

## Documents

Albayomi, G.

### **Assessment of urban geomorphological hazard in the North-East of Cairo City, using remote sensing and GIS techniques**

(2012) *Life Science Journal*, 9 (2), pp. 398-402.

Geography Department, Helwan University, Cairo, Egypt

#### **Abstract**

This study aims to assess the geomorphological hazard of urban area in the north eastern side of Cairo City, based on analyses of remote sensing and GIS. In addition the objective of this study is to develop a GIS-aided urban geomorphological hazard zoning in the north-east of Cairo city. The main landforms of the area were delineated by using remote sensing and land surveying data, applying multi criteria decision analysis to evaluate it. This criterion includes geomorphic factors and sub factors such as: urban site location, urban morphology, Slope gradient, Digital Elevation Models, Gully Density. The research methodology focused on the analysis of those variables factors to identify urban hazards areas. The results indicate that most of lands with grad (1) which is about 62% are in low risk area, and about of land 26% of the total area is in moderate hazard, and >12% in high hazards of the study area is in high risk hazards.

#### **Author Keywords**

Geomorphology; GIS; Hazard; Remote sensing; Urban

**Document Type:** Article

**Source:** Scopus

Bishr, M.M.<sup>a</sup>, Haggag, E.G.<sup>b</sup>, Moawed, M.M.<sup>c</sup>, Salama, O.M.<sup>d</sup>

### **Characterization of fennel fruits: Types and quality (I)**

(2012) *Life Science Journal*, 9 (2), pp. 686-691.

<sup>a</sup> Research and Development Dept., Arab Co. for Pharm. and Med. Plants (MEPACO), Egypt

<sup>b</sup> Pharmacognosy Dept., Helwan University, Cairo, Egypt

<sup>c</sup> Botany Dept., Ain Shams University, Cairo, Egypt

<sup>d</sup> Pharmacognosy Dept., Future University in Cairo, Egypt

#### **Abstract**

Four samples of different fennel fruit cultivars (F 1-F 4), obtained from El-Fayoum, Egypt (F 1), El- Menia, Egypt (F 2), Sudan, El-Khartoum (F 3), and Germany (F 4) were cultivated in MEPACO's Farm (Arab Co. for Pharm. and Med. Plants, Cairo, Egypt) and the obtained fruits were subjected to macro- and micromorphological stereomicroscopic examination as well as GC-MS analysis of their volatile oils. The aim of the study is to determine the differences in the macro- and micro- characters of different fruit cultivars as well as their oil constitutes. The results showing different exomorphic parameters viz. shape, color, dimensions and surface sculpture. Also the stereomicroscopic examination showed differences in the epicarp, mesocarp; vitti and endosperm. GC-MS analysis of volatile oils of (F 1-F 4) showed on comparing three parameters; fenchone, estragole and trans-anethole that F 4 has the highest percentage of trans-anethole (78.98%), while F 1 and F 2 have close values (1.05 and 1.02%, respectively) followed by F 3 (3.02%). F 4 has the lowest percentage of estragole (3.97%); while (F 1-F 3) have higher values (78.58, 64.81 and 25.79%, respectively). Also F 4 has doubled the percentage of fenchone (6.73%) of F 1 and F 2 (2.54 and 2.57%, respectively), while F 3 has 0.69%. Thus results show that the two cultivars growing in Egypt (F 1 and F 2) have almost the same ratios of the compared parameters while, the Sudan cultivar F 3 is closer to F 1 and F 2 than it is to F 4. Also the three cultivars (F 1-F 3) are far from specification of sweet fennel oil but close to bitter fennel oil. The German cultivar (F 4) has the best oil quality as a sweet fennel. Investigation of the powdered samples (F 1-F 4) showed that only F 4 is different in having higher abundant fragments of reticulate parenchyma cells with ratio of 1:3 {F 4:(F 1-F 3)}. In conclusion: These findings are of pharmaceutical-industrial value helping in the production of herbal pharmaceutical products of fennel fruit and/or oil of known higher quality. © 2012. Zhengzhou University, Marsland Press.

#### **Author Keywords**

Anethole; Estragole; Fenchone; *Foeniculum vulgare*; Stereomicroscopic examination

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

Mahmoud, S.<sup>a</sup>, Abd-Elhameed, A.<sup>b</sup>, Jankowski, R.<sup>c</sup>

**Behaviour of colliding multi-storey buildings under earthquake excitation considering soil-structure interaction**  
 (2012) *Applied Mechanics and Materials*, 166-169, pp. 2283-2292.

**DOI:** 10.4028/www.scientific.net/AMM.166-169.2283

<sup>a</sup> Faculty of Engineering, King Abdulaziz University, Rabigh, Saudi Arabia

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

<sup>c</sup> Faculty of Civil and Environmental Engineering, Gdansk University of Technology, Gdansk, Poland

#### Abstract

This paper investigates the coupled effect of the supporting soil flexibility and pounding between neighbouring, insufficiently separated buildings under earthquake excitation. Two adjacent three-storey structures, modelled as inelastic lumped mass systems with different structural characteristics, have been considered in the study. The models have been excited using the time history of the Kobe earthquake of 1995. A nonlinear viscoelastic pounding force model has been employed in order to effectively capture the impact forces during collisions. A discrete element model has been incorporated to simulate the horizontal and rotational movements of the supporting soil. Numerical simulations have been performed using developed software based on the Matlab code. The variation in storeys peak displacements, peak accelerations and peak impact forces for various gap sizes is presented in the paper and comparisons are made with the results obtained for colliding buildings with fixed-base supports. The results of the study indicate that the incorporation of the soil-structure interaction decreases both storey peak displacements and peak impact forces during collisions, whereas increase the peak accelerations at each floor level. © (2012) Trans Tech Publications.

#### Author Keywords

Earthquakes; Nonlinear modelling; Peak response; Shear wave velocity; Soil-structure interaction; Structural pounding

**Document Type:** Conference Paper

**Source:** Scopus

Mansour, E.M.<sup>a</sup>, Desouky, S.M.<sup>a</sup>, Batanoni, M.H.<sup>a</sup>, Mahmoud, M.R.<sup>a</sup>, Farag, A.B.<sup>b</sup>, El-Dars, F.S.<sup>b</sup>

**Modification proposed for SRK equation of state**

(2012) *Oil and Gas Journal*, 110 (6), pp. 78-91.

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

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

#### Abstract

The article presents a new modification for the Soave-Redlich-Kwong equation of state (SRKE) to determine reservoir fluid properties of Egyptian black oils. The modified Soave-Redlich-Kwong equation of state (MSRKE) enables prediction of the bubble point pressure, oil-formation volume factor, gas-oil ratio, oil density, crude oil gravity, gas gravity, and gas-formation volume factor of black oil with average relative errors of 0.01% to 10.713%. PVT properties are crucial for geophysicists and petroleum engineers for use in material-balance calculations, inflow performance calculations, well log analysis, reserve estimates and recoverable amounts, flow rate of oil or gas, and numerical reservoir simulations. Because simulation of PVT data requires an accurate equation of state to predict reservoir parameters with minimum errors, m-equation is necessary to modify and improve the accuracy of the Soave-Redlich-Kwong. For bottom hole sample, a portion of the homogenous oil was flashed and properties of gas and oil are determined.

**Document Type:** Article

**Source:** Scopus

Zainud-Deen, S.H.<sup>a</sup>, Shaker, A.<sup>b</sup>, Mahmoud, K.R.<sup>b</sup>

**Planar circular monopole antenna with perforated dielectric resonator for notched ultra-wide band applications**

(2012) *Applied Computational Electromagnetics Society Journal*, 27 (6), pp. 516-523.

<sup>a</sup> Faculty of Electronic Engineering, Menoufiya University, Menouf, Egypt

<sup>b</sup> Department of Electronics and Communications Engineering, Faculty of Engineering, Helwan University, Cairo, Egypt

### Abstract

In this paper, a planar circular patch antenna is presented for UWB operating characteristics. The bandwidth of the proposed antenna is increased by inserting a perforated dielectric resonator (DR) material with the planar monopole. The design combines the advantages of a small size dielectric resonator (DR) and thin planar monopole antennas. Two antenna designs A and B are proposed. In design A, two layers of the same dielectric material are presented with the same radius and different thicknesses. While in antenna design B, only one dielectric material layer perforated by 11 holes drilled with the same radius is considered. The effects with respect to the geometric parameters of the proposed antennas on impedance bandwidth and radiation pattern are discussed. In addition, the two proposed antennas are designed to have a rejection frequency band from 5 to 6 GHz by inserting two U-shaped slots in the ground plane, where the WLAN service is allocated. The proposed antennas are completely designed and analyzed using the finite element method (FEM), and then the finite integral transform (FIT) technique is used to check the validity of the numerical results. © 2012 ACES.

### Author Keywords

Band notched; Dielectric resonator antenna (DRA); FEM; FIT; Ultra-wideband (UWB)

**Document Type:** Article

**Source:** Scopus

Barakat, M.R., Elmasry, S., Bahgat, M.E., Sayed, A.A.

**Effect of rotor current control for wound rotor induction generator on the wind turbine performance** (2012) *International Journal of Power Electronics and Drive Systems*, 2 (2), pp. 117-126.

**DOI:** 10.11591/ijped.s.v2i2.213

Electric Machines and Power Department, Helwan University, Helwan, Egypt

### Abstract

The developed torque of the wind turbine fluctuates with the change of wind speed which provides more fatigue on the turbine blades and overloads on the electric machine. This paper presents the effect of rotor current control of wound rotor induction generator driven by wind turbine during different operation modes when varying the rotor resistance. The rotor current is measured and controlled to provide constant torque from the turbine on the machine. The studied modes are wind speed variations, starting especially at high wind speed. Moreover, the effect of the proposed control on short circuit and critical fault clearing time is investigated. This technique will relieve pitch regulator duties, will provide soft starting of the machine and reduces torque and power fluctuations. © 2012 Institute of Advanced Engineering and Science. All rights reserved.

### Author Keywords

Generator; Rotor resistance control; Wind energy conversion; Wound rotor induction

**Document Type:** Article

**Source:** Scopus

Bayomi, N.N.<sup>a</sup>, Abd El-Maksoud, R.M.<sup>b</sup>

**Two operating modes for turbocharger system**

(2012) *Energy Conversion and Management*, 58, pp. 59-65. Cited 5 times.

**DOI:** 10.1016/j.enconman.2012.01.003

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

<sup>b</sup> Faculty of Eng. Mataria, Helwan University Cairo, Egypt

### Abstract

The present paper introduces a turbocharger system that operates in two different modes according to turbocharging requirements. In the first mode, the turbocharger is operating with power assistance at lower engine speeds where the power of the exhaust gases is insufficient. Thereafter, the second mode is switched leading the compressor and the turbine of the turbocharger to rotate separately for best performance. Analysis is presented to find out the parameters affecting the operation of the turbocharger and their values to achieve enhanced turbocharger performance with high efficient impellers. The parameters studied are based on data of the turbocharger operating conditions and the operational requirements of the engine. The analysis considers the turbocharger system, its turbine and its compressor. The operational charts demonstrate the simulated results for two operating modes. This study is helpful as a guide to determine the turbocharger dimensioning and blade profile assignment without using any given blade dimensional value. © 2012 Elsevier Ltd. All rights reserved.

**Author Keywords**

Compressor; Power assist; Turbine; Turbocharger

**Document Type:** Article**Source:** ScopusAl-Quraishy, S.<sup>a</sup>, Dkhil, M.A.<sup>a b</sup>, Abdel Moneim, A.E.<sup>b c</sup>**Protective effects of *Portulaca oleracea* against rotenone mediated depletion of glutathione in the striatum of rats as an animal model of Parkinson's disease**(2012) *Pesticide Biochemistry and Physiology*, 103 (2), pp. 108-114. Cited 5 times.**DOI:** 10.1016/j.pestbp.2012.04.005<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, Egypt<sup>c</sup> Biomedical Research Center, University of Granada, Granada, Spain**Abstract**

Damage to the mitochondrial electron transport chain by rotenone has been suggested to be an important factor in the pathogenesis of many neurodegenerative disorders. Adult male Wister albino rats were orally treated with *Portulaca oleracea* (purslane) at a dose of 1.5mL/kg body weight for 12days. Pre-treatment, post-treatment and co-treatment of rotenone (12mg/kg body weight) was given orally. The striatum level of Na<sup>+</sup>/K<sup>+</sup>-ATPase activity, glutathione (GSH), glutathione reductase (GR), glutathione peroxidase (GPx), glutathione-S-transferase (GST), catalase (CAT) and superoxide dismutase (SOD) were evaluated. Protein carbonyl and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) levels were also determined. Results revealed that purslane administration induced a marked improvement in all the parameters that were studied. Purslane reversed the increases in protein carbonyl and H<sub>2</sub>O<sub>2</sub> that were a consequence of the oxidative stress generated by rotenone administration. Additionally, RT-PCR results showed that whilst GPx transcription was decreased due to rotenone administration, it was up-regulated with purslane treatment. In conclusion, the present study provided a clear evidence that purslane possesses promising activity against rotenone-induced neurodegeneration. Thus, it may be useful against neurotoxicity induced by environmental neurotoxins. © 2012 Elsevier Inc.

