. The transfer results of temoporfin especially to the acceptor MLV obtained with the two detection techniques were comparable while the centrifugation technique indicated an apparently higher Nile red transfer rate than the flow cytometric technique. Both techniques are equally suitable to study the transfer of temoporfin, while the flow cytometric technique is advantageous to measure the very rapid transfer of Nile red. © 2014, American Association of Pharmaceutical Scientists.

**Author Keywords**

drug transfer; flow cytometry; lipid nanoparticles; liposomes; ultracentrifugation

**Document Type:** Article

**Source:** Scopus

Atta, A.M.<sup>a b</sup>, El-Mahdy, G.A.<sup>a c</sup>, Al-Lohedan, H.A.<sup>a</sup>, Ezzat, A.O.<sup>a</sup>

**Electrochemical behaviour of mild steel in acidic medium based on eco-friendly stabilized monodisperse silver nanocomposite**

(2014) *International Journal of Electrochemical Science*, 9 (12), pp. 8226-8238. Cited 1 time.

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<sup>c</sup> Chemistry Department, Faculty of Science, Helwan University, Helwan, Egypt

**Abstract**

Among the natural products, plant extracts and gums find a prominent place. The abundant phytochemical constituents of plant extracts and gums possess considerable potential as inexpensive, non-toxic and renewable sources of a wide range of organic chemicals of industrial significance. The present work used Myrrh gum to prepare monodisperse coated silver nanoparticles. The method used is simple, easy, cost effective and environment friendly. In this study, Myrrh was used for the first time as a reducing and stabilizing agent. X-ray diffraction, ultraviolet visible spectra, transmission electron microscopy, and ultrasonic spectroscopy revealed the formation of monodispersed Ag-NPs with a narrow particle size distribution. The electrochemical behaviour of Myrrh and silver nanoparticles on steel in 1 M HCl solution has been studied by potentiodynamic and EIS measurements. The inhibition efficiency increases with the concentration of Myrrh and silver nanoparticles. The results revealed that inhibitive effect of silver nanoparticles with Myrrh significantly improved the inhibition performance, and produced strong synergistic inhibition effect. © 2014 The Authors.

**Author Keywords**

EIS; Electrochemical; Myrrh; Polarization; Silver nanoparticles; Steel

**Document Type:** Article

**Source:** Scopus

Elsayed, K.<sup>a b</sup>, Lacor, C.<sup>a</sup>

**Multi-objective surrogate based optimization of gas cyclones using support vector machines and cfd simulations**

(2014) *11th World Congress on Computational Mechanics, WCCM 2014, 5th European Conference on Computational Mechanics, ECCM 2014 and 6th European Conference on Computational Fluid Dynamics, ECFD 2014*, pp. 6265-6298.

<sup>a</sup> Vrije Universiteit Brussel, Department of Mechanical Engineering, Research Group Fluid Mechanics and Thermodynamics, Pleinlaan 2, Brussels, Belgium

<sup>b</sup> Mechanical Power Engineering Department, Faculty of Engineering at El-Mattaria, Helwan University, Masaken El-Helmia P.O., Cairo, Egypt

**Abstract**

In order to accurately predict the complex non-linear relationships between the cyclone performance parameters (The Euler and Stokes numbers) and the four significant geometrical dimensions (the inlet section height and width, the vortex finder diameter and the cyclone total height), the support vector machines approach has been used. Two support vector regression surrogates (SVR) have been trained and tested by CFD data sets. The result demonstrates that SVR can offer an alternative and powerful approach to model the performance parameters. The SVR model parameters have been optimized to obtain the most accurate results from the cross validation steps. SVR (with optimized parameters) can offer an alternative and powerful approach to model the performance parameters better than Kriging. SVR surrogates have been employed to study the effect of the four geometrical parameters on the cyclone performance. The genetic algorithms optimization technique has been applied to obtain a new geometrical ratio for minimum Euler number and for minimum Euler and Stokes numbers. New cyclones over-perform the standard Stairmand design performance. A Pareto optimal solutions have been obtained and a new correlation between the Euler and Stokes numbers are fitted. CFD simulations for the Stairmand design and the new design for minimum Euler numbers are performed using the Reynolds stress turbulence model. The analysis of the CFD results reveal the changes in the flow field pattern which cause the better performance presented by the new design.

**Author Keywords**

Cyclone separator; Multi-objective optimization; Support vector machines; Surrogate models

**Document Type:** Conference Paper

**Source:** Scopus

Tohamy, A.A.<sup>a</sup>, Mohamed, A.F.<sup>b</sup>, Abdel Moneim, A.E.<sup>a c</sup>, Diab, M.S.M.<sup>a</sup>

**Biological effects of Naja haje crude venom on the hepatic and renal tissues of mice**

(2014) *Journal of King Saud University - Science*, 26 (3), pp. 205-212. Cited 7 times.

**DOI:** 10.1016/j.jksus.2014.01.003

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<sup>c</sup> Department of Biochemistry and Molecular Biology, Asturias Institute of Biotechnology, University of Oviedo, Oviedo, Spain

**Abstract**

Snake venoms are known to cause different metabolic disorders, altering cellular and enzymatic activities in animals and releasing pharmacological substances. In this study, the lethality as well as biochemical and histopathological effect of Egyptian cobra (*Naja haje*; *N. haje*) crude venom at a sublethal dose have been investigated on liver and kidney of male mice. Venom injected intramuscularly in mice with 1/2 LD50 (approximately 0.0115. µg/g body weight of mice) and the animals were sacrificed 6. days post injection. Results indicated that the injection of crude venom of the *N. haje* induced a significant disturbance in liver and kidney functions. In addition, results revealed that *N. haje* venom has a potent oxidative activity by increasing the level of reactive oxygen species with concomitant significant increase in hydrogen peroxide, lipid peroxidation, carbonyl protein and nitric oxide levels in hepatic and renal tissues. This activity was extended to decrease non-enzymatic and enzymatic antioxidant defense components such as glutathione, superoxide dismutase and catalase. Additionally, the biochemical alternations induced in hepatic and renal tissues were associated with significant alternations in the histological architecture of liver and kidney of injected mice. From this study, we can conclude that such injury could be considered among the factors that lead to death caused by *N. haje* venom. © 2014 King Saud University.

**Author Keywords**

Kidney; Liver; Mice; *Naja haje* venom; Oxidative stress

**Document Type:** Article

**Source:** Scopus



Bauomy, A.A.<sup>a</sup>, Dkhil, M.A.<sup>a b</sup>, Diab, M.S.M.<sup>a c</sup>, Amer, O.S.O.<sup>d e</sup>, Zrieq, R.M.<sup>f</sup>, Al-Quraishy, S.<sup>b</sup>  
**Response of spleen and jejunum of mice infected with *Schistosoma mansoni* to mulberry treatment**  
(2014) *Pakistan Journal of Zoology*, 46 (3), pp. 753-761.

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<sup>f</sup> Department of Biology, Faculty of Science for Girls at Alfaysalyah, King Abdulaziz University, Jeddah, Saudi Arabia

### Abstract

Schistosomiasis is the second most predominant tropical disease in Africa after malaria. In the developing world, it has a great public health and socio-economic importance. Here, we aimed to assess the antioxidant and anti-schistosomal activities of *Morus alba* leaves (MLE) methanolic extract (200, 400 and 800 mg/kg) on the noticed tissue damage caused by *Schistosoma mansoni* infection in mice. The infection resulted in marked histopathological abnormalities in the spleen and jejunum. Moreover, infection induced splenomegaly and the spleen appeared with disorganized red and white pulps while the jejunum of the infected mice appeared with some inflammation, vacuolation of the epithelium, and destruction of some villi. Also, the number of goblet cells within the infected villi was significantly increased. In addition, schistosomiasis caused oxidative damage where the level of glutathione (GSH) was reduced significantly while the levels of malondialdehyde (MDA) and nitrite/nitrate were elevated significantly. On the other hand, oral gavage of MLE extract ameliorated the tissues damage and oxidative stress induced by Schistosomiasis. The present study indicates that MLE extract possess a highly promising ameliorative effect against histopathological damages and oxidative stress induced by Schistosomiasis. Copyright © 2014 Zoological Society of Pakistan.

### Author Keywords

Glutathione level; *Morus alba*; Oxidative stress; *Schistosoma mansoni*

**Document Type:** Article

**Source:** Scopus

Dkhil, M.A.<sup>a b</sup>, Moneim, A.E.A.<sup>b</sup>, Al-Quraishy, S.<sup>a</sup>

**Berberine protects against *Schistosoma mansoni*-induced oxidative damage in renal and testicular tissues of mice**  
(2014) *Pakistan Journal of Zoology*, 46 (3), pp. 763-771.

<sup>a</sup> Department of Zoology, College of Science, King Saud University, Riyadh, Saudi Arabia

<sup>b</sup> Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

### Abstract

A complex interplay between schistosomiasis and function of different organs leads to the impairment of these organs. In this study, we demonstrated the protective effect of berberine chloride (BER) in schistosomiasis-induced oxidative stress on renal and testicular tissues of mice compared to praziquantel (PZQ). Lipid peroxidation (LPO), nitric oxide (NO), glutathione (GSH), superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPx), glutathione reductase (GR) were estimated. In addition, histopathology of kidney and testes in infected mice were elucidated. The results showed that BER normalized the concentration of GSH and the activities of SOD, CAT, GPx and GR, which were changed by infection and lowered the LPO level that were increased in infected mice. Moreover, BER was able to lower the NO level, while PZQ-treatment induced more elevation of this product. The protection by BER was extending to improve the histopathology of kidney and testes of infected mice. In conclusion, data presented here demonstrated that BER is a novel protective agent and these results indicated that BER could be useful in treatment of *S. mansoni* infection induced renal and testicular oxidative damage. Copyright © 2014 Zoological Society of Pakistan.

### Author Keywords

Antioxidant; Berberine; Oxidative stress; Praziquantel; *Schistosoma mansoni*

**Document Type:** Article

**Source:** Scopus

Mahmoud, M.A.<sup>a</sup>, Ebid, A.H.I.M.<sup>a</sup>, Shouman, S.<sup>b</sup>, Ebid, E.<sup>c</sup>

**Pharmacokinetics of vancomycin in oncology Egyptian paediatrics: A dosage adjustment trial**  
(2014) *Indian Journal of Pharmaceutical Sciences*, 76 (1), pp. 82-86.

<sup>a</sup> Department of Pharmacy Practice, College of Pharmacy, Helwan University, Cairo, Egypt

<sup>b</sup> Departments of Clinical Biochemistry, Cairo, Egypt

<sup>c</sup> Dept. of Pediatric Oncology and Hematology, National Cancer Institute, Cairo University, Cairo, Egypt

#### Abstract

The purpose of this study is to determine the pharmacokinetic parameters of vancomycin in Egyptian paediatric oncology patients and to evaluate the factors that influence the variability of the pharmacokinetic parameters in this population. Vancomycin serum concentration at steady state was determined in 51 paediatric cancer patients who were treated with vancomycin multiple intravenous infusions. Also individual vancomycin pharmacokinetic parameters were calculated assuming one compartment model. The mean vancomycin total body clearance and mean vancomycin volume of distribution were significantly higher among the age range of 2 to <12 years as compared with older age. Obese patients showed significant lower values of peak and trough vancomycin concentrations than those of normal and underweight patients. A significant correlation was found between the estimated creatinine clearance (Schwartz formula) and vancomycin total body clearance in the studied patients. Also, a significant direct correlation between vancomycin volume of distribution and ratio between blood urea nitrogen (mg/dl)/weight (kg) was found. As a conclusion, age and obesity were identified as the most important factors influencing vancomycin total body clearance, volume of distribution and serum concentrations in the studied patients.

#### Author Keywords

Oncology; paediatrics; pharmacokinetics; vancomycin

**Document Type:** Article

**Source:** Scopus

Al-Agamy, A.O.<sup>a b</sup>, Khalifa, A.<sup>c</sup>, Fahmy, A.S.<sup>a d</sup>

**Greedy framework for optical flow tracking of myocardium contours**

(2014) *IET Image Processing*, 8 (4), pp. 207-212.

**DOI:** 10.1049/iet-ipr.2012.0512

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<sup>b</sup> Electrical Engineering, TU/e, Eindhoven, Netherlands

<sup>c</sup> Biomedical Engineering Department, Helwan University, Cairo, Egypt

<sup>d</sup> Biomedical Engineering Department, Cairo University, Cairo, Egypt

#### Abstract

Optical flow (OF) tracking of the myocardium contours has a potential in segmenting the myocardium in time sequences of cardiac medical images. Nevertheless, to estimate the displacement field of the contour points, a number of assumptions are required to solve an under-determined set of optical flow equations. In this work, a new framework is proposed to solve the OF tracking problem using greedy optimisation algorithm. The new framework allows different types of constraints such as motion invariance, shape and topology to be applied in a unified way. The developed methods are applied to a publicly-available cardiac magnetic resonance imaging dataset containing image sequences for 33 patients. Quantitative evaluation of the results shows high potential of the methods to accurately track and segment the myocardium contours. © The Institution of Engineering and Technology 2014.

**Document Type:** Article

**Source:** Scopus

Lin, J.<sup>a</sup>, Mohamed, M.<sup>a b</sup>, Balint, D.<sup>a</sup>, Dean, T.A.<sup>a</sup>

**The development of continuum damage mechanics-based theories for predicting forming limit diagrams for hot stamping applications**

(2014) *International Journal of Damage Mechanics*, 23 (5), pp. 684-701. Cited 1 time.

**DOI:** 10.1177/1056789513507731

<sup>a</sup> Department of Mechanical Engineering, Imperial College London, South-Kensington, London SW7 2AZ, United Kingdom

<sup>b</sup> Department of Mechanical Engineering, Faculty of Engineering, Helwan University, Helwan, Egypt

#### Abstract

This paper presents a novel plane-stress continuum damage mechanics (CDM) model for the prediction of the

different shapes of forming limit diagrams (FLCs) for aluminium alloys under hot stamping conditions. Firstly, a set of uniaxial viscoplastic damage constitutive equations is determined from tensile experimental data of AA5754 at a temperature range of 350-550 and strain rates of 0.1, 1.0 and 101. The tests were carried out on Gleeble materials simulator (3800). Based on the analysis of features of FLCs for different materials forming at different temperatures, a plane-stress damage equation is proposed to take account the failure of materials at different stress-state sheet metal forming conditions. In this way, a set of multi-axial viscoplastic damage constitutive equations is formulated. The model is calibrated from the FLC data at temperature of 350 and strain rate of 1.01 for AA5754. A good agreement has been achieved between the experimental and numerical data. The effect of the maximum principal stress, effective stress and hydrostatic stress on the materials failure features and on the shape of FLCs is studied individually and in combination. Using the newly developed plane-stress unified viscoplastic damage constitutive equations, the FLC of materials can be predicted at different temperatures and strain rate forming conditions. © The Author(s) 2013 Reprints and permissions: [sagepub.co.uk/journalsPermissions.nav](http://sagepub.co.uk/journalsPermissions.nav).

#### Author Keywords

continuum damage mechanics (CDM); FLC; hot stamping; materials modelling; unified damage equations

**Document Type:** Article

**Source:** Scopus

Ellabban, O.<sup>a b</sup>, Abu-Rub, H.<sup>b</sup>, Blaabjerg, F.<sup>c</sup>

#### Renewable energy resources: Current status, future prospects and their enabling technology

(2014) *Renewable and Sustainable Energy Reviews*, 39, pp. 748-764. Cited 14 times.

**DOI:** 10.1016/j.rser.2014.07.113

<sup>a</sup> Department of Power and Electrical Machines, Faculty of Engineering, Helwan University, Cairo 11790, Egypt

<sup>b</sup> Electrical and Computer Engineering Department, Texas A and M University at Qatar, Doha 23874, Qatar

<sup>c</sup> Department of Energy Technology, Aalborg University, 9220 Aalborg ø, Denmark

#### Abstract

Electric energy security is essential, yet the high cost and limited sources of fossil fuels, in addition to the need to reduce greenhouse gasses emission, have made renewable resources attractive in world energy-based economies. The potential for renewable energy resources is enormous because they can, in principle, exponentially exceed the world's energy demand; therefore, these types of resources will have a significant share in the future global energy portfolio, much of which is now concentrating on advancing their pool of renewable energy resources. Accordingly, this paper presents how renewable energy resources are currently being used, scientific developments to improve their use, their future prospects, and their deployment. Additionally, the paper represents the impact of power electronics and smart grid technologies that can enable the proportionate share of renewable energy resources. © 2014 Elsevier Ltd. All rights reserved.

#### Author Keywords

Biomass energy; Geothermal energy; Hydropower energy; Marine energy; Smart grid; Solar energy; Wind energy

**Document Type:** Review

**Source:** Scopus

Hashem, F.M.<sup>a</sup>, Nasr, M.<sup>a</sup>, Khairy, A.<sup>b</sup>

#### In vitro cytotoxicity and bioavailability of solid lipid nanoparticles containing tamoxifen citrate

(2014) *Pharmaceutical Development and Technology*, 19 (7), pp. 824-832. Cited 3 times.

**DOI:** 10.3109/10837450.2013.836218

<sup>a</sup> Department of Pharmaceutics and Industrial Pharmacy, Faculty of Pharmacy, Helwan University, Cairo, Egypt

<sup>b</sup> Department of Pharmaceutics, Faculty of Pharmacy, October 6 University, Cairo, Egypt

#### Abstract

The objective of this study was to evaluate the influence of solid lipid nanoparticles (SLN) loaded with the poorly water-soluble drug tamoxifen citrate (TC) on the in vitro antitumor activity and bioavailability of the drug. TC-loaded SLN were prepared by solvent injection method using glycerol monostearate (GMS) or stearic acid (SA) as lipid matrix. Poloxamer 188 or tween 80 were used as stabilizers. TC-loaded SLN (F3 and F4) prepared using GMS and stabilized by poloxamer 188 showed highest entrapment efficiency % ( $86.07 \pm 1.74$  and  $90.40 \pm 1.22$ %) and reasonable mean particle sizes ( $130.40 \pm 9.45$  and  $243.80 \pm 12.33$  nm), respectively. The in vitro release of TC from F3 and F4 exhibited an initial burst effect followed by a sustained drug release. In vitro cytotoxicity of F3 against human breast cancer cell line MCF-7 showed comparable antitumor activity to free drug. Moreover, the results of bioavailability evaluation of TC-loaded SLN in rats compared to free TC indicated that 160.61% increase in the oral bioavailability of TC. The obtained results suggest that incorporation of the poorly water-soluble drug TC in SLN preserves the in vitro

antitumor activity and significantly enhance oral bioavailability of TC in rats. © 2014 Informa Healthcare USA, Inc.

**Author Keywords**

Bioavailability; In vitro cytotoxicity; Solid lipid nanoparticles; Tamoxifen citrate

**Document Type:** Article

**Source:** Scopus

Salem, N.M.

**Segmentation of white blood cells from microscopic images using K-means clustering**

(2014) *National Radio Science Conference, NRSC, Proceedings*, art. no. 6835098, pp. 371-376.

**DOI:** 10.1109/NRSC.2014.6835098

Faculty of Engineering, Helwan University, Cairo, Egypt

**Abstract**

In this paper, a new segmentation scheme for the white blood cells from microscopic images is proposed. The method is based on the K-means clustering technique. The RGB test images are converted to the Lab color space, and then the two color components (a and b) are used as features to the K-means clustering algorithm. The proposed method is tested and evaluated using blood cell images from publicly available dataset. Experiments demonstrate that the proposed method performs well and able to segment white blood cells from microscopic images. © 2014 IEEE.

**Author Keywords**

k-means clustering; Lab color space; segmentation; White blood cells

**Document Type:** Conference Paper

**Source:** Scopus

Ebaid, A.<sup>a</sup>, Khaled, S.M.<sup>b c</sup>

**An exact solution for a boundary value problem with application in fluid mechanics and comparison with the regular perturbation solution**

(2014) *Abstract and Applied Analysis*, 2014, art. no. 172590, . Cited 2 times.

**DOI:** 10.1155/2014/172590

<sup>a</sup> Department of Mathematics, Faculty of Science, University of Tabuk, P.O. Box 741, Tabuk 71491, Saudi Arabia

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<sup>c</sup> Department of Studies and Basic Sciences, Faculty of Community, University of Tabuk, Saudi Arabia

**Abstract**

The exact solution for any physical model is of great importance in the applied science. Such exact solution leads to the correct physical interpretation and it is also useful in validating the approximate analytical or numerical methods. The exact solution for the peristaltic transport of a Jeffrey fluid with variable viscosity through a porous medium in an asymmetric channel has been achieved. The main advantage of such exact solution is the avoidance of any kind of restrictions on the viscosity parameter  $\alpha$ , unlike the previous study in which the restriction  $\alpha \ll 1$  has been put to achieve the requirements of the regular perturbation method. Hence, various plots have been introduced for the exact effects of the viscosity parameter, Daray's number, porosity, amplitude ratio, Jeffrey fluid parameter, and the amplitudes of the waves on the pressure rise and the axial velocity. These exact effects have been discussed and further compared with those approximately obtained in the literature by using the regular perturbation method. The comparisons reveal that remarkable differences have been detected between the current exact results and those approximately obtained in the literature for the axial velocity profile and the pressure rise. © 2014 Abdelhalim Ebaid and S. M. Khaled.

**Document Type:** Article

**Source:** Scopus

Raafat, E.M.<sup>a</sup>, Gamal-Eldeen, A.M.<sup>b c</sup>, El-Hussieny, E.A.<sup>d</sup>, Ahmed, E.F.<sup>e</sup>, Eissa, A.A.<sup>a</sup>

**Polysaccharide extracts of the brown alga *Sargassum asperifolium* possess in vitro cancer chemopreventive properties**

(2014) *Natural Product Research*, 28 (24), pp. 2304-2311.

**DOI:** 10.1080/14786419.2014.926351

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<sup>b</sup> Cancer Biology Laboratory, Center of Excellence for Advanced Sciences, National Research Center, Dokki, Cairo, Egypt

<sup>c</sup> Biochemistry Department, National Research Center, Cairo, Egypt

<sup>d</sup> Zoology Department, Faculty of Science, Ain Shams University, Cairo, Egypt

<sup>e</sup> Department of Natural and Microbial Products Chemistry, National Research Center, Cairo, Egypt

### Abstract

The cancer chemopreventive activity of the polysaccharide extracts (E1-E4) of *Sargassum asperifolium*, a brown alga in Red Sea shores in Egypt, was investigated. Tumour anti-initiation activity (the modulation of carcinogen metabolism) indicated that E3 and E4 were potent anti-initiators by inhibiting the carcinogen activator cytochrome P450-1A, and enhancing carcinogen detoxification enzymes glutathione-S-transferase. Only E4 significantly enhanced quinone reductase activity. All polysaccharide extracts possessed anti-promotion property by their anti-inflammatory activity. E3 and E4 dramatically induced the growth of spleen macrophages. E2, E3 and E4 significantly inhibited nitric oxide generation from lipopolysaccharide (LPS)-stimulated spleen macrophages, while E1, E3 and E4 led to significant inhibition of LPS-induced tumour necrosis factor- $\alpha$ . The extracts E1, E2 and E4 showed cytotoxicity against HepG2 cells, where E2 and E4 induced cell death due to apoptosis. In conclusion, E3 and E4 are promising cancer chemopreventive extracts, since they had tumour anti-initiating activity via their protective modulation of carcinogen metabolism. © 2014 Taylor & Francis.

### Author Keywords

anti-initiating; anti-promoting; apoptosis; cancer chemoprevention; cytochrome P450 1A; *Sargassum asperifolium*

**Document Type:** Article

**Source:** Scopus

Daoush, W.M.<sup>a</sup>, Elkady, O.A.<sup>b</sup>

**Microstructure, physical properties and hardness of alumina short fibres/nickel matrix composites fabricated by powder technology**

(2014) *Journal of Composite Materials*, 48 (30), pp. 3735-3746.

**DOI:** 10.1177/0021998313513203

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<sup>b</sup> Department of Powder Technology, Central Metallurgical RandD Institute (CMRDI), Helwan, Cairo, Egypt

### Abstract

Nickel matrix composites reinforced with different weight percent of alumina short fibres have been fabricated by powder technology route. The alumina short fibres were encapsulated by nickel layers using the electroless deposition technique. The produced alumina/nickel composite powders underwent cold compaction and sintering at 850. The alumina/nickel powders as well as the consolidated composites were investigated by optical microscope, scanning electron microscope, XRD and VSM. It was observed that the surface of the alumina short fibres was completely coated with nickel layer and the microstructures of the consolidated compacts show homogeneous distribution of the alumina short fibres in the nickel matrix. The density, electrical conductivity, coercivity, retentivity, saturation magnetization and hardness of the produced alumina short fibres/nickel composites were measured. The relative sintered density and the saturation magnetization were decreased, but the retentivity, the coercivity and the hardness were increased by increasing the alumina short fibres weight percent in the nickel matrix. © The Author(s) 2013 Reprints and permissions: [sagepub.co.uk/journalsPermissions.nav](http://sagepub.co.uk/journalsPermissions.nav).

### Author Keywords

Alumina short fibres; electrical resistivity; electroless deposition; hardness; magnetic properties; nickel composites

**Document Type:** Article

**Source:** Scopus

Wunderlich, F.<sup>a</sup>, Al-Quraishy, S.<sup>b</sup>, Dkhil, M.A.<sup>b c</sup>

**Liver-inherent immune system: Its role in blood-stage malaria**

(2014) *Frontiers in Microbiology*, 5 (OCT), art. no. 559, . Cited 1 time.

**DOI:** 10.3389/fmicb.2014.00559

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<sup>b</sup> Department of Zoology, College of Science, King Saud University, Riyadh, Saudi Arabia

<sup>c</sup> Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

### Abstract

The liver is well known as that organ which is obligately required for the intrahepatocyte development of the pre-erythrocytic stages of the malaria-causative agent Plasmodium. However, largely neglected is the fact that the liver is also a central player of the host defense against the morbidity- and mortality-causing blood stages of the malaria parasites. Indeed, the liver is equipped with an unique immune system that acts locally, however with systemic impact. Its main ,antipodal' functions are to recognize and to generate effective immunoreactivity against pathogens on the one hand, and to generate tolerance to avoid immunoreactivity with ,self' and harmless substances as dietary compounds on the other hand. This review provides an introductory survey of the liver-inherent immune system: its pathogen recognition receptors including Toll-like receptors and its major cell constituents with their different facilities to fight and eliminate pathogens. Then, evidence is presented that the liver is also an essential organ to overcome blood-stage malaria. Finally, we discuss effector responses of the liver-inherent immune system directed against bloodstage malaria: activation of Toll-like receptors, acute phase response, phagocytic activity, cytokine-mediated pro- and anti-inflammatory responses, generation of ,protective' autoimmunity by extrathymic T cells and B-1 cells, and T cell-mediated repair of liver injuries mainly produced by malaria-induced overreactions of the liverinherent immune system. © 2014 Wunderlich.

**Author Keywords**

Blood- stage malaria; Erythrocytes; Hepatic immune system; Innate immunity; Liver; Plasmodium; Protective autoimmunity; Tolerance

**Document Type:** Article

**Source:** Scopus

Elmoulsy, M.A., Emara, A., Abu-Elyazeed, O.S.M.

**Conversion of glucose into 5-hydroxymethylfurfural in DMSO as single organic solvent**

(2014) *ASME International Mechanical Engineering Congress and Exposition, Proceedings (IMECE)*, 6A, .

**DOI:** 10.1115/IMECE2014-37316

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

**Abstract**

Nowadays, 5-Hydroxymethylfurfural (HMF) is considered an important compound due to its economic importance, and due to the energy and waste crisis. It could provide a biofuel and alternatives of petrochemicals for various industrial applications. In the present work, 5-HMF was successfully produced with high yield by the dehydration of glucose in DMSO as organic solvent. DMSO was approved that it is highly selectivity of HMF (5-Hydroxymethylfurfural), and reducing the side reactions compared to water/DMSO as solvent. And the 5-HMF formation reaction was found to be faster in DMSO system than in water/DMSO. The influence of temperature and reaction time on the selectivity of DMSO was investigated over small range, to clarify the relation between temperature and time. Copyright © 2014 by ASME.

**Document Type:** Conference Paper

**Source:** Scopus

Garbie, I.<sup>a b</sup>

**Performance analysis and measurement of reconfigurable manufacturing systems**

(2014) *Journal of Manufacturing Technology Management*, 25 (7), pp. 934-957.

**DOI:** 10.1108/JMTM-07-2011-0070

<sup>a</sup> Department of Mechanical and Industrial Engineering, Sultan Qaboos University, Muscat, Oman

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**Abstract**

purpose-The purpose of this paper is to propose a new performance analysis and measurement regarding reconfigurable manufacturing systems (RMS) taken into consideration new circumstances which include changes in the market demand, changes in a product design, and/or introduction of a new product. As the reconfiguration process is applied to a manufacturing system to improve the system's performance due to new circumstances, the RMS process has potential quantitative and qualitative measures.

Design/methodology/approach-The manufacturing system has a great impact on the performance measurement and the selection of the objectives to measure the performance is very important. These objectives include the critical requirements for a RMS and they are as follows: product cost, manufacturing response, system productivity, people behavior, inventory, and quality of the finished products. Because each criterion measure in a RMS is a potential source of evaluation, it should have a relative weight with respect to the other measures. First, each criterion will be measured individually. Second, these measures need to be evaluated through an aggregate quantitative metric because there is a lack of analytical techniques to analyze and evaluate both qualitative and quantitative measures.