**Author Keywords**Glutathione; *Portulaca oleracea* (purslane); Rats; Rotenone; Striatum**Document Type:** Article**Source:** ScopusSaeed, H.<sup>a</sup>, Taipaleenmäki, H.<sup>a b</sup>, Aldahmash, A.M.<sup>a d</sup>, Abdallah, B.M.<sup>a c</sup>, Kassem, M.<sup>a d e</sup>**Mouse Embryonic Fibroblasts (MEF) Exhibit a Similar but not Identical Phenotype to Bone Marrow Stromal Stem Cells (BMSC)**(2012) *Stem Cell Reviews and Reports*, 8 (2), pp. 318-328. Cited 12 times.**DOI:** 10.1007/s12015-011-9315-x<sup>a</sup> Endocrine Research Laboratory (KMEB), Department of Endocrinology and Metabolism, Odense University Hospital and University of Southern Denmark, Odense, Denmark<sup>b</sup> Department of Medical Biochemistry and Genetics, University of Turku, Turku, Finland<sup>c</sup> Faculty of Science, Helwan University, Cairo, Egypt<sup>d</sup> Stem cell unit, Department of Anatomy, College of Medicine, King Saud University, Riyadh, Saudi Arabia<sup>e</sup> Department of Endocrinology and Metabolism, Odense University Hospital, Klørvægnænet 6.4, DK-5000 Odense C, Denmark**Abstract**

Mouse embryonic fibroblasts have been utilized as a surrogate stem cell model for the postnatal bone marrow-derived stromal stem cells (BMSC) to study mesoderm-type cell differentiation e. g. osteoblasts, adipocytes and chondrocytes. However, no formal characterization of MEF phenotype has been reported. Utilizing standard in vitro and in vivo assays we performed a side-by-side comparison of MEF and BMSC to determine their ability to differentiate into mesoderm-type cells. BMSC were isolated from 8-10 weeks old mouse bone marrow by plastic adherence. MEF were established by trypsin/EDTA digestion from E13.5 embryos after removing heads and viscera, followed by plastic adherence. Compared to BMSC, MEF exhibited telomerase activity and improved cell proliferation as assessed by q-PCR based TRAP assay and cell number quantification, respectively. FACS analysis revealed that MEF exhibited surface markers characteristic of the BMSC: Sca-1<sup>+</sup>, CD73<sup>+</sup>, CD105<sup>+</sup>, CD29<sup>+</sup>, CD44<sup>+</sup>, CD106<sup>+</sup>, CD11b<sup>-</sup>, and CD45<sup>-</sup>. In contrast to BMSC, ex vivo osteoblast (OB) differentiation of MEF exhibited a less mature osteoblastic phenotype (less alkaline phosphatase, collagen type I and osteocalcin) as assessed by real-time PCR

analysis. Compared to BMSC, MEF exhibited a more enhanced differentiation into adipocyte and chondrocyte lineages. Interestingly, both MEF and BMSC formed the same amount of heterotopic bone and bone marrow elements upon in vivo subcutaneous implantation with hydroxyapatite/tricalcium phosphate, in immune deficient mice. In conclusion, MEF contain a population of stem cells that behave in ex vivo and in vivo assays, similar but not identical, to BMSC. Due to their enhanced cell growth, they may represent a good alternative for BMSC in studying molecular mechanisms of stem cell commitment and differentiation to osteoblasts, adipocytes and chondrocytes. © 2011 Springer Science+Business Media, LLC.

#### Author Keywords

Adipocyte; Bone marrow stromal stem cells; Chondrocyte; Differentiation; Mouse embryonic fibroblasts; Osteoblast

**Document Type:** Article

**Source:** Scopus

Mourad, M.M.<sup>a</sup>, Elshakankery, M.H.<sup>b</sup>, Almetwally, A.A.<sup>b</sup>

**Physical and stretch quality of cotton-spandex woven fabrics**  
(2012) *Textile Asia*, 43 (5), pp. 25-28.

<sup>a</sup> Faculty of Education, Helwan University, Helwan, Cairo, Egypt

<sup>b</sup> Textile Eng. Dpt., National Research Center, Dokki, Cairo, Egypt

#### Abstract

Spandex fibres have superior stretch and recovery quality; therefore cotton yarns containing spandex are popular choice for making elastic textile products. This study has found that the amount of spandex in cotton fabric significantly influences the fabric's physical and stretch properties.

**Document Type:** Article

**Source:** Scopus

Osman, M.<sup>a</sup>, El Hendawy, H.H.<sup>a</sup>, Hassan, A.<sup>b</sup>, Abdel-All, S.M.<sup>b</sup>, Mahmoud, D.E.<sup>b</sup>

**Efficacy of combination of glutaraldehyde and benzalkonium chloride against multidrug-resistant gram negative bacteria isolated from hospitals**  
(2012) *Journal of Applied Sciences Research*, 8 (6), pp. 3019-3031.

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

<sup>b</sup> National Organization for Drug Control and Research, Egypt

#### Abstract

Due to the growing number of outbreaks of nosocomial infections in hospitals, it has been shown that the appropriate environmental hygienic and disinfection practices can be very helpful to hospital infection control. The aim of this study was to evaluate the efficacy of glutaraldehyde and benzalkonium chloride alone and in combination against antibiotic-resistant hospital Gram-negative bacteria (GNB) isolated. Twenty one isolates of antibiotic-resistance GNB (11 strains of *Escherichia coli*, 5 strains of *Salmonella typhi*, 3 strains of *Klebsiella pneumoniae* and 2 strains of *Pseudomonas aeruginosa*) were selected from seventy one GNB which had been collected of some clinical hospitals in Cairo, Egypt. These were evaluated to determine the minimal inhibitory concentration (MIC) values of Glutaraldehyde and Benzalkonium Chloride, separately and in combinations. In addition, to choose one isolate from each strain. MIC for both agents alone or in combination was recorded. Whereas, MIC results of glutaraldehyde was 3000 mg/L for *E. coli*, *K. pneumoniae*, *P. aeruginosa* and *S. typhi*, and MIC results of benzalkonium chloride was 256 mg/L for *K. pneumoniae* and *S. typhi* and also was 64 mg/L and 128 mg/L for *E. coli* and *P. aeruginosa*, respectively. In addition, the microbicidal effect was determined by using quantitative suspension tests log<sub>10</sub> reductions of test bacteria after contact times 15 sec., 1 and 5 minutes. The best log<sub>10</sub> reductions of glutaraldehyde was concentration 2000 mg/L for *K. pneumoniae* after 1 & 5 minutes, While, it was 3000 mg/L against *E. coli*, *S. typhi* and *P. aeruginosa* after 1 & 5 minutes. The log<sub>10</sub> reductions of benzalkonium chloride was concentration 256 mg/L for *K. pneumoniae* after one minute, *E. coli* at concentration 512 mg/L after contact 15 second and against, *S. typhi* after 5 minutes at concentration 128 mg/L. and The preferred log<sub>10</sub> reductions of combinations was 2000 mg/L of glutaraldehyde plus 8 mg/L of benzalkonium chloride after contact five minutes against *E. coli* and *S. typhi*, after one minute against *K. pneumoniae* and 15 second contact for *P. aeruginosa*.

**Document Type:** Article

**Source:** Scopus

Ahmed, A.H.<sup>a</sup>, Gharib, M.E.<sup>a</sup>, Arai, S.<sup>b</sup>

**Characterization of the thermally metamorphosed mantle-crust transition zone of the Neoproterozoic ophiolite**

**at Gebel Mudarjaj, south Eastern Desert, Egypt**(2012) *Lithos*, 142-143, pp. 67-83. Cited 4 times.

DOI: 10.1016/j.lithos.2012.02.014

<sup>a</sup> Geology Department, Faculty of Science, Helwan University, Cairo, Egypt<sup>b</sup> Department of Earth Sciences, Kanazawa University, Kanazawa, Japan**Abstract**

A suite of mantle-crust transition zone (Moho transition zone = MTZ) rocks are exceptionally well exposed in Gebel Mudarjaj area, southeastern desert of Egypt. The MTZ rocks were thermally metamorphosed by younger granitic intrusion, forming mafic-ultramafic hornfels with characteristic metamorphic mineral assemblages. The MTZ rocks are remarkably thin (30-50. m thick) and are composed mainly of dunites, troctolites, gabbroic rocks and pyroxenite masses overlying a basal serpentinitized mantle harzburgite section. The Cr# of spinels of the basal serpentinitized harzburgites and the MTZ dunites are on average 0.76 and 0.74, respectively, which is consistent with the range for arc peridotite spinels. The melt in equilibrium with these MTZ rocks is compositionally similar to boninitic magmas produced by high degrees of partial melting. The basal harzburgites and MTZ dunites have been produced by 19-23% mantle melting, and are compositionally similar to supra-subduction zone (SSZ) peridotites. The mantle melt in equilibrium with pyroxenites was formed after 16-17% partial melting, which subsequently reacted with the lower crustal gabbroic rocks to produce pyroxenites. The occurrence of pyroxenite masses at the crust-mantle boundary suggests a medium- to high-pressure accumulation of pyroxenes in mid- to lower crustal magma chambers. The original MTZ rocks were partially or fully hydrated, prior to the granitic intrusion, during the regional metamorphism, tectonic disruption and emplacement as various fragments of a dismembered ophiolite, to form antigorite-bearing serpentinitized mafic-ultramafic rocks. Progressive metamorphic assemblages then overprinted the primary features due to the contact metamorphism of the MTZ rocks. The resultant metamorphic mineral assemblages are: (1) olivine. +. anthophyllite. +. tremolite ± chlorite ± talc (in the basal serpentinites), (2) olivine. +. enstatite ± chlorite (in the MTZ dunites), and (3) olivine. +. aluminous spinel (pleonaste). +. chlorite. +. magnetite ± enstatite (in the troctolites). The peak of thermal metamorphism was about 650°-700. °C and < 7. kb, equivalent to the upper amphibolite facies. © 2012 Elsevier B.V.

**Author Keywords**

Egypt; Gebel Mudarjaj; MTZ; Thermal metamorphism

**Document Type:** Article**Source:** ScopusEl-Kholy, E.E.<sup>a</sup>, Alwadie, A.<sup>b</sup>, Youssef, H.<sup>c</sup>, Abouelfadl, A.A.<sup>a</sup>**Efficiency optimized indirect field oriented control of induction motor impacting iron loss**(2012) *International Review of Electrical Engineering*, 7 (3), pp. 4419-4427.<sup>a</sup> King Abdul Aziz University, Faculty of Engineering, Electrical Engineering Department, Rabigh, Saudi Arabia<sup>b</sup> Najran University, Faculty of Engineering, Electrical Engineering Department, Saudi Arabia<sup>c</sup> Industrial Education College, Elect. Tech. Departmeny, Helwan University, Egypt**Abstract**

This paper presents a deadbeat flux controller for vector control induction motor drives. Efficiency of an induction motor is improved when the magnitude of the rotor flux is changed according to a load. In order to obtain high efficiency drives of an induction motor spoiling the speed response, a method to control the rotor flux with the deadbeat response is proposed. The theoretical analysis, design and computer simulations of the proposed drive are presented. The simulation results show excellent performance of the proposed system. To verify the proposed deadbeat torque control concept, a laboratory setup with a four-pole 1.5 hp induction motor drive with dSPACE DS1102 laboratory control board is constructed. The experimental results confirm the validity of the proposed control scheme. © 2012 Praise Worthy Prize S.r.l. - All rights reserved.

**Author Keywords**

Deadbeat controller; Digital signal processor; Induction motor; Space vector modulation; Vector control

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

Elassar, A.-Z.A.

**Synthesis, characterisation and bioactivity of polysubstituted 1-(4-(1H-pyrrol-1-yl)phenyl)-1H-pyrrole derivatives**(2012) *Journal of Chemical Research*, 36 (6), pp. 328-332. Cited 1 time.

**DOI:** 10.3184/174751912X13353579628083

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

### Abstract

1,4-Phenylenediamine reacted readily with chloroacetone to give 1,4-bis[(2-oxopropyl)amino]benzene which was used to prepare 1-(4-(1H-pyrrol-1-yl)phenyl)-1H-pyrrole derivatives in a one pot reaction with dimethylformamide dimethylacetal or triethyl orthoformate and an active methylene nitrile, an active methylene ketone or an ylidenemalononitrile. Reaction of 1,4-bis[(2-oxopropyl)amino]benzene with arene diazonium salts afforded the hydrazone derivatives which readily cyclised when reacted with malononitrile to give bispyrrole derivatives. The antibacterial activity of some of the products was determined.

### Author Keywords

Antibacterials; Bispyrrole; Chloroacetone; Phenylenediamine

**Document Type:** Article

**Source:** Scopus

Soliman, F.M.<sup>a</sup>, Said, M.M.<sup>a</sup>, Youns, M.<sup>b</sup>, Darwish, S.A.<sup>a</sup>

### Chemistry of phosphorus ylides 32: Synthesis of phosphoranylidene-pyrano- and -cyclobutyl-xanthenones with potential antitumor activity

(2012) *Monatshefte fur Chemie*, 143 (6), pp. 965-973. Cited 3 times.

**DOI:** 10.1007/s00706-011-0683-3

<sup>a</sup> Department of Organometallic and Organometalloid Chemistry, National Research Centre, Dokki, Cairo, Egypt

<sup>b</sup> Faculty of Pharmacy, Biochemistry and Molecular Biology Department, Helwan University, Cairo, Egypt

### Abstract

The reaction of active phosphacumulenes with xanthenones and anthrone yields xanthene(anthracene)-and/or phosphoranylidene xanthene(anthracene)- depending upon the nature of reactants and reaction conditions. Pertinent reaction mechanisms were considered and compatible spectroscopic measurements were recorded for all new compounds. The cytotoxic activity of some new products was evaluated against human cervical and breast carcinoma cell lines. Certain tested compounds showed promising results. © Springer-Verlag 2011.

### Author Keywords

Active phosphacumulenes; Antitumor activity; Cyclobutanes; Pyranoxanthenones; Xanthenones

**Document Type:** Article

**Source:** Scopus

Soliman, M.H.<sup>a</sup>, Mohamed, G.G.<sup>b</sup>

### Preparation, spectroscopic and thermal characterization of new metal complexes of verlipride drug. in vitro biological activity studies

(2012) *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, 91, pp. 11-17. Cited 11 times.

**DOI:** 10.1016/j.saa.2012.01.021

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

<sup>b</sup> Chemistry Department, Faculty of Science, Cairo University, 12613 Giza, Egypt

### Abstract

Metal complexes of the general formula  $[M(VER)_2Cl_2(H_2O)_2] \cdot yH_2O$  and  $[Cr(VER)_2Cl_2(H_2O)_2]Cl \cdot H_2O$  (where VER = verlipride, M = Mn(II) (y = 2), Co(II) (y = 2), Ni(II) (y = 2), Cu(II) (y = 1) and Zn(II) (y = 0)) are prepared and characterized based on elemental analyses, IR, <sup>1</sup>H NMR, magnetic moment, molar conductance, and thermal analyses (TG and DTA) techniques. From the elemental analyses data, the complexes are formed in 1:2 [Metal]:[VER] ratio. The molar conductance data reveal that all the metal chelates are non-electrolytes except Cr(III) complex, it is 1:1 electrolyte. IR spectra show that VER is coordinated to the metal ions in a neutral monodentate manner with O donor site of the carbonyl O atom. On the basis of spectral studies and magnetic moment measurements an octahedral geometry has been assigned for the complexes. The thermal behavior of these chelates is studied using thermogravimetric analysis technique. The results obtained show that the complexes lose hydrated water, HCl and coordinated water molecules followed immediately by decomposition of the ligand molecules in the successive unseparate steps. The VER drug, in comparison to its metal complexes is also screened for its biological activity against Gram positive bacterial (*Staphylococcus aureus*) and Gram negative bacteria (*Escherichia coli*) and fungi (*Candida albicans* and *Aspergillus flavus*) in vitro. The activity data show that most of the metal complexes have antibacterial activity like or higher than that of the parent VER drug against one or more species. © 2012 Elsevier B.V.

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**Author Keywords**

1H NMR; Biological activity; IR; Magnetic moment; Metal complexes; Molar conductance; Thermal analyses; Verlipride

**Document Type:** Article

**Source:** Scopus

Ellabban, O.<sup>a</sup>, Van Mierlo, J.<sup>b</sup>, Lataire, P.<sup>b</sup>

**A DSP-based dual-loop peak dc-link voltage control strategy of the Z-source inverter**

(2012) *IEEE Transactions on Power Electronics*, 27 (9), art. no. 6161655, pp. 4088-4097. Cited 34 times.

**DOI:** 10.1109/TPEL.2012.2189588

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

<sup>b</sup> Department of Electrical Engineering and Energy Technology, Vrije Universiteit Brussel, 1050 Brussels, Belgium

**Abstract**

This paper proposes a direct dual-loop peak dc-link voltage control strategy, with outer voltage loop and inner current loop, of the Z-source inverter (ZSI). The peak dc-link voltage is estimated by measuring both the input and capacitor voltages. With this proposed technique, a high-performance output voltage control can be achieved with an excellent transient performance including input voltage and load current variations with minimized nonminimum phase characteristics caused by the right half-plane zero in the control to peak dc-link voltage transfer function. Both controllers are designed based on a third-order small-signal model of the ZSI using the direct digital control method. The performance of the proposed control strategy is verified by simulation and experimental results of a 30-kW ZSI prototype. © 2012 IEEE.

**Author Keywords**

DC-link voltage control; direct digital control; dual-loop control; Z-source inverter

**Document Type:** Article

**Source:** Scopus

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

**Gene expression in rabbit appendices infected with Eimeria coecicola**

(2012) *Veterinary Parasitology*, 186 (3-4), pp. 222-228. Cited 6 times.

**DOI:** 10.1016/j.vetpar.2011.11.031

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

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

<sup>c</sup> Department of Zoology, Faculty of Science, Beni-Suef University, Egypt

**Abstract**

*Eimeria coecicola* causes intestinal coccidiosis in rabbits and, thereby, enormous economic losses in rabbit farms. Here, we investigate the final target site of *E. coecicola*, the appendix of rabbits, at the level of gene expression. Rabbits, orally infected with *E. coecicola*, begin to shed parasitic oocysts with their feces on day 5 p.i., and approximately 1.1 million oocysts are maximally shed on day 7 p.i. At maximal shedding, the appendix has increased in size by about 2-3-folds and reveals increased hemorrhage which is associated with increases in nitrite/nitrate, malondialdehyde and catalase activity and a decrease in glutathione. Agilent 2-color oligo whole rabbit genome microarray, in combination with quantitative real-time PCR, detects 45 and 36 genes whose expression is more than 2-fold up- and down-regulated, respectively, by *E. coecicola* infection on day 7 p.i. The most dramatic increase by approximately 50-fold reveals the mRNA of the pro- and anti-inflammatory pleiotropic cytokine interleukin 6 (IL-6), whereas the largest decrease by approximately 13-fold is detected for mRNAs encoding for DBP, SULT3A1, CRP and glutathione-S transferase. Also, there are up- and down-regulations in the expression of genes encoding diverse regions of antibodies. Our data suggest that IL-6 plays a central role in the infection of the appendix of rabbits by *E. coecicola*, presumably involved in both pathological injuries, host defences and healing processes. © 2011 Elsevier B.V.

**Author Keywords**

Appendix; *Eimeria coecicola*; Oligo microarrays; Rabbits; Real time PCR

**Document Type:** Article

**Source:** Scopus



El-Ameen, M.A.<sup>a</sup>, El-Kady, M.<sup>b</sup>

**A new direct method for solving nonlinear volterra-fredholm-hammerstein integral equations via optimal control problem**

(2012) *Journal of Applied Mathematics*, 2012, art. no. 714973, . Cited 3 times.

**DOI:** 10.1155/2012/714973

<sup>a</sup> Faculty of Engineering, Umm Al-Qura University, P.O. Box 5555, Mecca, Saudi Arabia

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

**Abstract**

A new method for solving nonlinear Volterra-Fredholm-Hammerstein (VFH) integral equations is presented. This method is based on reformulation of VFH to the simple form of Fredholm integral equations and hence converts it to optimal control problem. The existence and uniqueness of proposed method are achieved. Numerical results are given at the end of this paper. Copyright © 2012 M. A. El-Ameen and M. El-Kady.

**Document Type:** Article

**Source:** Scopus

Ismail, M.M.

**Improving the performance of the DTC saturated model of the induction motor in case of two level and three level VSI using GA and PSO algorithms**

(2012) *Proceedings of the 2012 Japan-Egypt Conference on Electronics, Communications and Computers, JEC-ECC 2012*, art. no. 6186961, pp. 79-84.

**DOI:** 10.1109/JEC-ECC.2012.6186961

Faculty of Engineering, Helwan University, Electrical Power and Machine Department, Egypt

**Abstract**

The problem of controlling the -model induction motor with magnetic saturation is considered in this proposed research. Direct Torque Control (DTC) of induction motor has been developed since three decades. Furthermore many techniques have been proposed to improve the performance of the induction machines that using the DTC drives in industry. However, all the previous models are based on the linear model of the machine for approximation. This is not the exact model and there is no guarantee that the process will work outside the saturation region of the flux, especially in large rating of induction machines. In this paper, two types of voltage source inverters are applied on the saturated model of induction motor. We study the performance of the induction machine response in the two cases using MATLAB SIMULINK one is by using torque control and the other is by using speed control. GA and PSO are used for improvement of the speed control for the two and three level inverters. © 2012 IEEE.

**Author Keywords**

Direct Torque Control (DTC); GA and PSO; Magnetically Saturated Induction Motors; Two and Three Level Inverter

**Document Type:** Conference Paper

**Source:** Scopus

Ismail, M.M.

**Adaptation of PID controller using AI technique for speed control of isolated steam turbine**

(2012) *Proceedings of the 2012 Japan-Egypt Conference on Electronics, Communications and Computers, JEC-ECC 2012*, art. no. 6186962, pp. 85-90.

**DOI:** 10.1109/JEC-ECC.2012.6186962

Faculty of Engineering, Helwan University, Electrical Power and Machine Department, Egypt

**Abstract**

It is known that PID controller is employed in every facet of industrial automation. The application of PID controller span from small industry to high technology industry. Tuning the parameters of a PID controller is very important in PID control. Ziegler and Nichols proposed the well-known Ziegler-Nichols method to tune the coefficients of a PID controller. This tuning method is very simple, but cannot guarantee to be always effective. For this reason, this paper investigates the design of self tuning for a PID controller. For this study, the model selected is of isolated turbine speed control system. Isolated turbine system means that the turbine is not connected to the grid. The reason for this is that this model is often encountered in refineries in a form of steam turbine that uses hydraulic governor to control the speed of the turbine. The PID controller of the model will be designed using the adaptive fuzzy control method and the results analyzed. The same model will be redesigned using GA, PSO and ANFIS methods. The results of design methods will be compared, analyzed and conclusion will be drawn out of the simulation made. © 2012 IEEE.

**Author Keywords**

ANFIS; Fuzzy logic control; GA; PID controller; PSO; Self tuning controller; steam turbine

**Document Type:** Conference Paper

**Source:** Scopus

Hafez, A.G.<sup>a b</sup>, Ghamry, E.<sup>b c</sup>, Yayama, H.<sup>a d</sup>, Yumoto, K.<sup>e</sup>

**A wavelet spectral analysis technique for automatic detection of geomagnetic sudden commencements** (2012) *IEEE Transactions on Geoscience and Remote Sensing*, 50 (11 PART1), art. no. 6197227, pp. 4503-4512. Cited 1 time.

**DOI:** 10.1109/TGRS.2012.2192279

<sup>a</sup> LTLab Inc., Fukuoka 812-8581, Japan

<sup>b</sup> National Research Institute of Astronomy and Geophysics, 11722 Helwan, Egypt

<sup>c</sup> Space Weather Monitoring Center, Helwan University, 11795 Helwan, Egypt

<sup>d</sup> Department of Physics, Faculty of Sciences, Kyushu University, Fukuoka 812-8581, Japan

<sup>e</sup> Space Environment Research Center, Kyushu University, Fukuoka 812-8581, Japan

**Abstract**

Maximal overlap discrete wavelet transform is used to perform spectral analysis of geomagnetic storm sudden commencements (SCs) (SSCs). This spectral analysis guided us in the development of an automatic SSC detection algorithm. The SC can be an indicator of the onset of a geomagnetic storm; in this case, it is called an SSC. The geomagnetic records used in this study were 3-s resolution data collected from the Circum-Pan Pacific Magnetometer Network. Using such high-resolution data enabled us to achieve a small detection error and short processing time. In addition to these technical merits, we introduce a new algorithm that automatically detects, for the first time, the SC from high-resolution data (sampled at the rate of 1 sample/3 s), unlike previous studies that focused on determining the SSC times automatically using 1-min data. Ninety-three geomagnetic storms were considered for testing the proposed algorithm; it was found that the average and maximum standard deviation of the errors in the detection times determined by the algorithm were 7 and 18 samples, respectively, of the corresponding manually determined arrival times. © 1980-2012 IEEE.

**Author Keywords**

Circum-Pan Pacific Magnetometer Network (CPMN); geomagnetic sudden commencement (SC) detection; maximal overlap discrete wavelet transform (DWT) (MODWT) and wavelets

**Document Type:** Article

**Source:** Scopus

Ismail, M.M.

**Speed sensorless observer using lyapnov design and ANFIS for DTC of magnetically saturated induction motor** (2012) *ICENCO'2011 - 2011 7th International Computer Engineering Conference: Today Information Society What's Next?*, art. no. 6153934, pp. 62-71.

**DOI:** 10.1109/ICENCO.2011.6153934

Electrical Power and Machine Department, Faculty of Engineering, Helwan University, Egypt

**Abstract**

The problem of controlling the  $\pi$ -model induction motor with magnetic saturation is considered in this proposed research. DTC of induction motor have been developed since 1980, many techniques have been proposed to improve the performance of the induction machines that using the DTC drives in industry but all the previous models are using the linear model of the machine for approximation which is not the exact model and we are not guarantee that the process is not work in the saturation region of the flux specially in large rating of induction machines. In this paper we introduce an speed observer using lyapnov design and compared with a one using ANFIS design as well as the classical flux observer that used with DTC technique. Simulation result show that the speed observer have a good performance with variation of speed reference. © 2011 IEEE.

**Author Keywords**

Adaptive Neuro Fuzzy Inference Systems (ANFIS); DTC; Induction Motor; lyapnov stability; Magnetically Saturated Motors

**Document Type:** Conference Paper

**Source:** Scopus

Yousef, A.<sup>a b</sup>, Barakat, N.A.M.<sup>c d</sup>, Al-Deyab, S.S.<sup>e</sup>, Nirmala, R.<sup>a c</sup>, Pant, B.<sup>a</sup>, Kim, H.Y.<sup>c</sup>

**Encapsulation of CdO/ZnO NPs in PU electrospun nanofibers as novel strategy for effective immobilization of the photocatalysts**

(2012) *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 401, pp. 8-16. Cited 21 times.

**DOI:** 10.1016/j.colsurfa.2012.02.033

<sup>a</sup> BioNanosystem Department, Chonbuk National University, Jeonju 561-756, South Korea

<sup>b</sup> Faculty of Engineering, Matteria, Helwan University, Cairo, Egypt

<sup>c</sup> Organic Materials and Fiber Engineering Department, Chonbuk National University, Jeonju 561-756, South Korea

<sup>d</sup> Chemical Engineering Department, Faculty of Engineering, Minia University, El-Minia, Egypt

<sup>e</sup> Petrochemical Research Chair, Department of Chemistry, College of Science, King Saud University, Riyadh 11451, Saudi Arabia

**Abstract**

Secondary pollution is the main problem facing wide applications of the nanostructural photocatalysts. In other words, most of the reported nanostructural photocatalysts might effectively eliminate the organic pollutants; however they create a serious issue due to the separation difficulty of the utilized nanostructural photocatalysts from the treated water especially in the case of large scale processes. Recently, the photocatalytic activity of ZnO has been improved by doping with CdO, the resultant CdO/ZnO nanoparticles successfully utilized to eliminate the organic pollutants under the visible light. In this study, CdO/ZnO-doped polyurethane electrospun mat is introduced as an efficient and easy separable photocatalyst. Preparation of the introduced mat was achieved by using simple, effective, low cost and high yield technology; electrospinning. The introduced mat successfully catalyzes the photodegradation of methylen blue and reactive black 5 dyes as models of organic pollutants under the visible light radiation. Overall, the introduced mat is recommended to be used as low cost, efficient and healthily safe photocatalyst in the field of water treatment. © 2012 Elsevier B.V.

**Author Keywords**

CdO/ZnO-doped PU; Electrospinning; Immobilization of the photocatalysts; Visible light

**Document Type:** Article

**Source:** Scopus

Abdel Dayem, A.M.<sup>a b</sup>

**Set-up and performance investigation of an innovative solar vehicle**

(2012) *Journal of Renewable and Sustainable Energy*, 4 (3), art. no. 033109, . Cited 1 time.

**DOI:** 10.1063/1.4717512

<sup>a</sup> Mechanical Power Engineering Department, Faculty of Engineering Mattarria, Helwan University, 11718 Cairo, Egypt

<sup>b</sup> Umm Al-Qura University, College of Engineering, Mechanical Engineering Department, P.O. 05555, Makkah, Saudi Arabia

**Abstract**

Solar energy is a regenerative and clean source of energy. In Makkah city (21.4 °N), the solar radiation is relatively high along the year; it is more than 5 KWh/m<sup>2</sup> a day and it is high enough to be efficiently used. On the other hand, due to high pollution and traffic in MASHAER region in Makkah where pilgrimage is developed, a solar vehicle can be considered as smart solution for these problems. Therefore, a gasoline engine is replaced by an electrical drive motor in an old (second hand) vehicle, cargo car. The energy required for this motor is converted from the solar energy to electric power through the installation of solar photovoltaic (PV) modules those produce energy by absorbing incoming sunlight. Then it is stored in batteries that feed the motor by needed energy. Therefore, the vehicle transmission mechanism includes electrical motor with variable speed controller that rotates the vehicle wheels by a chain drive. A simple brake system is installed to control the vehicle speed. The size of photovoltaic cells is determined based on the motor power and volt. It is found that 4 m<sup>2</sup> PV panel area is enough to feed the car by needed power. Moreover, 6 batteries are seemed enough to move the car for about 6 h daily. The vehicle is efficiently tested carrying six passengers for about 8 h continuously working under different operating and weather conditions. Moreover, a numerical simulation was developed for the solar vehicle system to visualize the annual performance of the system. A mathematical model of the photovoltaic cells, batteries, and controller were established. Annual measured data of Makkah city is used as input parameters to the numerical simulation. The system efficiency is investigated along the year demonstrating a successful utilization of solar energy in that sector. It is found that the considered PV array can move the vehicle for less than 2 h a day in average. © 2012 American Institute of Physics.