Findings-Performance evaluation of a RMS from one circumstance to another is highly desired by using the new quantitative metric regarding updating (upgrading) the system for the next period based on the previous one. The results show that the applicable of using this new technique in evaluating the RMS. The results also support the new quantitative metric.

Originality/value-The suggestion of a new aggregate performance measurement metric including the all potential objectives is highly considered. This paper provides an insight into each objective individually to measure it. It is also used from 0 to 1 as range of measure to evaluate the potential and aggregate metrics toward next reconfiguration with respect to the existing one. © 2014 Emerald Group Publishing Limited.

#### Author Keywords

Flexibility; Manufacturing flexibility; Manufacturing systems; Performance measurement

**Document Type:** Article

**Source:** Scopus

Arafat, A.<sup>a b</sup>, Bamufleh, H.S.<sup>a</sup>

#### **Fe<sub>2</sub>O<sub>3</sub>/TUD-1: an efficient catalysts for Friedel–Crafts alkylation of aromatics**

(2014) *Journal of Porous Materials*, 21 (6), pp. 1091-1100.

**DOI:** 10.1007/s10934-014-9859-7

<sup>a</sup> Chemical and Materials Engineering Department, Faculty of Engineering, King Abdulaziz University, P.O. Box 80204, Jeddah, Saudi Arabia

<sup>b</sup> Chemistry Department, Faculty of Science, Helwan University, Ain Helwan, Cairo, Egypt

#### Abstract

Three-dimensional mesoporous (Fe-TUD-1) catalysts with different Si/Fe ratios (100, 50, 20 and 10) are prepared using triethanolamine as template. Physicochemical and textural measurements by XRD, elemental analysis, N<sub>2</sub> adsorption, UV–Vis spectroscopy and HR-TEM imaging indicate the formation of pure solid mesoporous materials and the presence of Fe<sub>2</sub>O<sub>3</sub> nanoparticles in the prepared Fe-TUD-1 samples. The catalytic performance of Fe-TUD-1 catalysts is tested in Friedel–Crafts alkylations of single-ring aromatic compounds [e.g. toluene (T), ethyl benzene (EB) and cumene (C)] by benzyl alcohol (BnOH). Dispersion of Fe(III) in the mesoporous matrix of TUD-1 enhanced the catalytic activity of Fe-TUD-1 in the alkylation of aromatic compounds compared to pure Fe<sub>2</sub>O<sub>3</sub> and TUD-1 catalysts. The catalytic activity further increases by the decreasing of Si/Fe ratio. Sample loaded with Si/Fe ratio = 10 (Fe-10) showed almost complete conversion of BnOH in a relatively very short reaction time (<30 min) with 95 % selectivity. The catalytic performance of Fe-TUD-1 was superior to other metal-containing TUD-1 (e.g. Ga, Sn, and Ti) catalysts, or other Fe-containing catalysts (e.g. Fe-MCM-41, ZSM-5 and Fe-HMS). Alkylation of C is the fastest among the three aromatic substrates investigated (at temperatures very close to their boiling points) due to the largest inductive effect by the isopropyl group compared to the methyl group of T and the ethyl group in EB. Dibenzyl ether is formed as a byproduct only in the early times of the reaction and proved to act as alkylating agent after being hydrolyzed backwards to reform BnOH. Leaching experiments show the Fe-TUD-1 materials are very stable and can be reused as alkylation catalyst. © 2014, Springer Science+Business Media New York.

#### Author Keywords

Alkylation; Friedel–Crafts; Iron oxide; Mesoporous

**Document Type:** Article

**Source:** Scopus

Othman, M.S.<sup>a</sup>, Nada, A.<sup>a</sup>, Zaki, H.S.<sup>a</sup>, Abdel Moneim, A.E.<sup>b c</sup>

#### **Effect of *Physalis peruviana* L. on cadmium-induced testicular toxicity in rats**

(2014) *Biological Trace Element Research*, 159 (1-3), pp. 278-287. Cited 3 times.

**DOI:** 10.1007/s12011-014-9955-1

<sup>a</sup> Faculty of Biotechnology, October University for Modern Science and Arts (MSA), Giza, Egypt

<sup>b</sup> Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

<sup>c</sup> Department of Biochemistry and Molecular Biology, Asturias Institute of Biotechnology, University of Oviedo, Oviedo, Spain

#### Abstract

Cadmium (Cd) stimulates the production of reactive oxygen species and causes tissue damage. We investigated here the protective effect of *Physalis peruviana* L. (family Solanaceae) against cadmium-induced testes toxicity in rats. Twenty-eight Wistar albino rats were used. They were divided into four groups (n=7). Group 1 was used as control. Group 2 was intraperitoneally injected with 6.5 mg/kg body weight (bwt) of cadmium chloride for 5 days. Group 3 was

orally treated with 200 mg/kg bwt of methanolic extract of physalis (MEPh). Group 4 was pretreated with MEPh before cadmium for 5 days. Changes in body and testes weights were determined. Oxidative stress markers, antioxidant enzymes, and testosterone level were measured. Histopathological changes of testes were examined, and the immunohistochemical staining for the proapoptotic (caspase-3) protein was performed. The injection of cadmium caused a significant decrease in body weight, while a significant increase in testes weight and testes weight index was observed. Pretreatment with MEPh was associated with significant reduction in the toxic effects of Cd as shown by reduced testicular levels of malondialdehyde, nitric oxide, and caspase-3 expression and increased glutathione content, and the activities of superoxide dismutase, catalase, glutathione reductase, glutathione peroxidase, and testosterone were also increased. Testicular histopathology showed that Cd produced an extensive germ cell apoptosis, and the pretreatment of MEPh in Cd-treated rats significantly reduced Cd-induced testicular damage. On the basis of the above results, it can be hypothesized that *P. peruviana* L. has a protective effect against cadmium-induced testicular oxidative stress and apoptosis in the rat. © 2014 Springer Science+Business Media.

**Author Keywords**

Apoptosis; Cadmium; Oxidative stress; Physalis peruviana L; Testes

**Document Type:** Article

**Source:** Scopus

Abd El-Maksoud, R.M.

**Gas turbine with heating during the expansion in the stator blades**

(2014) *Energy Conversion and Management*, 78, pp. 219-224. Cited 1 time.

**DOI:** 10.1016/j.enconman.2013.10.054

Faculty of Eng., Mataria, Helwan University, Cairo, Egypt

**Abstract**

Reheat is used in the gas turbine to achieve higher power output. However, the reheat process is constrained by the heat quantity given to it and the choice of reheat point. Consequently, this paper introduces a new gas turbine cycle to overcome the reheat drawbacks and having superior features. In this cycle, the reheat process is replaced by processes of heating the expanded gases while passing through different turbine stator blades. Small amount of combusted gases is utilized to flow inside such blades for heating and mixing with the expanded gases. Nevertheless, this is performed with precautions of turbine overheating by reducing significantly the maximum temperature of the present cycle. The simulated results demonstrate that the cycle performance is increased by raising the quantity of heating during the expansion. Additionally, this cycle achieves greater efficient output than the traditional reheat Brayton cycle operating with higher maximum cycle temperature. To boost the present cycle efficiency, regeneration is used making the possibility of such cycle to be competitive to the combined cycle. © 2013 Elsevier Ltd. All rights reserved.

**Author Keywords**

Brayton cycle; Gas turbine; Heating during the expansion; Regeneration; Reheat

**Document Type:** Article

**Source:** Scopus

El-Mahdy, G.A.<sup>a b</sup>, Atta, A.M.<sup>a c</sup>, Al-Lohedan, H.A.<sup>a</sup>

**Synthesis and characterizations of Fe<sub>3</sub>O<sub>4</sub> nanogel composite for enhancement of the corrosion resistance of steel in HCl solutions**

(2014) *Journal of the Taiwan Institute of Chemical Engineers*, 45 (4), pp. 1947-1953. Cited 8 times.

**DOI:** 10.1016/j.jtice.2014.02.014

<sup>a</sup> Research chair of Surfactants, King Saud University, Chemistry Department, College of Science, P.O. Box - 2455, Riyadh 11451, Saudi Arabia

<sup>b</sup> Chemistry Department, Faculty of Science, Helwan University, Helwan, Egypt

<sup>c</sup> Egyptian Petroleum Research Institute, Nasr City 11727, Cairo, Egypt

**Abstract**

Composites were prepared by incorporating magnetite (Fe<sub>3</sub>O<sub>4</sub>) nanoparticles into the matrix of crosslinked acrylamide-co-sodium acrylate in the presence of hydrophilic magnetite nanoparticles. The composite, was characterized by means of transmission electron microscopy (TEM), Fourier transform infrared (FT-IR) spectra, UV-vis spectroscopy, and atomic adsorption measurements. TEM image shows that magnetite nanoparticles were finely distributed into the polymer matrix. The results of FT-IR and UV-vis spectroscopy reveal the presence of molecular level interactions between polymer groups and magnetite nanoparticles in the composite. The inhibiting action of magnetite polymer composite towards steel corrosion in 1M HCl solutions has been investigated by polarization and electrochemical impedance spectroscopy (EIS) methods. The results show that the magnetite nanoparticles have an



excellent protection performance towards the corrosion of steel in aggressive solution even at very low concentration.  
© 2014 Taiwan Institute of Chemical Engineers.

**Author Keywords**

Core-shell; Nanomaterials; Polarization; Steel

**Document Type:** Article

**Source:** Scopus

Hassanein, A.S., Khalifa, A.M., Al-Atabany, W., El-Wakad, M.T.

**Performance of Optical Flow tracking approaches for cardiac motion analysis**

(2014) *Middle East Conference on Biomedical Engineering, MECBME*, art. no. 6783226, pp. 143-146.

**DOI:** 10.1109/MECBME.2014.6783226

Helwan University, Cairo, Egypt

**Abstract**

Tagging Magnetic Resonance Imaging (MRI) sequence is used for evaluating Left Ventricular contractility. In this technique, a pattern of spatially varying magnetism is applied at the end diastole. Analyzing the deformation of tag pattern during the cardiac cycle has wide applications for cardiac deformation analysis. Noninvasive myocardial tagging in MRI has shown great potential in measuring and studying the motion of the heart. This paper presents a mathematical model that simulates the real cardiac motion during myocardial tagging. We synthesized both the Spatial Modulation of Magnetization (SPAMM) and complementary Spatial Modulation of Magnetization (CSPAMM) tag patterns with arbitrary spatial frequency. Using this model, we tested the performance and limitations of different Optical Flow (OF) motion tracking techniques and compared them with the performance of Harmonic Phase (HARP) analysis technique. The results exhibit that the OF tracking accuracy differs from point to another with a noticeable over estimation at the end of systole. Also OF is performing better than HARP at the heart borders. © 2014 IEEE.

**Author Keywords**

cardiac motion analysis; optical flow; tagging CMR

**Document Type:** Conference Paper

**Source:** Scopus

Eissa, A.

**Biomechanical evaluation of the phases of the triple jump take-off in a top female athlete**

(2014) *Journal of Human Kinetics*, 40 (1), pp. 29-35.

**DOI:** 10.2478/hukin-2014-0004

Faculty of Physical Education for Girls, Helwan University, Egypt

**Abstract**

The triple jump is one of two track and field events in which the athlete aims to maximize the horizontal distance jumped. This jump is comprised of 3 take-off phases (hop, step, and jump), each playing an important role, as they require the jumper to tolerate extremely high forces of impact and to maintain a high level of horizontal velocity. The purpose of the study was to investigate the biomechanical characteristics of the 3 take-off phases in the triple jump in a top female athlete. The 3 take-off phases of the top national female triple jumper were videotaped and analyzed using 2D motion analysis. Three cameras (DSR-SR 68) were placed on the lateral sides of the 3 take-off points, to record the motions of the 3 take-off phases. Results indicated that maximum loss of the horizontal velocity was in the hop phase (1.13 m/s), while the maximum braking time was in the jump phase (0.05 sec). The maximum pushing time was in the jump phase (0.10 s), while the pushing time was equal in the hop and step phases (0.05 s). In conclusion, the success of the triple jump is the result of the physical and technical qualities of the jumper. The excessive loss in horizontal velocity during the 3 take-off phases is the main factor limiting the performance of the top female athlete. © Editorial Committee of Journal of Human Kinetics.

**Author Keywords**

Female athletes.; Take-off; Triple jump

**Document Type:** Article

**Source:** Scopus

Gaffer, H.E.<sup>a</sup>, Mohamed, M.E.<sup>b</sup>, Zahran, M.K.<sup>b</sup>

**Synthesis of some novel antibacterial sulfonamide reactive dyes**

(2014) *Life Science Journal*, 11 (11), pp. 138-142.

<sup>a</sup> Textile Research Division, National Research Centre, Dokki, Cairo 12622, Egypt

<sup>b</sup> Chemistry Department, Helwan University, Ain-Helwan, Cairo 11795, Egypt

### Abstract

Several new of sulfonamide based reactive dyes (D1-D4) has been synthesized by coupling reaction of sulfonamide diazonium salt with sulfonamido-cyanurated H-acid. The chemical structure of the synthesized dyes was secured by their spectral data e.g. Elemental analysis, IR, <sup>1</sup>HNMR and MS spectroscopy. The principle advantage here for using sulfonamide based moiety is that the activity of antimicrobial is high, short reaction time and reaction procedure is done in few steps, the work up is convenient and thus the starting material can be easily found.

### Author Keywords

Antimicrobial; H-acid; Reactive dyes; Sulfonamide

**Document Type:** Article

**Source:** Scopus

Yahya, R.S.<sup>a</sup>, El-Bindary, A.A.<sup>b</sup>, El-Mezayen, H.A.<sup>c</sup>, Abdelmasseh, H.M.<sup>d</sup>, Eissa, M.A.<sup>e</sup>

### Biochemical evaluation of hyaluronic acid in breast cancer

(2014) *Clinical Laboratory*, 60 (7), pp. 1115-1121. Cited 1 time.

**DOI:** 10.7754/Clin.Lab.2013.130413

<sup>a</sup> Children Hospital, Faculty of Medicine, Mansoura University, Egypt

<sup>b</sup> Chemistry Department, Faculty of Science, Damiette University, Egypt

<sup>c</sup> Chemistry Department, Faculty of Science, Helwan University, Egypt

<sup>d</sup> Clinical Pathology Department, Faculty of Medicine, Mansoura University, Egypt

<sup>e</sup> Damiette Cancer Institute, Egypt

### Abstract

**Background:** The latest experimental studies on human cancer diseases have observed the bioactive role of hyaluronic acid (HA) during carcinogenesis. HA is a component of the extra-cellular matrix (ECM). It is closely correlated with tumor cell growth, proliferation, and metastasis. The present study aimed to evaluate the biochemical role of HA and its degrading enzymes and products in breast cancer (BC) patients under therapy treatment. **Methods:** An ELISA method was used to determine HA levels and standard spectrophotometric techniques were used to estimate the activities of HA degrading enzymes hyaluronidase (HAS), N-acetyl- $\beta$ -D-glucosaminidase (NAG), and  $\beta$ -glucuronidase ( $\beta$ -Glu) and the concentration of both glucoseamine (G-Amine) and glucuronic acid (GA) as degrading products in blood sera of 50 BC patients before and after chemotherapy treatment and in blood sera of 40 healthy women as controls. Statistical analyses were performed by a statistical package for social sciences (SPSS, version 15.0). **Results:** Elevated serum HA levels, increased HAS, NAG, and  $\beta$ -Glu activities and high concentrations of G-Amine and GA were significantly found ( $p < 0.001$ ) in patients before treatment compared to controls. After all BC patients had received the first chemotherapy course, HA and its previous degrading parameters were significantly decreased ( $p < 0.001$ ) in post-treated patients compared to pre-treated patients. **Conclusions:** Hyaluronic acid and its degrading enzymes and products can be considered a biomarker for early detection of recurrent disease and also for monitoring the effective therapeutic follow up of BC patients.

### Author Keywords

Breast cancer; Extra cellular matrix; Glucosamine; Glucuronic acid; Hyaluronic acid; Hyaluronidase; N-acetyl- $\beta$ -D-glucosaminidase and  $\beta$ -glucuronidase

**Document Type:** Article

**Source:** Scopus

Galal, T.M.<sup>a</sup>, Shehata, H.S.<sup>b</sup>

### Bioaccumulation and translocation of heavy metals by *Plantago major* L. grown in contaminated soils under the effect of traffic pollution

(2014) *Ecological Indicators*, 48, pp. 244-251. Cited 2 times.

**DOI:** 10.1016/j.ecolind.2014.08.013

<sup>a</sup> Botany and Microbiology Department, Faculty of Science, Helwan University, Helwan, Egypt

<sup>b</sup> Botany Department, Faculty of Science, Zagazig University, Zagazig, Egypt

### Abstract

The present study was performed at a heavy-traffic affected soil to examine the efficacy of bioaccumulation and translocation potentials of heavy metals by the naturally growing weed *Plantago major*. Heavy metals were analyzed in soil as well as in plant below- and above-ground parts along different distances from a heavy-traffic highway. All the investigated soil heavy metals, except Cd, varied significantly, while pH and E.C had no significant difference, with increasing distance from the highway. Likewise, there was a significant decrease of heavy metals in plant below- and aboveground parts. In addition, no significant difference between most soil and root heavy metals at 20 and 100 m as well as those at 500 and 750 m distance from the highway. The bioaccumulation factor (BF) of all heavy metals, except Cd and Sr, were less than unity at most distances. However, Cd showed relative BF decline with the distance in contrast to Sr, which increases as distance from the highway increases. On the other hand, the translocation factors (TF) of Cd, Co, Cu, Pb and Zn were higher at the distances far from the highway, while that of Fe, Cr and Sr were higher near the highway. Furthermore, the enrichment factor (EF) showed small variations, among the investigated heavy metals, with varying distances from the pollution source. It was found that soil Fe, Al, Cr, Ni, Sr, V and Zn had significant positive correlation with all investigated heavy metals in *P. major* roots. The higher TFs of Cd, Fe and Pb in *P. major* shoots makes it suitable for phytoextraction from soil, while the lower ratios of Al, Mn, V, Co, Ni, Cr, Zn, Cu and Sr make it suitable for their phytostabilization. Therefore, this plant can be used as a bioindicator and biomonitor for traffic related heavy metals. © 2014 Elsevier Ltd. All rights reserved.

#### Author Keywords

Enrichment factor; Phytoremediation; Plantain; Traffic pollution; Translocation

**Document Type:** Article

**Source:** Scopus

Khan, I.<sup>a</sup>, Abdelsalam, N.M.<sup>b</sup>, Fouad, H.<sup>b c</sup>, Tariq, A.<sup>a</sup>, Ullah, R.<sup>d</sup>, Adnan, M.<sup>a</sup>

**Application of ethnobotanical indices on the use of traditional medicines against common diseases** (2014) *Evidence-based Complementary and Alternative Medicine*, 2014, art. no. 635371, . Cited 2 times.

**DOI:** 10.1155/2014/635371

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<sup>b</sup> Riyadh Community College, King Saud University, Riyadh 11437, Saudi Arabia

<sup>c</sup> Department of Chemistry, Faculty of Engineering, Helwan University, P.O. Box 11792, Helwan, Egypt

<sup>d</sup> Department of Chemistry, Government College Ara Kheil, FR Kohat, Khyber Pakhtunkhwa 26000, Pakistan

#### Abstract

The present study was aimed at documenting the detailed ethnomedicinal knowledge of an unexplored area of Pakistan. Semistructured interviews were taken with 55 informants randomly chosen regarding detailed ethnomedicinal and sociocultural information. The study exposed 67 medicinal plant species used to prepare 110 recipes and the major modes of herbal formulation were decoction and powdering (20% each). The disease categories with the highest Fic values were gastrointestinal and dermatological (0.87 each). The study determined 3 plant species, i.e., *Acacia modesta* Wall., *Caralluma tuberculata* R.Br., and *Withania somnifera* (L.) Dunal with a FL of 100%. DMR results showed that *Olea ferruginea* (Sol.) Steud. ranked first, *Morus alba* L. ranked second, and *Melia azedarach* L. ranked third. Among the 55 informants, the male concentration was high (61%) and most of them were over 40 years old while a leading quantity of respondents (45%) was uneducated. There is a dire need to take necessary steps for the conservation of important medicinal plants by inhibiting overgrazing and providing alternate fuel resources. Young generations should be educated regarding the importance of ethnomedicinal knowledge and plants with high Fic and FL values should be further checked chemically and pharmacologically for future exploration of modern medicine. © 2014 Imran Khan et al.

**Document Type:** Article

**Source:** Scopus

Tolbah, F.A.<sup>a</sup>, Abdelhameed, M.M.<sup>a</sup>, Awad, M.I.<sup>a</sup>, Abdelwahab, S.A.<sup>b</sup>

**Modeling and simulation of a new bioinspired muscle actuator**

(2014) *2014 15th International Workshop on Research and Education in Mechatronics, REM 2014*, art. no. 6920230, . Cited 1 time.

**DOI:** 10.1109/REM.2014.6920230

<sup>a</sup> Department of Mechanical Engineering, Ain Shams University, Cairo, Egypt

<sup>b</sup> Department of Mechanical Engineering, Helwan University, Cairo, Egypt

#### Abstract

In this paper a new linear bioinspired actuator is developed. This actuator is made to mimic the biological muscle's structure and function. Ionic polymer metal composites (IPMC) smart material is used to emulate the motion of the cross-bridges of biological muscle. A dynamic model of the proposed actuator is developed using the wave

propagation technique. Modeling and simulation of the bioinspired actuator shows that one muscle unit actuator produces a maximum force of 0.12 N, axial displacement of 4 mm in each step, and a maximum axial displacement of about 30% of total muscle unit length. Sixteen IPMC sets are used; each set contains three IPMC segments connected in series. The length, width and height of each segment are 16mm, 10mm, 0.2 mm respectively. The total muscle unit length and diameter are 120 mm and 70 mm respectively. © 2014 IEEE.

**Author Keywords**

Actuators; Artificial Muscle; IPMC; Natural Muscle; Wave Propagation

**Document Type:** Conference Paper

**Source:** Scopus

Nasr, E.A.<sup>a d</sup>, Al-Ahmari, A.<sup>a c</sup>, Alkhawashki, H.<sup>b</sup>, Altamimi, A.<sup>a</sup>, Alkhuraisi, M.<sup>a</sup>, Ismail, K.<sup>c</sup>

**A prospective finite element analysis of proximal interphalangeal joint**

(2014) *IIE Annual Conference and Expo 2014*, pp. 35-44.

<sup>a</sup> Industrial Engineering Department, College of Engineering, King Saud University, Riyadh, Saudi Arabia

<sup>b</sup> Department of Orthopedics, College of Medicine, King Saud University, Riyadh, Saudi Arabia

<sup>c</sup> Advanced Manufacturing Institute, College of Engineering, King Saud University, Riyadh, Saudi Arabia

<sup>d</sup> Mechanical Engineering Department, Faculty of Engineering, Helwan University, Cairo, Egypt

**Abstract**

Arthritis of the finger joints is a vital pathology of the hand. Among the surgical treatment of Arthritis is arthroplasty which involves replacing the diseased joint with an artificial joint. Surface Replacement arthroplasty SRA-PIP design consisting of two pieces, is used in this study due to its maintenance of locking ability along the length of the finger while retaining the shape, size and joint motion. The purpose of this paper is to develop a three-dimensional finite element model and study the muscular functions of different SRA-PIP design prostheses. Muscle forces such as grasp test, key test and pinch test are applied on PIP Implant Prosthesis. Based on the evaluation of FEA model, the best design is manufactured using Electron beam melting technology. Finally, an actual case study will be presented for demonstration purposes.

**Author Keywords**

Additive manufacturing; Electron beam melting; Finite element analysis; Interphalangeal finger joint

**Document Type:** Conference Paper

**Source:** Scopus

Fadel, A.S., Belal, M., Mostafa, M.-S.M.

**ROSS: A rapid protein structure alignment algorithm**

(2014) *2014 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology, CIBCB 2014*, art. no. 6845511, .

**DOI:** 10.1109/CIBCB.2014.6845511

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

**Abstract**

Protein structure comparison is very important in bioinformatics as the function of a protein is determined by its structure. Finding relationships between proteins is very necessary. The databases for proteins are growing rapidly. Therefore there is a strong need for rapid algorithms to handle large number of requests made by biologists. This means that protein structure comparison is an active research area. Relative Orientation of Secondary Structure (ROSS) algorithm for protein structure alignment is proposed. ROSS is a sequential (preserving order) sequence-independent structure alignment algorithm. This work proposes a data reduction and a hierarchical approach for the structure alignment of proteins. The data reduction is done in the pre-processing stage to compute small descriptors for proteins and store them in a repository. This reduction speeds up the process of aligning the structure of a query protein to a large number of proteins. The comparison process is performed hierarchically. The reduced representation depends on the vectors representing the axes of the Secondary Structure Elements (SSE's) and the inter-direction between their centroids. The accuracy of the algorithm is similar to the well known algorithms Secondary-Structure Matching (SSM) and Vector Alignment Search Tool (VAST), used through their websites. The speed of the algorithm is around fifty times that of TM Align algorithm. This speed enables searching for similarities within large datasets instantly. Moreover, the algorithm achieves reduction ratio around 30:1. © 2014 IEEE.

**Author Keywords**

Protein representation; Protein structure alignment; Protein structure comparison

**Document Type:** Conference Paper

**Source:** Scopus

Badr, A.<sup>a</sup>, Ahmed, H.I.S.<sup>b</sup>, Hamouda, M.<sup>b</sup>, Halawa, M.<sup>b</sup>, Elhiti, M.A.<sup>b</sup>

**Variation in growth, yield and molecular genetic diversity of M2 plants of cowpea following exposure to gamma radiation**

(2014) *Life Science Journal*, 11 (8), pp. 10-19.

<sup>a</sup> Botany and Microbiology Department, Helwan University, Cairo, Egypt

<sup>b</sup> Botany Department, Tanta University, 31527 Tanta, Egypt

**Abstract**

Seeds of five cowpea varieties, Kaha 1, Dokki 331, Azmerly, Cream 7 and Giza 6, were exposed to different doses of gamma radiation at 50, 100, 200 and 300 Gy. Some growth parameters and yield components were measured in 22 M2 genotypes. Variation in seed protein electrophoretic pattern, RAPD and ISSR fingerprinting was scored to assess genetic variation among the M2 genotypes. The gamma dose of 50 Gy resulted in an increase of growth parameters and enhanced yield components in the three varieties Dokki 331, Azmerly and Cream 7; while the dose of 100 Gy resulted in higher growth rate and yield in var. Kaha 1 and var. Giza 6. Analysis of seed protein profile indicated specific bands for each variety; two bands appeared only in control plants and two other bands appeared in M2 plants of exposed seeds. Seven RAPD primers produced 30 polymorphic and 30 monomorphic bands. Meanwhile, 54 markers including 45 polymorphic bands were produced by the nine ISSR primers. Gamma radiation induced more genetic variation in the genotypes of var. Kaha 1 and var. Dokki 331 compared to other varieties, as estimated by the cluster analysis of seed protein, RAPD and ISSR markers.

**Author Keywords**

Cowpea; Gamma radiation; Genetic diversity; Growth; Molecular markers; Yield

**Document Type:** Article

**Source:** Scopus

Ghany, H.A.<sup>a b</sup>, Hyder, A.-A.<sup>c</sup>

**Exact solutions for the wick-type stochastic time-fractional KdV equations**

(2014) *Kuwait Journal of Science*, 41 (1), pp. 75-84.

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**Abstract**

Our aim in this paper is to explore white noise functional solutions for the variable coefficients Wick-type stochastic time-fractional KdV equations. Using the modified fractional sub-equation method, we can find out new exact solutions for the time-fractional KdV equations. Subsequently, the Hermite transform and the inverse Hermite transform are employed to find white noise functional solutions for the variable coefficients Wick-type stochastic time-fractional KdV equations.

**Author Keywords**

Hermite transform; Time-fractional KdV equations; White noise; Wick product

**Document Type:** Article

**Source:** Scopus

Ansari, Z.A.<sup>a</sup>, Irfan, A.<sup>a</sup>, Umar, A.<sup>b c</sup>, Fouad, H.<sup>d e</sup>, Al-Hajry, A.<sup>b</sup>, Ansari, S.G.<sup>a</sup>

**Fabrication and characterization of cholesterol biosensor based on nanoscale Sn-TiO<sub>2</sub> thin films**

(2014) *Sensor Letters*, 12 (1), pp. 44-49. Cited 3 times.

**DOI:** 10.1166/sl.2014.3240

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**Abstract**

This paper reports the fabrication and characterization of cholesterol biosensor based on nanoscale Sn-doped TiO<sub>2</sub> (Sn-TiO<sub>2</sub>) films. The powders for Sn-TiO<sub>2</sub> films were prepared by facile hydrothermal process and characterized by several analytical techniques in terms of their structural, optical and scattering properties. The detailed characterizations revealed that the prepared films possess well-crystallinity and good optical properties. The fabricated cholesterol biosensors based on Sn-TiO<sub>2</sub> films exhibited a high and reproducible sensitivity. The estimated sensitivity for the fabricated biosensor was found to be 414 Sf/mg dl<sup>-1</sup>cm<sup>-2</sup> with a regression coefficient of 0.90. It is realized that sensitivity of the fabricated biosensor increases linearly as a function of cholesterol concentration when tested over the wide range of cholesterol concentration i.e., 1 mg/dl to 200 mg/dl. To the best of our knowledge, this is the first report in which Sn-TiO<sub>2</sub> films are used for the fabrication of highly sensitive cholesterol biosensor. Copyright © 2014 American Scientific Publishers.