**Document Type:** Article

**Source:** Scopus

Chen, W.<sup>a</sup>, Yousef, W.A.<sup>b</sup>, Gallas, B.D.<sup>a</sup>, Hsu, E.R.<sup>a</sup>, Lababidi, S.<sup>c</sup>, Tang, R.<sup>c</sup>, Pennello, G.A.<sup>c</sup>, Symmans, W.F.<sup>d</sup>, Pusztai, L.<sup>d</sup>

**Uncertainty estimation with a finite dataset in the assessment of classification models**

(2012) *Computational Statistics and Data Analysis*, 56 (5), pp. 1016-1027. Cited 3 times.

**DOI:** 10.1016/j.csda.2011.05.024

<sup>a</sup> Division of Imaging and Applied Mathematics, Office of Science and Engineering Laboratories, Center for Devices and Radiological Health, Silver Spring, MD, United States

<sup>b</sup> Computer Science Department, Faculty of Computers and Information, Helwan University, Egypt

<sup>c</sup> Division of Biostatistics, Office of Surveillance and Biometrics, Center for Devices and Radiological Health, Silver Spring, MD, United States

<sup>d</sup> Departments of Breast Medical Oncology and Pathology, University of Texas, M. D. Anderson Cancer Center, Houston, TX, United States

**Abstract**

To successfully translate genomic classifiers to the clinical practice, it is essential to obtain reliable and reproducible measurement of the classifier performance. A point estimate of the classifier performance has to be accompanied with a measure of its uncertainty. In general, this uncertainty arises from both the finite size of the training set and the finite size of the testing set. The training variability is a measure of classifier stability and is particularly important when the training sample size is small. Methods have been developed for estimating such variability for the performance metric AUC (area under the ROC curve) under two paradigms: a smoothed cross-validation paradigm and an independent validation paradigm. The methodology is demonstrated on three clinical microarray datasets in the microarray quality control consortium phase two project (MAQC-II): breast cancer, multiple myeloma, and neuroblastoma. The results show that the classifier performance is associated with large variability and the estimated performance may change dramatically on different datasets. Moreover, the training variability is found to be of the same order as the testing variability for the datasets and models considered. In conclusion, the feasibility of quantifying both training and testing variability of classifier performance is demonstrated on finite real-world datasets. The large variability of the performance estimates shows that patient sample size is still the bottleneck of the microarray problem and the training variability is not negligible. © 2011 Elsevier B.V. All rights reserved.

**Author Keywords**

Area under the ROC curve (AUC); Microarray classification; Training variability; Uncertainty

**Document Type:** Article

**Source:** Scopus

Abdelfattah, M.S.<sup>a</sup>, Toume, K.<sup>b</sup>, Ishibashi, M.<sup>b</sup>

**Yoropyrazone, a new naphthopyridazone alkaloid isolated from *Streptomyces* sp. IFM 11307 and evaluation of its TRAIL resistance-overcoming activity**

(2012) *Journal of Antibiotics*, 65 (5), pp. 245-248. Cited 10 times.

**DOI:** 10.1038/ja.2012.11

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

<sup>b</sup> Graduate School of Pharmaceutical Sciences, Chiba University, 1-8-1 Inohana, Chuo-ku, Chiba 260-8675, Japan

**Abstract**

A new naphthopyridazone derivative, yoropyrazone (1), has been isolated from *Streptomyces* sp. IFM 11307. The structure of the new compound was established on the basis of spectroscopic analyses. Compound 1 (10 M) in combination with TRAIL moderately showed cytotoxic activity in sensitizing TRAIL-resistant human gastric adenocarcinoma (AGS) cells. © 2012 Japan Antibiotics Research Association All rights reserved.

**Author Keywords**

naphthopyridazone; *Streptomyces* sp.; TRAIL

**Document Type:** Article

**Source:** Scopus

Tohamy, A.A.<sup>a</sup>, Ibrahim, S.R.<sup>a</sup>, Abdel Moneim, A.E.<sup>b</sup>

**Studies on the effect of *salvia aegyptiaca* and *Trigonella foenum graecum* extracts on adult male mice**

(2012) *Journal of Applied Pharmaceutical Science*, 2 (5), pp. 36-43.

**DOI:** 10.7324/JAPS.2012.2501

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

<sup>b</sup> Biomedical Research Center, University of Granada, Granada, Spain

### Abstract

*Salvia aegyptiaca* (Egyptian sage) and *Trigonella foenum graecum* (fenugreek) have potential tannins, total flavonoids and total phenolics as examined in vitro in the present study. In addition, the antioxidant effect of Egyptian sage (ESE) and fenugreek (FE) extracts were evaluated in normal male adult mice. Also, there is no evidence about the positive and/or negative effect of those extracts on male fertility. In order to evaluate the beneficial effect of those extracts, liver and kidney functions, lipid peroxidation, nitric oxide. In addition, non-enzymatic and enzymatic antioxidant molecules as glutathione (GSH), catalase (CAT), superoxide dismutase (SOD), glutathione reductase (GR) and glutathione-S-transferase (GST) were estimated. Also, histological examination of testis was done. The results revealed that both extract of ESE and FE have potent antioxidant activity by reducing lipid peroxidation and nitric oxide formation in testis tissues of mice. Those activities were extended to non-enzymatic and enzymatic antioxidant defense components such as GSH, CAT, SOD, GR and GST. Additionally, ESE mixed to FE caused enhancement in testis structure with improved seminiferous tubules and spermatozoa. In conclusion, the results obtained showed that ESE and FE may contain some biologically active components that may be active against oxidative stress, and this may be the basis for its traditional use for environmental toxins.

### Author Keywords

Antioxidant properties; Mice; Oxidants/antioxidants status; *Salvia aegyptiaca*; *Trigonella foenum graecum*

**Document Type:** Article

**Source:** Scopus

Shokry, C.M., El-Khatib, H.S.

**One-bath dyeing of cotton/polyester blend fabrics with chlorophyll dye**  
(2012) *Melliand International*, 18 (2), pp. 124-126.

Helwan University, Giza, Egypt

### Abstract

Dyeing of polyester/cotton blend fabrics with natural chlorophyll-100- WSP dye were carried out after cationization with Tanafex SR. The most effective parameters that affect the dyeing operation were investigated. Simultaneous dyeing and mordanting with different mordants concentrations were carried out to improve the fastness properties. The color strength and fastness properties of dyed fabrics were assessed.

**Document Type:** Article

**Source:** Scopus

Barakat, H.M.<sup>a</sup>, El-Adil, M.E.<sup>b</sup>

**On the limit distribution of lower extreme generalized order statistics**  
(2012) *Proceedings of the Indian Academy of Sciences: Mathematical Sciences*, 122 (2), pp. 297-311.

**DOI:** 10.1007/s12044-012-0064-9

<sup>a</sup> Department of Mathematics, Faculty of Science, Zagazig University, Zagazig, Egypt

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

### Abstract

In a wide subclass of generalized order statistics (gOs), which contains most of the known and important models of ordered random variables, weak convergence of lower extremes are developed. A recent result of extreme value theory of m-gOs (as well as the classical extreme value theory of ordinary order statistics) yields three types of limit distributions that are possible in case of linear normalization. In this paper a similar classification of limit distributions holds for extreme gOs, where the parameters  $\gamma_j$ ,  $j = 1, \dots, n$ , are assumed to be pairwise different. Two illustrative examples are given to demonstrate the practical importance for some of the obtained results. © Indian Academy of Sciences.

### Author Keywords

Extreme value theory; Generalized order statistics; Order statistics; Progressive type ii censored order statistics; Weak convergence

**Document Type:** Article

**Source:** Scopus

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

**Social work practice in contemporary Egypt**

(2012) *European Journal of Social Work*, 15 (2), pp. 279-283.

**DOI:** 10.1080/13691457.2012.687883

<sup>a</sup> 33 Claremont Street, Belfast, BT96 AP, Antrim County, United Kingdom

<sup>b</sup> Department of Fields of Social Work Practice, Faculty of Social Work, Helwan University, Ain Helwan, PO Box 11790, Cairo, Egypt

**Document Type:** Article

**Source:** Scopus

Abdel-Mowla, S.A.A.

**Vulnerable employment in Egypt**

(2012) *International Research Journal of Finance and Economics*, 90, pp. 66-91.

Department of Economics, Faculty of Commerce, Helwan University, Helwan, Cairo, Egypt

**Abstract**

This study aims to assess vulnerable employment in the Egyptian labor market, examine its determinants and analyze the main factors that influence the probability of escaping vulnerable employment. Empirical findings point out that the main determinants of vulnerable employment are sector of work, gender and education, in that order. Overall, working in agriculture, being female and having a low level of education increase the incidence of vulnerable employment. For males, education and working in agriculture and trade are the most important determinants; while education, region, marital status and working in agriculture and trade are the most important determinants among females. Gender is deemed a major factor influencing the probability of escaping vulnerable employment, where males have a higher probability. Other important factors include wealth, education and being a head of the household. Working in agriculture increases the probability of staying vulnerable. To conclude, the study stresses that the policy interventions needed to address vulnerable employment should be based on an integrated approach and implementation phased over short and longer time horizons. © EuroJournals Publishing, Inc. 2012.

**Author Keywords**

Decent work; Egypt; Labor market mobility; Labor market policies; Poverty; Vulnerable employment

**Document Type:** Article

**Source:** Scopus

Mahmoud, R.Y., Shawky, R.M., El-domany, R.A.

**Optimization and evaluation of rapid methods for the assessment of waterborne Escherichia coli in Egypt**

(2012) *Journal of Applied Sciences Research*, 8 (5), pp. 2839-2849.

Department of Microbiology and Immunology, Faculty of Pharmacy, Helwan University, Ain Helwan, P.O.11795, Cairo, Egypt

**Abstract**

Three different methods were developed and evaluated for determination of water borne E. coli from two wastewater purification stations and one drinking water station at Cairo, Egypt. The most appropriate parameters used in the enzymatic method were found to be; using the substrate concentration (700 mg/l-1), temperature of the water bath shaker (44.5° C), pH (7.2), and the time of measurement (30 minutes). Moreover, there was no significant difference between the samples' enzymatic activity measured with or without addition of the inducer IPTG (isopropyl-β-D-1-thiogalactopyranoside). Multiplex PCR was used to detect E. coli that enables its differentiation from biochemically and phylogenetically related bacteria. The target genes have been increased to three genes: uidA, lacZ and lacY. Evaluation of these methods indicated a significant correlation between the microbial count and the enzymatic activity of β-D-galactosidase produced by E. coli when using chromogenic (Pearson r = 0.87) or fluorogenic substrate (Pearson r = 0.749). In conclusion, fluorometric method was suitable for detection of low contaminated samples, while colorimetric was suitable for highly contaminated sample, multiplex PCR based on three target genes was suitable for quiet identification of environmental E. coli either viable, VBNC (viable but nonculturable cells) or dead cells.

**Author Keywords**

β-D-Galactosidase; Escherichia coli; Evaluation; Optimization; Waterborne

**Document Type:** Article

**Source:** Scopus

Fouad, M.M.M.<sup>a</sup>, Mostafa, M.-S.M.<sup>b</sup>, Dawood, A.R.<sup>a</sup>

**SOPK: Second opportunity pairwise key scheme for topology control protocols**

(2012) *Proceedings - 3rd International Conference on Intelligent Systems Modelling and Simulation, ISMS 2012*, art. no. 6169776, pp. 632-638. Cited 2 times.

**DOI:** 10.1109/ISMS.2012.39

<sup>a</sup> Arab Academy for Science, Technology, and Maritime Transport, Cairo, Egypt

<sup>b</sup> Faculty of Computers and Information, Helwan University, Cairo, Egypt

**Abstract**

Sensor networks typically consist of a very large number of nodes with no centralized supervision. As a result, sensor networks are highly prone to an enormous number of logical and physical attacks. These attacks vary from eavesdropping on sensitive information, imputing inaccurate information, to the unintentional failure of nodes as in Denial of Service (DoS) attacks. Many approaches have been proposed for assuring the Hop-to-hop encryption using different short keys in each node along the path from source to destination, for example the random key pre-distribution scheme. This random key pre-distribution scheme and its enhanced editions were applied with assumptions of no prior deployment knowledge. The paper proposes a scheme that uses prior deployment knowledge in terms of the energy level carried by each node for modifying the polynomial pool based key pre-distribution scheme proposed in [1]. The paper shows that the node energy level observation can be used to control the selection of polynomial keys held by this node. The proposed scheme shows that it is suitable to be applied on topology control protocols such as the A3 protocol [2]. The proposed scheme reduces the energy consumption and computational overhead through controlling the use of security keys according to specific network's energy threshold that positively reflects on the performance of the whole WSN. © 2012 IEEE.

**Author Keywords**

Pairwise key predistribution; Topology control protocol; Wireless sensor network

**Document Type:** Conference Paper

**Source:** Scopus

Pitz-Paal, R.<sup>a</sup>, Amin, A.<sup>b</sup>, Oliver Bettzuge, M.<sup>c</sup>, Eames, P.<sup>d</sup>, Flamant, G.<sup>e</sup>, Fabrizi, F.<sup>f</sup>, Holmes, J.<sup>g</sup>, Kribus, A.<sup>h</sup>, Van Der Laan, H.<sup>i</sup>, Lopez, C.<sup>j</sup>, Garcia Novo, F.<sup>k</sup>, Papagiannakopoulos, P.<sup>l</sup>, Pihl, E.<sup>m</sup>, Smith, P.<sup>n</sup>, Wagner, H.-J.<sup>o</sup>

**Concentrating solar power in Europe, the middle east and North Africa: A review of development issues and potential to 2050**

(2012) *Journal of Solar Energy Engineering, Transactions of the ASME*, 134 (2), art. no. 024501, . Cited 12 times.

**DOI:** 10.1115/1.4006390

<sup>a</sup> DLR, Porz-Wahnheide, Linder Hohe, 51147 Koln, Germany

<sup>b</sup> Faculty of Engineering, Helwan University, 8 Giza Street, Giza 12211, Egypt

<sup>c</sup> Institute of Energy Economics (EWI), University of Cologne, Albertus-Magnus-Platz, D-50923 Cologne, Germany

<sup>d</sup> Loughborough University, Centre for Renewable Energy Systems Technology, School of Electronic, Electrical and Systems Engineering, Holywell Park, Leicestershire LE11 3TU, United Kingdom

<sup>e</sup> PROMES-CNRS, 7 rue du Four Solaire, Odeillo, 66120 Font Romeu, France

<sup>f</sup> ENEA, ENEA - UTRINN - STD (Solar Thermodynamic Laboratory), Via Anguillarese 301, 00123 Rome, Italy

<sup>g</sup> EASAC, Leopoldina, Postfach 110543, 06019 Halle (Saale), Germany

<sup>h</sup> School of Mechanical Engineering, Faculty of Engineering, Tel Aviv University, Tel Aviv 69978, Israel

<sup>i</sup> Universities of Leiden and Utrecht, Schoener 18, 3961 KZ Wyk by Duurstede, Netherlands

<sup>j</sup> CIEMAT, Avda. Complutense, 40-28040 Madrid, Spain

<sup>k</sup> University of Seville, C/San Fernando 4, 41004 Seville, Spain

<sup>l</sup> Department of Chemistry, University of Crete, 710 03 Heraklion, Crete, Greece

<sup>m</sup> Department of Energy and Environment, Chalmers University of Technology, SE-412 96 Goteborg, Sweden

<sup>n</sup> Electricity Research Centre, School of Electrical, Electronic and Communications Engineering, University College, Belfield, Dublin 4, Ireland

<sup>o</sup> Ruhr-Universitat Bochum, 44780 Bochum, Germany

**Abstract**

This paper summarizes the findings of a study undertaken by the European Academies Science Advisory Council to evaluate the development challenges of concentrating solar power (CSP) and its consequent potential to contribute to low carbon electricity systems in Europe, the Middle East and North Africa (the MENA region) to 2050. The study reviewed the current status and prospective developments of the four main CSP technology families, and identified

prospective technical developments, quantifying anticipated efficiency improvements and cost reductions. Similarly, developments in thermal energy storage were evaluated, and the role and value of CSP storage in electricity systems were examined. A key conclusion was that as the share of intermittent renewables in an electricity system increases, so does the value of thermal energy storage in CSP plants. Looking ahead, the study concludes that CSP should be cost competitive with fossil-fired power generation at some point in the 2020's provided that commercial deployment continues at an increasing rate, and through support mechanisms that incentivise technology development. Incentive schemes should reflect the real value of electricity to the system, and should ensure sufficient transparency of cost data that learning rates can be monitored. Key factors which will determine CSP's contribution in Europe and the MENA region over the period to 2050 are generating costs, physical constraints on construction of new plants and transmission, and considerations of security of supply. The study makes recommendations to European and MENA region policy makers on how the associated issues should be addressed. © 2012 American Society of Mechanical Engineers.

**Document Type:** Review

**Source:** Scopus

Shaaban, S.<sup>a</sup>, Seume, J.<sup>b</sup>

**Impact of turbocharger non-adiabatic operation on engine volumetric efficiency and turbo lag**

(2012) *International Journal of Rotating Machinery*, 2012, art. no. 625453, . Cited 7 times.

**DOI:** 10.1155/2012/625453

<sup>a</sup> Mechanical Power Engineering Department, Faculty of Engineering, Helwan University, Cairo 11718, Egypt

<sup>b</sup> Institute of Turbomachinery and Fluid Dynamics, University of Hanover, 30167 Hannover, Germany

### Abstract

Turbocharger performance significantly affects the thermodynamic properties of the working fluid at engine boundaries and hence engine performance. Heat transfer takes place under all circumstances during turbocharger operation. This heat transfer affects the power produced by the turbine, the power consumed by the compressor, and the engine volumetric efficiency. Therefore, non-adiabatic turbocharger performance can restrict the engine charging process and hence engine performance. The present research work investigates the effect of turbocharger non-adiabatic performance on the engine charging process and turbo lag. Two passenger car turbochargers are experimentally and theoretically investigated. The effect of turbine casing insulation is also explored. The present investigation shows that thermal energy is transferred to the compressor under all circumstances. At high rotational speeds, thermal energy is first transferred to the compressor and latter from the compressor to the ambient. Therefore, the compressor appears to be "adiabatic" at high rotational speeds despite the complex heat transfer processes inside the compressor. A tangible effect of turbocharger non-adiabatic performance on the charging process is identified at turbocharger part load operation. The turbine power is the most affected operating parameter, followed by the engine volumetric efficiency. Insulating the turbine is recommended for reducing the turbine size and the turbo lag. Copyright © 2012 S. Shaaban and J. Seume.

**Document Type:** Article

**Source:** Scopus

Abdel-Khalek, N.A.<sup>a</sup>, Yassin, K.E.<sup>a</sup>, Selim, K.A.<sup>a</sup>, Rao, K.H.<sup>b</sup>, Kandel, A.-H.<sup>c</sup>

**Effect of starch type on selectivity of cationic flotation of iron ore**

(2012) *Transactions of the Institutions of Mining and Metallurgy, Section C: Mineral Processing and Extractive Metallurgy*, 121 (2), pp. 98-102. Cited 2 times.

**DOI:** 10.1179/1743285512Y.0000000001

<sup>a</sup> Central Metallurgical Research and Development Institute (CMRDI), PO Box 87, Helwan, Cairo, Egypt

<sup>b</sup> Lulea University of Technology, Lulea, Sweden

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

### Abstract

Cationic flotation is one of the most widely accepted technologies for upgrading siliceous iron ore using polysaccharides (mainly starches) as depressing agents for iron bearing minerals while floating silica with amines. In this paper, a group of starches are investigated as depressants for haematite. These starches are wheat, corn, rice, potato and dextrin. The role of starch type on the selectivity of the separation process has been studied through zeta potential, adsorption measurements as well as flotation tests. The effects of type of starch and pH of the medium have been studied. The results indicate that the selectivity of the separation process is strongly affected by the type of starch used, where better results are obtained with corn starch or wheat starch in comparison to the other types. Fourier transform infrared spectroscopy measurements indicated that the interaction between starches and haematite surface is intermolecular interaction. © 2012 Institute of Materials, Minerals and Mining and The AusIMM.



**Author Keywords**

Adsorption; Corn; Flotation; Iron ore; Potato and dextrin; Rice; Starches of wheat

**Document Type:** Article

**Source:** Scopus

El-Nahas, A.

**Analytic approximations for the flows and heat transfer in microchannels between two parallel plates**

(2012) *Mathematical Problems in Engineering*, 2012, art. no. 568345, .

**DOI:** 10.1155/2012/568345

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

**Abstract**

We consider the nonlinear problem for the flow of Newtonian fluid in a microchannel between two parallel plates with the effects of velocity slip, viscous dissipation, and temperature jump at the wall. This problem is modelled by both the Navier-Stokes equation and energy equation with two thermal boundary conditions related to the two cases: the constant wall temperature (CWT) and the constant heat flux (CHF). The homotopy analysis method is applied via a polynomial exponential basis to obtain analytic approximations for this problem. A rarefaction effects on the velocity profile and the flow friction are investigated. Also, as a result of the application, the effects, on the Nusselt number  $Nu$ , with variation in Brinkman number  $Br$  and Knudsen number  $Kn$  for both (CWT) case and (CHF) case are discussed. Copyright © 2012 A. El-Nahas.

**Document Type:** Article

**Source:** Scopus

Amin, A.<sup>a</sup>, Darweesh, H.M.<sup>b</sup>, Ramadan, A.M.<sup>c</sup>, Morsi, S.M.M.<sup>a</sup>, Ayoub, M.M.H.<sup>a</sup>

**Modification of cement with succinic anhydride-based hyperbranched polyesteramide**

(2012) *Journal of Applied Polymer Science*, 124 (2), pp. 1483-1489. Cited 4 times.

**DOI:** 10.1002/app.35156

<sup>a</sup> Polymers and Pigments Department, National Research Center, Dokki, Giza, Egypt

<sup>b</sup> Department of Refractories, Ceramics and Building Materials, National Research Centre, Dokki, Giza, Egypt

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

**Abstract**

Two hyperbranched polyesteramides (HYP 1 and HYP 2) were prepared by reacting succinic anhydride (ScAn) with both of diisopropanolamine (DiPA) and diethanolamine, respectively, via one-pot polycondensation reaction. The prepared polymers were analyzed using gel permeation chromatography, infrared spectra, and <sup>1</sup>HNMR. The resulting hydroxyl-ended resins have been successfully applied as polymeric admixtures in two types of cements such as Ordinary Portland cement and Portland limestone cement. The water of consistency decreased by addition of the hyperbranched polymers in both types of cements. Better hydration was observed by incorporation of small amounts of polymers. The infrared spectra and scanning electron microscopy photos of Ordinary Portland cement and Portland limestone cement pastes premixed with HYP 1 and HYP 2 showed no effect on the chemical composition of the cement hydrates where only the morphology and the crystallinity of the formed hydrates were changed. © 2011 Wiley Periodicals, Inc. *J Appl Polym Sci*, 2012.

**Author Keywords**

hyperbranched polymers; polyesteramides; polymeric admixtures; portland-limestone cement

**Document Type:** Article

**Source:** Scopus

El-Hagary, M.<sup>a b</sup>, Shaaban, E.R.<sup>c</sup>, Emam-Ismail, M.<sup>a d</sup>, Althoyaib, S.<sup>a</sup>

**Microstructural and optoelectronic properties of diluted magnetic semiconducting Cd 1-xFe xS nanocrystalline films**

(2012) *Journal of Alloys and Compounds*, 520, pp. 140-145. Cited 6 times.

**DOI:** 10.1016/j.jallcom.2011.12.160

<sup>a</sup> Physics Department, College of Science, Qassim University, P. O. 6644, 5145 Buryadh, Saudi Arabia

<sup>b</sup> Physics Department, Faculty of Science, Helwan University, 11792 Helwan, Cairo, Egypt

<sup>c</sup> Physics Department, Faculty of Science, Al-Azhar University, Assuit, Egypt

<sup>d</sup> Physics Department, Faculty of Science, Ain Shams University, 11566 Abbassia, Cairo, Egypt

### Abstract

We report the preparation of electron beam evaporated Fe-doped CdS nanocrystalline thin films (Cd<sub>1-x</sub>Fe<sub>x</sub>S) with different doping concentrations ( $x = 0.002, 0.05, 0.1, 0.15$  and  $0.2$ ) and characterization of their microstructural and optoelectronic properties. The structural properties investigated by X-ray diffraction revealed cubic zincblende CdS type structure and a decrease of lattice parameter with Fe doping confirming incorporation of Fe in Cd atom positions. The crystallite size of the films was found to vary from 33 to 20 nm with increasing Fe content. The elemental chemical stoichiometric was studied by energy dispersive X-ray analysis. The optical characterization of the films has been carried out from spectral transmittance and reflectance obtained by double beam spectrophotometer in the wavelength range from 190 to 2500 nm. The refractive index and extinction coefficient have been found to increase with increasing Fe content. The increase in the refractive index has been explained on the basis of polarizability. Dispersion of refractive index has been analyzed in terms of the Wemple-DiDomenico single oscillator model. The oscillator parameters; the single oscillator energy  $E_0$ , the dispersion energy  $E_d$ , the static refractive index  $n_0$ , average interband oscillator wavelength  $\lambda_0$ , and the average oscillator strength  $S_0$  were estimated. It was further found that the optical energy gap decreases from 2.470 eV to 2.338 eV with increasing Fe content from  $x = 0.002$  to  $x = 0.2$  which is suggested to be related to the sp-d exchange interaction with the Fe<sup>2+</sup> magnetic moments. © 2011 Elsevier B.V. All rights reserved.

### Author Keywords

Diluted magnetic semiconductors; Microstructure properties; Nanomaterial; Optical properties; Single oscillator parameters

**Document Type:** Article

**Source:** Scopus

Mohamed, H.H.<sup>a</sup>, Dillert, R.<sup>b</sup>, Bahnemann, D.W.<sup>b</sup>

### Kinetic and mechanistic investigations of the light induced formation of gold nanoparticles on the surface of TiO<sub>2</sub>

(2012) *Chemistry - A European Journal*, 18 (14), pp. 4314-4321. Cited 8 times.

**DOI:** 10.1002/chem.201102799

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

<sup>b</sup> Institut für Technische Chemie, Leibniz Universität Hannover, Callinstrasse 3, 30167 Hannover, Germany

### Abstract

The kinetics of the formation of gold nanoparticles on the surface of pre-illuminated TiO<sub>2</sub> have been investigated using stopped-flow technique and steady state UV/Vis spectroscopy. Excess electrons were loaded on the employed nanosized titanium dioxide particles by UV-A photolysis in the presence of methanol serving as hole scavenger, stored on them in the absence of oxygen and subsequently used for the reduction of Au<sup>III</sup> ions. The formation of gold nanoparticles with an average diameter of 5 nm was confirmed after mixing of the TiO<sub>2</sub> nanoparticles loaded with electrons with aqueous solution of tetrachloroaurate (HAuCl<sub>4</sub>) by their surface plasmon absorbance band at 530 nm, as well as by XRD and HRTEM measurements. The rate of formation of the gold nanoparticles was found to be a function of the concentration of the gold ions and the concentration of the stored electrons, respectively. The effect of PVA as a stabilizer of the gold nanoclusters was also studied. The observed kinetic behavior suggests that the formation of the gold nanoparticles on the TiO<sub>2</sub> surface is an autocatalytic process comprising of two main steps: 1) Reduction of the gold ions by the stored electrons on TiO<sub>2</sub> forming gold atoms that turn into gold nuclei. 2) Growth of the metal nuclei on the surface of TiO<sub>2</sub> forming the gold particles. Interestingly, at higher TiO<sub>2</sub> electron loading the excess electrons are subsequently transferred to the deposited gold metal particles resulting in "bleaching" of their surface plasmon band. This bleaching in the surface plasmon band is explained by the Fermi level equilibration of the Au/TiO<sub>2</sub> nanocomposites. Finally, the reduction of water resulting in the evolution of molecular hydrogen initiated by the excess electrons that have been transferred to the previously formed gold particles has also been observed. The mechanism of the underlying multistep electron-transfer process has been discussed in detail. © 2012 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

### Author Keywords

excess electrons; gold; hydrogen production; nanoparticles; titanium dioxide

**Document Type:** Article

**Source:** Scopus

Ayoub, N.<sup>b</sup>, Yuji, N.<sup>a</sup>

### Governmental intervention approaches to promote renewable energies-Special emphasis on Japanese feed-in tariff

(2012) *Energy Policy*, 43, pp. 191-201. Cited 14 times.

**DOI:** 10.1016/j.enpol.2011.12.056

<sup>a</sup> Chemical Resources Laboratory, Process Systems Engineering Division, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan

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

### Abstract

Almost all countries have issued laws and regulations to promote renewable energy (RE). However, the applications and motivations of such laws as well as achievements have been different. Currently, the Japanese government has announced its targets to expand the electricity feed-in tariff scheme for solar power, along with other energy sources, within two years to meet the goal set by the Japanese Prime Minister who, in the 15th United Nations Climate Change Conference (COP15) held in September 2009, proclaimed to cut 25% of greenhouse gas (GHG) emissions from the 1990 levels by 2020. In this paper, the current Japanese energy policies and measures for promoting RE in comparison to popular methods followed worldwide are explored. Furthermore, a Least Cost Feed-in Tariff (LCFIT) Simulation Model for Japanese case was developed to calculate the optimal mix of technologies to reach certain targets. The LCFIT also calculates the tariff that should be proposed for each technology and the total cost for the program with and without a carbon tax and estimates the premium added to the bill of the customer every month. © 2012 Elsevier Ltd.