**Author Keywords**

Biosensor; Cholesterol; Films; Tin-doped titanium oxide

**Document Type:** Article

**Source:** Scopus

Mohareb, R.M.<sup>a</sup>, Abbas, N.S.<sup>b</sup>, Abdelaziz, M.A.<sup>c d</sup>

**Heterocyclic ring extension of androstenedione: Synthesis and cytotoxicity of fused pyran, pyrimidine and thiazole derivatives**

(2014) *Steroids*, 86, pp. 45-55. Cited 1 time.

**DOI:** 10.1016/j.steroids.2014.04.011

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<sup>c</sup> Department of Chemistry, Faculty of Science, Tabuk University, P.O. Box 741, Tabuk 71491, Saudi Arabia

<sup>d</sup> Basic Science Department, Modern Academy for Engineering and Technology, Maadi, Egypt

**Abstract**

The reaction of androstenedione with either malononitrile or ethyl cyanoacetate and aromatic aldehydes 2a-c gave the pyran derivatives 4a-f, respectively. On the other hand, the reaction of androstenedione with thiourea and the aromatic aldehydes 2a-c gave the pyrimidine derivatives 6a-c, respectively. Compound 6b reacted with 2-bromo-1-arylethanone derivatives 7a-d to give the indeno[2,1-e]thiazole derivatives 8a-d. Some of the produced compounds were used for further heterocyclization reactions. The cytotoxicity of the newly obtained products was evaluated against some cancer cell lines and a normal cell line. © 2014 Elsevier Inc. All rights reserved.

**Author Keywords**

Androstenedione; Cytotoxicity; Pyran; Pyrimidine; Thieno[2,3-b]pyridine

**Document Type:** Article

**Source:** Scopus

Nasr, E.S.A.<sup>a b</sup>, Khan, A.A.<sup>c</sup>, Alahmari, A.M.<sup>c</sup>, Hussein, H.M.A.<sup>c</sup>

**A feature recognition system using geometric reasoning**

(2014) *Procedia CIRP*, 18, pp. 238-243.

**DOI:** 10.1016/j.procir.2014.06.138

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**Abstract**

In this paper, an automatic feature recognition system is proposed using object oriented approach. The part data is extracted from STEP file, which is the standard format for the most known CAD systems. The object oriented structure found quite useful for the generation of part geometric database. Both simple and interacting machining features considered in the study. Different algorithms developed for the extraction of feature faces along with their geometric properties and dimensions. The logical rules then formulated based on geometric reasoning to recognize the selected machining features. A case study presented to validate the proposed methodology. © 2014 Elsevier B.V.

**Author Keywords**

Feature extraction; Geometric reasoning; Machining features; Object oriented; STEP

**Document Type:** Conference Paper  
**Source:** Scopus

Sayed, S.<sup>a c d</sup>, Darwish, R.R.<sup>b</sup>, Salem, S.A.<sup>a</sup>

**A real-time approach for detecting malicious executables**

(2014) *Advances in Intelligent Systems and Computing*, 240, pp. 355-364.

**DOI:** 10.1007/978-3-319-01857-7\_34

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<sup>d</sup> Egyptian Computer Emergency Response Team (EG-CERT), National Telecom Regulatory Authority (NTRA), Cairo, Egypt

**Abstract**

In this paper, we develop a real-time algorithm to detect malicious portable executable (PE) files. The proposed algorithm consists of feature extraction, vector quantization, and a classifier named Attribute-Biased Classifier (ABC). We have collected a large data set of malicious PE files from the HoneyNet project in the EG-CERT and VirusSign to train and test the proposed system. We first apply a feature extraction algorithm to remove redundant features. Then the most effective features are mapped into two vector quantizers. Finally, the output of the two quantizers are given to the proposed ABC classifier to identify a PE file. The results show that our algorithm is able to detect malicious PE file with 99.3% detection rate, 97% accuracy, 0.998 AUC, and less than 1% false positive rate. In addition, our algorithm consumes a fraction of seconds to test a portable executable file. © Springer International Publishing Switzerland 2014.

**Author Keywords**

Data mining; Malicious detection; Portable executables; Vector quantization

**Document Type:** Conference Paper  
**Source:** Scopus

Ebtesam, A.-O.<sup>a</sup>, Fatmaa, A.-A.<sup>b</sup>, Manal, E.-K.<sup>a c</sup>

**Seroprevalence of toxoplasma gondii antibodies in horses at Riyadh city**

(2014) *Journal of Animal and Veterinary Advances*, 13 (3), pp. 139-143.

**DOI:** 10.3923/javaa.2014.139.143

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<sup>c</sup> Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

**Abstract**

Toxoplasmosis, caused by the protozoan parasite *Toxoplasma gondii* is one of the most important zoonotic diseases affecting both animals and humans. It is one of the most destructive factors affecting the reproductive potentials of animals being responsible for abortion, stillbirths, resulting in a great economic loss. In this study, blood samples were collected from 152 horses (99 female and 53 male). The age of the study groups ranged from 2 months and 20 years and during the period from October 2010 to April 2011. Collected samples were labeled and stored at -20°C until tested by the three serological tests for detection of snti-*Toxoplasma gondii* antibodies. The seroprevalence in the adult horses (>11 years old) 44.1%: 15 of 34 was significantly higher than those of young horses (1-10 years old) 13.4%: 13 of 97. Ended, seroprevalence in horses increased with age. Although, the female horses had a significantly higher seroprevalence (18.2%: 18 from 99) than the male (3.8%: 2 from 53). This study describes that high seroprevalence rates and highlights the risk of toxoplasmosis in horses due to environmental contamination with *T. gondii* oocysts. © Medwell Journals, 2014.

**Author Keywords**

Antibodies; Blood; Horse; Seroprevalence; Toxoplasma

**Document Type:** Article  
**Source:** Scopus

Abdel Aal, A.<sup>a</sup>, Hammad, T.R.<sup>a</sup>, Zawrah, M.<sup>b</sup>, Battisha, I.K.<sup>c</sup>, Abou Hammad, A.B.<sup>c</sup>

**FTIR study of nanostructure perovskite BaTiO<sub>3</sub> doped with both Fe<sup>3+</sup> and Ni<sup>2+</sup> ions prepared by sol-gel**

**technique**

(2014) *Acta Physica Polonica A*, 126 (6), pp. 1318-1321.

**DOI:** 10.12693/APhysPolA.126.1318

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<sup>c</sup> National Research Center (NRC), Solid State Physics Department, Doky, Giza, Egypt

**Abstract**

Pure barium titanate BaTiO<sub>3</sub> (BT) and BT doped with two different transition elements Fe<sup>3+</sup> and Ni<sup>2+</sup> at 5 mol.% (BT5Fe and BT5M, respectively) as constant concentration in powder form have been prepared by sol-gel method using barium acetate, titanium(IV) n-butoxide, iron and nickel nitrates as precursor materials. The microstructure of BT and the influence of Fe and Ni dopants on it were investigated by X-ray diffraction and Fourier transform infrared spectroscopy. X-ray diffraction shows that tetragonal phase is dominant for pure BT sintered for 4 h at 800 °C. Scanning electron microscopy and transmission electron microscopy were used to study surface morphology and particle size distribution for BT5Fe and BT5M, respectively. The presence of hydroxyl defects were verified by Fourier transform infrared spectroscopy for (BaTi<sub>1-x</sub>Fe<sub>x</sub>O<sub>3-x/2</sub>) (BTxFe), where x = 0.005, 0.01, 0.05, and 0.07 and (BaTi<sub>1-x</sub>Ni<sub>x</sub>O<sub>3-x/2</sub>) (BTxNi), where x = 0.005, 0.01, 0.03, 0.05, and 0.07.

**Document Type:** Article

**Source:** Scopus

Abada, E.A.<sup>a b</sup>, El-Hendawy, H.H.<sup>a</sup>, Osman, M.E.<sup>a</sup>, Hafez, M.A.<sup>c</sup>

**Antimicrobial activity of Bacillus circulans isolated from rhizosphere of Medicago sativa**

(2014) *Life Science Journal*, 11 (8), art. no. 94, pp. 641-652.

<sup>a</sup> Botany and Microbiology Dep., Helwan university, Ain Helwan 11790, Cairo, Egypt

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<sup>c</sup> Biology Dep., Al-Azahr University, Cairo, Egypt

**Abstract**

Microorganisms are good sources for the production of biologically active substances. The main purpose of this work is to study the antimicrobial and the chitinase activity of a bacterial isolate collected from Medicago sativa rhizosphere field of Helwan region, Cairo, Egypt. According to Bergy's manual of systematic bacteriology, the isolate was identified as Bacillus circulans. The antimicrobial activity of Bacillus circulans was studied against bacteria and fungi. Our results indicate the antimicrobial activity of Bacillus circulans against gram-positive, gramnegative bacteria and plant pathogenic fungi. The maximal antimicrobial activity was observed after 24 h at 30°C and pH 8. The best carbon and nitrogen sources was starch and DL-methionin respectively. The GC-mass analysis showed that the compound responsible for antimicrobial activity is 4-(Diphenylmethyl)-6 ethoxycarbonyl-1-phenyl-1H-pyranolo [4, 3-c] pyridine with molecular formula C<sub>28</sub> H<sub>23</sub> N<sub>3</sub> O<sub>2</sub>. The Minimum Inhibitory Concentration (MIC) of C<sub>28</sub>H<sub>23</sub>N<sub>3</sub>O<sub>2</sub> against Gram positive, Gram negative bacteria and unicellular fungi was in range of 0.5-2µg/ml. Interestingly, Bacillus circulans showed chitinase activity against different pathogenic plant fungi. Due to the antimicrobial and chitinase activity of Bacillus circulans, it could be used in industry for production of antibacterial compound and in biological control against different plant pathogen.

**Author Keywords**

Antimicrobial activity; Bacillus circulans; Chitinase; MIC

**Document Type:** Article

**Source:** Scopus

Balasubramaniam, P.<sup>a</sup>, Prakash, M.<sup>a</sup>, Rihan, F.A.<sup>b c</sup>, Lakshmanan, S.<sup>b</sup>

**Hopf Bifurcation and Stability of Periodic Solutions for Delay Differential Model of HIV Infection of CD4+ T-cells**

(2014) *Abstract and Applied Analysis*, 2014, art. no. 838396, . Cited 3 times.

**DOI:** 10.1155/2014/838396

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<sup>c</sup> Department of Mathematics, Faculty of Science, Helwan University, Cairo, Egypt

**Abstract**



This paper deals with stability and Hopf bifurcation analyses of a mathematical model of HIV infection of CD 4 + T-cells. The model is based on a system of delay differential equations with logistic growth term and antiretroviral treatment with a discrete time delay, which plays a main role in changing the stability of each steady state. By fixing the time delay as a bifurcation parameter, we get a limit cycle bifurcation about the infected steady state. We study the effect of the time delay on the stability of the endemically infected equilibrium. We derive explicit formulae to determine the stability and direction of the limit cycles by using center manifold theory and normal form method. Numerical simulations are presented to illustrate the results. © 2014 P. Balasubramaniam et al.

**Document Type:** Article

**Source:** Scopus

Nada, A.<sup>a</sup>, Nasr, M.<sup>b</sup>, Salah, M.<sup>b</sup>

**Service oriented approach for decision support systems**

(2014) *2014 IEEE 7th Joint International Information Technology and Artificial Intelligence Conference, ITAIC 2014*, art. no. 7065081, pp. 409-413.

**DOI:** 10.1109/ITAIC.2014.7065081

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**Abstract**

Decision Support System has been applied to solve variety of agricultural problems. It provides the framework that allows both the decision-makers and farmers to make good decisions. Decision support systems (DSS) use databases, human-machine to combine a large number of models to realize scientific decision-making. The environmental data plays a vital role in agriculture decision, which changes at a rapid rate. Keeping these data updated can be done by using a Service Oriented Approach (SOA). SOA is a kind of designing style which can share information between heterogeneous systems that solve the software integration expansion problem in a distributed environment. This paper presents that SOA used to get precise irrigation schedule for mango trees. Recent years SOA has the focus of attention, due to standards based on Web services that simplify interoperability, loose coupling and reuse. One of the basic business motivations for implementing SOA today is achieving business agility, can help businesses respond more quickly and cost effectively to the dynamic and continues changes in market conditions. © 2014 IEEE.

**Author Keywords**

decision support system (DSS); service oriented architecture (SOA); services; web service composition

**Document Type:** Conference Paper

**Source:** Scopus

Abdel-Rahim, O.<sup>a b</sup>, Funato, H.<sup>b</sup>, Abu-Rub, H.<sup>c</sup>, Ellabban, O.<sup>c d</sup>

**Multiphase Wind Energy generation with direct matrix converter**

(2014) *Proceedings of the IEEE International Conference on Industrial Technology*, pp. 519-523. Cited 3 times.

**DOI:** 10.1109/ICIT.2014.6894994

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<sup>d</sup> Electrical Machines and Power Engineering Department, Helwan University, Cairo, Egypt

**Abstract**

This paper proposes a multiphase power generation with matrix converter for Wind Energy Conversion System (WECS). The proposed system consists of five-phase Permanent Magnet Synchronous Generator (PMSG), to generate five-phase voltage with variable amplitude and frequency. The grid is a three-phase system and hence deployment of multiphase generator needs some sort of phase conversion system. Therefore, a five-to-three phase Direct Matrix Converter (DMC) is used to interface the five-phase PMSG with the grid. The choice of multiphase machine comes from the inherent advantages of multiphase machine such as higher output power, reduced phase's losses, reduced sized for the same amount of output power compared to three phase generator. The proposed control strategy for the converter is Model Predictive Control (MPC). The proposed algorithm does the following functions: extract maximum power from the WECS, and ensures unity power factor at the grid terminal and machine terminal. © 2014 IEEE.

**Author Keywords**

Direct Matrix Converter; Model Predictive Control; Permanent Magnet Synchronous Generator; Wind Energy Conversion System

**Document Type:** Conference Paper  
**Source:** Scopus

Alshaer, W.G.<sup>a</sup>, Nada, S.A.<sup>a</sup>, Rady, M.A.<sup>b</sup>, Le Bot, C.<sup>c</sup>, Palomo Del Barrio, E.<sup>c</sup>

**Numerical investigations of using carbon foam/PCM/Nano carbon tubes composites in thermal management of electronic equipment**

(2014) *Energy Conversion and Management*, 89, pp. 873-884. Cited 6 times.

**DOI:** 10.1016/j.enconman.2014.10.045

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**Abstract**

A numerical investigation of predicting thermal characteristics of electronic equipment using carbon foam matrix saturated with phase change material (PCM) and Nano carbon tubes as thermal management modules is presented. To study the effect of insertion of RT65 and Nano carbon tubes in carbon foam matrices of different porosities, three different modules; namely Pure CF-20, CF20 + RT65, and CF-20 + RT65/Nano carbon modules are numerically tested at different values of carbon foam porosities. Mathematical model is obtained using volume averaging technique based on single-domain energy equation and a control volume based numerical scheme. Interfacial effects influencing heat transfer process at enclosure wall, module surface and different interfacial surfaces within the composite have been addressed. Governing equations have been solved using a CFD code (Thétis, <http://thetis.enscbp.fr>). Mathematical model is validated by comparing its prediction with previous experimental measurements for pure CF-20 foam and CF-20 + RT65 composite modules. The model is used to predict thermal characteristics of CF-20 + RT65/Nano carbon tubes composite as a thermal management modules. Results reveal that insertion of RT65/MWCNTs in CF-20 leads to a 11.5% reduction in the module surface temperature for carbon foam porosities less than 75%. The reduction decrease to 7.8% for a porosity of 88%. Numerical results of transient and steady state temperature histories at different depths within the module are compared with previous experimental data and fair agreement is obtained. © 2014 Elsevier Ltd.

**Author Keywords**

Electronic equipment; Nano carbon tubes; PCM; Thermal management

**Document Type:** Article

**Source:** Scopus

El-Bagory, T.M.A.A.<sup>a b</sup>, Alkanhal, T.A.R.<sup>c</sup>, Younan, M.Y.A.<sup>d</sup>

**Effect of specimen geometry on the predicted mechanical behavior of polyethylene pipe material**

(2014) *American Society of Mechanical Engineers, Pressure Vessels and Piping Division (Publication) PVP*, 3, .

**DOI:** 10.1115/PVP2014-28401

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<sup>c</sup> Engineering College, Engineering and Applied Sciences, Majmaah University, Saudi Arabia

<sup>d</sup> School of Sciences and Engineering, American University in Cairo, AUC, Egypt

**Abstract**

The primary objective of the present paper is to depict the mechanical behavior of high density polyethylene, (HDPE), pipes under different loading conditions with different specimen geometries to provide the designer with reliable design data relevant to practical applications. Therefore, it is necessary to study the effect of strain rate, ring configuration, and grip or fixture type on the mechanical behavior of dumb-bell-shaped, (DBS), and ring specimens made from HDPE pipe material. DBS and ring specimens are cut from the pipe in longitudinally, and circumferential (transverse) direction respectively. On the other hand, the ring specimen configuration is classified into two types; full ring, (FR), and notched ring, (NR) (equal double notch from two sides of notched ring specimen) specimens according to ASTM D 2290-12 standard. Tensile tests are conducted on specimens cut out from the pipe with thickness 10 mm at different crosshead speeds (10-1000 mm/min), and ambient temperature,  $T_a = 20^\circ\text{C}$  to investigate the mechanical properties of DBS, and ring specimens. In the case of test specimens taken from longitudinal direction from the pipe a necking phenomenon before failure appears at different locations along the gauge section. On the other hand, the fracture of NR specimens occurs at one notched side. The results demonstrated that the NR specimen has higher yield stress than DBS, and FR specimens at all crosshead speeds. The present experimental work reveals that the crosshead speed has a significant effect on the mechanical behavior of both DBS, and ring specimens. The fixture type plays an important role in the mechanical behavior for both FR and NR specimens at all crosshead speeds.

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### Author Keywords

(FR); (NR); Dumb-bell-shaped (DBS); Full ring; High-density polyethylene (HDPE); Mechanical behavior; Notched ring; Strain rate

**Document Type:** Conference Paper

**Source:** Scopus

Wunderlich, F.<sup>a</sup>, Al-Quraishy, S.<sup>b</sup>, Steinbrenner, H.<sup>c</sup>, Sies, H.<sup>b c</sup>, Dkhil, M.A.<sup>b d</sup>

**Towards identifying novel anti-Eimeria agents: trace elements, vitamins, and plant-based natural products** (2014) *Parasitology Research*, 113 (10), pp. 3547-3556.

**DOI:** 10.1007/s00436-014-4101-8

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### Abstract

Eimeriosis, a widespread infectious disease of livestock, is caused by coccidian protozoans of the genus *Eimeria*. These obligate intracellular parasites strike the digestive tract of their hosts and give rise to enormous economic losses, particularly in poultry, ruminants including cattle, and rabbit farming. Vaccination, though a rational prophylactic measure, has not yet been as successful as initially thought. Numerous broad-spectrum anti-coccidial drugs are currently in use for treatment and prophylactic control of eimeriosis. However, increasing concerns about parasite resistance, consumer health, and environmental safety of the commercial drugs warrant efforts to search for novel agents with anti-*Eimeria* activity. This review summarizes current approaches to prevent and treat eimeriosis such as vaccination and commercial drugs, as well as recent attempts to use dietary antioxidants as novel anti-*Eimeria* agents. In particular, the trace elements selenium and zinc, the vitamins A and E, and natural products extracted from garlic, barberry, pomegranate, sweet wormwood, and other plants are discussed. Several of these novel anti-*Eimeria* agents exhibit a protective role against oxidative stress that occurs not only in the intestine of *Eimeria*-infected animals, but also in their non-parasitized tissues, in particular, in the first-pass organ liver. Currently, it appears to be promising to identify safe combinations of low-cost natural products with high anti-*Eimeria* efficacy for a potential use as feed supplementation in animal farming. © 2014, Springer-Verlag Berlin Heidelberg.

### Author Keywords

Anti-coccidial agents; Artemisinin; Berberine; *Eimeria*; Eimeriosis; Garlic; Selenium

**Document Type:** Review

**Source:** Scopus

Tariq, A.<sup>a</sup>, Adnan, M.<sup>a</sup>, Abdelsalam, N.M.<sup>b</sup>, Fouad, H.<sup>b c</sup>, Hussain, K.<sup>d</sup>, Ullah, R.<sup>e</sup>, Ullah, A.<sup>a</sup>

**Richness and cover of nontimber economic plants along altitude in temperate Himalayan forest-Use types** (2014) *Scientific World Journal*, 2014, art. no. 748490, . Cited 1 time.

**DOI:** 10.1155/2014/748490

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<sup>d</sup> World Wide Fund for Nature, Peshawar 25000, Pakistan

<sup>e</sup> Department of Chemistry, Government College Ara Khel FR Kohat, Khyber Pakhtunkhwa 26000, Pakistan

### Abstract

Pakistani Himalaya stretches over a wide range of altitudinal gradients and supports high diversity of medicinal plants that are an important source for rural livelihood. Altitudinal effects on ground vegetation have already been indicated but ground vegetation is also under severe threat of grazing and over collection. The present study investigated the effect of altitude on medicinal plants abundance in both old-growth and derived woodland forests. Each of the five line transects was selected in old-growth and derived woodland forests. Each line transect consisted of four plots distributed at four altitudinal levels (2200, 2300, 2400, and 2500 m asl). Species richness under derived woodland had shown strong negative correlation ( $r = -0.95$ ) with altitude while it was found to be nonsignificant under old-growth. Cover of most of the species such as *Veronica laxa* ( $r = -0.95$ ,  $P \leq 0.05$ ) had shown significant negative correlation with altitude under derived woodland. Cover abundance of some species like *Valeriana jatamansi* and *Viola canescens* has also shown significant negative correlation under old-growth forest. Derived woodland can

decrease the cover abundance of valuable medicinal plants towards extension at higher altitudes. Thus, protection of the derived woodland could serve as a tool for the improvement of rural livelihood and ecological restoration. © 2014 Akash Tariq et al.

**Document Type:** Article  
**Source:** Scopus

El-Bagory, T.M.A.A.<sup>a b</sup>, Sallam, H.E.M.<sup>c d</sup>, Younan, M.Y.A.<sup>e</sup>

**Evaluation of fracture toughness behavior of polyethylene pipe materials**

(2014) *American Society of Mechanical Engineers, Pressure Vessels and Piping Division (Publication) PVP*, 3, .

**DOI:** 10.1115/PVP2014-28407

<sup>a</sup> Mechanical and Industrial Engineering Department, Majmaah University, Saudi Arabia

<sup>b</sup> Helwan University, Cairo, Egypt

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<sup>e</sup> School of Sciences and Engineering, American University in Cairo, AUC, Egypt

**Abstract**

The main purpose of the present paper is to investigate the effect of strain rate, specimen thickness and welding on the fracture toughness. The material of the investigated pipe is a high-density polyethylene, (HDPE) which is commonly used in natural gas piping systems. The welding technique used in this study is butt fusion (BF) welding technique. The crosshead speed ranged from 5 to 500 mm/min and specimen thickness ranged from 9 to 45mm for both welded and unwelded specimens at room temperature,  $T_a$  equal 20°C. Curved three point bend (CTPB) specimens were used to determine KQ. Furthermore, the results of fracture toughness, KQ, will be compared with the plane strain fracture toughness, JIC, for welded and unwelded specimens. The experimental results revealed that KQ increases with increasing the crosshead speed, while KQ decreases as the specimen thickness increases. The investigation reveals that the apparent fracture toughness, KQ, for HDPE pipe of unwelded specimen is greater than that of corresponding value for welded specimen. The same trend was observed for the plane strain fracture toughness, JIC. At lower crosshead speeds there is a minimum deviation in KQ between welded and unwelded specimens, while the deviation becomes larger with increasing crosshead speed. Copyright © 2014 by ASME.

**Author Keywords**

Butt-fusion (BF) method; Crosshead speed; Curved three point bend (CTPB); Elastic plastic fracture mechanics (EPFM); Fracture toughness; High density polyethylene (HDPE); Linear elastic fracture mechanics (LEFM)

**Document Type:** Conference Paper  
**Source:** Scopus

Samir Abou El-Seoud, M.<sup>a</sup>, Taj-Eddin, I.A.T.F.<sup>a</sup>, Seddiek, N.<sup>b</sup>, El-Khouly, M.M.<sup>c</sup>, Nosseir, A.<sup>a</sup>

**E-learning and students' motivation: A research study on the effect of e-learning on higher education**

(2014) *International Journal of Emerging Technologies in Learning*, 9 (4), pp. 20-26.

**DOI:** 10.3991/ijet.v9i4.3465

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**Abstract**

Most universities in Egypt face many educational problems and obstacles that technology can help to overcome. An open source, such as Moodle e-learning platform, has been implemented at many Egyptian universities. Moodle could be used as an aid to deliver e-content and to provide various possibilities for implementing asynchronous elearning web-based modules. This paper shows that the use of interactive features of e-learning increases the motivation of the undergraduate students for the learning process.

**Author Keywords**

E-learning; Higher education; Motivation; Web-based education

**Document Type:** Article  
**Source:** Scopus

Wassef, M.<sup>a</sup>, Behiry, I.<sup>a</sup>, Younan, M.<sup>a</sup>, Guindy, N.E.<sup>a</sup>, Mostafa, S.<sup>a</sup>, Abada, E.<sup>b c</sup>

**Genotypic identification of AmpC  $\beta$ -lactamases production in gram-negative Bacilli isolates**  
(2014) *Jundishapur Journal of Microbiology*, 7 (1), art. no. e8556, . Cited 3 times.

**DOI:** 10.5812/jjm.8556

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<sup>b</sup> Department of Botany and Microbiology, Helwan University, Cairo, Egypt

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**Abstract**

Background: AmpC type  $\beta$ -lactamases are commonly isolated from extended-spectrum Cephalosporin-resistant Gram-negative bacteria. Also, resistance appeared in bacterial species not naturally producing AmpC enzymes. Therefore, a standard test for the detection of the plasmid-mediated AmpC enzyme and new breakpoints for extended spectrum Cephalosporins are urgently necessary. Objectives: To detect plasmid and chromosomal mediated AmpC- $\beta$ -lactamases in Gram negative bacteria in community and hospital acquired infections. Materials and Methods: 1073 Gram negative clinical isolates were identified by the conventional methods and were screened for AmpC production using Cefoxitin discs. Confirmatory phenotypic identifications were done for the Cefoxitin-resistant isolates using Boronic Acid for combined and double disc synergy tests, Cloxacillin based double disc synergy test, and induction tests. The genotypic identification of plasmid-mediated AmpC was done using multiplex PCR. ESBL production was also screened by discs of Ceftazidime and Cefotaxime with and without Clavulanic Acid (10  $\mu$ g). Results: The AmpC-producing isolates among all identified Gram negative bacilli were 5.8% (62/1073) as detected by screening disc diffusion methods, where 72% were positive for AmpC by combined disc method (Cefotetan and Boronic Acid), 56.5% were positive by each of Boronic Acid and Cloxacillin double disc synergy tests, 35.5% were positive by the induction test, and 25.8% were plasmid-mediated AmpC  $\beta$ -lactamase producers by the multiplex PCR. Plasmid-mediated AmpC genes retrieved, belonged to the families (MOX, FOX, EBC and CIT). ESBL producers were found in 26 (41.9%) isolates, 15 (57%) of which also produced AmpC. Isolates caused hospital acquired infections were (53/62); of which (39/62) were AmpC producers. While only (8/62) of the isolates caused community-acquired infections, were AmpC producers, and (1.6%) (1/62) were non AmpC producer. Conclusions: The AmpC  $\beta$ -lactamases detection tests had to be included in the routine microbiology workup of Gram negative bacteria, namely Cefoxitin as a screening test, combined Boronic Acid disc test with Cefotetan, followed by synergy tests and finally by the induction test for phenotypic identifications. Multiplex PCR can successfully detect the plasmid AmpC genes. © 2014, Ahvaz Jundishapur University of Medical Sciences; Published by Kowsar Corp.

**Author Keywords**

AmpC  $\beta$ -lactamase; AmpC genes; Boronic acid; Cloxacillin; Multiplex PCR

**Document Type:** Article

**Source:** Scopus

Al-Johany, A.M.<sup>a</sup>, Al-Sadoon, M.K.<sup>a</sup>, Moneim, A.E.A.<sup>b</sup>, Bauomy, A.A.<sup>b</sup>, Diab, M.S.M.<sup>c</sup>

**Effects of pyramid viper, echis pyramidum crude venom on hepatic redox status and BAX expression in rats**  
(2014) *Journal of Pure and Applied Microbiology*, 8, pp. 429-436.

<sup>a</sup> Department of Zoology, College of Science, King Saud University, Saudi Arabia

<sup>b</sup> Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

<sup>c</sup> Molecular Drug Evaluation Department, National Organization for Drug Control and Research (NODCAR), Giza, Egypt

**Abstract**

In the present study, we have investigated the *Echis pyramidum* crude venom induced oxidative stress and apoptosis after 2, 4 and 6 hrs in livers of rats injected with the [LD<inf>50</inf> and  $\mu$  LD<inf>50</inf>. Wistar rats were randomly divided into 3 groups, the control group was intrapretoneal (i.p.) injected with saline while, [LD<inf>50</inf> and  $\mu$  LD<inf>50</inf> doses envenomed groups i.p. injected with venom at a dose of 0.6325 and 1.265 mg/kg body weight, respectively. Animals were sacrificed after 2, 4 and 6 hrs from the injection. Lipid peroxidation, nitric oxide and glutathione levels as oxidative markers were measured in liver homogenate. In addition, liver functions parameter and activity of catalase were determined. *E. pyramidum* crude venom increased lipid peroxidation and nitric oxide production in liver with concomitant reduction in glutathione, catalase, and total antioxidant capacity. These findings were associated with apoptosis induction in the liver as indicated with the increment in BAX expression. In addition, *E. pyramidum* crude venom caused hepatic injury as indicated by histopathological changes in the liver tissue with an elevation in total bilirubin, serum alanine aminotransferase, aspartate aminotransferase and alkaline phosphatase. On the basis of the present results it can hypothesized that *E. pyramidum* crude venom is a potent toxins-mediated hepatotoxicity associated with apoptosis induction in the hepatic tissue.