### Author Keywords

Governmental policies; Promotion measures; Renewable energies

**Document Type:** Article

**Source:** Scopus

Shaker, O.<sup>a</sup>, Ahmed, A.<sup>b</sup>, Satar, I.A.<sup>c</sup>, El Ahi, H.<sup>d</sup>, Shousha, W.<sup>e</sup>, Doss, W.<sup>b</sup>

### Occult hepatitis B in Egyptian thalassemic children

(2012) *Journal of Infection in Developing Countries*, 6 (4), pp. 340-346. Cited 5 times.

<sup>a</sup> Department of Biochemistry and Molecular Biology, Faculty of Medicine, Cairo University, Cairo, Egypt

<sup>b</sup> Department of Medical Biochemistry, National Hepatology and Tropical Medicine Institute, Cairo, Egypt

<sup>c</sup> Department of Pediatrics, Faculty of Medicine, Cairo University, Cairo, Egypt

<sup>d</sup> Tabarak Children's Hospital, Cairo, Egypt

<sup>e</sup> Department of Biochemistry, Faculty of Science, Helwan University, Helwan, Egypt

### Abstract

**Introduction:** Thalassemia is hereditary anemia which requires lifelong transfusion as treatment, and hepatitis viral infection is one of the risks of repeated transfusions. Hepatitis B outbreaks in health-care settings are still a serious public health concern worldwide. Blood samples negative for HBsAg but positive for HBV-DNA, with or without the presence of HBV antibodies, are classified as "occult" HBV infection (OBI). This study investigated the prevalence of occult HBV infection in Egyptian thalassemic children. **Methodology:** Eighty patients admitted to the Faculty of Medicine, Cairo University Hospital, were involved in this prospective study. Strict inclusion criteria were set to nullify the effect of confounding variables and further minimize selection bias. The following laboratory investigations were performed: complete blood count (CBC); serum AST and ALT; albumin; bilirubin; HBsAg; HBeAg; HBcAb; HCV-RNA; and HBV-DNA. **Results:** All our patients had no clinical manifestation suggestive of hepatitis. Molecular biology studies revealed positivity for HCV and HBV at 25% and 32.5% respectively. **Conclusion:** The estimated risk of acquiring hepatitis B and C infection in children receiving multiple blood transfusions is surprisingly high. Moreover, occult hepatitis B infection is a considerably risk. © 2012 Shaker et al.

### Author Keywords

DNA; Hepatitis C virus; Occult HBV; Pediatrics; Thalassemia

**Document Type:** Article

**Source:** Scopus

Elshaer, Y.H.<sup>a</sup>, Aly, S.S.<sup>b</sup>, Ali, A.I.<sup>c,d</sup>, Kim, Y.S.<sup>d</sup>

### Gamma-ray induced modifications in structure and optical properties of high density poly- ethylene thin films

(2012) *Journal of Applied Sciences Research*, 8 (4), pp. 2371-2378. Cited 1 time.

<sup>a</sup> Nuclear Research Center, Atomic Energy Authority (AEA), Cairo, Egypt

<sup>b</sup> National Center for Radiation Research and Technology (NCRRT), Atomic Energy Authority (AEA), P.O. Box 29, Nasr City, Cairo, Egypt

<sup>c</sup> Basic Science Department, Faculty of Industrial Education, Helwan University, Saray El-Quba, 11281 Cairo, Egypt

<sup>d</sup> Energy Harvest-Storage Research Center, Department of Physics, University of Ulsan, Ulsan 680-749, South Korea

### Abstract

The effect of gamma-ray radiation on the crystalline structure and optical properties of high density polyethylene (HDPE) thin films has been investigated. Gamma irradiation was carried out in air to a maximum dose up to 400 kGy. The structure and chemical changes of the polymer were studied using X-ray Diffraction (XRD) and Fourier-Transform Infrared Spectrophotometry (FTIR) techniques. The optical parameters such as (optical energy gap, absorption coefficient, and activation energy) were determined from transmission, reflection and absorption spectra for these films. The obtained results show that the gamma-ray irradiation increased the crystallinity of the polymer films. Meanwhile, the optical energy band gap and the optical activation energy of the films exhibit a decrease with increasing the irradiation dose.

### Author Keywords

$\Lambda$ -Ray irradiation; Ftir; High density polyethylene polymer thin film; Uv-vis spectrophotometry

**Document Type:** Article

**Source:** Scopus

El-Arady, O.<sup>a</sup>, El-Enin, S.A.A.<sup>a</sup>, El Semaary, N.A.<sup>b</sup>, El Diwani, G.<sup>a</sup>

**Microalgal culture in photo-bioreactor for biodiesel production: Case studies from Egypt**

(2012) *Afinidad*, 69 (558), pp. 137-143. Cited 1 time.

<sup>a</sup> Pilot Plant Dept., National Research Centre, EL Tahrir St. Dokki, Cairo, Egypt

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

### Abstract

Biodiesel production from three local microalgae from Egypt was investigated. These microalgae strains differ in their growth pattern as one of the cyanobacterial strains is filamentous mat-forming *Phormidium* sp. whereas the other strain is coccoid colony-forming *Microcystis* sp. The third is coccoid yellow-green *Botrydiopsis* sp. The mass productivity for the strains in a photobioreactor using semi-continuous culture was arranged as: *Microcystis* sp. > *Botrydiopsis* sp. > *Phormidium* sp. The mass productivity can be increased by increasing the illumination period in case of *Botrydiopsis* sp. and *Microcystis* sp. The lipid content was determined by using different solvents for lipid extraction. The *Botrydiopsis* sp. gave the highest lipid content (48%) for *Botrydiopsis* sp. cultured in *Oscillatoria* medium. *Microcystis* sp. had (28%) lipid content while the *Phormidium* sp. had the lowest lipid content (15%). The major components of the fatty acid compositions in different algal species studied were linoleic, palmitic, oleic and stearic. In conclusion, the cultivation of microalgae in photo-bioreactor has given high biomass productivity by applying semi-continuous feeding technique. The highest mass productivity doesn't mean the highest lipid content. The Gas chromatography analysis showed that the algae oils have the suitable fatty acid composition for biodiesel production.

### Author Keywords

Biodiesel; *Botrydiopsis* sp.; *Microcystis*; *Phormidium*; Photobioreactor

**Document Type:** Article

**Source:** Scopus

El-Nahas, A.

**Analytic approximations for the nonlinear problems of nano boundary layer flows**

(2012) *Journal of Computational and Theoretical Nanoscience*, 9 (4), pp. 516-521. Cited 4 times.

**DOI:** 10.1166/jctn.2012.2054

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

### Abstract

In this paper we use the homotopy analysis method as a tool to give analytic approximations to the nonlinear problem of nano boundary layer flows, which has nonlinear boundary conditions. The application of this method is executed via bases which are fractional or fractional in most of their terms. Two types of flows are considered: the flow past a wedge and the flow in a convergent channel. The effects of the slip length, on the velocity profile are described and discussed. Copyright © 2012 American Scientific Publishers.

### Author Keywords

Boundary layers; Homotopy analysis method; Nano boundary layer flows; Navier nonlinear boundary condition; Partial differential equations

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

Al-Quraishy, S.<sup>a</sup>, Abdel-Baki, A.S.<sup>a b</sup>, Al-Qahtani, H.<sup>a</sup>, Dkhil, M.<sup>a c</sup>, Casal, G.<sup>d e f</sup>, Azevedo, C.<sup>a d e</sup>  
**A new microsporidian parasite, *Heterosporis saurida* n. sp. (Microsporidia) infecting the lizardfish, *Saurida undosquamis* from the Arabian Gulf, Saudi Arabia: Ultrastructure and phylogeny**  
(2012) *Parasitology*, 139 (4), pp. 454-462. Cited 3 times.

**DOI:** 10.1017/S0031182011001971

<sup>a</sup> Zoology Department, College of Science, King Saud University, P.O. Box 12455, Riyadh 11451, Saudi Arabia

<sup>b</sup> Zoology Department, Faculty of Science, Beni-Suef University, Egypt

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

<sup>d</sup> Department of Cell Biology, Institute of Biomedical Sciences, University of Porto (ICBAS/UP), 4099-003 Porto, Portugal

<sup>e</sup> Laboratory of Pathology, Interdisciplinary Centre of Marine Environmental Research, University of Porto (CIIMAR/UP), Porto, Portugal

<sup>f</sup> Departamento de Ciências, Instituto Superior de Ciências da Saúde - Norte, CESPU, Gandra, Portugal

### Abstract

A new microsporidian that infects the lizardfish *Saurida undosquamis* (Richardson, 1848) that are caught in the Arabian Gulf in Saudi Arabia is described here. This parasite invades the skeletal muscle of the abdominal cavity forming white, cyst-like structures containing numerous spores. The prevalence of the infection was 32.1% (135/420). The spores were oval to pyriform in shape and measured approximately 3.3 µm×2.0 µm. The developing spores were found within parasitophorous vacuoles. In mature spores, the polar filament was arranged into 5 coils in a row. Molecular analysis of the rRNA genes, including the ITS region, and phylogenetic analyses using maximum parsimony, maximum likelihood, and Bayesian inference were performed. The ultrastructural characteristics and phylogenetic analyses support the recognition of a new species, herein named *Heterosporis saurida* n. sp. © Copyright 2012 Cambridge University Press.

### Author Keywords

Arabian Gulf fish; *Heterosporis saurida*; Microsporidia; phylogeny; ultrastructure

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

Faridoon<sup>a b</sup>, Hussein, W.M.<sup>a c</sup>, Ul Islam, N.<sup>b</sup>, Guddat, L.W.<sup>a</sup>, Schenk, G.<sup>a d</sup>, McGeary, R.P.<sup>a e</sup>  
**Penicillin inhibitors of purple acid phosphatase**  
(2012) *Bioorganic and Medicinal Chemistry Letters*, 22 (7), pp. 2555-2559. Cited 1 time.

**DOI:** 10.1016/j.bmcl.2012.01.123

<sup>a</sup> University of Queensland, School of Chemistry and Molecular Biosciences, Brisbane, QLD 4072, Australia

<sup>b</sup> Institute of Chemical Sciences, University of Peshawar, Peshawar-25120, Pakistan

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

<sup>d</sup> National University of Ireland-Maynooth, Department of Chemistry, Maynooth, Co. Kildare, Ireland

<sup>e</sup> University of Queensland, School of Pharmacy, Brisbane, QLD 4072, Australia

### Abstract

Purple acid phosphatases (PAPs) are binuclear metallohydrolases that have a multitude of biological functions and are found in fungi, bacteria, plants and animals. In mammals, PAP activity is linked with bone resorption and over-expression can lead to bone disorders such as osteoporosis. PAP is therefore an attractive target for the development of drugs to treat this disease. A series of penicillin conjugates, in which 6-aminopenicillanic acid was acylated with aromatic acid chlorides, has been prepared and assayed against pig PAP. The binding mode of most of these conjugates is purely competitive, and some members of this class have potencies comparable to the best PAP inhibitors yet reported. The structurally related penicillin G was shown to be neither an inhibitor nor a substrate for pig PAP. Molecular modelling has been used to examine the binding modes of these compounds in the active site of the enzyme and to rationalise their activities. © 2011 Elsevier Ltd. All rights reserved.

### Author Keywords

Inhibition assays; Osteoporosis; Penicillin; Purple acid phosphatase (PAP)

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

Mady, M.M.<sup>a b</sup>, Shafaa, M.W.<sup>c d</sup>, Abbase, E.R.<sup>c</sup>, Fahium, A.H.<sup>c</sup>  
**Interaction of Doxorubicin and Dipalmitoylphosphatidylcholine Liposomes**  
(2012) *Cell Biochemistry and Biophysics*, 62 (3), pp. 481-486. Cited 4 times.

**DOI:** 10.1007/s12013-011-9334-x

<sup>a</sup> Biophysics Department, Faculty of Science, Cairo University, 12613 Giza, Egypt

<sup>b</sup> Department of Physics and Astronomy, Faculty of Science, King Saud University, Riyadh 11451, Saudi Arabia

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

<sup>d</sup> Medical Physics Department, Faculty of Medicine, Jazan University, Jazan, Saudi Arabia

#### Abstract

The interaction between doxorubicin (DOX), an anthracycline antibiotic frequently used in chemotherapy, and zwitterionic dipalmitoylphosphatidylcholine (DPPC) was investigated using Fourier transform infrared (FTIR) spectroscopy, differential scanning calorimetry (DSC), and rheological measurements. FTIR results showed that DOX shifted the wavenumber of the PO 2 - band for pure DPPC to a higher wavenumber. This may have been because of the strong interactions between the NH 3 + group in DOX and the phosphate (PO 2 -) group in the polar head of DPPC. The main transition temperature of DPPC liposomes was slightly shifted to a lower temperature for DPPC liposome-encapsulated DOX. This suggested that DOX had a significant effect on the acyl chains in the DPPC bilayers, and that its presence decreased the transition cooperativity of lipid acyl chains. There was also the appearance of an additional transition peak at nearly 136°C for the DPPC/DOX sample. These interactions between DOX and DPPC phospholipid would cause a decrease in the DPPC liposomes plastic viscosity and increase membrane fluidity. A better understanding of the interactions between DOX and lipid bilayers could help in the design and development of improved liposomal drug delivery systems. © 2011 Springer Science+Business Media, LLC.

#### Author Keywords

Doxorubicin; DPPC; DSC; FTIR; Interaction; Liposomes; Viscosity

**Document Type:** Article

**Source:** Scopus

Thalouth, A.E.<sup>a</sup>, Rekaby, M.<sup>a</sup>, Ibrahim, M.A.<sup>b</sup>, Ragheb, A.A.<sup>b</sup>, Abd El-Moaty, A.R.<sup>b</sup>

**Printing of wool, silk and cotton fabric samples using natural dye extracted from fenugreek seeds and thickened with different thickening agent**

(2012) *Man-Made Textiles in India*, 40 (4), pp. 121-127.

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

<sup>b</sup> Helwan University, High Institute of Applied Arts, Egypt

#### Abstract

Fenugreek seeds gum, which is mainly galactomannan was used successfully as thickening agent for textile printing after treatment with sodium hydroxide. Natural dye was extracted from the same seeds and used in printing of wool, silk and cotton fabrics. Different colour ranges could be obtained from fenugreek peel extract using different mordants. Irrespective of the nature of the fabric used, the colour ranges from yellow to olive green. In case of cotton fabrics, the highest K/S was obtained when tannic acid was used as a mordant. While in case of protein fabrics, i.e. wool and silk, all of the mordants cause a remarkable effect on the K/S; however the highest value was obtained on using tannic acid also. In all cases also, the colour fastness properties, i.e. for washing, rubbing or perspiration are quite satisfactory for practical purposes where it ranges between 2-3 to 4-5.