**Author Keywords**

BAX; *Echis pyramidum* venom; Hepatotoxicity; Oxidative stress; Rats

**Document Type:** Article**Source:** Scopus

Suinesiaputra, A.<sup>a</sup>, Cowan, B.R.<sup>a</sup>, Al-Agamy, A.O.<sup>c</sup>, Elattar, M.A.<sup>e</sup>, Ayache, N.<sup>b</sup>, Fahmy, A.S.<sup>c d</sup>, Khalifa, A.M.<sup>e i</sup>, Medrano-Gracia, P.<sup>a</sup>, Jolly, M.-P.<sup>h</sup>, Kadish, A.H.<sup>f</sup>, Lee, D.C.<sup>f</sup>, Margeta, J.<sup>b</sup>, Warfield, S.K.<sup>g</sup>, Young, A.A.<sup>a</sup>

**A collaborative resource to build consensus for automated left ventricular segmentation of cardiac MR images** (2014) *Medical Image Analysis*, 18 (1), pp. 50-62. Cited 7 times.

**DOI:** 10.1016/j.media.2013.09.001<sup>a</sup> Department of Anatomy with Radiology, University of Auckland, New Zealand<sup>b</sup> Asclepios Research Project, INRIA Sophia-Antipolis, France<sup>c</sup> Center for Informatics Science, Nile University, Cairo, Egypt<sup>d</sup> Systems and Biomedical Engineering, Cairo University, Cairo, Egypt<sup>e</sup> Diagnosoft Inc., Cardiac Image Analysis, Morrisville, NC, United States<sup>f</sup> Feinberg Cardiovascular Research Institute, Northwestern University Feinberg School of Medicine, Chicago, United States<sup>g</sup> Computational Radiology Laboratory, Harvard Medical School, United States<sup>h</sup> Siemens Corporation, Corporate Technology, Imaging and Computer Vision, Princeton, NJ, United States<sup>i</sup> Biomedical Engineering Department, Helwan University, Cairo, Egypt**Abstract**

A collaborative framework was initiated to establish a community resource of ground truth segmentations from cardiac MRI. Multi-site, multi-vendor cardiac MRI datasets comprising 95 patients (73 men, 22 women; mean age 62.73 ± 11.24 years) with coronary artery disease and prior myocardial infarction, were randomly selected from data made available by the Cardiac Atlas Project (Fonseca et al., 2011). Three semi- and two fully-automated raters segmented the left ventricular myocardium from short-axis cardiac MR images as part of a challenge introduced at the STACOM 2011 MICCAI workshop (Suinesiaputra et al., 2012). Consensus myocardium images were generated based on the Expectation-Maximization principle implemented by the STAPLE algorithm (Warfield et al., 2004). The mean sensitivity, specificity, positive predictive and negative predictive values ranged between 0.63 and 0.85, 0.60 and 0.98, 0.56 and 0.94, and 0.83 and 0.92, respectively, against the STAPLE consensus. Spatial and temporal agreement varied in different amounts for each rater. STAPLE produced high quality consensus images if the region of interest was limited to the area of discrepancy between raters. To maintain the quality of the consensus, an objective measure based on the candidate automated rater performance distribution is proposed. The consensus segmentation based on a combination of manual and automated raters were more consistent than any particular rater, even those with manual input. The consensus is expected to improve with the addition of new automated contributions. This resource is open for future contributions, and is available as a test bed for the evaluation of new segmentation algorithms, through the Cardiac Atlas Project ([www.cardiacatlas.org](http://www.cardiacatlas.org)). © 2013 Elsevier B.V.

**Author Keywords**

Consensus images; LV myocardium; Segmentation challenge

**Document Type:** Article**Source:** Scopus

El-Refaie, E.-S.M., Besheir, M., Abd Elrahman, M.K., Saad, R.

**Partial Discharge measurement for medium voltage cables using different voltage wave forms**(2014) *Proceedings of the International Symposium on Electrical Insulating Materials*, art. no. 6870782, pp. 315-318.**DOI:** 10.1109/ISEIM.2014.6870782

Helwan University - Cairo, Egypt

**Abstract**

Partial Discharge (PD) is the most important issue that arise when testing service aged and non-aged cables. For long time, High Voltage Direct Current (HVDC) was used to detect the occurrence of PD activity in cables. Due to technical reasons, the HVDC was replaced by the Very Low Frequency (VLF). Wide range of frequencies and wave forms were used for this purpose. This paper presents an evaluation to the ability of VLF to detect successfully the presence of PD. The study was based on laboratory testing data collected from medium voltage cable having artificial defects. PD was measured on healthy and unhealthy samples of 12/20 kV cables with VLF as well as with power frequency. Different wave forms such as sinusoidal and rectangular with different frequencies in the range from 0.01Hz to 0.1 Hz were used. © 2014 The Institute of Electrical Engineers, Japan.

**Author Keywords**

Cable testing; Partial discharge; Very low frequency; XLPE medium voltage cables

**Document Type:** Conference Paper  
**Source:** Scopus

Farag, I.S.A.<sup>a</sup>, Girgis, A.S.<sup>b</sup>, Ramadan, A.A.<sup>c</sup>, Moustafa, A.M.<sup>a</sup>, Tiekink, E.R.T.<sup>d</sup>  
**5''-Benzylidene-5-chloro-1',1''-dimethyl- 4'-phenyldispiro[indoline-3,2'-pyrrolidine-3', 3''-piperidine]-2,4''-dione**  
 (2014) *Acta Crystallographica Section E: Structure Reports Online*, 70 (1), pp. o22-o23. Cited 3 times.

**DOI:** 10.1107/S1600536813032765

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<sup>d</sup> Department of Chemistry, University of Malaya, 50603 Kuala Lumpur, Malaysia

### Abstract

The title compound, C<sub>30</sub>H<sub>28</sub>CIN<sub>3</sub>O<sub>2</sub>, features two spiro links, one connecting the piperidine and pyrrolidine rings, and the other connecting the pyrrolidine ring and indole residue. The configuration about the ethene bond is E. The piperidine ring adopts a half-chair conformation where the C atom connected to the spiro-C atom lies 0.713(3)Å out of the plane of the remaining five atoms (r.m.s. deviation = 0.086Å). The pyrrolidine ring has an envelope conformation with the flap atom being the methylene C atom. Centrosymmetric eight-membered {...HNCO}<sub>2</sub> amide synthons feature in the crystal packing. These are consolidated into a three-dimensional architecture by phenyl-pyrrolidine C-H...N and chlorobenzene-pyrrolidine-bound phenyl C-H...π interactions.

**Document Type:** Article  
**Source:** Scopus

El-Robaa, A.S.<sup>a b</sup>, Ibrahim, S.M.<sup>a c d</sup>, Gaawan', S.M.<sup>a d e</sup>, Malek, C.I.<sup>a f</sup>

**Effect of human-induced vibration on the design of steel pedestrian bridges**  
 (2014) *Proceedings of the 12th International Conference on Steel, Space and Composite Structures*, pp. 181-188.

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### Abstract

The importance of vibration becomes a dominate criterion for design of footbridges. Modern design and construction techniques produce structures which are competitive in terms of overall cost. To achieve this goal, longer spans and lightweight bridges have been comprised in most of design trends. This leads to lower the natural frequencies of the system which have a great effect on the dynamic performance of bridges subjected to human activities. Although the design of steel footbridges could reach the optimum level of design in terms of strength criterion, it might not reach the acceptance level for vibration condition. This will enforce the designer to choose section profiles with higher inertia to enhance stiffness of the whole system. For such cases, it is required to examine the factors affecting the design of steel structures due to vibration concern. The main goal of this research study is to investigate the range of spans and deck's finish loads of footbridges which are governed by human comfort requirements due to vertical forces induced by pedestrians. The footfall method presented by concrete center "CCIP-016" is adopted in this study to evaluate the response factor and acceleration of pedestrian bridges using a FEA software package "Robot Structural Analysis".

### Author Keywords

Footfall analysis; Pedestrian bridges; Robot structural analysis.; Vibration

**Document Type:** Conference Paper  
**Source:** Scopus

Tantawy, S.F.

**Solving a special class of multiple objective linear fractional programming problems**  
 (2014) *ANZIAM Journal*, 56 (1), pp. 91-103.

**DOI:** 10.1017/S1446181114000200

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

### Abstract

In this paper a feasible direction method is presented to find all efficient extreme points for a special class of multiple objective linear fractional programming problems, when all denominators are equal. This method is based on the conjugate gradient projection method, so that we start with a feasible point and then a sequence of feasible directions towards all efficient adjacent extremes of the problem can be generated. Since methods based on vertex information may encounter difficulties as the problem size increases, we expect that this method will be less sensitive to problem size. A simple production example is given to illustrate this method. Copyright © 2014 Australian Mathematical Society.

### Author Keywords

conjugate gradient; efficient solution; fractional programming; multiple objective; nondominated solution

**Document Type:** Article

**Source:** Scopus

Metered, H.<sup>a b</sup>, Šika, Z.<sup>c</sup>

### Vibration control of a semi-active seat suspension system using magnetorheological damper

(2014) *MESA 2014 - 10th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications, Conference Proceedings*, art. no. 6935527, .

**DOI:** 10.1109/MESA.2014.6935527

<sup>a</sup> Czech Technical University in Prague, Prague, Czech Republic

<sup>b</sup> Helwan University, Cairo, Egypt

<sup>c</sup> Faculty of Mechanical Engineering, Czech Technical University in Prague, Prague, Czech Republic

### Abstract

Seat suspension is an important system to the ride comfort experience of a commercial vehicle's driver and passengers. The usage of magnetorheological (MR) dampers in seat suspension systems has been shown to offer a momentous enhancement regarding to the ride comfort. In the majority, research work on seat MR dampers has been emphasized on the control implementation but most of them were not quite appropriate for the semi-active and nonlinear hysteretic nature of the MR damper. This paper introduces a deeply investigation into the application of a semi-active MR damper for a truck seat suspension, enabling more efficient control algorithm. The proposed control system consists of a system controller that calculates the desired damper force using a fuzzy logic control (FLC) algorithm, and a signum function damper controller that provides an approximation of the command voltage required to track the desired damping force. A mathematical model and the equations of motion of a two degree-of-freedom semi-active seat suspension with an MR damper are derived and simulated using Matlab/Simulink software. The proposed semi-active MR seat suspension is compared to passive and uncontrolled seat suspensions for prescribed base displacements. These inputs are representative of the vibration of the body mass of a passive quarter-vehicle suspension under bump and random-profile road excitation. Seat travel distance and driver body acceleration are assessed as system performance criteria through bump and random road excitations, in order to quantify the efficiency of the proposed semi-active control technique. The simulated results indicate that the proposed FLC of the semi-active MR seat suspension provides a significant enhancement in ride comfort. © 2014 IEEE.

### Author Keywords

fuzzy logic; MR damper; ride comfort; seat suspension

**Document Type:** Conference Paper

**Source:** Scopus

Osman, M.E.-S.<sup>a</sup>, El-Shaphy, A.A.E.-N.<sup>a</sup>, Meligy, D.A.<sup>b</sup>, Ayid, M.M.<sup>c</sup>

### Survey for fungal decaying archaeological wood and their enzymatic activity

(2014) *International Journal of Conservation Science*, 5 (3), pp. 295-308.

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<sup>b</sup> Environmental pollution Researches Center, Ministry of Antiquities affairs, Egypt

<sup>c</sup> Microbiology Lab, Conservation center, Grand Egyptian Museum, Ministry of Antiquities Affairs, Egypt

### Abstract

Fungi play a considerable role in deterioration/degradation of cultural heritage due to their enormous enzymatic activity. A total of 112 fungal isolates were identified from selected archaeological wood objects located at different areas (Islamic Art Museum, Storage area of Cheops's Solar Boat, Excavation of Saqqara and Grand Egyptian



Museum). *Aspergillus* spp. were predominant in all investigated samples. Thirty seven fungal isolates were screened for cellulases, pectinases and ligninases activity. *Aspergillus brasiliensis* Varga, Frisvad et Janos and *Penicillium duclauxii* Delacroix exhibited high cellulolytic activity while *Aspergillus amstelodami* (Mangin) Thom and Cruch and *Aspergillus parasiticus* Speare have high pectinolytic activity. Seven fungal species showed ligninolytic potential activity based on their ability to oxidize dyes.

#### Author Keywords

Archaeological wood; Biodeterioration/biodegradation; Cultural heritage; Fungal cellulases; Ligninases; Pectinases

**Document Type:** Article

**Source:** Scopus

Saad-Hussein, A.<sup>a</sup>, Abdalla, M.S.<sup>b</sup>, Shousha, W.G.<sup>b</sup>, Moubarz, G.<sup>a c</sup>, Mohamed, A.H.<sup>b</sup>

#### Oxidative role of aflatoxin B1 on the liver of wheat milling workers

(2014) *Macedonian Journal of Medical Sciences*, 7 (1), pp. 141-146. Cited 1 time.

**DOI:** 10.3889/MJMS.1857-5773.2014.0355

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<sup>b</sup> Department of Chemistry, Helwan University, Egypt

<sup>c</sup> Department of Chemistry, King Abdulaziz University, Saudi Arabia

#### Abstract

**Aim:** The study aimed to estimate oxidative role of aflatoxin B1 (AFB1) on the liver in wheat milling workers. **Materials and Methods:** Case-control study was conducted to compare between the levels of AFB1/albumin (AFB1/alb), liver enzymes (ALT, AST, GGT, and ALP), P53, MDA, GST, SOD, zinc and vitamin C in 35 wheat milling workers and 40 control subjects. **Results:** Statistical analysis revealed that ALT, AST, GGT, ALP, P53, MDA, GST and SOD in workers were significantly elevated compared to their controls. In the milling workers, there were significant correlations between MDA levels and the levels of AST, GGT, and P53, while, P53 was inversely correlated with GST and SOD activities. There were significant correlations between Zn levels and GGT, GST and SOD activities, between vitamin C and GST activities, and vitamin C inversely correlated with MDA. **Conclusion:** The present study concluded that the oxidative stress of AFB1 elevated the MDA and the liver enzymes in wheat milling workers. GST has a crucial role in the detoxification of aflatoxin and SOD as a scavenger antioxidant increased in the workers to overcome the oxidative toxic effects of AFB1 on the liver of the workers, and roles of Zn and vitamin C were significant in activation of these processes. © 2014 Saad-Hussein et al.

#### Author Keywords

Aflatoxin B1; Antioxidants; Liver enzymes; Oxidative stress; P53

**Document Type:** Article

**Source:** Scopus

Badr, H.A.<sup>a b c</sup>, Alsadek, D.M.M.<sup>a b d</sup>, Darwish, A.A.<sup>e</sup>, Elsayed, A.I.<sup>c</sup>, Bekmanov, B.O.<sup>a</sup>, Khussainova, E.M.<sup>a</sup>, Zhang, X.<sup>g</sup>, Cho, W.C.S.<sup>f</sup>, Djansugurova, L.B.<sup>a</sup>, Li, C.-Z.<sup>b</sup>

#### Lectin approaches for glycoproteomics in FDA-approved cancer biomarkers

(2014) *Expert Review of Proteomics*, 11 (2), pp. 227-236. Cited 6 times.

**DOI:** 10.1586/14789450.2014.897611

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<sup>f</sup> Queen Elizabeth Hospital, Department of Clinical Oncology, 30 Gascoigne Road, Kowloon, Hong Kong, Hong Kong

<sup>g</sup> Research Center for Bioengineering and Sensing Technology, University of Science and Technology, Beijing, 100083, China

#### Abstract

The nine FDA-approved protein biomarkers for the diagnosis and management of cancer are approaching maturity, but their different glycosylation compositions relevant to early diagnosis still remain practically unexplored at the sub-glycoproteome scale. Lectins generally exhibit strong binding to specific sub-glycoproteome components and this

property has been quite poorly addressed as the basis for the early diagnosis methods. Here, we discuss some glycoproteome issues that make tackling the glycoproteome particularly challenging in the cancer biomarkers field and include a brief view for next generation technologies. © Informa UK, Ltd.

**Author Keywords**

biomarkers; cancer; diagnosis; glycoproteome; lectins

**Document Type:** Review

**Source:** Scopus

Daróczy, L.<sup>a</sup>, Mohamed, M.H.<sup>b</sup>, Janiga, G.<sup>a</sup>, Thévenin, D.<sup>a</sup>

**Analysis of the effect of a slotted flap mechanism on the performance of an H-darrieus turbine using CFD**  
(2014) *Proceedings of the ASME Turbo Expo*, 3B, .

**DOI:** 10.1115/GT2014-25250

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<sup>b</sup> Renewable Energy Lab., Faculty of Engineering, Helwan University, Cairo, Egypt

**Abstract**

Wind energy represents nowadays a very important source of energy for many countries. It provides an efficient and effective solution to reduce fuel consumption as well as pollutant emissions. VAWTs (vertical axis wind turbines) were originally considered as very promising, before being superseded by the present, horizontal axis turbines. There is now a resurgence of interests for VAWTs, in particular Darrieus turbines. VAWTs like the H-rotor Darrieus turbine appear to be particularly promising for low wind speed conditions, but suffer from a low efficiency compared to horizontal axis turbines. Additionally, Darrieus turbines are not self-starting, which is a major drawback. The present paper introduces a new idea to improve the global performance of Darrieus rotors, relying on a slotted flap. Due to its low manufacturing costs and size, a two-bladed H-rotor with a radius of 2 meters was retained as a first application example. The blade airfoil relies on the S1046 profile, which was shown in previous studies to be superior under relevant operating conditions [1]. The solidity ( $Nc/R$ ) of the rotor is kept at 0.25 for all the computations. In the first step a parametric geometry is created, where the end of the blade is converted into a slotted flap (with appropriate rounding). The main parameters are the distance between the main part of the blade and the flap (width of gap), the angle of the slot and the angle of the flap. In the second step a systematic analysis of the effect of those variables on the force and power coefficient is carried out using three-dimensional full factorial Design-of-Experiment with an in-house parameterization and optimization software. For each configuration, force and power coefficients are calculated for four different tip-speed ratios (including the value, where the S1046 profile without flap shows its maximal power coefficient). The evaluation of each configuration is performed using a commercial CFD software. The flow is assumed in this first study to be two-dimensional and unsteady. Turbulence intensities follow the relevant norms (DIN EN 61400). Finally the results are compared to each other and to the reference design (S1046 without flap) and conclusions are given regarding power coefficient and flap load. Copyright © 2014 by ASME.

**Document Type:** Conference Paper

**Source:** Scopus

Talaat, Y.<sup>a c</sup>, Hegazy, O.<sup>b c c</sup>, Amin, A.<sup>c</sup>, Lataire, P.<sup>b</sup>

**Control and analysis of multiphase Interleaved DC/DC Boost Converter for photovoltaic systems**  
(2014) *2014 9th International Conference on Ecological Vehicles and Renewable Energies, EVER 2014*, art. no. 6844009, .

**DOI:** 10.1109/EVER.2014.6844009

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<sup>b</sup> Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussels, Belgium

<sup>c</sup> Helwan University, Cairo, Egypt

**Abstract**

Topical technological advances in power electronics and regulation systems have provided an opportunity for designing a high-efficiency PV system. High performance DC/DC converters should be developed to connect the low-voltage PV system to the high voltage DC-bus. These converters are used to regulate the output voltage and current of the PV system, to control the power flow and to track the maximum power point of the PV system. With the indispensable advantages of Interleaved Boost Converter (IBC) such as increased power capacity, passive components size reduction and output voltage ripple cancellation, it can be considered as a superior solution for PV systems. Therefore, this paper investigates and analyzes a three-phase interleaved DC/DC converter to enhance the dynamic performance of the PV system. The paper intends to design and implement two complete models of the standalone and grid-connected PV systems using Matlab/Simulink software package. In this paper, the dynamic

model of the PV is described in detail. The simulation results are provided. © 2014 IEEE.

**Author Keywords**

Grid-connected system; Interleaved DC/DC converter; Maximum Power Point (MPP); PV system; Standalone system

**Document Type:** Conference Paper

**Source:** Scopus

El-Kosasy, A.M.<sup>a</sup>, Tawakkol, S.M.<sup>b</sup>, Ayad, M.F.<sup>a</sup>, Sheta, A.I.<sup>c</sup>

**A novel potentiometric detection strategy for the determination of amlodipine besylate based on functionalized particles**

(2014) *Electroanalysis*, 26 (5), pp. 1031-1038. Cited 1 time.

**DOI:** 10.1002/elan.201400025

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<sup>b</sup> Analytical Chemistry Department, Faculty of Pharmacy, Helwan University, Cairo, Egypt

<sup>c</sup> Pharmaceutical Chemistry Department, Faculty of Pharmacy, Ahram Candaian University, Giza, Egypt

**Abstract**

A novel potentiometric strategy based on functionalized magnetite nanoparticles and microparticles were compared with the classical potentiometric strategy. This strategy provided nano- and microsized particles that were highly dispersed and coated with ionophore and plasticizer to promote an in situ cooperative ion-pairing interaction between the ionophore and the analyte present in inner solution of sensor membrane, compared to the classical technique. Three amlodipine (AML) sensors were constructed using functionalized nanoparticles in sensor1; microparticles in sensor2, as ionophores, and the polymeric membrane ionophoric property in sensor3. © 2014 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

**Author Keywords**

AML; Amlodipine; Microparticles; Nanoparticles; Potentiometric

**Document Type:** Article

**Source:** Scopus

Kassem, S.S.<sup>a</sup>, Abdel-Kader, M.M.<sup>a</sup>, Al-Sayed, E.M.<sup>a</sup>, El-Din, S.<sup>b</sup>, El-Hawary, M.H.A.Z.<sup>a</sup>, Haggag, M.M.<sup>c</sup>

**Modulatory effects of aerial parts of Coriandrum sativum L. on carbon-tetrachlorid induced hepatorenal Toxicity**

(2014) *Global Veterinaria*, 12 (4), pp. 523-531.

**DOI:** 10.5829/idosi.gv.2014.12.04.82201

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<sup>b</sup> Department of Food Technology Department, National Research Centre Dokki, Cairo, Egypt

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**Abstract**

Carbon tetrachloride (CCL4) is a potent hepato and nephro toxin. Its toxicity resides from its reactive metabolites. Coriandrum sativum (CS) possesses multiple pharmacological properties including antioxidant, antidiabetic and antihyperlipidemic effects. The present study investigated the hepatorenal protectant activity of CS against CCL4 induced toxicity in rats. Also, CS phenolics were evaluated. Our data revealed that CS aerial parts (stem and leaves) total phenolics were 4.08 mg/g tannic acid equivalent and isoflavones were 12.29 mg/g catechin equivalent. HPLC analysis showed that genstin (3%w/w), rutin (0.56%), dadzin (0.17%), vanillin (0.14%) and quercetin (0.1%) were the major phenolics in CS aerial parts. Concerning CCL4 intoxication, CCL4 significantly increased liver enzymes; alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP) and lactate dehydrogenase (LDH) as compared to the normal control. Also, CCL4- induced kidney damage as evidenced by a marked increase in plasma creatinine, urea and uric acid levels as compared to normal rats. Furthermore, oxidative stress in CCL4 group was manifested by an extreme reduction of both erythrocyte superoxide dismutase (SOD) and plasma catalase (CAT) activities. Feeding CS stem and leaves showed a marked decrease, in a dose dependent manner, in liver and kidney biomarkers as compared to CCL4 group, indicating a significant protection of CS against CCL4 intoxication. In addition, the ameliorating effects of CS on the antioxidant enzymes SOD and CAT, in a dose dependent manner were noticed as compared to CCL4 treated rats suggesting that the antioxidant effects of CS phenolics could be implicated as a mechanism against CCL4 deleterious effects. Our results demonstrated the protective role of CS against CCL4- induced hepatotoxicity and nephrotoxicity. Increasing CS consumption is recommended, especially in cases of heavy contaminants. © IDOSI Publications, 2014.

**Author Keywords**

Antioxidants; Carbon tetrachloride; Coriandrum sativum; Kidney; Liver

**Document Type:** Article

**Source:** Scopus

Rashad, M.M.<sup>a</sup>, Ismail, A.A.<sup>a</sup>, Osama, I.<sup>a</sup>, Ibrahim, I.A.<sup>a</sup>, Kandil, A.H.T.<sup>b</sup>

**Photocatalytic decomposition of dyes using ZnO doped SnO<sub>2</sub> nanoparticles prepared by solvothermal method** (2014) *Arabian Journal of Chemistry*, 7 (1), pp. 71-77. Cited 7 times.

**DOI:** 10.1016/j.arabjc.2013.08.016

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<sup>b</sup> Department of Chemistry, Faculty of Science, Helwan University, Cairo, Egypt

**Abstract**

ZnO doped SnO<sub>2</sub> has been successfully synthesized by the solvothermal method using methanol as organic solvent. The effect of ZnO/SnO<sub>2</sub> molar ratios on the crystal structure, microstructure, optical and photocatalytic properties has been investigated. The synthesized samples are characterized by X-ray diffraction, transmission electron microscopy, N<sub>2</sub> physical adsorption, FT-IR spectroscopy and UV-Vis spectroscopy. XRD results revealed that all diffraction peaks positions agree well with the reflection of a tetragonal rutile structure of SnO<sub>2</sub> phase without extra peaks at 0.1ZnO:0.9SnO<sub>2</sub> and 0.2ZnO:0.8SnO<sub>2</sub> molar ratios. However, the secondary phase of ZnO at 0.3ZnO:0.7SnO<sub>2</sub> molar ratio was investigated. TEM images revealed that the shape of SnO<sub>2</sub> particles was spherical and the particle sizes of SnO<sub>2</sub> and 0.3ZnO:0.7SnO<sub>2</sub> molar ratio were 6.2 and 16.4nm, respectively. The newly prepared samples have been tested by the determination of photocatalytic degradation of methylene blue (MB). The results indicated that Zn<sup>2+</sup> doping at 0.3ZnO:0.7 SnO<sub>2</sub> molar ratio showed the highest photocatalytic activity for the MB photodegradation. The heightened photocatalytic activity of ZnO/SnO<sub>2</sub> could be ascribed to the enhanced charge separation derived from the coupling of ZnO with SnO<sub>2</sub> due to the potential energy differences between SnO<sub>2</sub> and ZnO. The recycling tests demonstrated that 0.3ZnO:0.7 SnO<sub>2</sub> photocatalysts were quite stable during that liquid-solid heterogeneous photocatalysis since no decrease in activity in the first four cycles was observed. © 2013.

**Author Keywords**

Doping; Photocatalysis; Solvothermal method; Stannic oxide; ZnO

**Document Type:** Article

**Source:** Scopus

Hendy, A.M.<sup>a</sup>, Hegazy, S.A.<sup>a</sup>, Hossam Eldin Hendawy, Y.<sup>b</sup>, Emam, M.A.A.<sup>c</sup>

**Mechatronics system for tire pressure control**

(2014) *2014 15th International Workshop on Research and Education in Mechatronics, REM 2014*, art. no. 6920444, .

**DOI:** 10.1109/REM.2014.6920444

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<sup>c</sup> Faculty of Engineering, Matria Helwan University, Cairo, Egypt

**Abstract**

To evaluate the off road vehicle performance, a scaled soil bin was designed and established at Military Technical College (MTC). Using the indoor soil bin, single wheel tester that concludes the dynamic weight equal to that measured statically in addition to measuring sensors, the vehicle performance was measured. Also the dynamic sinkage due to wheel motion was measured using ultrasonic sensor. This paper presents a detailed Mechatronics system for experimental measuring of instantaneous slip ratio, and dynamic sinkage on soft dry sand. The data acquisition card and LABVIEW program are considered the Mechatronics pressure control system. Also this paper introduces a development and implementation of a control algorithm for tire pressure control. The control system depends on the signal from tire pressure sensor, the signal from speed sensors and signal from dynamic sinkage to control the tire pressure via directional control valve (inflation/deflation) automatically based on road conditions. © 2014 IEEE.

**Author Keywords**

Dynamic sinkage; Indoor soil bin; inflation-deflation; Mechatronics system; slip ratio; Tire pressure control

**Document Type:** Conference Paper

**Source:** Scopus

Galal, T.M.<sup>a</sup>, Shehata, H.S.<sup>b</sup>

**Evaluation of the invasive macrophyte *Myriophyllum spicatum* L. as a bioaccumulator for heavy metals in some watercourses of Egypt**

(2014) *Ecological Indicators*, 41, pp. 209-214.