**Document Type:** Article

**Source:** Scopus

El-Sayed, S.T.<sup>a</sup>, El-Sayed, M.E.-S.<sup>b</sup>, Shousha, W.G.<sup>b</sup>, Shehata, A.N.<sup>a</sup>, Omar, N.I.<sup>a</sup>

**Production of novel antitumor chitooligosaccharides by using purified chitosanases from *Capsicum annum* leaves**

(2012) *Australian Journal of Basic and Applied Sciences*, 6 (4), pp. 1-15. Cited 1 time.

<sup>a</sup> Biochemistry Departments, National Research Center, Dokki, Giza, Egypt

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

#### Abstract

Purification of three chitosanases (A 1, A 2 and A 3) from *Capsicum annuum* (pepper) leaves extract was done with different techniques giving three isoenzymes named A 1, A 2 and A 3 with specific activities of  $107.3 \pm 6.9$ ,  $57.8 \pm 0.1$  and  $81.1 \pm 0.0$  U/mg protein, respectively. The enzymes were purified about 66.2, 35 and 49 fold by three chromatographic steps in Sephadex G-100, diethylaminoethylcellulose (DEAE-cellulose) and Sephadex G-200. The pure enzymes A 1, A 2 and A 3 gave single band by sodium dodecylsulfate - polyacrylamide gel electrophoresis (SDS-PAGE) for each enzyme with molecular weights of 26.2, 59 and 94 KDa, respectively. While the molecular masses of the purified enzymes A 1, A 2 and A 3 were found to be 23, 33 and 34 KDa, respectively by gel filtration technique. They were stable below  $50^\circ\text{C}$  for 60 min with maximum activity at pH range of 5.0-5.2 and  $45^\circ\text{C}$ . The three enzymes A 1, A 2 and A 3 were highly specific to hydrolyze chitosan exhibiting  $K_m$  value of 3.18, 3.9 and 3.7 mg/ml and  $V_{max}$  of 30.9, 19.03 and 31.8 U/mg, respectively. The three enzymes could also degraded chitin substrate with lower efficiency. Inhibition of the three chitosanases A 1, A 2 and A 3 was observed with  $\text{CoCl}_2$ ,  $\text{NiCl}_2$ ,  $\text{HgSO}_4$ ,  $\text{AgNO}_3$ ,  $\text{FeCl}_2$ ,  $\text{CuSO}_4$  and  $\text{ZnSO}_4$  with different percentages. They were also inhibited by cysteine, EDTA, iodoacetate, D-L-dithiotheritol and sodium azide. High amount of glucosamine (14.6 U) was produced by hydrolysis of chitosan by A 2 compared with A 1 and A 3 (5.3 and 0.0 U, respectively) as determined by acetyl acetone method (AcAc). This indicates that A 2 is exo type and A 1 and A 3 are endo type. These results were confirmed by the appearance of glucosamine in chitosan degraded product by A 2 as identified by TLC and also by HPLC analysis (718.4 mg/100g of sample). The purified chitosanase A 1 was rich in aspartic acid, glutamic acid and histidine. Chitosanase A 2 was rich in aspartic acid, glutamic acid and lysine while chitosanase A 3 was rich in aspartic acid, glutamic, leucine and tyrosine. The three isoenzymes degraded chitosan to chitooligosaccharides (COS) with antitumor activity. COS-A 1 was the most efficient as inhibitor of HEP-G2 (hepatocellular carcinoma cell line) with  $\text{IC}_{50}$  of  $17.8 \mu\text{g/well}$ ; COS- A 3 was superior in suppressing HCT-116 (colon carcinoma cell line) with  $\text{IC}_{50}$  of  $8.62 \mu\text{g/well}$ . But the cytotoxicity of all COS showed nearly the same results against MCF7 (breast carcinoma cell line).

#### Author Keywords

Antitumor activity; Chitooligosaccharides; Chitosan; Chitosanase; Pepper leaves; Physicochemical properties; Purification

**Document Type:** Article

**Source:** Scopus

Attia, H.N.<sup>a</sup>, Al-Rasheed, N.M.<sup>d</sup>, Al-Rasheed, N.M.<sup>d</sup>, Maklad, Y.A.<sup>a</sup>, Ahmed, A.A.E.<sup>b</sup>, Kenawy, S.A.B.<sup>c</sup>

**Protective effects of combined therapy of gliclazide with curcumin in experimental diabetic neuropathy in rats** (2012) *Behavioural Pharmacology*, 23 (2), pp. 153-161. Cited 8 times.

**DOI:** 10.1097/FBP.0b013e3283512c00

<sup>a</sup> Medicinal and Pharmaceutical Chemistry Department, Pharmaceutical and Drug Industries Research Division, National Research Center, El-Bohouth Street (El-Tahrir Street), Dokki 12622, Egypt

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

<sup>c</sup> Department of Pharmacology and Toxicology, Cairo University, Cairo, Egypt

<sup>d</sup> Department of Pharmacology and Toxicology, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia

#### Abstract

Diabetic neuropathy is the most common chronic complication of diabetes. The aim of the present study was to evaluate the protective effects of curcumin against neuropathy in gliclazide-treated diabetic rats. Diabetes was induced by an intraperitoneal injection of streptozotocin (45 mg/kg). Diabetic animals were given gliclazide (10 mg/kg, orally) alone or combined with curcumin (100 mg/kg, orally) or gabapentin (30 mg/kg, intraperitoneally as a positive control). Behavioral responses to thermal (hot plate and tail flick) and mechanical (tail pinch) pain, and some biochemical tests (serum glucose, C-peptide, peroxyntirite, lipid peroxides, and tumor necrosis factor- $\alpha$ ) were assessed after 5 consecutive weeks of daily treatment. Combined treatment of curcumin with gliclazide significantly increased hot-plate and tail-flick latencies in comparison with that of the diabetic control group. The threshold of mechanical hyperalgesia was also significantly elevated. Serum glucose and C-peptide levels were significantly increased in the combined treatment compared with the diabetic control group, whereas serum levels of peroxyntirite, lipid peroxide, and tumor necrosis factor- $\alpha$  production were significantly decreased. The data suggest that the combination of curcumin with gliclazide may protect against the development of diabetic neuropathy, with favorable effects with respect to the gliclazide/gabapentin combination. © 2012 Wolters Kluwer Health | Lippincott Williams & Wilkins.

#### Author Keywords

curcumin; diabetes; gabapentin; gliclazide; neuropathy; pain; rat

**Document Type:** Article

**Source:** Scopus

Saeed, H.A.<sup>a</sup>, Tagnit-Hamou, A.<sup>b</sup>, Ebead, U.A.<sup>c</sup>, Neale, K.W.<sup>b</sup>

**Stoichiometric study of activated glass powder hydration**

(2012) *Advances in Cement Research*, 24 (2), pp. 91-101. Cited 2 times.

**DOI:** 10.1680/adcr.10.00067

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

<sup>b</sup> Department of Civil Engineering, University of Sherbrooke, Sherbrooke, QC, Canada

<sup>c</sup> Civil and Environmental Engineering Department, United Arab Emirates University, Al Ain, United Arab Emirates

#### Abstract

The focus of this work was to study the reactivity of glass powder of a certain fineness by using a new experimental approach and to establish specifications for the use of glass powder as a pozzolanic material in concrete by developing glass powder hydration reaction equations. Experiments were carried out to determine the different quantities and proportions of glass powder, calcium hydroxide and water to establish the hydration reaction. Models that describe the hydration of the glass powder with and without calcium hydroxide are also developed in this paper. The developed models are validated using the results of the experiments. Using these models, predictions of the structure of the hydration products are obtained. © 2012 Thomas Telford Ltd.

**Document Type:** Article

**Source:** Scopus

Hariyanti<sup>a</sup>, El-Mahdy, G.A.<sup>b</sup>, Nishikata, A.<sup>a</sup>, Tsuru, T.<sup>a</sup>

**Effect of scratching of coating surface on the electrochemical behavior of PVD Al-Mg-Si coated steel**

(2012) *Electrochemistry*, 80 (4), pp. 214-217. Cited 1 time.

**DOI:** 10.5796/electrochemistry.80.214

<sup>a</sup> Department of Metallurgy and Ceramics Science, Tokyo Institute of Technology, 2-12-1, S8-7, O-okayama, Meguro-ku, Tokyo 152-8552, Japan

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

#### Abstract

Effect of scratching of coating surface on the electrochemical behavior of PVD Al-Mg-Si coated steel has been investigated using an open circuit potential (OCP), anodic polarization and galvanic couple test. The OCP monitoring showed a fast ennoblement of OCP then attained a steady state value during the last stage of monitoring. There were two types of corrosion products of scratched coating that protected from continuous corrosion and act as selfhealing. The first is passive film that arises from the adjacent coating surface on both sides of scratched area and covering the underlying steel. The second is corrosion product produced by the corrosion of steel on scratched area. © The Electrochemical Society of Japan, All rights reserved.

#### Author Keywords

Polarization; PVD

**Document Type:** Article

**Source:** Scopus

Yashwant, G.<sup>a b</sup>, Prajapat, C.L.<sup>a</sup>, Ravikumar, G.<sup>a</sup>, Soltan, S.<sup>c</sup>, Christiani, G.<sup>d</sup>, Habermeier, H.-U.<sup>d</sup>

**Magnetic response of ferromagnetsuperconductor bilayers**

(2012) *Journal of Magnetism and Magnetic Materials*, 324 (7), pp. 1406-1409. Cited 7 times.

**DOI:** 10.1016/j.jmmm.2011.11.055

<sup>a</sup> Technical Physics Division, Bhabha Atomic Research Centre, Mumbai 400085, India

<sup>b</sup> Tata Institute of Fundamental Research, Mumbai 400005, India

<sup>c</sup> Physics Department, Faculty of Science, Helwan University, 11795 Cairo, Egypt

<sup>d</sup> Max-Planck-Institut für Festkörperforschung, Heisenbergstrasse 1, D 70569 Stuttgart, Germany

#### Abstract

Magnetic measurements on a ferromagnet/insulator/superconductor (La<sub>2/3</sub>Ca<sub>1/3</sub>MnO<sub>3</sub>/SrTiO<sub>3</sub>/YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub>) structures were performed with the field applied parallel to the plane of the film. We observed an evidence of a modification of the ferromagnetic domain structure in the magnetic layer induced by the superconducting transition in the neighboring superconducting YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> layer. © 2011 Elsevier B.V. All rights reserved.

#### Author Keywords

Proximity effect; Superconductor; Superlattice



**Document Type:** Article**Source:** ScopusNada, A.S.<sup>c</sup>, Hawas, A.M.<sup>c</sup>, Amin, N.E.-D.<sup>c</sup>, Elnashar, M.M.<sup>d</sup>, Abd Elmageed, Z.Y.<sup>a b</sup>**Radioprotective effect of curcuma longa extract on  $\gamma$ -irradiation-induced oxidative stress in rats**(2012) *Canadian Journal of Physiology and Pharmacology*, 90 (4), pp. 415-423. Cited 6 times.**DOI:** 10.1139/Y2012-005<sup>a</sup> Department of Biology, Faculty of Science, Helwan University, Cairo, Egypt<sup>b</sup> Department of Urology and Oncology, Tulane University Medical School, 1430 Tulane Avenue, New Orleans, LA 70112, United States<sup>c</sup> National Centre for Radiation Research and Technology (NCRRT), Atomic Energy Authority, Nasr City, Cairo, Egypt<sup>d</sup> Laboratory of Biopolymers and Nanobiotechnology, Polymers Department, Center of Excellence, National Research Center, Dokki, Cairo, Egypt**Abstract**

This study was conducted to evaluate the modulatory effect of aqueous extract of *Curcuma longa* (L.) against irradiation (GR), which induces biochemical disorders in male rats. The sublethal dose of GR was determined in primary hepatocytes. Also, the effect of *C. longa* extract was examined for its activity against GR. In rats, *C. longa* extract was administered daily (200 mg/kg body mass) for 21 days before, and 7 days after GR exposure (6.5 Gy). The lipid profile and antioxidant status, as well as levels of transaminases, interleukin-6 (IL-6), and tumour necrosis factor  $\alpha$  (TNF $\alpha$ ) were assessed. The results showed that in hepatocytes, the aqueous extract exhibited radioprotective activity against exposure to GR. Exposure of untreated rats to GR resulted in transaminase disorders, lipid abnormalitie, elevation of lipid peroxidation, trace element alterations, release of IL-6 and TNF, and decrease in glutathione and protein level of superoxide dismutase-1 (SOD-1) and peroxiredoxin-1 (PRDX-1). However, treatment of rats with this extract before and after GR exposure improved antioxidant status and minimized the radiation-induced increase in inflammatory cytokines. Changes occurred in the tissue levels of trace elements, and the protein levels of SOD-1 and PRDX-1 were also modulated by *C. longa* extract. Overall, *C. longa* exerted a beneficial radioprotective effect against radiation-induced oxidative stress in male rats by alleviating pathological disorders and modulating antioxidant enzymes.