**DOI:** 10.1016/j.ecolind.2014.02.004

<sup>a</sup> Botany and Microbiology Department, Faculty of Science, Helwan University, Cairo, Egypt

<sup>b</sup> Botany Department, Faculty of Science, Zagazig University, Zagazig, Egypt

**Abstract**

*Myriophyllum spicatum* was investigated for its ability to accumulate nutrients and heavy metals from contaminated watercourses of Egypt. Three stations in Ismailia canal (S1-S3), receiving industrial, municipal and domestic discharge, were selected along different distances from the pollution discharge point (S1). Another three stations in the Nile River (S4-S6), the water stem of Egypt, were randomly selected at different locations. In each station, two sampling sites were selected, where *M. spicatum* plants were obtained using five grapnel hauls per sampling site. The DWSC of the aboveground shoots of *M. spicatum* changed significantly with the distance from the discharge point in Ismailia Canal. The present study indicated that there is no significant difference between DWSC of *M. spicatum* shoots from S6 and S5, on one hand, and S6 and S1, on the other hand. In addition, no significant difference in sediment Mn, Cd, Pb and Ni were found between S1 and S6, while N, P and K were significantly different. The concentrations of the investigated heavy metals in sediments had the sequence: Fe > Mn > Cu > Zn > Pb > Ni > Cd, while in plants was: Mn > Fe > Zn > Cu > Ni > Pb > Cd. Moreover, the bioaccumulation Factor (BF) was more than unity for all heavy metals except Pb and the order of uptake capability was: Ni > Mn > Cd > Fe > Zn > Cu > Pb. There were significant positive correlations between plant Fe and Cu with sediment Fe, N with Cd; and P with Zn. High BFs indicates high potential of this species to concentrate heavy metal in its tissues and thus can be used as a bioaccumulator for these toxic metals. © 2014 Elsevier Ltd.

**Author Keywords**

Bioaccumulation; Heavy metals; Industrial pollution; Nutrients; Watermilfoil

**Document Type:** Article

**Source:** Scopus

El-Ashmawy, K.L.A.<sup>a b</sup>

**Accuracy, time cost and terrain independence comparisons of levelling techniques**

(2014) *Geodesy and Cartography*, 40 (3), pp. 133-141.

**DOI:** 10.3846/20296991.2014.962727

<sup>a</sup> Department of Civil Engineering, Helwan University Matria, Cairo, Egypt

<sup>b</sup> Department of Civil Engineering, College of Engineering and Islamic Architecture, Umm Al-Qura University, Makkah, Saudi Arabia

**Abstract**

Abstract: Levelling techniques is classified as geometric levelling, trigonometric levelling and GPS/Levelling depending on used instruments or the methods applied. Accuracies of geometric levelling with using three equipments (Leica NA-720 optical level, Topcon RL-VH4G2 laser level and Leica NA-3003 digital level), the trigonometric levelling with using two equipments (Topcon GTS710 total station and Topcon Imaging Station) and GPS/levelling with using Sokkia GSR2600 receiver were investigated to determine their performances against precise levelling that yields the most precise results. For this purpose, measurements were taken at hundred points on the ground of a well-protected site. The comparison of the results was performed based on accuracy, time cost and terrain independence. The comparison shows that levelling using digital level produces the closets results to precise levelling results, the time cost of GPS/levelling was 74% and 41% less than geometric and trigonometric levelling respectively, and trigonometric and GPS/levelling are independent of the terrain surveyed. © 2014, Copyright © 2014 Vilnius Gediminas Technical University (VGTU) Press.

**Author Keywords**

accuracy; digital level; GPS; laser level; levelling

**Document Type:** Article

**Source:** Scopus

Ismail, S.A.<sup>a</sup>, Kettanah, Y.A.<sup>b c</sup>, Chalabi, S.N.<sup>b</sup>, Ahmed, A.H.<sup>d e</sup>, Arai, S.<sup>f</sup>

**Petrogenesis and PGE distribution in the Al- and Cr-rich chromitites of the Qalander ophiolite, northeastern Iraq: Implications for the tectonic environment of the Iraqi Zagros Suture Zone**

(2014) *Lithos*, 202-203, pp. 21-36.

**DOI:** 10.1016/j.lithos.2014.05.013

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<sup>b</sup> Department of Geology, College of Science, Salahaddin University, Erbil, Iraq

<sup>c</sup> Department of Earth Sciences, College of Science, Dalhousie University, Halifax, Canada

<sup>d</sup> Faculty of Earth Sciences, King Abdulaziz University, Saudi Arabia

<sup>e</sup> Geology Department, Faculty of Science, Helwan University, Cairo, Egypt

<sup>f</sup> Department of Earth Sciences, Kanazawa University, Kanazawa, Japan

### Abstract

The Qalander ophiolite is a small, poorly preserved and incomplete mélangé-type complex situated within the Eocene-Oligocene Walash-Naopurdan Group in the Iraqi Zagros Suture Zone (IZSZ). It is one of six fragmented ophiolite complexes emplaced in the IZSZ during the Cretaceous and Tertiary. Within the Qalander ophiolite, serpentinized dunite and harzburgite hosts small lens-shaped podiform high-Al (North Qalander) and high-Cr (North Shitna) chromitite bodies. The average range of Cr-, Mg-, and Fe<sup>3</sup>-numbers for North Qalander chromitites is 39-53, 75-77, and 3-5, respectively; meanwhile those for North Shitna chromitites are 78-80, 65-73, and 6-8, respectively. The ranges of Al<sub>2</sub>O<sub>3</sub> wt.% and FeO/MgO for the North Qalander and North Shitna chromitites are 15-15.5 and 0.8-1.0, and 9.0-10.5 and 0.4-1.0, respectively. In addition to pyroxene and olivine, inclusions of laurite, millerite and galena were detected within the chromitites of Qalander ophiolite. The matrix minerals between chromite grains are serpentinized olivine and pyroxene, chlorite, and calcite; grains of magnetite, pyrite and ilmenite are also common accessories. The concentrations of platinum-group elements (PGE) in both varieties are typical for the ophiolitic chromitites, but they show two distinct patterns of PGE enrichment. The high-Cr chromitites have relatively uniform mantle-normalized PGE distribution patterns with a steep slope, positive Ru and negative Pt anomalies, and they show enrichment of PGE and depletion in Pt relative to the average upper mantle. The high-Al chromitites show relatively gently sloping patterns with slight positive Ru and negative Pt anomalies, high iridium-group PGE (IPGE) abundances relative to the high platinum-group PGE (PPGE), and are distinctly enriched in Pt and Pd relative to the upper mantle and the average abundances in the high-Cr chromitites. The differences in the PGE content, geochemistry, rare earth element (REE), mineral chemistry and petrographical characteristics of the chromitites suggests two stages of magmatic activity which were responsible for the chromitite genesis in the region. The first stage involved low degree partial melting of S-saturated peridotite melt that produced high-Al chromitites of MORB affinity, which crystallized in the upper mantle close to the Moho. The second stage involved a high degree partial melting of S-undersaturated boninitic melt that produced high-Cr chromitites of arc affinity and crystallized in a deeper mantle section. The presence of low-Cr MORB-type chromitites with high-Cr boninitic-type chromitites in the same mantle section suggests their formation in a back-arc supra-subduction zone tectonic setting. © 2014 Elsevier B.V.

### Author Keywords

Chromitite; Iraq; PGE; Qalander ophiolite; Zagros suture zone

**Document Type:** Review

**Source:** Scopus

Elsayed, A.<sup>a</sup>, Eldin, A.S.<sup>a</sup>, El Zanfaly, D.S.<sup>b</sup>

### Supporting ontology-driven Keyword Search over Relational Databases

(2014) *2014 World Symposium on Computer Applications and Research, WSCAR 2014*, art. no. 6916841, .

**DOI:** 10.1109/WSCAR.2014.6916841

<sup>a</sup> Information Systems Department, Faculty of Computers and Information, Helwan University, Cairo, Egypt

<sup>b</sup> Informatics and Computer Science, British University in Egypt, Cairo, Egypt

### Abstract

Keyword Search Over Relational Databases (KSORDB) provides an easy way for casual users to access relational databases using a set of keywords. Although much research has been done and several prototypes have been developed recently, most of this research implements exact (also called syntactic or keyword) match. So, if there is a vocabulary mismatch, the user cannot get an answer although the database may contain relevant data. In this paper we propose a system that overcomes this issue. The proposed system extends existing schema-free KSORDB systems with semantic match features. It exploits domain ontology to progressively return related terms that can be used to retrieve more relevant answers to user. Experimental results show that the semantic search method, employed by the proposed system, is more effective than the traditional keyword search method, employed by the existing schema-free KSORDB systems, in terms of the recall rate of the retrieved results. © 2014 IEEE.

### Author Keywords

Keyword Search; Ontologies; Relational Database; Semantic Search; Semantic Similarity; Top-k queries

**Document Type:** Conference Paper

**Source:** Scopus

Metwally, F.M.<sup>a</sup>, Zaid, M.M.<sup>a b</sup>, El-Mezayen, H.A.<sup>c</sup>

**Chromosomal aberrations and oxidative stress induced by occupational exposure to organic solvents: Role of antioxidant supplementation**

(2014) *International Journal of Pharmaceutical Sciences Review and Research*, 29 (1), art. no. 44, pp. 226-231.

<sup>a</sup> Environmental and Occupational Medicine Dep, National Research Centre, Egypt

<sup>b</sup> Chemistry department, Rabigh College of Science and Arts, King Abdulaziz University, Saudi Arabia

<sup>c</sup> Chemistry Department, Helwan University, Egypt

**Abstract**

Previous studies have demonstrated that organic solvents could induce genotoxicity in vivo and in vitro, and oxidative stress may be an important factor involved. It was also suggested that antioxidant supplementation could ameliorate some of the physiological changes caused by DNA oxidation damage. In the current study, the effect of chronic exposure to organic solvent on chromosomes and enzymatic antioxidant system was assessed. Moreover, the present work was designed to elucidate the protective role offered by antioxidant supplementation to workers at risk. The results demonstrate that the percentage of chromosomal aberrations in general and mean level of MDA were significantly higher and those of GPx and SOD were significantly lower among the exposed groups in comparison to the controls. Chromosomal aberrations' percentage and MDA level showed significant positive correlations with the duration of work and hydrocarbon exposure score (HES), while significant negative correlations were found with GPx & SOD levels. After antioxidant administration, our results showed a significant decrease in CAs percentage & MDA level and increase in the activity of GPx & SOD in the exposed groups. The last results indicate that chronic exposure to OSs results in chromosomal damage and increased lipid peroxidation which might play an important role in malignancy. Also, we concluded that, antioxidants supplementation can ameliorate oxidative stress and genotoxicity in workers at risk. © 2014, Global Research Online. All rights reserved.

**Author Keywords**

Antioxidants; Chromosomal aberration; Organic solvents; Oxidative stress

**Document Type:** Article

**Source:** Scopus

Ahmed, L.A.

**Renoprotective effect of Egyptian cape gooseberry fruit (*Physalis peruviana* L.) against acute renal injury in rats**

(2014) *The Scientific World Journal*, 2014, art. no. 273870, . Cited 3 times.

**DOI:** 10.1155/2014/273870

Nutrition and Food Science Department, Faculty of Home Economics, Helwan University, 65 Elmatbaea El-Ahliaa Street, Boulak Abo Elela, Cairo, Egypt

**Abstract**

This study aimed to evaluate the renoprotective effect of *Physalis peruviana* L. extract (PPE) on acute renal injury in rats. Adult male rats (n = 36) were divided into six groups that were fed with basal diet throughout the experiment (33 days). The first group was normal group, the second and the third groups were administered orally with 100 and 150 mg PPE/kg body weight (BW) respectively, the fourth group was injected intraperitoneally with 5 mg/kg BW cisplatin once on the 28th day to induced ARI, and the fifth and sixth groups were treated like the second and the third groups and were injected with cisplatin on the 28th day. Many bioactive compounds were found in PPE. PPE did not cause any changes in the second and third groups compared to normal control group. Administration of PPE prior to cisplatin injection caused significant reduction in relative kidney weight, serum creatinine, urea, blood urea nitrogen, and significant increments in body weight, feed intake, total protein, albumin, and total globulin compared to cisplatin group. Pretreatment with PPE improved kidney histology and diminished the level of thiobarbituric acid reactive substances and enhanced other antioxidant enzymes in kidney homogenate compared to cisplatin group. © 2014 Lamiaa Ali Ahmed.

**Document Type:** Article

**Source:** Scopus

Afify, A.A.<sup>a c</sup>, Bazid, M.A.A.<sup>b d</sup>

**Flow and heat transfer analysis of nanofluids over a moving surface with temperature-dependent viscosity and viscous dissipation**

(2014) *Journal of Computational and Theoretical Nanoscience*, 11 (12), pp. 2440-2448.

**DOI:** 10.1166/jctn.2014.3660

<sup>a</sup> Department of Mathematics, Deanship of Educational Services, Qassim University, P.O. Box 6595, Buraidah, Saudi Arabia

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<sup>d</sup> Department of Mathematics, Faculty of Education, Suez Canal University, El-Arish, Egypt

### Abstract

The steady of two-dimensional boundary layer flow and heat transfer characteristics along a moving permeable surface immersed in nanofluids taking into account the effects of a temperature dependent viscosity and viscous dissipation has been investigated numerically. Three different types of nanoparticles, namely Copper Cu, Alumina Al<sub>2</sub>O<sub>3</sub>, and Titania TiO<sub>2</sub> are considered by using water as a base fluid. The set of governing boundary layer equations and the boundary condition are transformed into a set of nonlinear ordinary differential equations with the relevant boundary conditions. The transformed equations are solved numerically by using Keller-Box method. Favorable comparison with previously published work is performed. Numerical results for variable Prandtl number, velocity and temperature profiles as well as skin friction coefficient and Nusselt number are presented through graphs and tables for pertinent parameters to show interesting aspects of the solution. Copyright © 2014 American Scientific Publishers. All rights reserved.

### Author Keywords

Boundary layer; Nanofluids; Suction/injection; Variable viscosity; Viscous dissipation

**Document Type:** Article

**Source:** Scopus

Elbaz, A.M.<sup>a b</sup>, Roberts, W.L.<sup>a</sup>

### Flame structure of methane inverse diffusion flame

(2014) *Experimental Thermal and Fluid Science*, 56, pp. 23-32. Cited 3 times.

**DOI:** 10.1016/j.expthermflusci.2013.11.011

<sup>a</sup> Clean Combustion Research Center, King Abdullah University of Science and Technology (KAUST), Jeddah 23955-6900, Saudi Arabia

<sup>b</sup> Mechanical Power Engineering Department, Faculty of Engineering, Helwan University, Cairo 11718, Egypt

### Abstract

This paper presents high speed images of OH-PLIF at 10. kHz simultaneously with 2D PIV (particle image velocimetry) measurements collected along the entire length of an inverse diffusion flame with circumferentially arranged methane fuel jets. For a fixed fuel flow rate, the central air jet  $Re$  was varied, leading to four air to fuel velocity ratios, namely  $V_r = 20.7, 29, 37.4$  and  $49.8$ . A double flame structure could be observed composed of a lower fuel entrainment region and an upper mixing and intense combustion region. The entrainment region was enveloped by an early OH layer, and then merged through a very thin OH neck to an annular OH layer located at the shear layer of the air jet. The two branches of this annular OH layer broaden as they moved downstream and eventually merged together. Three types of events were observed common to all flames: breaks, closures and growing kernels. In upstream regions of the flames, the breaks were counterbalanced by flame closures. These breaks in OH signal were found to occur at locations where locally high velocity flows were impinging on the flame. As the  $V_r$  increased to 37.4, the OH layers became discontinuous over the downstream region of the flame, and these regions of low or no OH moved upstream. With further increases in  $V_r$ , these OH pockets act as flame kernels, growing as they moved downstream, and became the main mechanism for flame re-ignition. Along the flame length, the direction of the two dimensional principle compressive strain rate axis exhibited a preferred orientation of approximately  $45^\circ$  with respect to the flow direction. Moreover, the OH zones were associated with elongated regions of high vorticity. © 2013 Elsevier Inc.

### Author Keywords

Inverse diffusion flames; PIV measurements; PLIF-OH imaging

**Document Type:** Article

**Source:** Scopus

Ghany, H.A.<sup>a b</sup>, Hussain, H.E.<sup>a c</sup>

### Local and global well-posedness of stochastic kadmomtsev-petviashvili (kp) equation

(2014) *International Journal of Mathematical Analysis*, 8 (57-60), pp. 2873-2883.

**DOI:** 10.12988/ijma.2014.410333



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<sup>b</sup> Department of Mathematics, Helwan University (11282), Cairo, Egypt

<sup>c</sup> Department of Mathematics, Ain Shams University, Cairo, Egypt

### Abstract

In this paper, we will prove local existence and uniqueness of the stochastic Kadomtsev-Petviashvili equation (KP) in some function subspace of the total solutions probability space of our problem. Our proposed technique is based on employing Banach contraction principle method, fixed point theory, Fourier analysis and some basic inequalities. Finally, we will also prove the global existence of solution in the total solutions probability space for the problem. Detailed computations and implemented examples are explicitly provided. © 2014 Hossam A. Ghany and Hussain E. Hussain.

### Author Keywords

Kadomtsev-Petviashvili; Stochastic; Well-Posedness

**Document Type:** Article

**Source:** Scopus

El-Mezayen, H.A.<sup>a</sup>, Darwish, H.<sup>b</sup>

### Development of a novel score for early detection of hepatocellular carcinoma among high-risk hepatitis C virus patients

(2014) *Tumor Biology*, 35 (7), pp. 6501-6509.

**DOI:** 10.1007/s13277-014-1858-4

<sup>a</sup> Chemistry Department, Helwan University, Cairo, Egypt

<sup>b</sup> Medical Oncology Department, Damietta Cancer Institute, Damietta, Egypt

### Abstract

Hepatocellular carcinoma (HCC) is often diagnosed at advanced stage where effective therapies are lacking. Identification of new scoring system is needed to discriminate HCC patients from those with chronic liver disease. Based on the link between vascular endothelial growth factor (VEGF) and HCC progression, we aimed to develop a novel score based on combination of VEGF and routine laboratory tests for early prediction of HCC. VEGF was assayed for HCC group (123), liver cirrhosis group (210), and control group (50) by enzyme-linked immunosorbent assay (ELISA). Data from all groups were retrospectively analyzed including  $\alpha$ -fetoprotein (AFP), international normalized ratio (INR), albumin and platelet count, transaminases, and age. Areas under receiving operating curve (ROC) were used to develop the score. A novel index named hepatocellular carcinoma-vascular endothelial growth factor score (HCC-VEGF score) =  $1.26$  (numerical constant) +  $0.05 \times \text{AFP (U l}^{-1})$  +  $0.038 \times \text{VEGF (ng ml}^{-1})$  +  $0.004 \times \text{INR}$  -  $1.02 \times \text{albumin (g l}^{-1})$  -  $0.002 \times \text{platelet count} \times 10^9 \text{ l}^{-1}$  was developed. HCC-VEGF score produce area under ROC curve of 0.98 for discriminating HCC patients from liver cirrhosis with sensitivity of 91 % and specificity of 82 % at cutoff 4.4 (i.e., less than 4.4 considered cirrhosis and greater than 4.4 considered HCC). Hepatocellular carcinoma-VEGF score could replace AFP in HCC screening and follow up of cirrhotic patients. © 2014 International Society of Oncology and BioMarkers (ISOBM).

### Author Keywords

Cirrhosis; Diagnosis; HCV; Hepatocellular carcinoma; Tumor markers

**Document Type:** Article

**Source:** Scopus

Ali, A.<sup>a</sup>, Moussa, A.<sup>b</sup>, Abdelatif, K.<sup>a</sup>, Eissa, M.<sup>a</sup>, Wasfy, S.<sup>a</sup>, Malik, O.P.<sup>b</sup>

### ANFIS based controller for rectifier of PMSG wind energy conversion system

(2014) *Proceedings - 2014 Electrical Power and Energy Conference, EPEC 2014*, art. no. 7051683, pp. 99-103.

**DOI:** 10.1109/EPEC.2014.16

<sup>a</sup> Electrical Power and Machines Engineering Department, Helwan University, Cairo, Egypt

<sup>b</sup> Electrical Engineering Department, U of C, Calgary, Canada

### Abstract

Wind energy is becoming a very useful energy source at present. With the increasing wind power penetration, improvements are required in order to comply with the grid interconnection requirements. The focus of this paper is to maximize the output power and address the output control of a utility-connected Permanent Magnet Synchronous Generator (PMSG) for wind power generation systems. PMSG has a back-to-back converter to control the output of the PMSG driven by the wind turbine. To supply commercially the power of WPGS to the grid without any problems

related to power quality, the real and reactive powers of PMSG are strictly controlled at the required level. In this paper it is realized with the Adaptive Neuro Fuzzy Inference System (ANFIS) controller based on the field orientation control. The DC voltage of the DC link capacitor is also controlled at a certain level with the conventional Proportion-Integral controller of the real power. Studies demonstrate that the performance of the system with the IS controller parameters permits an improvement of the converter capability and system performance. © 2014 IEEE.

#### Author Keywords

ANFIS; Back to back converter; PI Controller; PMSG; Wind turbine

**Document Type:** Conference Paper

**Source:** Scopus

Al-Quraishy, S.<sup>a</sup>, Dkhil, M.A.<sup>a b</sup>, S. Abdel-Baki, A.-A.<sup>a c</sup>, Araújo-Bravo, M.J.<sup>d e</sup>, Delic, D.<sup>f</sup>, Wunderlich, F.<sup>f</sup>

#### **Testosterone persistently dysregulates hepatic expression of Tlr6 and Tlr8 induced by Plasmodium chabaudi malaria**

(2014) *Parasitology Research*, 113 (10), pp. 3609-3620. Cited 1 time.

**DOI:** 10.1007/s00436-014-4026-2

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<sup>f</sup> Department of Biology, Heinrich-Heine-University, Duesseldorf, Germany

#### Abstract

Testosterone (T) is known to induce persistent susceptibility to *Plasmodium chabaudi* malaria. Pathogens recognizing Toll-like receptors (TLRs), though potentially important against malaria, have not yet been examined for their T-sensitivity. Here, we investigate effects of T and *P. chabaudi* on mRNA expression and promoter DNA methylation of Tlr1–9 genes in the liver of female C57BL/6 mice. These are treated with T or vehicle for 3 weeks, and then treatment is discontinued for 12 weeks, before challenging with *P. chabaudi* for 8 days. Our data reveal that T induces a 9.1-fold downregulation of Tlr6 mRNA and 6.3-fold upregulation of Tlr8 mRNA. Blood-stage infections induce significant increases in mRNA expression of Tlr1, 2, 4, 6, 7, and 8 varying between 2.5-fold and 21-fold in control mice. In T-pretreated mice, these Tlr genes are also significantly responsive to infections. However, the malaria-induced upregulations of the relative mRNA expressions of Tlr6 and Tlr8 are 5.6-fold higher and 6.5-fold lower in T-pretreated mice than in control mice. Infections induce a massive DNA down-methylation of the Tlr6 gene promoter in control mice, which is still more pronounced in T-pretreated mice, while significant changes are not detectable for the DNA methylation status of the Tlr8 promoter. Our data support the view that hepatic expression of Tlr6, but not that of Tlr8 is epigenetically controlled, and that the dysregulations of Tlr6 and Tlr8 critically contribute to T-induced persistent susceptibility to *P. chabaudi* malaria, possibly by dys-balancing responses of TLR6-mediated pathogen recognition and TLR8-mediated generation of anti-malaria “protective” autoimmunity. © 2014, Springer-Verlag Berlin Heidelberg.

#### Author Keywords

Malaria; Promoter DNA methylation; Testosterone; Tlr6; Tlr8

**Document Type:** Article

**Source:** Scopus

Abdel-Baki, A.-A.S.<sup>a b</sup>, Al-Quraishy, S.<sup>a</sup>, Dkhil, M.A.<sup>a c</sup>, Oliveira, E.<sup>d</sup>, Casal, G.<sup>d e</sup>, Azevedo, C.<sup>a d</sup>

#### **Perkinsus sp. (Alveolata, Perkinsidae) a parasite of the clam *Meretrix meretrix* (Veneridae) from Arabian gulf: Ultrastructural observations of the trophozoites and the cellular response of the host**

(2014) *Acta Protozoologica*, 53 (2), pp. 215-221.

**DOI:** 10.4467/16890027AP.14.018.1599

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<sup>d</sup> Department of Cell Biology, University of Porto, Institute of Biomedical Sciences (ICBAS/UP) and Laboratory of Pathology, Interdisciplinary Centre of Marine and Environmental Research (CIIMAR/CIMAR), Porto, Portugal

<sup>e</sup> Department of Sciences, High Institute of Health Sciences (CESPU), Gandra, Portugal

#### Abstract

Genus *Perkinsus* Levine, 1978 (Alveolata, Perkinsidae) an intracellular pathogenic parasite is described from the mantle and gill filaments of a commercially important clam, *Meretrix meretrix*, collected from the Arabian Gulf, Saudi Arabia. This genus contains currently seven named species: *P. marinus*, *P. olseni* (*P. atlanticus*), *P. chesapeakei* (*P. andrewsi*), *P. mediterraneus*, *P. honshuensis*, *P. beihaiensis* and *P. qugwadi*. Meanwhile, some unnamed *Perkinsus* sp. have been described in wide variety of mollusc species. Ultrastructural features of *Perkinsus* sp. trophozoites and the host reaction are described. The different developmental stages of trophozoites appeared as single or grouped cells surrounded by amorphous material that constituted cysts or nodules randomly distributed throughout the connective tissue of the mantle. The early trophozoites were generally spherical to ellipsoidal with a circular nucleus containing a prominent central nucleolus. The cytoplasm had several small vacuoles which coalesce to form a great vacuole in the later trophozoites and the nucleus becomes eccentric. Some lysosomes were observed between the wall and the plasmalemma of trophozoites. A large number of degraded and pyknotic cell and several cellular structure with lysed aspects were encountered in the surrounding area near the cysts. Ultrastructural data showed that the lysed granular cells and the coalescence of the granules result in the cyst that encapsulates various trophozoites. In the current study, we describe for the first time the presence of *Perkinsus* sp. as well as the host reaction in clams from the Saudi Arabian coasts.

#### Author Keywords

Arabian gulf; Clam; Encapsulation; *Meretrix meretrix*; *Perkinsus*; Trophozoite; Ultrastructure

**Document Type:** Article

**Source:** Scopus

Garbie, I.H.<sup>a b</sup>, Al-Hosni, F.S.<sup>c</sup>

#### **New evaluation of petroleum companies based on the agility level in gulf area**

(2014) *International Journal of Industrial and Systems Engineering*, 18 (4), pp. 528-572.

**DOI:** 10.1504/IJISE.2014.065622

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<sup>c</sup> Petroleum Development of Oman (PDO), P.O. Box 92, Mina-Al-Fahal-Muscat, Oman

#### Abstract

The oil industry is becoming a more competitive environment where objectives of the oil companies have to deal with multiple business challenges. Some of those challenges are the unexpected oil prices and customer demands where the companies have to continuously change their production strategies to meet the new requirements. Analysis and measuring the agility level in petroleum companies is very important to mitigate unexpected challenges. Agile systems in petroleum companies are considered as production and/or management philosophies that integrate the available production strategies, technology, people and organisation management systems. In this paper, a conceptual framework or approach is proposed to measure the agility level (AS) of the petroleum companies based on four pillars. These pillars are: production strategies, level of qualifying human resources, technologies, and organisation management systems. A questionnaire was designed and administered covering the whole important aspects and issues of agility pillars. Three case studies are presented to demonstrate the proposed approach insight into those characteristics which is used for assessing the agility level that is most relevant within the oil and gas industry. Copyright © 2014 Inderscience Enterprises Ltd.

#### Author Keywords

Agility; Performance evaluation; Petroleum companies

**Document Type:** Article

**Source:** Scopus

El-Mahdy, G.A.<sup>a b</sup>, Atta, A.M.<sup>a c</sup>, Al-Iohedan, H.A.<sup>a</sup>, Ezzat, A.O.<sup>a</sup>

#### **Synthesis of water soluble hyperbranched poly (amine-ester) as corrosion inhibitors for steel**

(2014) *International Journal of Electrochemical Science*, 9 (12), pp. 7925-7934. Cited 2 times.

<sup>a</sup> Department of Chemistry, College of Science, King Saud University, P.O.Box 2455, Riyadh, Saudi Arabia

<sup>b</sup> Chemistry department, Faculty of science, Helwan university, Helwan, Egypt

<sup>c</sup> Department, Egyptian Petroleum Research Institute, Cairo, Egypt

#### Abstract

Encouraged by the excellent performance of dendrimers as scale inhibitors and anticorrosive coatings, we reasoned that dendrimers with properly designed structures might also be used as efficient water soluble corrosion inhibitors.

New kind of dendritic polyether water soluble were synthesized using pentaerythritol tetracrylate as a precursor via Michael addition reaction with diethanolamine. The chemical structure of the prepared dendrimer was determined by FTIR, <sup>13</sup>C and <sup>1</sup>H NMR analyses. The inhibitive effect of HPAE-PEG600 on the corrosion of steel in 1 M HCl solution has been investigated using potentiodynamic polarization and electrochemical impedance spectroscopy (EIS) techniques. The results indicated that HPAE-PEG600 inhibited the corrosion of steel and the extent of inhibition increased with HPAE-PEG600 concentrations. Potentiodynamic polarization data suggests mixed-mode of corrosion inhibition. © 2014 The Authors.

**Author Keywords**

EIS; Electrochemical; FTIR; HPAE-PEG600; NMR; Polarization; Steel

**Document Type:** Article

**Source:** Scopus

Aliev, A.R.<sup>a b</sup>, Elbably, A.L.<sup>c</sup>

**Completeness of derivative chains for polynomial operator pencil of third order with multiple characteristics** (2014) *Azerbaijan Journal of Mathematics*, 4 (2), pp. 3-9. Cited 1 time.

<sup>a</sup> Baku State University, 23, Z. Khalilov Str., AZ1148, Baku, Azerbaijan

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<sup>c</sup> Helwan University, Ain Helwan 11795, Cairo, Egypt

**Abstract**

In this paper, we prove the completeness of a derivative chain constructed using the eigen- and adjoined vectors of polynomial operator pencils of third order with multiple characteristics corresponding to a boundary value problem on the semiaxis. © 2010 AZJM All rights reserved.

**Author Keywords**

Derivative chain; Eigen- and adjoined vectors; Polynomial operator pencil; Regular solvability; Resolvent

**Document Type:** Article

**Source:** Scopus

Afify, A.A.<sup>a c</sup>, Bazid, M.A.A.<sup>b d</sup>

**Effects of variable fluid properties on the natural convective boundary layer flow of a nanofluid past a vertical plate: Numerical study**

(2014) *Journal of Computational and Theoretical Nanoscience*, 11 (1), pp. 210-218. Cited 2 times.

**DOI:** 10.1166/jctn.2014.3340

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<sup>d</sup> Faculty of Education, Department of Mathematics, Suez Canal University, El-Arish, Egypt

**Abstract**

The study of natural convective boundary-layer flow in a nanofluid past a vertical plate is investigated numerically. Physical mechanisms responsible for temperature-dependent viscosity and temperature-dependent thermal conductivity between the nanoparticles and the base fluid, such as Brownian motion and thermophoresis, are accounted for in the model. The governing partial differential equations and the boundary condition are first transformed into coupled nonlinear ordinary differential equation with appropriate boundary conditions by using a similarity transformation. Furthermore the coupled nonlinear boundary value problem with the corresponding boundary conditions are solved numerically by a second order finite difference scheme known as Keller-Box method for various values of the pertinent parameters. The result indicates: (i) the combined effects of Brownian and thermophoresis with thermal conductivity parameter leads to increase skin-friction coefficient and reduced Sherwood number whereas the opposite results show for the reduced Nusselt number; and (ii) increasing variable viscosity parameter leads to decrease the reduced Nusselt and reduced Sherwood numbers whereas the opposite results show for the skin-friction coefficient. Copyright © 2014 American Scientific Publishers All rights reserved.

**Author Keywords**

Boundary Layer; Brownian Motion; Nanofluid; Thermophoresis; Variable Fluid Properties

**Document Type:** Article

**Source:** Scopus

Shamroukh, A.H.<sup>a b</sup>, Rashad, A.E.<sup>a c</sup>, Ali, H.S.<sup>d</sup>, Awad, S.M.<sup>e</sup>

**Studies on the reactivity of amino-1-(6-phenyl-pyridazin-3-yl)-1H-pyrazole-4-carboxylic acid hydrazide towards some reagents for biological evaluation**

(2014) *Journal of Heterocyclic Chemistry*, 51 (4), pp. 899-905.

**DOI:** 10.1002/jhet.1724

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<sup>c</sup> Chemistry Department, Faculty of Science and Human Studies, Shaqra University, Hurraiymila, Saudi Arabia

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<sup>e</sup> Organic Chemistry Department, Faculty of Pharmacy, Helwan University, Cairo, Egypt

**Abstract**

Novel 5-amino-1-(6-phenyl-pyridazin-3-yl)-1H-pyrazole-4-carboxylic acid ethyl ester (2) was formed using (6-phenyl-pyridazin-3-yl)-hydrazine (1) and ethyl(ethoxymethylene)cynoacetate. The  $\beta$ -enaminoester derivative 2 was in turn used as precursor for the preparation of 1-(6-phenyl-pyridazin-3-yl)- pyrazoles (3, 4, 7, 8, 9, 10, 11, 12, 15, 16), 1-(6-phenyl-pyridazin-3-yl)- pyrazolo[3,4-d]pyrimidines (5, 6, 14) and 1-(6-phenyl-pyridazin-3-yl)- pyrazolo[3,4-d][1,2,3]triazine (13). The in vitro antimicrobial activity of the synthesized compounds was evaluated by measuring the inhibition zone diameters where some of them showed potent antimicrobial activity in compared with well-known drugs (standards). © 2013 HeteroCorporation.

**Document Type:** Article

**Source:** Scopus

Goudah, A.<sup>a</sup>, Hasabelnaby, S.<sup>b</sup>

**Plasma disposition and tissue residue of Moxifloxacin in Japanese quails (*Coturnix japonica*) following different routes of administration**

(2014) *British Poultry Science*, 55 (5), pp. 693-698.

**DOI:** 10.1080/00071668.2014.960808

<sup>a</sup> Pharmacology Department, Cairo University, Giza, Egypt

<sup>b</sup> Pharmaceutical Chemistry Department, Helwan University, Helwan, Cairo, Egypt

**Abstract**

1. The disposition kinetics and the plasma availability of moxifloxacin were investigated in Japanese quails (*Coturnix japonica*) following different routes of administration at 5 mg/kg body weight.

2. Tissue residue profiles (liver, kidney, lung and muscle) and plasma were also studied after multiple intramuscular and oral administrations of 5 mg/kg body weight, once daily for 5 consecutive days.

3. Following intravenous injection, plasma concentration–time curves were best described by a two-compartment open model.

4. After intramuscular and oral administration of moxifloxacin, the peak plasma concentrations ( $C_{max}$ ) were 2.14 and 1.94  $\mu\text{g/ml}$  and were obtained at 1.40 and 1.87 h ( $T_{max}$ ), post administration, respectively.

5. The systemic bioavailabilities following intramuscular and oral administration, respectively, of moxifloxacin were 92.48 and 87.94%.

6. Tissue concentrations following i.m. and p.o. administration were highest in liver and kidney, respectively, and decreased in the following order: plasma, lung and muscle. No moxifloxacin residues were detected in tissues and plasma after 120 h after i.m. or oral administration. © 2014 British Poultry Science Ltd.

**Document Type:** Article

**Source:** Scopus

Al-Sadoon, M.K.<sup>a d</sup>, Diab, M.M.<sup>b d d</sup>, Bauomy, A.A.<sup>c d d</sup>, Moneim, A.E.A.<sup>c d d</sup>

**Cerastes cerastes gasperettii venom Induced Hematological Alterations and Oxidative Stress in Male Mice**

(2014) *Journal of Pure and Applied Microbiology*, 8, pp. 693-702.

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<sup>d</sup> Department of Biochemistry and Molecular Biology, Asturias Institute of Biotechnology, University of Oviedo, Oviedo, Spain

### Abstract

The desert horned vipers (*Cerastes cerastes gasperettii*; *C. c. gasperettii*) are the most familiar snakes of the great deserts of North Africa and the Middle East, including the Saudi Arabia. They are responsible for many human snake bites. The current study was designed to investigate the hematological effects and oxidative stress induction in lung, heart and spleen after *C. c. gasperettii* envenomation. Thirty six male Swiss albino mice were randomly divided into 2 groups, Control group injected intrapretoneally (i.p.) with saline or LD<sub>50</sub> dose envenomed group i.p. injected with venom at a dose of 978 µg/kg body weight (bwt). Mice were sacrificed after 1, 3 and 6 hrs from the injection. The number of white blood cells (WBC) was counted in envenomation and non-envenomation groups. Also, hemoglobin (Hb) was determined. In addition, lipid peroxidation (LPO), nitric oxide (NO), glutathione (GSH) levels and catalase (CAT) activity were measured in lung, cardiac and splenic homogenates. Statistical analyses were carried out using the unpaired student t test. The differential WBC count showed difference between envenomated and non-envenomated mice, which was mainly attributable to increase in neutrophils, monocytes eosinophils, and basophils in the envenomation mice (p<0.001). In the envenomation mice, the amounts of Hb were significantly lower compared to those of the non-envenomation group (p<0.001). In addition to the hematological alterations, *C. c. gasperettii* envenoming was associated to significant increasing in oxidative stress levels. Moreover, congestion of the alveolar capillaries in lung, inflammatory cell infiltration and myonecrosis in heart and splenomegaly were observed after 6 hrs of envenomation. Based on these observations, we may conclude that the LD<sub>50</sub> of *C. c. gasperettii* venom causes hematological alternations in mice, characterized by elevated oxidative stress levels and histological alterations in heart, lung and spleen tissues.

### Author Keywords

Blood elements; *Cerastes cerastes gasperettii*; Mice; Oxidative stress

**Document Type:** Article

**Source:** Scopus

Eldeeb, S.M.<sup>a</sup>, Khalifa, A.M.<sup>a b</sup>, Fahmy, A.S.<sup>c</sup>

### Hybrid intensity- and phase- based optical flow tracking of tagged MRI

(2014) *2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2014*, art. no. 6943776, pp. 1059-1062.

**DOI:** 10.1109/EMBC.2014.6943776

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<sup>b</sup> Biomedical Eng. Dept, Helwan University, Egypt

<sup>c</sup> Biomedical Eng. Dept, Cairo University, Nile University, Egypt

### Abstract

Accurate tracking of the myocardium tissues in tagged Magnetic Resonance Images (MRI) is essential for evaluating the cardiac function. Current tracking methods utilize either the image intensity or the image phase as landmarks that can be tracked. In either case, the performance is vulnerable to the image quality and the fading of the tag lines. In this work, we propose a hybrid optical flow tracking method that combines both the intensity and the phase features of the image. The method is validated using numerical cardiac phantom as well as real MRI data experiments. Both experiments showed that the proposed method outperforms current intensity-based optical flow tracking and the phase-based HARP method with maximum error of 1 pixel at extreme conditions of tag fading. © 2014 IEEE.

**Document Type:** Conference Paper

**Source:** Scopus

El-Raheem, Z.F.A.<sup>a</sup>, Nasser, A.H.<sup>b</sup>

### On the spectral investigation of the scattering problem for some version of one-dimensional Schrödinger equation with turning point

(2014) *Boundary Value Problems*, 2014, art. no. 97, . Cited 1 time.

**DOI:** 10.1186/1687-2770-2014-97

<sup>a</sup> Department of Mathematics, Faculty of Education, Alexandria University, Alexandria, Egypt

<sup>b</sup> Department of Mathematics, Faculty of Industrial Education, Helwan University, Cairo, Egypt

### Abstract

In this paper we introduce and investigate the eigenvalues and the normalizing numbers as well as the scattering function for some version of the one-dimensional Schrödinger equation with turning point on the half line. © 2014 El-Raheem and Nasser.

### Author Keywords

Asymptotic formula; Initial value problem; Normalizing numbers; Scattering function; The eigenvalues

**Document Type:** Article

**Source:** Scopus

Shehata, H.S.<sup>a</sup>, Galal, T.M.<sup>b</sup>

**Phytosociology and phytochemical screening of the medicinal weed *Malva parviflora* L**  
(2014) *Life Science Journal*, 11 (6), art. no. 65, pp. 458-468.

<sup>a</sup> Department of Botany, Zagazig University, Zagazig, Egypt

<sup>b</sup> Botany and Microbiology Department, Helwan University, Cairo, Egypt

### Abstract

*Malva parviflora* (common mallow) is a wild medicinal herb, which needs more management planes, and thus we studied its distribution and phytochemical constituents along five different habitats (cultivated lands, orchards, canals, drains and roadsides) in the Nile Delta region. In addition, the behavior of its common associated species along the prevailing environmental conditions was also assessed. Eighty-six species (50 annuals and 36 perennials) along 50 stands, representing the different habitats, were recorded. Therophytes predominated over the other life forms, while bi-regional taxa contributed the highest chorological elements. *M. Parviflora* is a therophytic plant that has Mediterranean distribution intermingled with Irano-Turanian elements. Four vegetation groups (VG) were produced by the application of TWINSPAN and DECORANA as classification and ordination techniques, respectively. VG (C) dominating the cultivated lands was the most diverse. Canonical Correspondence Analysis (CCA) indicated that, calcium carbonates, organic carbon, potassium adsorption ratio, carbonates, electrical conductivity and potassium were the most effective soil variables on the distribution of common mallow and its associated species along the different habitats. Phytochemical screening of leaves, stems and roots of *M. parviflora* indicated the presence of active compounds including: saponin, flavonoids, alkaloids and phenols in both wild and cultivated plants, while tannins were not detected in the former ones. There was a significant difference in these active compounds between wild and cultivated organs as well as between the different organs of the same plant. The investigated phytochemicals were present in considerable concentrations that render, in addition to its wide distribution, *M. parviflora* a promising plant for pharmaceutical purposes.

### Author Keywords

Common mallow; Communities; Distribution; Diversity; Phytochemistry; Weeds

**Document Type:** Article

**Source:** Scopus

Ebrahim, A.F.<sup>a b</sup>, Youssef, T.<sup>a</sup>, Ahmed, S.M.W.<sup>b</sup>, Elmasry, S.E.<sup>b</sup>, Mohammed, O.A.<sup>a</sup>

**Fault detection and compensation for a PV system grid tie inverter**  
(2014) *2014 North American Power Symposium, NAPS 2014*, art. no. 6965470, .

**DOI:** 10.1109/NAPS.2014.6965470

<sup>a</sup> Energy Systems Research Laboratory, ECE Department, Florida International University, Miami, FL, United States

<sup>b</sup> Electrical Machine and Power Engineering, Faculty of Engineering, Helwan University, Cairo, Egypt

### Abstract

The main purpose of this paper is to propose a fault detection and fault tolerant control mechanism to maintain the continuous operation of the grid tied inverter, which is commonly used to interface renewable energy and distributed generation to the grid. The fault tolerance is provided using modified topology of the DC-AC power converter with redundant standby branch. The proposed system insures the continuous operation without isolating the energy source from the grid during faults on inverter switch. The fault may be open circuit fault or short circuit fault. © 2014 IEEE.

### Author Keywords

fault detection; fault identification; fault tolerant control; grid tie inverter

**Document Type:** Conference Paper  
**Source:** Scopus

Temirak, A.<sup>a</sup>, Shaker, Y.M.<sup>a</sup>, Ragab, F.A.F.<sup>b</sup>, Ali, M.M.<sup>c</sup>, Soliman, S.M.<sup>d</sup>, Mortier, J.<sup>d e</sup>, Wolber, G.<sup>d</sup>, Ali, H.I.<sup>f g</sup>, Diwani, H.I.E.<sup>a</sup>

**Synthesis, biological evaluation, and docking studies of new 2-furylbenzimidazoles as anti-angiogenic agents: Part II**

(2014) *Archiv der Pharmazie*, 347 (4), pp. 291-304. Cited 1 time.

**DOI:** 10.1002/ardp.201300356

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<sup>f</sup> Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Texas AandM Health Science Center, Round Rock, TX, United States

<sup>g</sup> Faculty of Pharmacy, Department of Pharmaceutical Chemistry, Helwan University, Cairo, Egypt

**Abstract**

The 2-(5-methyl-2-furyl)-1H-benzimidazole moiety has shown promising activity against vascular endothelial growth factor (VEGF)-induced angiogenesis. In part I of this study, we have synthesized new analogs and tested their anti-angiogenic potentials. Here, we continue our previous study with different new analogs. Some compounds show promising cytotoxic activity against the human breast cancer cell line MCF-7, with IC<sub>50</sub> in the range of 7.80-13.90 µg/mL, and exhibited remarkable in vitro inhibition against VEGF in the MCF-7 cancer cell line, with 95-98% of inhibition in comparison to tamoxifen as reference (IC<sub>50</sub>: 8.00 µg/mL, % of inhibition = 98%). Additionally, a molecular docking study was carried out to gain insight into plausible binding modes and to understand the structure-activity relationships of the synthesized compounds. © 2014 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

**Author Keywords**

2-(2-Furyl)-1H-benzimidazoles; Angiogenesis; Cytotoxicity; Molecular modeling; Vascular endothelial growth factor (VEGF)

**Document Type:** Article

**Source:** Scopus

Al-Hazzani, A.<sup>a</sup>, Daoud, M.S.<sup>b c</sup>, Ataya, F.S.<sup>b d</sup>, Fouad, D.<sup>e f</sup>, Al-Jafari, A.A.<sup>b</sup>

**Renin-angiotensin system gene polymorphisms among Saudi patients with coronary artery disease**

(2014) *Journal of Biological Research (Greece)*, 21 (1), art. no. 8, .

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<sup>b</sup> Department of Biochemistry, College of Science, King Saud University, P.O. Box 2455, Riyadh, Saudi Arabia

<sup>c</sup> King Fahd Unit Laboratory, Department of Clinical and Chemical Pathology, Kasr Al-Ainy University Hospital, Cairo University, El-Manial, Cairo, Egypt

<sup>d</sup> Department of Molecular Biology, Genetic Engineering Division, National Research Center, Dokki, Cairo, Egypt

<sup>e</sup> Department of Zoology, College of Science, King Saud University, Riyadh, Saudi Arabia

<sup>f</sup> Department of Zoology and Entomology, Faculty of Science, Helwan University, Ein Helwan, Cairo, Egypt

**Abstract**

**Background:** The polymorphisms in the components of the renin-angiotensin system (RAS) are important in the development and progression of coronary artery disease (CAD) in some individuals. Our objectives in the present investigation were to determine whether three RAS polymorphisms, angiotensin-converting enzyme insertion/deletion (ACE I/D), angiotensin receptor II (Ang II AT2 - C3123A) and angiotensinogen (AGT-M235T), are associated with CAD in the Saudi population. We recruited 225 subjects with angiographically confirmed CAD who had identical ethnic backgrounds and 110 control subjects. The polymerase chain reaction-restriction fragment length polymorphisms (RFLP) technique was used to detect polymorphisms in the RAS gene. **Results:** Within the CAD group, for the ACE I/D genotype, DD was found in 64.4%, 26.3% carried the ID genotype, and 9.3% carried the II genotype. Within the control group, the DD genotype was found in 56.4%, 23.6% carried the ID genotype, and 20% carried the II genotype.



The odds ratio (OR) of the ACE DD vs II genotype with a 95% confidence interval (CI) was 2.45 (1.26-4.78), with  $p = 0.008$ . For the Ang II AT2 receptor C3123A genotype, within the CAD group, CC was found in 39.6%, 17.8% carried the CA genotype, and 42.6% carried the AA genotype. Within the control group, CC was found in 39.1%, 60.9% carried the CA genotype, and there was an absence of the AA genotype. The OR of the Ang II AT2 receptor C3123A CC vs AA genotypes (95% CI) was 0.01, with  $p = 0.0001$ . A significant association with CAD was shown. For the AGT-M235T genotype, within the CAD group, MM was found in 24.0%, 43.6% carried the MT genotype and 32.4% carried the TT genotype. Within the control group, MM was found in 26.4%, 45.5% carried the TT genotype and 28.2% carried the MT genotype. The OR of MM vs TT (95% CI) was 0.79 (0.43 to 1.46), which was insignificant. Conclusions: There is an association between the ACE I/D and Ang II AT2 receptor C3123A polymorphisms and CAD, however, no association was detected between the AGT M235T polymorphism and CAD in the Saudi population. © 2014 Al-Hazzani et al.

**Author Keywords**

Angiotensin; Angiotensin converting enzyme; Angiotensin receptors; Coronary artery disease; Genotypes; Saudi populations and polymorphism

**Document Type:** Article

**Source:** Scopus

Elgendy, E.<sup>a</sup>, Schmidt, J.<sup>b</sup>

**Optimum utilization of recovered heat of a gas engine heat pump used for water heating at low air temperature** (2014) *Energy and Buildings*, 80, pp. 375-383.

**DOI:** 10.1016/j.enbuild.2014.05.054

<sup>a</sup> Mechanical Power Engineering Department, Faculty of Engineering at El-Mattaria, Helwan University, Cairo, Egypt

<sup>b</sup> Institute of Fluid Dynamics and Thermodynamics, Faculty of Process and System Engineering, Otto-von-Guericke University, Magdeburg, Germany

**Abstract**

Engine waste heat recovery represents one of the main advantages of gas engine heat pump (GEHP) as compared to conventional heat pump. At lower air ambient temperature, engine waste heat can be used either to evaporate the refrigerant in the refrigerant circuit (mode-I) or to heat the supply water (mode-II). In this paper, the performance of a gas engine heat pump integrated with heat recovery subsystem for both modes are experimentally investigated. In order to achieve this objective, a test facility was developed and experiments were performed over a wide range of engine speed (1300:2200 rpm), ambient air temperature (-3.3:22 °C) and condenser water inlet temperature (27:48 °C). Performance characteristics of the gas engine heat pump were characterized by outlet water temperature, heating capacity and primary energy ratio. The results showed that the effect of condenser water inlet temperature on the system performance is more significant than the effects of ambient air temperature and engine speed. Maximum primary energy ratio has been estimated with a value of 1.83 when the recovered engine heat is transferred to water while it is limited to 1.25 as the recovered engine heat is transferred to refrigerant circuit. © 2014 Elsevier B.V. All rights reserved.

**Author Keywords**

Gas engine heat pump; Heat recovery; Heating mode; Primary energy ratio; R410A

**Document Type:** Article

**Source:** Scopus

Bondock, S.<sup>a b</sup>, Nasr, T.<sup>c</sup>, Zaghary, W.<sup>d</sup>, Chantrapromma, S.<sup>e</sup>, Ghabbour, H.<sup>d</sup>, Fun, H.-K.<sup>d</sup>

**Novel diastereoselective synthesis and X-ray crystallographic studies of (E)-2-cyano-N-(4-ethoxyphenyl)-3-methylthio-3-(substituted-amino)acrylamides** (2014) *Molecular Crystals and Liquid Crystals*, 605 (1), pp. 165-178.

**DOI:** 10.1080/15421406.2014.885354

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<sup>b</sup> Department of Chemistry, Faculty of Science, King Khalid University, Abha, South Africa

<sup>c</sup> Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Helwan University, Egypt

<sup>d</sup> Department of Pharmaceutical Chemistry, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia

<sup>e</sup> Department of Chemistry, Faculty of Science, Prince of Songkla University, Hat-Yai, Songkhla, Thailand

**Abstract**

Three derivatives of the novel (E)-2-cyano-N-(4-ethoxyphenyl)-3-methylthio-3-(substituted-amino)acrylamides 3-5 were selectively synthesized by the one-pot reaction of 2-cyano-N-(4-ethoxyphenyl)acetamide (2) with substituted

isothiocyanates and methyl iodide in DMF containing potassium hydroxide as a basic catalyst. The stereochemistry and the structures of the synthesized compounds were confirmed by single crystal X-ray diffraction, IR, <sup>1</sup>H-NMR, <sup>13</sup>C-NMR, mass spectroscopy, and elemental analyses. © 2014 Copyright © Taylor & Francis Group, LLC.

**Author Keywords**

4-ethoxyaniline; Crystal structure; cyanoacetylation; diastereoselective; ketene N,S-acetals

**Document Type:** Article

**Source:** Scopus

El-Mezayen, H.A.<sup>a</sup>, Metwally, F.M.<sup>b</sup>, Darwish, H.<sup>c</sup>

**A novel discriminant score based on tumor-associated trypsin inhibitor for accurate diagnosis of metastasis in patients with breast cancer**

(2014) *Tumor Biology*, 35 (3), pp. 2759-2767.

**DOI:** 10.1007/s13277-013-1366-y

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<sup>b</sup> Environmental and Occupational Medicine Department, National Research Center, Giza, Egypt

<sup>c</sup> Medical Oncology Department, Damietta Cancer Institute, Damietta, Egypt

**Abstract**

Invasion and metastasis of solid tumors require proteolytic enzymes for degradation of the basal membrane and extracellular matrix. Currently, there are no reliable methodologies to predict the risk for metastatic disease. In this context, our aim has been focused on the development of a noninvasive score based on tumor-associated trypsin inhibitor (TATI) for the assessment of metastasis in patients with breast cancer. TATI, trypsin, and soluble epidermal growth factor receptor (sEGFR) were assayed by enzyme-linked immunosorbent assay. CA 15.3 serum level was assayed by microparticle enzyme immunoassay in 265 patients with breast cancer. Statistical analyses were performed by logistic regression and receiver operating characteristic analysis curves. Using multivariate discriminant analysis, a score is selected based on absolute values of the four biochemical markers: TATI-metastatic breast cancer score (TATI-MBCS) =  $[0.03 \times \text{CA 15.3 (U/L)} + 0.039 \times \text{TATI (ng/ml)} + 0.04 \times \text{trypsin (ng/ml)} + 0.023 \times \text{sEGFR (ng/ml)} - 6.49$  (numerical constant)]. This function correctly classified 84 % of metastatic breast cancer at cutoff value = 0.62 (i.e., greater than 0.62 indicates patients with metastatic breast cancer and less than 0.62 indicates patients with nonmetastatic breast cancer). In conclusion, TATI-MBCS is a novel, noninvasive, and simple score which can be applied to discriminate patients with metastatic breast cancer. © 2013 International Society of Oncology and BioMarkers (ISOBM).

**Author Keywords**

Biomarkers; Breast cancer; EGFR; Metastasis; TATI; Trypsin

**Document Type:** Article

**Source:** Scopus

Ramadan, R.<sup>a</sup>, Kamal, H.<sup>b</sup>, Hashem, H.M.<sup>c</sup>, Abdel-Hady, K.<sup>a</sup>

**Gelatin-based solid electrolyte releasing Li<sup>+</sup> for smart window applications**

(2014) *Solar Energy Materials and Solar Cells*, 127, pp. 147-156.

**DOI:** 10.1016/j.solmat.2014.04.016

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<sup>b</sup> Physics Department, Faculty of Science, Ain Shams University, Cairo, Egypt

<sup>c</sup> Physics Department, Faculty of Science, Helwan University, Cairo, Egypt

**Abstract**

Gelatin-based solid electrolyte (GSE) has been prepared, characterized and successfully applied to a small electrochromic device (ECD). The gelatin was cross-linked with formaldehyde, plasticized with glycerol and contained different quantities from LiClO<sub>4</sub> or LiCl. The physical properties of these membranes were studied by impedance spectroscopy, X-ray diffraction, thermal analysis, mechanical test and UV-visible spectrophotometry. The XRD results indicated that all membranes are predominantly amorphous with some localized ordering. The DSC results proved that the samples exhibited high stability with low glass transition temperature of -100 °C. The ionic conductivity showed highest values of 1.04×10<sup>-4</sup> S/cm at 13 wt% LiClO<sub>4</sub> and 2.02×10<sup>-4</sup> S/cm at 10 wt% LiCl, which is attributed to increase of the number of charge carriers. Results of ionic conductivity/temperature measurements fitted linearly to VTF behavior, independent of salt contents, indicating contribution of polymeric chain movement to ionic transport of Li<sup>+</sup>. Low values of activation energy, namely, 9.37 and 6.31 kJ/mol have been deduced for samples containing LiClO<sub>4</sub> and LiCl, respectively, which showed highest conductivities. In addition, the activation energy dropped from 11.57 to 6.31 kJ/mol as the LiCl contents increased from 4 to 10 wt%. Mechanical investigation showed that addition of Li salts

enhanced noticeably the membrane elasticity which improved polymeric chains movement with subsequent increase of Li ions transport. At  $\lambda$  280 nm, the membranes exhibited ~90% transmittance. Membranes possessing highest conductivity combined with high transparency and showing good adhesion to both counter and working electrodes were assembled in a smart window device of configuration (glass/FTO/NiO/GSE/WO<sub>3</sub>/FTO/glass). The device has been characterized by cyclic voltammetry (CV) and chronoamperometry (CA), and showed good performance and stability in cycling between coloring and bleached states at ( $\pm 2V$ ). It showed transmittance change of 38% at  $\lambda=600$  nm, response time 60 s, inserted charge -35 mC/cm<sup>2</sup> and a coloration efficiency of 23 cm<sup>2</sup>/C. The obtained results of mechanical, ionic conductivity, adhesion to electrodes and high transmittance properties in combination with the performance of the assembled device indicate that GSE is promising for electrochromic smart window application. © 2014 Elsevier B.V.

**Author Keywords**

Gelatin; Ionic conductivity and smart window device; Solid electrolyte

**Document Type:** Article

**Source:** Scopus

El-Dars, F.M.S.E.<sup>a</sup>, Ibrahim, M.A.<sup>a</sup>, Gabr, A.M.E.<sup>b c</sup>

**Reduction of COD in water-based paint wastewater using three types of activated carbon**  
(2014) *Desalination and Water Treatment*, 52 (16-18), pp. 2975-2986.

**DOI:** 10.1080/19443994.2013.804456

<sup>a</sup> Chemistry Department, Helwan University, Ain Helwan, Helwan, Cairo, 11785, Egypt

<sup>b</sup> El Obour Paint and Chemicals Factory (Pachin), Al Obour City, Egypt

<sup>c</sup> P.O. Box 1, El-Obour, Egypt

**Abstract**

In this study, the reduction chemical oxygen demand (COD) in water-based paint wastewater using commercial activated carbon, activated date pits and rice husks was investigated. The process was studied in the batch mode with respect to the initial pH, contact time, and adsorbent dose. Adsorption equilibrium and kinetic data were determined for the three adsorbents and were fitted to several isotherm and kinetic models accordingly. The results indicated that activated rice husks (ARH) and activated date pits (ADP) were as effective as commercial activated charcoal (CAC) in the reduction of the effluent COD reaching a maximum of 83% using 180 g/L ARH and 76% using 120 g/L ADP. Kinetically, the results showed that reduction of COD onto both ADP and ARH was better fitted to pseudo-second-order model which involved particle/pore diffusion. In addition, equilibrium adsorption data for the reduction of COD effluent ADP and ARH was best represented by the Langmuir model. © 2013 Balaban Desalination Publications. All rights reserved.

**Author Keywords**

COD reduction; Industrial wastewater treatment; Low-cost adsorbents; Water-based paints

**Document Type:** Article

**Source:** Scopus

Kandil, T.<sup>a</sup>, Chowdhury, D.<sup>b</sup>

**Islamic banks' mergers and acquisitions - Impacts on performance and financial crisis in the United Kingdom**  
(2014) *Contemporary Studies in Economic and Financial Analysis*, 95, pp. 119-140.

**DOI:** 10.1108/S1569-3759(2014)0000095016

<sup>a</sup> Faculty of Commerce and Business Administration, Helwan University, Ain Helwan, Cairo, Egypt

<sup>b</sup> School of Business, Leadership and Enterprise, University Campus Suffolk (UCS), Suffolk, United Kingdom

**Abstract**

**Purpose** - The purpose of this chapter is to reflect the impact of mergers and acquisitions processes on performance of Islamic banking industry in the United Kingdom through studying within. **Design/methodology/approach** - The present research uses explanatory approach in order to examine the research problems, methodology used in the research is quantitative methods through calculating the longterm share prices performance of the UK Islamic banks' sample. First, the researchers use the control Islamic bank in the event-time approach. The researchers calculate annual abnormal returns using the buy-andhold abnormal return (BHAR) method over a period of five years, counting from the quarter of a year when the transaction is said to be effective. **Research findings** - The research findings found that there are significant differences in the Islamic mergers and acquisitions post-long-run performance of the UK Islamic banks to the control the crises that face the United Kingdom from 2007 to 2010. However, the acquiring Islamic bank in high-tech industries had a negative effect on their long-term performance. **Limitations/implications** - The present research has been applied for the Islamic banking industry in the United Kingdom after the Western Europe

industry from 2007 to 2010. Practical implication - The main implementations of the present research is valuing UK banks carried out the Islamic mergers and acquisitions of a broad range of management disciplines encompassing the financial, strategic, behavioral, operational, and cross-cultural aspects of this challenging and high-risk activity. Originality/value - The Islamic mergers and acquisitions have placed a significant amount of value added on the motivation of large banks for engaging in banking mergers and acquisitions' transactions. © 2014 by Emerald Group Publishing Limited.

**Author Keywords**

Banking sector; Islamic finance; Mergers and acquisitions; ROE; ROI

**Document Type:** Article

**Source:** Scopus

Elbably, M.

**New BIST scheme and 3-D generic diagnostic algorithm for nano-scale devices**

(2013) *Proceedings - 2013 IEEE 3rd International Conference on System Engineering and Technology, ICSET 2013*, art. no. 6650202, pp. 369-374.

**DOI:** 10.1109/ICSEngT.2013.6650202

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

**Abstract**

To test and diagnose the nano-scale devices a new test scheme and diagnostic generic algorithm for three directions (3-D) will be presented. Isolate any faulty block(s) and preventing the fault effect propagation among the nano-devices is the major challenges for these new nano-devices. In this research, a new built-in self-test (BIST) scheme will be proposed using different modes with two test configurations to test any selected block(s) in nano devices. Also, based on results of the proposed BIST scheme, a generic 3-D diagnostic algorithm to identify the faulty and fault-free blocks will be presented. An practical analysis to evaluate the average amount of hardware and time required for the proposed algorithm will be presented. © 2013 IEEE.

**Author Keywords**

diagnostic and generic algorithm design for digital systems; Electronics design automation (EDA); testing

**Document Type:** Conference Paper

**Source:** Scopus

Moustafa Ahmed, H.<sup>a</sup>, Saeed Alazonee, A.<sup>b</sup>

**Radioprotective effect of hesperidin against gamma-irradiation-induced oxidative stress and biomechanical properties of bone in rats**

(2013) *Life Science Journal*, 10 (4), pp. 2857-2865.

<sup>a</sup> October Six University, Egypt

<sup>b</sup> Zoology Department, Helwan University, Egypt

**Abstract**

The radioprotective effects of hesperidin (HES), a flavonone glucoside, were investigated by using the creatine kinase (CPK), lactate dehydrogenase (LDH), asymmetric dimethylarginine (ADMA), urea, creatinine, total nitrate/nitrite (NO(x)), superoxide dismutase (SOD), glutathione peroxidase (GSHPx) activities, glutathione (GSH), malondialdehyde (MDA), calcium ion concentration and biomechanical properties of bone in rats. Eighty male albino rats were divided into four groups. The control group received 100 µL of sterile saline intra peritoneal. Rats of the second group were injected HES extract (160 mg/kg) intra peritoneal (I.P) for 3 consecutive days. Animals in the third group were administered vehicle by gastric tube for 3 consecutive days, then exposed to single dose gamma-irradiation (2Gy). The Fourth group received HES extract for 3 consecutive days; one hour later rats were exposed to gamma-irradiation. Our results revealed that, prior to irradiation HES extract produced a significant radioprotection. This was evidenced by a significant reduction in serum (CPK), (LDH), (ADMA), urea and creatinine levels as well as significant increase in serum nitrate/nitrite (NO(x)) level. Moreover, HES significantly increased renal (SOD), (GSHPx) and calcium ion concentration, and reduced (GSH) content, associated with a significant depletion in (MDA) and NO(x) levels compared to irradiated group. Additionally, treatment with HES extract led to significant break points of tibia bones compared to irradiated group. In conclusion, this study suggests that HES may serve as a potential protective agent against gamma-irradiation-induced cardio-nephrotoxicity via enhancing the antioxidant activity, biophysical mechanical properties of bone in rats and inhibition of endothelial dysfunction.

**Author Keywords**

Biomechanical properties of bone; Calcium ions; Gamma-radiation oxidative stress; Hesperidin

**Document Type:** Article

**Source:** Scopus

Kamal, A.M.<sup>a</sup>, Abdelhady, M.I.S.<sup>a b</sup>, Tawfik, N.F.<sup>a</sup>, Abdelkhalik, S.M.<sup>a</sup>

**Lipoidal Matter and Essential Oil Contents of Leaves and Flowers of *Callistemon viridiflorus* and their Antimicrobial Activity**

(2013) *Journal of Essential Oil-Bearing Plants*, 16 (6), pp. 771-780.

**DOI:** 10.1080/0972060X.2013.813281

<sup>a</sup> Pharmacognosy Department, Helwan University, Ain Helwan, Cairo, Egypt

<sup>b</sup> Pharmacognosy Department, Umm Al Qura, University, Holy Makkah 21955, Saudi Arabia

**Abstract**

Comparative investigation of hydro-distilled essential oils from leaves and flowers of *Callistemon viridiflorus* Sims (family Myrtaceae) grown in Egypt was carried out including their chemical composition and some of their bioactivities. The obtained oils revealed the presence of 19 and 22 identified constituents in the leaves and flowers, respectively. The oils were dominated by oxygenated compounds of 96.1 and 98.5 % in leaves and flowers of *C. viridiflorus* respectively. Methyl eugenol was found to be the main component in leaves (89.1 %) and flowers (95.1 %). Hydrocarbon contents in both leaves and flowers were 3.9 and 1.5 %, respectively. The unsaponifiable fraction of the fixed oil obtained by extracting the leaves of *C. viridiflorus* with petroleum ether was analyzed by GLC. The percentage of hydrocarbons and sterols were found to be 76.9 and 2.9 %, respectively. Nonane (12.0 %), octadecane (11.0 %) and hexane (9.1 %) were found as the major hydrocarbon constituents. Stigmasterol (1.3 %),  $\beta$ -sitosterol (0.9 %) and cholesterol (0.7 %) were the major phytosterol constituents. Analysis of methylated fatty acid fraction of *C. viridiflorus* leaves extract by GLC revealed that the percentage of saturated fatty acids was higher than that of unsaturated fatty acids being 84.5 and 14.9 %, respectively. Arachidic (42.4 %) and palmitic (37.0 %) acids were the major identified saturated fatty acid while oleic acid (5.5 %) was the major identified unsaturated fatty acid. The oils of leaves and flowers of *C. viridiflorus* exhibited broad spectrum antimicrobial activity against both gram-positive and gram-negative bacteria as well as *Candida albicans* yeast. © 2013 © 2013 Har Krishan Bhalla & Sons.

**Author Keywords**

*Callistemon viridiflorus*; essential oil composition; lipoidal matter and antimicrobial activity; methyl eugenol

**Document Type:** Article

**Source:** Scopus

Khweek, A.A.<sup>a</sup>, Fernández Dávila, N.S.<sup>a</sup>, Caution, K.<sup>a</sup>, Akhter, A.<sup>a</sup>, Abdulrahman, B.A.<sup>a b</sup>, Tazi, M.<sup>a</sup>, Hassan, H.<sup>a</sup>, Novotny, L.A.<sup>c</sup>, Bakaletz, L.O.<sup>a c</sup>, Amer, A.O.<sup>a</sup>

**Biofilm-derived *Legionella pneumophila* evades the innate immune response in macrophages**

(2013) *Frontiers in Cellular and Infection Microbiology*, 4 (MAY), art. no. Article 18, .

**DOI:** 10.3389/fcimb.2013.00018

<sup>a</sup> Department of Microbial Infection and Immunity, Center for Microbial Interface Biology, College of Medicine, The Ohio State University, Columbus, OH, United States

<sup>b</sup> Department of Biochemistry and Molecular Biology, Faculty of Pharmacy, Helwan University, Cairo, Egypt

<sup>c</sup> Center for Microbial Pathogenesis, Nationwide Children's Hospital, Columbus, OH, United States

**Abstract**

*Legionella pneumophila*, the causative agent of Legionnaire's disease, replicates in human alveolar macrophages to establish infection. There is no human-to-human transmission and the main source of infection is *L. pneumophila* biofilms established in air conditioners, water fountains, and hospital equipments. The biofilm structure provides protection to the organism from disinfectants and antibacterial agents. *L. pneumophila* infection in humans is characterized by a subtle initial immune response, giving time for the organism to establish infection before the patient succumbs to pneumonia. Planktonic *L. pneumophila* elicits a strong immune response in murine, but not in human macrophages enabling control of the infection. Interactions between planktonic *L. pneumophila* and murine or human macrophages have been studied for years, yet the interface between biofilm-derived *L. pneumophila* and macrophages has not been explored. Here, we demonstrate that biofilm-derived *L. pneumophila* replicates significantly more in murine macrophages than planktonic bacteria. In contrast to planktonic *L. pneumophila*, biofilm-derived *L. pneumophila* lacks flagellin expression, do not activate caspase-1 or -7 and trigger less cell death. In addition, while planktonic *L. pneumophila* is promptly delivered to lysosomes for degradation, most biofilm-derived bacteria were enclosed in a vacuole that did not fuse with lysosomes in murine macrophages. This study advances our understanding of the innate immune response to biofilm-derived *L. pneumophila* and closely reproduces the natural mode of infection in human. © 2013 Abu Khweek, Fernández Dávila, Caution, Akhter, Abdulrahman, Tazi, Hassan, Novotny, Bakaletz and Amer.

**Author Keywords**

Biofilm; Caspase-1; Flagellin; Inflammasome; Innate immunity; Legionella pneumophila

**Document Type:** Article

**Source:** Scopus

Alawi, M.H.<sup>a</sup>, El-Qadi, M.M.<sup>b</sup>, El-Ameen, M.A.<sup>c</sup>

**Modeling and simulation of flow and formation damage of asphalt-paved roads**

(2013) *Abstract and Applied Analysis*, 2013, art. no. 384640, .

**DOI:** 10.1155/2013/384640

<sup>a</sup> Civil Engineering Department, Collage of Engineering, Umm Al-Qura University, Saudi Arabia

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**Abstract**

Porous asphalt is a standard asphalt built on aggregate storage bed which allows water to drain through it and reduces stormwater runoff. However, porosity of the porous asphalt and the storage bed may be effectively reduced due to trapping suspended solids from the water or from the asphalt damage. In this paper, we present mathematical modeling and numerical simulation of flow and damage of porous asphalt-paved roads. A mathematical model to describe the fine-particles transport carried by a two-phase flow in a porous medium is presented. The buoyancy, capillarity, and mixed relative permeabilities correlations to fit with the mixed-wet system are considered. Throughout this investigation, we monitor the changing of the fluids properties such as water saturation and solid properties such as porosity and permeability due to trapping the fine-particles. © 2013 M. H. Alawi et al.

**Document Type:** Article

**Source:** Scopus

Mohamed, S.H.<sup>a b</sup>, El-Hagary, M.<sup>a c</sup>

**Towards understanding the nanomaterials characteristics of vapor transported CdS in an open end tube**

(2013) *Materials Chemistry and Physics*, 143 (1), pp. 178-183. Cited 2 times.

**DOI:** 10.1016/j.matchemphys.2013.08.049

<sup>a</sup> Physics Department, Faculty of Science, Sohag University, 82524 Sohag, Egypt

<sup>b</sup> Physics Department, College of Science, Qassim University, P.O. 6644, 51452 Buryadh, Saudi Arabia

<sup>c</sup> Physics Department, Faculty of Science, Helwan University, 11792 Helwan, Cairo, Egypt

**Abstract**

In this study, the evaporation condensation of CdS was carried out in a quartz tube with an open end. The synthesis was carried out on Au coated Si(100) and quartz substrates. The Au coated Si and quartz substrates were put approximately 1 cm and up to 25 cm away from the alumina boat. It was observed that the materials deposited on the substrates in the reactor tube formed with different colors in different regions. The regions were found to be 6-14 cm, 14-18 cm and 18-24 cm away from the center of the alumina boat and were labeled B, C and D, respectively. The morphology, structural and chemical composition of the obtained materials at different regions were investigated using scanning electron microscopy (SEM), X-ray diffraction (XRD) and energy dispersive analysis of X-ray (EDAX), respectively. EDAX analysis revealed the presence of Cd and S with nearly stoichiometric CdS at region B. At region C a pronounced peak of oxygen was observed together with the peaks of Cd and S. At region D the S peak was diminished. XRD examinations revealed the formation of single crystalline phase of hexagonal CdS in region B. Mixed crystalline phases of hexagonal CdS, monoclinic cadmium sulfite, CdSO<sub>3</sub>, and cubic CdO were formed in region C. Cubic CdO was formed in region D. The SEM examinations showed that the morphology of CdS was nanowires (NWs) in shape. The morphology of the mixed oxysulfide phase was a mixture between NWs and nanoparticles (NPs). The morphology of CdO was NPs in shape. The optical constants, the thickness and the surface roughness of the prepared nanostructured films were determined by spectroscopic ellipsometry measurements. A model consisted of two layers was used to fit the calculated data to the experimental ellipsometric spectra. The obtained optical constants were compared with those of CdS and CdO obtained by other preparation methods. © 2013 Elsevier B.V. All rights reserved.

**Author Keywords**

Chemical vapour deposition (CVD); EDAX; Nanostructures; Optical properties; SEM

**Document Type:** Article

**Source:** Scopus

Fariad, N.<sup>a</sup>, Ghany, H.A.<sup>b c</sup>

**Construction of a cone by using weak\*- total families**

(2013) *Applied Mathematical Sciences*, 7 (133-136), pp. 6659-6668.

**DOI:** 10.12988/ams.2013.310544

<sup>a</sup> Mathematics Department, Faculty of Science, Ain Shams university, Cairo, Egypt

<sup>b</sup> Mathematics Department, Faculty of Science, Taif University, Taif, Saudi Arabia

<sup>c</sup> Mathematics Department, Faculty of Industrial Education, Helwan university, Cairo, Egypt

**Abstract**

This paper is devoted to construct a cone by using the so called weak\*-total families in different spaces ( Banach space, Hilbert space, metric space,...etc.). We were advised some forms for weak\*-total subsets to construct an exact forms for cones like (Normal cones, Allows plastering cones, Solid cones,...etc.).

**Author Keywords**

-total subsets; Cone; Weak

**Document Type:** Article

**Source:** Scopus

Ibrahim, M.A.<sup>a</sup>, Zohdy, M.H.<sup>b</sup>, Salem, A.A.<sup>a</sup>, Hassan, M.S.<sup>b</sup>, El Saed El Badawy, L.<sup>a</sup>

**Antimicrobial protection of preirradiated cotton and cotton/polyester fabrics printed with pigment colours**

(2013) *Polymers from Renewable Resources*, 4 (4), pp. 185-202.

<sup>a</sup> Textile Printing, dyeing and Finishing Department, Faculty of Applied Arts, Helwan University, Cairo, Egypt

<sup>b</sup> National Center for Radiation Research and Technology, Nasr City, Cairo, Egypt

**Abstract**

The paper deals with the improvement of the antimicrobial properties of gamma pre-irradiated cotton and cotton/PET blend fabrics, by using of different metal oxides (ZnO and Al  $\text{O}_3$  as antimicrobial agents, through the printing process. The antimicrobial properties of the fabrics were evaluated, in terms of the mechanical properties after burying in a soil reach with microorganisms. Moreover, the effect of antimicrobial finishing on the printing properties, in terms of colour strength was investigated. It was found that the antimicrobial properties were enhanced by addition of the metal oxides up to 1% to the pigment printing paste, under pre-irradiation of fabrics up to 5 (kGy) for cotton and blend fabrics. The colour strength (K/S) of printed fabrics was increased by addition of 0.5% of metal oxides and pre-irradiation dose up to 5 (kGy) for cotton fabric and up to (10 (kGy) for blend fabrics. The thermal stability of the printed fabrics was evaluated by thermogravimetric analysis (TGA) technique, which it showed a decreasing in the thermal stability by addition of the metal oxides, varying according to the types of fabrics and metal oxides used. © Smithers Rapra Technology, 2013.

**Author Keywords**

Antimicrobial; Cotton/polyester; Gamma irradiation; Metal oxides; Pigment

**Document Type:** Article

**Source:** Scopus

Abdelfattah, M.S.

**A new bioactive aminophenoxazinone alkaloid from a marine-derived actinomycete**

(2013) *Natural Product Research*, 27 (22), pp. 2126-2131.

**DOI:** 10.1080/14786419.2013.793686

Chemistry Department, Faculty of Science, Helwan University, Ain Helwan, Cairo, Egypt

**Abstract**

Chemical investigation of the marine *Streptomyces* sp. Eg25 led to the isolation of one new natural 2-aminophenoxazin-3-one-8-carboxylic acid methyl ester named maroxazinone (1) as well as the known compounds elloxazinone A (2), exfoliazone (3), carboxyexfoliazone (4), elloxazinone B (5) and venezueline D (6). The chemical structures of the isolated compounds were deduced from extensive studies of NMR (1H and 13C NMR, 1H-1H COSY, HMQC and HMBC) and mass spectra. The cytotoxic activities of the new maroxazinone (1) and venezueline D (6) against breast carcinoma cell line (MCF7), liver carcinoma cell line (HEPG2) and colon carcinoma cell line (HCT116) were investigated. © 2013 Taylor & Francis.

**Author Keywords**

Actinomycete; Aminophenoxazinone; Cytotoxic activity; Maroxazinone; Spectroscopy

**Document Type:** Article

**Source:** Scopus

Mohamed, E.S.

**Design and performance analysis of the hybrid powertrain strategies for split hybrid vehicles with CVT**  
(2013) *International Journal of Electric and Hybrid Vehicles*, 5 (3), pp. 195-214. Cited 1 time.

**DOI:** 10.1504/IJEHV.2013.057605

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

#### **Abstract**

A hybrid electric vehicle (HEV) is one of the most promising alternatives to a conventional engine-powered vehicle, which satisfies increasing customer's requirements. However, how much the hybrid vehicle is better than the conventional one depends heavily on its powertrain control strategy. The aim of the paper is to convert the internal combustion engine (ICE) to a split HEV with a continuously variable transmission (CVT), in which, the practical configuration of power train for a split hybrid electric is introduced. This is based on the analysis of the operation modes, which can operate the engine, generator and motor within its highly efficient range as much as possible and keep battery state of charge (SOC) at a reasonable level. A CVT is a transmission that can change steplessly through an infinite number of effective gear ratios. The performance of a CVT for an HEV was investigated, on the basis of theoretical simulation and practical road test in the chassis dynamometer. © 2013 Inderscience Enterprises Ltd.

#### **Author Keywords**

CVT design; HEV; Hybrid electric vehicle; Hybrid operation modes; Powertrain configuration; Split hybrid vehicles simulation

**Document Type:** Article

**Source:** Scopus

Ali, M.M.I.

**Efficiency optimisation with PI gain adaptation of field-oriented control applied on five phase induction motor using AI technique**

(2013) *International Journal of Modelling, Identification and Control*, 20 (4), pp. 344-360. Cited 5 times.

**DOI:** 10.1504/IJMIC.2013.057568

Electric Power and Machines Department, Faculty of Engineering, Helwan University, 1 Shref Street, Helwan - Cairo 11792, Egypt

#### **Abstract**

Improving flux vector control (FOC) drives performance is studied for five phase saturated model of induction motor. Fuzzy logic, genetic algorithm (GA) and particle swarm optimisation (PSO) are used for this purpose. Optimum flux reference identification by using FL, GA and PSO is used to minimise the motor input power to have the optimum motor efficiency. Selecting of the optimal gains using both methods is done to improve the motor response and behaviour. A comparison between the simulation results was done to evaluate the performance for the developed controller adopting (GA) and (PSO) algorithms. The results show that the proposed PSO controller algorithm has better optimisation performance than the proposed GA both for gain tuning and for the selection flux set point, while the fuzzy logic give the best performance for optimal flux set point selection. Copyright © 2013 Inderscience Enterprises Ltd.

#### **Author Keywords**

Filed-oriented control drives; Five phase; Flux observer controller; Fuzzy logic; Genetic algorithm; Induction motors; Particle swarm algorithm; Saturated model

**Document Type:** Article

**Source:** Scopus

Shaker, D.S.<sup>a</sup>, Ghorab, M.K.<sup>a</sup>, Klingner, A.<sup>b</sup>, Teiama, M.S.<sup>a</sup>

**In-situ injectable thermosensitive gel based on poloxamer as a new carrier for Tamoxifen citrate**

(2013) *International Journal of Pharmacy and Pharmaceutical Sciences*, 5 (SUPPL.4), pp. 429-437. Cited 1 time.

<sup>a</sup> Department of Pharmaceutics and Industrial Pharmacy, Helwan University, Cairo, Egypt



<sup>b</sup> Department of Physics, German University, Cairo, Egypt

### Abstract

Objective: To evaluate poloxamer (PI) based in-situ injectable thermosensitive gel of Tamoxifen citrate (TMC) compared to orally administered TMC regarding retention in different tissues. Methods: The inclusion complexes of TMC with  $\beta$ -cyclodextrin ( $\beta$ -CD), hydroxypropyl  $\beta$ -cyclodextrin (HP- $\beta$ -CD) and sulfobutyl-7-ether  $\beta$ -cyclodextrin (SBE- $\beta$ -CD) were prepared by solvent evaporation method and evaluated for drug-excipient compatibility tests as well as in-vitro release studies. Poloxamer analogs were mixed in different ratios and evaluated for gelation temperature and rheological properties. Finally, the optimized thermosensitive hydrogel formula was evaluated for in-vitro drug release as well as in-vivo drug retention in rat tissues, plasma and liver. Results: TMC/SBE- $\beta$ -CD complex showed the highest drug release rate. The optimum concentrations of poloxamer analogs for the in situ gel-forming delivery system were 20% (w/v) Poloxamer 407 (F127) and 15% (w/v) Poloxamer 188 (F68) that exhibited sol-gel transition at  $36.5^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ . TMC/SBE- $\beta$ -CD complex incorporated in the optimized thermosensitive gel base exhibited elevated drug level in cancer tissues and low level in plasma and liver compared to oral TMC suspension. Conclusion: The optimized formula of TMC/SBE- $\beta$ -CD hydrogel could contribute in elevating drug level at targeted tissues and improving drug anticancer activity.

### Author Keywords

Inclusion complex; Injectable hydrogel; SBE-Cyclodextrin

**Document Type:** Article

**Source:** Scopus

El-Garhy, A.M.<sup>a</sup>, El-Sheikh, G.A.<sup>b</sup>, El-Saify, M.H.<sup>a</sup>

### Fuzzy Life-Extending Control of Anti-Lock Braking System

(2013) *Ain Shams Engineering Journal*, 4 (4), pp. 735-751.

**DOI:** 10.1016/j.asej.2012.12.003

<sup>a</sup> Electronics, Communications, and Computers Dept., Faculty of Engineering, Helwan University, Helwan, Egypt

<sup>b</sup> Electrical Engineering Dept., MTC, Cairo, Egypt

### Abstract

The repeated operation of the Anti-Lock Braking System (ABS) causes accumulation of structural damages in its different subsystems leading to reduction in their functional life time. This paper proposes a Fuzzy Logic based Life-Extending Control (FLEC) system for increasing the service life of the ABS. FLEC achieves significant improvement in service life by the trade-off between satisfactory dynamic performance and safe operation. The proposed FLEC incorporates structural damage model of the ABS. The model utilizes the dynamic behavior of the ABS and predicts the wear rates of the brake pads/disc. Based on the predicted wear rates, the proposed fuzzy logic controller modifies its control strategy on-line to keep safe operation leading to increase in service time of the ABS. FLEC is fine tuned via genetic algorithm and its effectiveness is verified through simulations of emergency stops of a passenger vehicle model. © 2013 Ain Shams University. Production and hosting by Elsevier B.V. All rights reserved.

### Author Keywords

Anti-Lock Braking Systems (ABS); Fuzzy controller; Genetic algorithm; Life Extending Control (LEC); Modeling

**Document Type:** Article

**Source:** Scopus

Fahmi, W.S.

### Bloggers' right to Cairo's real and virtual spaces of protest

(2013) *Locating Right to the City in the Global South*, pp. 264-284.

**DOI:** 10.4324/9780203091104

Helwan University, Cairo, Egypt

**Document Type:** Book Chapter

**Source:** Scopus

Mostafa, A.<sup>a b</sup>, Youssef, A.E.<sup>a c</sup>

### A leader replacement protocol based on early discovery of battery power failure in MANETs

(2013) *2013 International Conference on IT Convergence and Security, ICITCS 2013*, art. no. 6717777, .

**DOI:** 10.1109/ICITCS.2013.6717777

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<sup>b</sup> Faculty of Engineering, Alazhar University, Cairo, Egypt

<sup>c</sup> Faculty of Engineering, Helwan University, Cairo, Egypt

### Abstract

In cooperative Mobile Ad-hoc Networks (MANETs), copies of data are replicated on different mobile devices to increase resource accessibility and data availability. In order to preserve data consistency, a leader or authoritative control node is assigned to act as an organizer for the shared data copies. Since mobile devices have limited battery power, the leader may fail at any time. When the leader fails, another leader has to be elected to maintain data availability and consistency. Current leader election approaches in MANETs employ a notable wireless communication overhead to replace the leader. These wireless communications consume about 70% of total battery power. In this paper, we propose a novel approach to replace exhausted leader in MANETs based on the measurement of its remaining battery power early before it dies. More specifically, the proposed approach replaces the exhausted leader with a healthy one when its remaining battery power reaches a predefined threshold. Our approach has two contributions: 1) early precaution of leader power failure, 2) reducing power consumption used in leader replacement by reducing communication overhead. © 2013 IEEE.

### Author Keywords

MANETs; Power awareness; Primary backup approach; Replication

**Document Type:** Conference Paper

**Source:** Scopus

Rekaby, A., Youssif, A.A., Sharaf Eldin, A.

### Introducing Adaptive Artificial Bee Colony algorithm and using it in solving traveling salesman problem

(2013) *Proceedings of 2013 Science and Information Conference, SAI 2013*, art. no. 6661785, pp. 502-506. Cited 1 time.

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

### Abstract

Artificial Bee colony algorithm is a modern swarm intelligence algorithm. This paper proposes a modified version of artificial bee colony algorithm called 'Adaptive Artificial Bee Colony' (AABC). This paper compares between standard bee colony algorithm and the proposed adaptive bee colony algorithm through traveling salesman problem. Traveling salesman problem is one of the most common problems in the searching techniques evaluation, so the paper considers it as an experimental case for the algorithms' performance discrimination. The experiments were repeated across different benchmarks. The proposed adaptive artificial bee colony algorithm presents more efficiency than standard artificial bee colony algorithm. The final solution fitness value is enhanced by around 8% in adaptive artificial bee colony algorithm comparing to standard artificial bee colony algorithm's solution. © 2013 The Science and Information Organization.

### Author Keywords

adaptive artificial bee colony algorithm; Artificial bee colony algorithm; traveling salesman problem

**Document Type:** Conference Paper

**Source:** Scopus

Ali Ali Khalil, A.A.<sup>a</sup>, Mostafa Saad, E.S.<sup>b</sup>, El-Nabi, M.A.<sup>a</sup>, Abd El-Samie, F.E.<sup>c</sup>

### Efficient speaker identification from speech transmitted over bluetooth based system

(2013) *Proceedings - 2013 8th International Conference on Computer Engineering and Systems, ICCES 2013*, art. no. 6707199, pp. 190-193.

**DOI:** 10.1109/ICCES.2013.6707199

<sup>a</sup> Dept. of Electronics and Electrical Communication, Faculty of Engineering, Tanta University, Egypt

<sup>b</sup> Communication, Electronics and Computers Dept., Faculty of Engineering, Helwan University, Egypt

<sup>c</sup> Dept. of Electronics and Electrical Communication, Faculty of Electronic Engineering, Menofia University, Egypt

### Abstract

This paper presents a study for speaker recognition of the speech signals transmitted through Bluetooth channel as degraded speech signals, while the training phase is made with clean speech signals. This is based on the Mel-Frequency Cepstral Coefficients (MFCCs) for feature extraction from the speech signals. Different approaches for feature extractions are tested in the paper; feature extraction from the signals, feature extraction from the Discrete Cosine Transform (DCT) of signals, feature extraction from the signals and the DCT, feature extraction from the

Discrete Sine Transform (DST) of signals, feature extraction from the signals and the DST, feature extraction from the Discrete Wavelet Transform (DWT) of signals, and finally feature extraction from the signals and the DWT. A Neural Network (NN) classifier is used in the simulation experiments. Simulation results show that feature extraction from the DCT of signals achieves the highest recognition rates. © 2013 IEEE.

#### Author Keywords

Bluetooth; DCT; DST; DWT; MFCCs

**Document Type:** Conference Paper

**Source:** Scopus

Dkhil, M.A.<sup>a b</sup>, Al-Quraishy, S.<sup>a</sup>, Aref, A.M.<sup>c</sup>, Othman, M.S.<sup>d</sup>, El-Deib, K.M.<sup>e</sup>, Abdel Moneim, A.E.<sup>b f</sup>

#### **The potential role of Azadirachta indica treatment on cisplatin-induced hepatotoxicity and oxidative stress in female rats**

(2013) *Oxidative Medicine and Cellular Longevity*, art. no. 741817, . Cited 2 times.

**DOI:** 10.1155/2013/741817

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<sup>b</sup> Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo 11795, Egypt

<sup>c</sup> Biological Science Department, Faculty of Dentistry, Modern Science and Arts University (MSA), Giza 12111, Egypt

<sup>d</sup> Biochemistry and Molecular Biology Department, Faculty of Pharmacy, Modern Science and Arts (MSA), Giza 12111, Egypt

<sup>e</sup> Molecular Drug Evaluation Department, National Organization for Drug Control and Research (NODCAR), Giza 12553, Egypt

<sup>f</sup> Department of Biochemistry and Molecular Biology, Asturias Institute of Biotechnology, University of Oviedo, Oviedo 33006, Spain

#### Abstract

*Azadirachta indica* A. Juss. (neem, family: Meliaceae) is perhaps the most commonly used traditional medicinal plant of India. In this study we investigated the protective effect of methanolic neem leaves extract (MNLE; 500 mg/Kg bwt) on rats treated with cisplatin (CDDP)-induced hepatotoxicity. Adult rats were randomly divided into four groups. CDDP was given to rats by intraperitoneal injection, while MNLE was given by oral gavage for 5 days after the CDDP injection. The injury and oxidative stress caused by CDDP on the liver and the effect of MNLE were evaluated by measuring (a) histological changes, (b) tissue biochemical oxidant and antioxidant parameters, and (c) investigating apoptosis markers immunohistochemically and by real time PCR. After treatment with MNLE, the histological damage and apoptosis induction caused by cisplatin were improved. Malondialdehyde and nitric oxide were significantly decreased; the antioxidant system, namely, glutathione content, glutathione-S-transferase, glutathione peroxidase, catalase, and superoxide dismutase activities were significantly elevated. In conclusion, MNLE may have a potential role when combined with cisplatin in chemotherapy to alleviate cisplatin-induced damage and oxidative stress in liver. © 2013 Mohamed A. Dkhil et al.

**Document Type:** Article

**Source:** Scopus

Ellabban, O.<sup>a b</sup>, Abu-Rub, H.<sup>a</sup>, Rodriguez, J.<sup>c</sup>

#### **Predictive torque control of an induction motor fed by a bidirectional quasi Z-source inverter**

(2013) *IECON Proceedings (Industrial Electronics Conference)*, art. no. 6700094, pp. 5854-5859.

**DOI:** 10.1109/IECON.2013.6700094

<sup>a</sup> Electrical and Computer Engineering Department, Texas AandM University at Qatar, Doha, Qatar

<sup>b</sup> Electrical Machines and Power Engineering Department, Helwan University, Cairo, Egypt

<sup>c</sup> Universidad Técnica Federico Santa María, Valparaiso, Chile

#### Abstract

In this paper, a predictive torque control (PTC) algorithm is introduced for controlling an induction motor (IM) fed by a bidirectional quasi Z-source inverter (BQZSI). A torque, stator flux and capacitor voltage magnitudes control algorithm evaluates a cost function, based on a simple discrete models of the IM and the BQZSI, for each BQZSI available switching state. The voltage vector with the lowest torque, a stator flux and capacitor voltage magnitude errors is selected to be applied in the next sampling interval. The proposed PTC algorithm, with its single structure, can control both sides of the BQZSI to optimize the motor performance with an extremely simple and versatile control algorithm and without any dynamic response limitation caused by the cascaded control structure. A high degree of flexibility is obtained with the proposed control technique due its online optimization algorithm. This paper proposed a new adjustable speed drive system based on a three-phase BQZSI feeding an induction motor. Where, the interesting

advantages of the PTC algorithm are combined by the advantages of one of the most interesting power electronics converters, the BQZSI. Simulation results for a 4 kW IM are presented to validate the new proposed electrical drive system. © 2013 IEEE.

**Author Keywords**

Predictive Torque Control (PTC); Quasi-Z-source Inverter (QZSI); Variable speed drives (VSD)

**Document Type:** Conference Paper

**Source:** Scopus

Al-Atabany, W.<sup>a b</sup>, Degenaar, P.<sup>a b</sup>

**Efficient scene preparation and downscaling prior to stimulation in retinal prosthesis**

(2013) *2013 IEEE Biomedical Circuits and Systems Conference, BioCAS 2013*, art. no. 6679669, pp. 182-185. Cited 1 time.

**DOI:** 10.1109/BioCAS.2013.6679669

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<sup>b</sup> School of Electrical, Electronic and Computer Engineering, Newcastle University, Newcastle upon Tyne, United Kingdom

**Abstract**

Retinal prostheses are moving towards providing a return to some functional vision for those with the Retinitis Pigmentosa disease. Optoelectronic/ optogenetic retinal prosthesis holds particular promise. As the various techniques are unlikely to return perfect vision in the first instance, we need to explore how best to present the visual scene. The key task is to restore mobility and scene recognition to the patients. Therefore, some form of reduction for the visual information should be applied before transfer to the retina. In particular, scene segmentation can reduce unimportant textures, thus increasing the contrast of the key features and objects. Based on the thermal characteristics of objects, in this paper we present a new processing platform to just transfer important objects segmented using mixed visible-infra red imaging. With this new segmentation approach, complex objects are still distinguishable even with low effective resolution. © 2013 IEEE.

**Document Type:** Conference Paper

**Source:** Scopus

Ellabban, O.<sup>a b</sup>, Abu-Rub, H.<sup>a</sup>, Baoming, G.<sup>c</sup>

**Field oriented control of an induction motor fed by a quasi-Z-source direct matrix converter**

(2013) *IECON Proceedings (Industrial Electronics Conference)*, art. no. 6699920, pp. 4850-4855.

**DOI:** 10.1109/IECON.2013.6699920

<sup>a</sup> Electrical and Computer Engineering Department, Texas AandM University at Qatar, Doha, Qatar

<sup>b</sup> Electrical Machines and Power Engineering Department, Helwan University, Cairo, Egypt

<sup>c</sup> Electrical and Computer Engineering Department, Michigan State University, East Lansing, United States

**Abstract**

This paper proposes a new four-quadrant adjustable speed drive (ASD) system based on an induction motor fed by a three-phase quasi-Z-source direct matrix converter (QZSDMC). The quasi-Z-source (QZS) network is used to overcome the limitation of the voltage gain of the traditional direct matrix converter (DMC). The QZSDMC can provide a buck-boost operation by controlling the shoot-through (ST) duty ratio. In addition, this paper presents a four-quadrant speed control method based on vector control technique which is able to control the motor speed from zero to the rated speed with the full load torque during motoring and regenerating operation modes. The simulation results validate the proposed QZSDMC based adjustable speed drive system. The proposed ASD system overcomes the voltage gain limitation of the traditional direct matrix converter with improved efficiency and higher readability compared to the traditional back-to-back converter configuration. © 2013 IEEE.

**Author Keywords**

Quasi-Z-source converter (QZSC); Quasi-Z-source direct matrix converter (QZSDMC); Z-source converter (ZSC)

**Document Type:** Conference Paper

**Source:** Scopus

Zaki, M.F.<sup>a</sup>, Abdul-Kader, A.M.<sup>b</sup>, Nada, A.<sup>c</sup>, El-Badry, B.A.<sup>c</sup>

**Surface modification of Makrofol-DE induced by  $\alpha$ -particles**

(2013) *Philosophical Magazine*, 93 (34), pp. 4276-4285.

**DOI:** 10.1080/14786435.2013.827339

<sup>a</sup> Department of Experimental Nuclear Physics, Nuclear Research Center, Atomic Energy Authority, Abu Zaabal, Cairo, P.O. 13759, Egypt

<sup>b</sup> Faculty of Science, Department of Physics, Helwan University, Ain Helwan, Helwan, Egypt

<sup>c</sup> Department of Physics, University College of Women for Arts, Science and Education, Ain Shams University, Cairo, Egypt

### Abstract

In the present work, Makrofol DE samples were irradiated with different doses of alpha particles. The optical and mechanical modifications in the alpha-irradiated Makrofol samples as a function of alpha irradiation time have been investigated. Different characterization techniques, UV-vis spectroscopy, photoluminescence spectroscopy and Vickers micro hardness tester have been used. UV-vis spectra of bombarded samples reveal that the optical absorption increases with increasing the irradiation time. The direct and indirect optical band gap was found to decrease from 3.4 and 2.81 eV for pristine sample to 3.1 and 2.35 eV for that bombarded with alpha particles at the highest irradiation time (15 h), respectively. The number of carbon atoms per conjugated length (N) and the number of carbon atoms per cluster (M) have been estimated. An increase in both N and M with increasing the irradiation time was noticed. A remarkable decrease in PL intensity with increasing the alpha irradiation time was observed. This decrease is attributed to ion beam-induced change in molecular structure and/or defects in the modified layer. The surface hardness for unmodified and modified polymeric material has been studied. © 2013 © 2013 Taylor & Francis.

### Author Keywords

Alpha particles; Makrofol DE; Photoluminescence spectroscopy; Ultraviolet-visible; Vickers hardness

**Document Type:** Article

**Source:** Scopus

Ghany, H.A.<sup>a b</sup>, Hussain, H.E.<sup>a c</sup>

### White noise functional solutions for system of stochastic fractional coupled KdV equations

(2013) *International Journal of Mathematical Analysis*, 7 (61-64), pp. 3019-3026.

**DOI:** 10.12988/ijma.2013.311280

<sup>a</sup> Department of Mathematics, Taif University, Taif, Saudi Arabia

<sup>b</sup> Department Mathematics, Helwan University, Cairo, Egypt

<sup>c</sup> Department Mathematics, Ain Shams University, Cairo, Egypt

### Abstract

Wick-type generalized stochastic Fractional coupled KdV equations are investigated. Some white noise functional solutions for Wick-type generalized stochastic Fractional coupled KdV equations are obtained by using white noise analysis, Hermite transform and modified tanh-coth method. Moreover, some examples are given for the investigated model. © 2013 Hossam A. Ghany and Hussain E. Hussain.

**Document Type:** Article

**Source:** Scopus

Abouel-seoud, S.S., Mohamed, E.S., Abouel-yazid, A.A., Abdalkkah, A.S.

### Vibration based prediction of noise in passenger car gearbox structures

(2013) *International Journal of Vehicle Structures and Systems*, 5 (1), pp. 30-37.

**DOI:** 10.4273/ijvss.5.1.05

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

### Abstract

In this paper, a method for predicting the contributions to noise radiated by a vehicle gearbox structure using measured vibration responses is presented. The gearbox structure is idealised as a set of flat plates. The radiation efficiency is calculated from the physical properties and edge constraints of each plate and the measured vibration response of the gearbox structure surfaces. These data were used in a simple acoustical power theory to determine 1/3-octave band sound pressure level under free field conditions for the whole and individual noise sources. The predicted individual noise sources are then used to pinpoint the exact problem area in the gearbox structure with a view to noise reduction. © 2013. MechAero Foundation for Technical Research & Education Excellence.

### Author Keywords

Gearbox structure; Noise; Radiation efficiency; Sound pressure level; Vibration velocity

**Document Type:** Article  
**Source:** Scopus

Mohammed, E.A.<sup>a</sup>, Far, B.H.<sup>a</sup>, Mohamed, M.M.A.<sup>b</sup>, Naugler, C.<sup>c</sup>

**Automatic working area localization in blood smear microscopic images using machine learning algorithms**  
 (2013) *Proceedings - 2013 IEEE International Conference on Bioinformatics and Biomedicine, IEEE BIBM 2013*, art. no. 6732733, pp. 43-50.

**DOI:** 10.1109/BIBM.2013.6732733

<sup>a</sup> Electrical and Computer Engineering, Schulich School of Engineering, University of Calgary, Calgary, AB, Canada

<sup>b</sup> Biomedical Engineering Dept, Faculty of Engineering, Helwan University, Cairo, Egypt

<sup>c</sup> Department of Pathology and Laboratory Medicine, University of Calgary, Calgary Laboratory Services, Calgary, AB, Canada

#### Abstract

Microscopic examination of a properly prepared blood smear is valuable in complete blood count (CBC) and differential blood count (DBC). A hematopathologist may spend enormous time manually inspecting the good working area (GWA) of the blood smear under a light microscope system to perform CBC or DBC. In this paper we focus on automatic localization of the GWA by classifying microscopic images of blood smears using different machine learning algorithms into three areas: Clumped, Good, and Sparse. The features used are the statistical and texture features. This approach yields a good localization of GWA in images acquired by a low cost light microscope system, scanned under magnifying power of xl 00 oil-immersed objective. Our experiment using images with resolution (3488×2616 pixels) of Giemsa-stained blood smears shows that the proposed method has an accuracy of 82% for the localizing the GWA and 79.73% for all areas in a validation set of 301 images. © 2013 IEEE.

#### Author Keywords

AdaBoost; Blood Smear Examination; Decision tree; Good Working Area (GWA); KNN Classifier; Microscopic Images; White Blood Cells (WBCs)

**Document Type:** Conference Paper

**Source:** Scopus

Metwally, A.M.<sup>a</sup>, Refaat, L.A.<sup>b c</sup>, Shaaban, H.<sup>d</sup>, Megm, S.<sup>e</sup>, Emara, M.<sup>f</sup>, Tohamy, A.A.<sup>g</sup>, Sinna, E.A.<sup>d</sup>, Khaled, H.<sup>f</sup>

**Role of cyclins A and E in endometrial carcinogenesis in breast cancer patients under tamoxifen treatment**  
 (2013) *Journal of the Egyptian National Cancer Institute*, 25 (4), pp. 193-198.

**DOI:** 10.1016/j.jnci.2013.07.002

<sup>a</sup> Technology of Medical Laboratory Department, College of Applied Medical Science, Misr University for Science and Technology, Postal Box 77, 6th of October City, Egypt

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<sup>f</sup> Medical Oncology Department, National Cancer Institute, Cairo University, Cairo, Egypt

<sup>g</sup> Zoology and Entomology Department, Faculty of Science, Helwan University, Egypt

#### Abstract

**Purpose:** The objective of our study was to determine the relevance of cyclins A and E overexpression in endometrial carcinogenesis in hormone receptor-positive breast cancer patients under tamoxifen therapy. **Experimental design:** We assessed expression of cyclins A and E in Endometrial cytology samples collected from 36 ER and PR positive breast cancer patients; under tamoxifen treatment by using the Tao-brush non-invasive brushing cytology technique. Cyclins were detected in the collected samples by means of immuno-cytochemistry. The patients included in this study are a cohort of 36 breast cancer patients who were operated upon at the National Cancer Institute - Cairo University in the period from February 2006 to May 2008 and received tamoxifen (TAM) as part of their adjuvant treatment. **Results:** Cyclins A and E were expressed in 17 and 15 of the 36 collected endometrial cytology samples (47.2% and 41.6% respectively). Expression of cyclins A and E was highly correlated to Tamoxifen exposure duration (32 and 43. months respectively)  $p < 0.001$ . Tamoxifen median exposure duration was shortened to 21. months in cases showing positivity for either markers, while in cases showing positivity for both cyclins, the median exposure duration was longer (44.5. months) ( $p < 0.001$ ). Neither cyclin A nor E was detected before median tamoxifen exposure duration of 11. months. Endometrial carcinoma cases had the longest Tamoxifen exposure duration (60.

months). Conclusion: Cyclins A and E expression is involved in the carcinogenesis of endometrium in women with breast cancer and under tamoxifen-treatment. Follow up of the patients using these 2 markers is highly recommended starting from the 12th month. © 2013.

**Author Keywords**

Carcinogenesis; Cyclins A and E; Endometrial; Tamoxifen

**Document Type:** Article

**Source:** Scopus

Abdelaziz, M.O.<sup>a</sup>, Bonura, C.<sup>b</sup>, Aleo, A.<sup>b</sup>, Fasciana, T.<sup>b</sup>, Mammina, C.<sup>b</sup>

**NDM-1- and OXA-163-producing Klebsiella pneumoniae isolates in Cairo, Egypt, 2012**

(2013) *Journal of Global Antimicrobial Resistance*, 1 (4), pp. 213-215. Cited 3 times.

**DOI:** 10.1016/j.jgar.2013.06.003

<sup>a</sup> Department of Microbiology and Immunology, Faculty of Pharmacy, Helwan University, Cairo, Egypt

<sup>b</sup> Department of Sciences for Health Promotion and Mother-Child Care G. d'Alessandro, University of Palermo, Via del Vespro 133, I-90127 Palermo, Italy

**Abstract**

Here we describe carbapenem resistance determinants in two *Klebsiella pneumoniae* isolates recovered from two hospitalised patients in the same intensive care unit of a cancer hospital in Cairo, Egypt. PCR and sequencing were used to detect and characterise  $\beta$ -lactamase genes. Clonal relationships between the isolates were analysed by pulsed-field gel electrophoresis (PFGE) and multilocus sequence typing (MLST). The first *K. pneumoniae* isolate carried the blaNDM-1 gene and the second isolate carried the blaOXA-163 gene. Both isolates co-expressed the extended-spectrum  $\beta$ -lactamase CTX-M-15. The two isolates belonged to different sequence types (STs), ST11 and ST16, respectively. No history of travel was established for the two patients. The first identification of NDM-1-producing *K. pneumoniae* in Egypt adds further evidence to the spread of NDM-1-producing Gram-negative microorganisms in North Africa. The additional detection of blaOXA-163 in a *K. pneumoniae* isolate confirms its endemic presence in a critical healthcare setting of this geographic area. © 2013 International Society for Chemotherapy of Infection and Cancer.

**Author Keywords**

Antimicrobial drug resistance; Carbapenemase; *Klebsiella pneumoniae*; NDM-1; OXA-163

**Document Type:** Article

**Source:** Scopus

Soliman, D.E.-E.I.<sup>a</sup>, Gabry, M.S.I.<sup>a</sup>, Farrag, A.R.H.<sup>b</sup>, Abdel Moniem, A.E.<sup>a</sup>

**The protective role of neem leaves extract on cisplatin-induced polysaccharides and protein depletion in rat liver and kidney**

(2013) *Pakistan Journal of Zoology*, 45 (6), pp. 1687-1698.

<sup>a</sup> Zoology and Entomology Department, Faculty of Science, Helwan University, Cairo, Egypt

<sup>b</sup> Pathology Department, Medical Research Division, National Research Centre, Giza, Egypt

**Abstract**

Cisplatin, an effective antineoplastic agent, is toxic to the liver and kidney. The present study has evaluated the effect of neem (*Azadirachta indica*) leaves extract on cisplatin-induced histochemical abnormality in liver and kidney of rats. Histochemical staining of the liver and kidney sections showed weak polysaccharide and protein staining in the cisplatin-treated animals as compared to the control group. Pre, post and co-treatment of animals with methanolic extract of *A. indica* showed strong staining of polysaccharides and protein compared with the control group. These results were confirmed with image analysis, which showed that cisplatin caused significant decrease in these inclusions compared to control. Likewise, neem treated group showed significant increase in these inclusions compared with cisplatin group. These findings suggest that cisplatin induced depletion of polysaccharides and protein in the liver and kidney of rats can be reverted with neem extract. © 2013 Zoological Society of Pakistan.

**Author Keywords**

*Azadirachta indica*; Cisplatin; Polysaccharides; Protein

**Document Type:** Article

**Source:** Scopus

El-Shehry, M.F.<sup>a</sup>, Abu-Zied, K.M.<sup>b</sup>, Ewies, E.F.<sup>c</sup>, Awad, S.M.<sup>d</sup>, Mohram, M.E.<sup>e</sup>

**Synthesis of some novel azaheterocycles utilizing 3-(4-nitrobenzylidene)-5-phenylfuran-2(3H)-one with expected antimicrobial activity**

(2013) *Der Pharma Chemica*, 5 (5), pp. 318-326.

<sup>a</sup> Pesticide Chemistry Department, National Research Centre, Dokki, Egypt

<sup>b</sup> Photochemistry Department, National Research Centre, Dokki, Egypt

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<sup>d</sup> Pharmaceutical Organic Chemistry Department, Helwan University, Egypt

<sup>e</sup> Microbial Chemistry Department, National Research Centre, Dokki, Egypt

**Abstract**

3-(4-Nitrobenzylidene)-5-phenylfuran-2(3H)-one 2 was prepared and converted into a variety of heterocyclic systems of synthetic and biological importance via reaction with nitrogen nucleophiles. Benzylamine reacted with the furanone 2; the product was found to depend on the reaction conditions. Thus, at room temperature the open-chain N-benzylamide 3 was obtained, whereas under refluxing conditions the 3-(4-Nitrobenzylidene)-5-phenyl-1-benzyl-2(3H)-pyrrolone 4 was obtained. Hydrazine hydrate affected ring opening of the furanone to give the corresponding acid hydrazide 5. The latter was used as key starting materials for the synthesis of aminotriazole 17 and 1,3,4-oxadiazole derivatives 15a-c. The structural elucidation of products is reported and also some of the products were screened for their antimicrobial activity.

**Author Keywords**

1,3,4-oxadiazoles derivatives; 2(3H)-Furanones; 2(3H)-pyrrolones; 5-thioxo-1H-1,2,4-triazol-3-yl; Acid hydrazide; Pyridazin-3(4H)-one; Pyrrolo [2,3-c] pyrazole

**Document Type:** Article

**Source:** Scopus

Ellabban, O.<sup>a b</sup>, Abu-Rub, H.<sup>a</sup>

**Torque control strategies for a high performance switched reluctance motor drive system**

(2013) *2013 7th IEEE GCC Conference and Exhibition, GCC 2013*, art. no. 6705786, pp. 257-262.

**DOI:** 10.1109/IEEEGCC.2013.6705786

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**Abstract**

Switched reluctance motor (SRM) is on the focus of many researchers and it is becoming a proper alternative to conventional motors, because of its unique advantages. This paper presents a review for different torque control techniques of the SRM. © 2013 IEEE.

**Document Type:** Conference Paper

**Source:** Scopus

Moin, S.<sup>a</sup>, Abu-Rub, H.<sup>a</sup>, Ellabban, O.<sup>a b</sup>

**Development of a new three-to-five phase bi-directional partial resonant AC Link converter**

(2013) *IECON Proceedings (Industrial Electronics Conference)*, art. no. 6700321, pp. 7152-7156. Cited 1 time.

**DOI:** 10.1109/IECON.2013.6700321

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**Abstract**

This paper proposes a novel three-to-five phase bi-directional partial resonant AC Link converter. The converter has three phase input with five phase output operating at variable voltage and variable frequency. The proposed topology uses two bi-directional switches for each leg of the converter resulting in a total of 16 switches. The high frequency charging and discharging of the link inductor is the main criteria for power transfer from input to output. In each cycle a small interval is allocated for resonances which enables the switches for soft zero voltage turn on and turn off. The converter has the ability for buck and boost operation. This paper proposes the basic control algorithm by considering only the large vectors of this converter topology. Simulation and real-time results are shown for the verification of the proposed converter. © 2013 IEEE.



**Author Keywords**

Ac link converter; five-phase; partial resonant converter; soft switching

**Document Type:** Conference Paper

**Source:** Scopus

Abd-Elhady, A.A.<sup>a b</sup>

**Effect of location and dimensions of welded cover plate on stress intensity factors of cracked plates**

(2013) *Ain Shams Engineering Journal*, 4 (4), pp. 863-867.

**DOI:** 10.1016/j.asej.2013.03.002

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**Abstract**

Three dimensional finite element model was utilized to determine mode I stress intensity factor through the front of a single edge crack in main plate with welded cover plate. The numerical results showed that the ratio of the crack length to the position of the welded cover plate end is a crucial parameter for describing the efficiency of the cover plate location. When the crack tip just reached the cover plate end, the cover plate efficiency is only dependent on the cover plate dimensions regardless the location of the cover plate or the crack length. In the case of crack front not reached the cover plate end, the location of cover plate near the edge of the main plate, i.e., near the crack mouth, is less efficient than that faraway. However, the opposite trend was found for cracks pass beneath the cover plate. © 2013 Ain Shams University. Production and hosting by Elsevier B.V. All rights reserved.

**Author Keywords**

Stress intensity factor; Three dimensional finite element; Welded cover plate

**Document Type:** Article

**Source:** Scopus

Hussein, S.S.<sup>a</sup>, Youssif, A.<sup>b</sup>, Mahmoud Ghouz, H.H.<sup>c</sup>

**Performance analysis and evaluation of UWB wireless computer network for multi-users and dynamic channel environment**

(2013) *Journal of Applied Sciences*, 13 (24), pp. 5723-5728.

**DOI:** 10.3923/jas.2013.5723.5728

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**Abstract**

Ultra wideband (UWB) technology has been widely used for wireless communication systems including long and short ranges. Wireless computer network is a short range communication system. The present study provides a detailed analysis and performance evaluation of an Ultra-Wideband wireless computer network in a dynamic environment. This includes multi-users state, various modulation schemes and different channel models. Time-Hopping multiple access technique (TH) has been selected to evaluate the network performance in multi-users environment. In addition, three modulation techniques including Pulse Position Modulation (TH-PPM), Binary Phase Shift Keying (TH-BPSK) and Quadrature Amplitude Modulation (QAM) have been used in this analysis. Two types of channel models for each modulation scheme have been used to simulate dynamic environment. The channel models are CM1 (line-of-sight) and/or CM3 (Non-line-of-sight) along with AWGN (IEEE 802.15.3a). Simulation results show that performance of the local area wireless computer network is highly dependent on the channel environment, the maximum allowable number of active users and the receiver structure. Therefore, prior information of the channel model as well as maximum number of active users is required to optimize the desired performance of the wireless computer network for a specific receiver model. © 2013 Asian Network for Scientific Information.

**Author Keywords**

Modulation schemes; Multiple access techniques; UWB wireless communication systems

**Document Type:** Article

**Source:** Scopus

Ellabban, O.<sup>a b</sup>, Abu-Rub, H.<sup>a</sup>

**Grid connected quasi-Z-Source direct matrix converter**

(2013) *IECON Proceedings (Industrial Electronics Conference)*, art. no. 6699236, pp. 798-803.

**DOI:** 10.1109/IECON.2013.6699236

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**Abstract**

This paper proposes a new three-phase ac-ac converter topology based on the Z-source concept and the conventional direct matrix converter (DMC), it is called quasi-Z-Source direct matrix converter (QZSDMC). It could provide buck-boost function and make the role of frequency changer. Compared with the traditional ac-dc-ac converter, it uses fewer devices and realizes direct ac-ac power conversion, so as to have higher efficiency and better circuit characteristics. Compared with the traditional direct matrix converter, it provides wider voltage regulation range and improves input-output voltage transformation ratio. The proposed converter is tested as a grid connected converter for interfacing renewable energy sources. The circuit topology, operating principle, control method and simulation results are given to verify the feasibility of the proposed converter. © 2013 IEEE.

**Author Keywords**

Quasi-Z-source converter (QZSC); Quasi-Z-source direct matrix converter (QZSDMC); Z-source converter (ZSC)

**Document Type:** Conference Paper

**Source:** Scopus

Mohammed, E.A.<sup>a</sup>, Far, B.H.<sup>a</sup>, Mohamed, M.M.A.<sup>b</sup>, Naugler, C.<sup>c</sup>

**Application of Support Vector Machine and k-means clustering algorithms for robust chronic lymphocytic leukemia color cell segmentation**

(2013) *2013 IEEE 15th International Conference on e-Health Networking, Applications and Services, Healthcom 2013*, art. no. 6720751, pp. 622-626.

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**Abstract**

Chronic lymphocytic leukemia (CLL) is the most common type of blood cancer in Canadian adults. The relative 5-year survival rates for CLL in Canada is decreasing. CLL cell morphology maybe similar to normal lymphocytes and require a hematopathologist examination for diagnosis. There are a low number of related works on image analysis in CLL. This paper focuses on lymphocyte color cell segmentation using Support Vector Machine (SVM) and k-means clustering algorithms. The algorithm overcomes the occlusion problem when lymphocytes are tightly bound to the surrounding Red Blood Cells. Over and under-segmentation problems are significantly reduced. In this paper we used 440 lymphocyte images (normal and CLL), in which 140 images are used for segmentation accuracy measurement and 12 images for SVM training. The algorithm obtained 98.43% maximum accuracy for nucleus segmentation, and 98.69% for cell segmentation. The cytoplasm region can be extracted by 99.85% maximum accuracy with simple mask subtraction. © 2013 IEEE.

**Author Keywords**

Bioinformatics; Chronic Lymphocytic Leukemia (CLL); Color image segmentation; K-means; Machine learning; SVM; White Blood Cell (WBC)

**Document Type:** Conference Paper

**Source:** Scopus

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