**Author Keywords** $\gamma$ -irradiation; *Curcuma longa*; Cytokines; Hepatocytes; Oxidative stress; Rats; Trace elements**Document Type:** Article**Source:** ScopusGhanem, M.T.M.<sup>a</sup>, Radwan, H.M.A.<sup>b</sup>, Mahdy, E.-S.M.<sup>c</sup>, Elkholy, Y.M.<sup>d</sup>, Hassanein, H.D.<sup>a</sup>, Shahat, A.A.<sup>a d</sup>**Phenolic compounds from *Foeniculum vulgare* (Subsp. *Piperitum*) (Apiaceae) herb and evaluation of hepatoprotective antioxidant activity**(2012) *Pharmacognosy Research*, 4 (2), pp. 104-108. Cited 7 times.**DOI:** 10.4103/0974-8490.94735<sup>a</sup> Department of Phytochemistry, National Research Centre, 12311 Dokki, Cairo, Egypt<sup>b</sup> Department of Biochemistry, Egypt<sup>c</sup> Department of Chemistry, Helwan University, Cairo, Egypt<sup>d</sup> Medicinal, Aromatic and Poisonous Plants Research Center, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia**Abstract**

**Objective:** The study was designed to evaluate the antioxidant and hepatoprotective activities of the 80% methanolic extract as well as the ethyl acetate (EtOAc) and butanol (BuOH) fractions of the wild fennel (*Foeniculum vulgare* (Subsp; *Piperitum*)) and cultivated fennel (*F. vulgare* var. *azoricum*). In addition, quantification of the total phenolic content in the 80% methanol extract of fennel wild and cultivated herbs is measured. **Materials and Methods:** An amount of 400 g of air dried powdered herb of wild and cultivated fennel were sonicated with aqueous methanol (80%), successively extracted with Hexane, EtOAc, and n-BuOH. The EtOAc and n-BuOH were subjected to repeated column chromatography on silica gel and Sephadex LH-20. The antioxidant effect was determined in vitro using 1,1-diphenyl-2-picrylhydrazyl (DPPH). Hepatoprotective activity was carried out using a Wistar male rat (250-300 g). Total phenolic and flavonoid contents were determined as chlorogenic acid and rutin equivalents, respectively. **Results:** Two phenolic compounds, i.e., 3,4-dihydroxy-phenethylalcohol-6-O-caffeoyl-d-glucopyranoside and 3,8-binarigenin were isolated from the fennel wild herb, their structures were elucidated by spectral methods including 1D NMR, 2D NMR, and UV. The EtOAc and BuOH fractions of wild fennel were found to exhibit a radical scavenging activity higher than those of cultivated fennel. An in vitro method of rat hepatocytes monolayer culture was used for the

investigation of hepatotoxic effects of the 80% methanol extract on the wild and cultivated fennel, which were >1000 and 1000 g/mL, respectively. As well as, their hepatoprotective effect against the toxic effect of paracetamol (25 mM) was exerted at 12.5 g/mL concentration. Conclusions: Fennel (*F. Vulgare*) is a widespread plant species commonly used as a spice and flavoring. The results obtained in this study indicated that the fennel (*F. vulgare*) herb is a potential source of natural antioxidant. Two phenolic compounds, i.e. 3,4-dihydroxy-phenethylalcohol-6-O-caffeoyl-d-glucopyranoside (A) and 3,8-binarigenin (B) were isolated from the fennel wild herb for the first time.

#### Author Keywords

Antioxidant (Apiaceae); azoricum; binaringenin; *Foeniculum vulgare*; hepatoprotection; phenolic compounds; piperitum

**Document Type:** Article

**Source:** Scopus

Al-Mutairi, M.S.<sup>a</sup>, Al-Abdullah, E.S.<sup>a</sup>, Haiba, M.E.<sup>a b</sup>, Khedr, M.A.<sup>c</sup>, Zaghary, W.A.<sup>a c</sup>

**Synthesis, molecular docking and preliminary in-Vitro cytotoxic evaluation of some substituted tetrahydronaphthalene (2',3',4',6'-tetra-O-acetyl-β-D- gluco-/galactopyranosyl) derivatives** (2012) *Molecules*, 17 (4), pp. 4717-4732. Cited 2 times.

**DOI:** 10.3390/molecules17044717

<sup>a</sup> Department of Pharmaceutical Chemistry, Faculty of Pharmacy, King Saud University, Riyadh 11451, Saudi Arabia

<sup>b</sup> Department of Medicinal Chemistry, National Research Center, Dokki, Cairo 12622, Egypt

<sup>c</sup> Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Helwan University, Ain Helwan, Cairo 11795, Egypt

#### Abstract

A facile, convenient and high yielding synthesis of novel S-glycosides and N-glycosides incorporating 1,2,3,4-tetrahydronaphthalene and or 1,2-dihydropyridines moieties has been described. The aglycons 2, 4, and 7 were coupled with different activated halosugars in the presence of basic and acidic medium. The preliminary in-vitro cytotoxic evaluation revealed that compounds 3c, 3f, 5c and 7b show promising activity. A molecular docking study was performed against tyrosine kinase (TK) (PDB code: 1t46) by Autodock Vina. The docking output was analyzed and some compounds have shown hydrogen bond (H-B) formation with reasonable distances ranged from 2.06 Å to 3.06 Å with Thr 670 and Cys 673 residues found in the specified pocket. No hydrogen bond was observed with either Glu 640 nor Asp 810 residues, as was expected from pdbsum. © 2012 by the authors.

#### Author Keywords

Cytotoxic; Glycoside; Molecular docking; Pyridine; Tetrahydronaphthalene

**Document Type:** Article

**Source:** Scopus

Gavrilin, M.A.<sup>a b</sup>, Abdelaziz, D.H.A.<sup>b c</sup>, Mostafa, M.<sup>b</sup>, Abdulrahman, B.A.<sup>a c d</sup>, Grandhi, J.<sup>a</sup>, Akhter, A.<sup>a d</sup>, Khweek, A.A.<sup>a d</sup>, Aubert, D.F.<sup>e</sup>, Valvano, M.A.<sup>e</sup>, Wewers, M.D.<sup>a b</sup>, Amer, A.O.<sup>a b d</sup>

**Activation of the pyrin inflammasome by intracellular *Burkholderia cenocepacia*** (2012) *Journal of Immunology*, 188 (7), pp. 3469-3477. Cited 23 times.

**DOI:** 10.4049/jimmunol.1102272

<sup>a</sup> Division of Pulmonary, Allergy, Critical Care and Sleep Medicine, Department of Internal Medicine, Ohio State University, Columbus, OH 43210, United States

<sup>b</sup> Center for Microbial Interface Biology, Ohio State University, Columbus, OH 43210, United States

<sup>c</sup> Faculty of Pharmacy, Department of Biochemistry and Molecular Biology, Helwan University, Helwan, Egypt

<sup>d</sup> Department of Microbial Infection and Immunity, Ohio State University, Columbus, OH 43210, United States

<sup>e</sup> Department of Microbiology and Immunology, University of Western Ontario, London, ON N6A5C1, Canada

#### Abstract

*Burkholderia cenocepacia* is an opportunistic pathogen that causes chronic infection and induces progressive respiratory inflammation in cystic fibrosis patients. Recognition of bacteria by mononuclear cells generally results in the activation of caspase-1 and processing of IL-1β, a major proinflammatory cytokine. In this study, we report that human pyrin is required to detect intracellular *B. cenocepacia* leading to IL-1β processing and release. This inflammatory response involves the host adapter molecule ASC and the bacterial type VI secretion system (T6SS). Human monocytes and THP-1 cells stably expressing either small interfering RNA against pyrin or YFP-pyrin and ASC (YFP-ASC) were infected with *B. cenocepacia* and analyzed for inflammasome activation. *B. cenocepacia* efficiently activates the inflammasome and IL-1β release in monocytes and THP-1. Suppression of pyrin levels in monocytes and THP-1 cells reduced caspase-1 activation and IL-1β release in response to *B. cenocepacia*

challenge. In contrast, overexpression of pyrin or ASC induced a robust IL-1 $\beta$  response to *B. cenocepacia*, which correlated with enhanced host cell death. Inflammasome activation was significantly reduced in cells infected with T6SS-defective mutants of *B. cenocepacia*, suggesting that the inflammatory reaction is likely induced by an as yet uncharacterized effector(s) of the T6SS. Together, we show for the first time, to our knowledge, that in human mononuclear cells infected with *B. cenocepacia*, pyrin associates with caspase-1 and ASC forming an inflammasome that upregulates mononuclear cell IL-1 $\beta$  processing and release. Copyright © 2012 by The American Association of Immunologists, Inc.

**Document Type:** Article

**Source:** Scopus

Al-Ghouleh, A.<sup>a</sup>, Johal, R.<sup>a</sup>, Sharquie, I.K.<sup>a</sup>, Emara, M.<sup>a b</sup>, Harrington, H.<sup>a</sup>, Shakib, F.<sup>a</sup>, Ghaemmaghmi, A.M.<sup>a</sup>  
**The glycosylation pattern of common allergens: The recognition and uptake of Der p 1 by epithelial and dendritic cells is carbohydrate dependent**  
(2012) *PLoS ONE*, 7 (3), art. no. e33929, . Cited 19 times.

**DOI:** 10.1371/journal.pone.0033929

<sup>a</sup> School of Molecular Medical Sciences, Division of Immunology, University of Nottingham, Queen's Medical Centre, Nottingham, United Kingdom

<sup>b</sup> Faculty of Pharmacy, Helwan University, Helwan, Egypt

### Abstract

Allergens are initiators of both innate and adaptive immune responses. They are recognised at the site of entry by epithelial and dendritic cells (DCs), both of which activate innate inflammatory circuits that can collectively induce Th2 immune responses. In an attempt to have a better understanding of the role of carbohydrates in the recognition and uptake of allergens by the innate immune system, we defined common glycosylation patterns in major allergens. This was done using labelled lectins and showed that allergens like Der p 1 (*Dermatophagoides pteronyssinus* group 1), Fel d 1 (*Felis domesticus*), Ara h 1 (*Arachis hypogaea*), Der p 2 (*Dermatophagoides pteronyssinus* group 2), Bla g 2 (*Blattella germanica*) and Can f 1 (*Canis familiaris*) are glycosylated and that the main dominant sugars on these allergens are 1-2, 1-3 and 1-6 mannose. These observations are in line with recent reports implicating the mannose receptor (MR) in allergen recognition and uptake by DCs and suggesting a major link between glycosylation and allergen recognition. We then looked at TSLP (Thymic Stromal Lymphopoietin) cytokine secretion by lung epithelia upon encountering natural Der p 1 allergen. TSLP is suggested to drive DC maturation in support of allergic hypersensitivity reactions. Our data showed an increase in TSLP secretion by lung epithelia upon stimulation with natural Der p 1 which was carbohydrate dependent. The deglycosylated preparation of Der p 1 exhibited minimal uptake by DCs compared to the natural and hyperglycosylated recombinant counterparts, with the latter being taken up more readily than the other preparations. Collectively, our data indicate that carbohydrate moieties on allergens play a vital role in their recognition by innate immune cells, implicating them in downstream deleterious Th2 cell activation and IgE production. © 2012 Al-Ghouleh et al.

**Document Type:** Article

**Source:** Scopus

Saad, A.A., El-Naggar, M.F., Shehab-Eldin, E.H.

**Modeling and testing of multi-resolution morphological gradient distance relay algorithm**

(2012) *Energy Procedia*, 14, pp. 271-279.

**DOI:** 10.1016/j.egypro.2011.12.887

Electrical Power and Machines Department, Faculty of Engineering, Helwan University, 1 Sherif, Helwan, Cairo, Egypt

### Abstract

This paper describes modeling and testing of a digital distance relay for transmission line protection using MATLAB/SIMULINK. ATP is used for detailed modeling of a power system network and fault simulation. SIMULINK is used to implement multi-resolution morphological gradient (MMG) relaying algorithm. MMG modeling is an interactive simulation environment for relaying algorithm design and evaluation. The basic principles of MMG relaying algorithm and some related algorithms such as tripping and fault location scheme are also described in this paper. Test results show that MMG relaying algorithm can detect and define fault location accurately within 1 milli-second. © 2011 Published by Elsevier Ltd.

### Author Keywords

ATP; Mathematical morphology (MM); MATLAB SIMULINK; Power transmission line; Ultra-high-speed protection

**Document Type:** Conference Paper

**Source:** Scopus

Mahmoud, A.M., El-Naggar, M.F., Shehab-Eldin, E.H.

**A new technique for power transformer protection based on transient components**

(2012) *Energy Procedia*, 14, pp. 318-324. Cited 1 time.

**DOI:** 10.1016/j.egypro.2011.12.936

Electrical Power and Machines Department, Faculty of Engineering, Helwan University, 1 Sherif, Helwan, Cairo, Egypt

**Abstract**

This paper presents a new protection technique for discrimination between internal faults and external faults in power transformers based on the transient components of the transformer's currents. The three phase transient currents of the transformer are converted to the modal current components using Clarke's transformation to produce the ground mode, areal mode 1 and areal mode 2. These different modes produce useful information which can be used to discriminate between internal faults and external faults by applying the Fault Discrimination equation suggested by the author. The proposed technique is evaluated via an extensive simulation study for a 132/15 KV - 155 MVA power transformer using Alternative Transient Program (ATP). It can be seen from the obtained results that the new approach is very successful in discriminate between internal faults in addition to inter-turn faults and external faults. © 2011 Published by Elsevier Ltd.

**Author Keywords**

ATP; Inter-turn fault; Power transformer; Transient components

**Document Type:** Conference Paper

**Source:** Scopus

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

**Myocardial segmentation using contour-constrained optical flow tracking**

(2012) *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 7085 LNCS, pp. 120-128. Cited 1 time.

**DOI:** 10.1007/978-3-642-28326-0\_12

<sup>a</sup> Center for Informatics Science, Nile University, Cairo, Egypt

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

**Abstract**

Despite the important role of object tracking using the Optical Flow (OF) in computer graphics applications, it has a limited role in segmenting speckle-free medical images such as magnetic resonance images of the heart. In this work, we propose a novel solution of the OF equation that allows incorporating additional constraints of the shape of the segmented object. We formulate a cost function that include the OF constraint in addition to myocardial contour properties such as smoothness and elasticity. The method is totally different from the common naïve combination of OF estimation within the active contour model framework. The technique is applied to dataset of 20 patients and comparison with manual segmentation shows sensitivity and specificity levels of 93% and 99% respectively is obtained through the challenge validation system. © 2012 Springer-Verlag.

**Author Keywords**

Active Contour Models; Myocardial segmentation; Optical Flow; Short Axis

**Document Type:** Conference Paper

**Source:** Scopus

Rihan, F.A.<sup>a</sup>, Safan, M.<sup>b</sup>, Abdeen, M.A.<sup>c</sup>, Abdel Rahman, D.<sup>a</sup>

**Qualitative and computational analysis of a mathematical model for tumor-immune interactions**

(2012) *Journal of Applied Mathematics*, 2012, art. no. 475720, . Cited 5 times.

**DOI:** 10.1155/2012/475720

<sup>a</sup> Department of Mathematical Sciences, Faculty of Science, United Arab Emirates University, Al-Ain 17551, United Arab Emirates

<sup>b</sup> Department of Mathematics, Faculty of Science, Mansoura University, Mansoura 35516, Egypt

<sup>c</sup> Department of Mathematics, Faculty of Science, Helwan University, Cairo 11790, Egypt

**Abstract**

We provide a family of ordinary and delay differential equations to model the dynamics of tumor-growth and immunotherapy interactions. We explore the effects of adoptive cellular immunotherapy on the model and describe

under what circumstances the tumor can be eliminated. The possibility of clearing the tumor, with a strategy, is based on two parameters in the model: the rate of influx of the effector cells and the rate of influx of IL-2. The critical tumor-growth rate, below which endemic tumor does not exist, has been found. One can use the model to make predictions about tumor dormancy. Copyright © 2012 F. A. Rihan et al.

**Document Type:** Article

**Source:** Scopus

Tohamy, A.A.<sup>a</sup>, Abdel Azeem, A.A.<sup>b</sup>, Shafaa, M.W.<sup>c d</sup>, Mahmoud, W.S.<sup>a</sup>

**Alleviation of genotoxic effects of cyclophosphamide using encapsulation into liposomes in the absence or presence of vitamin C**

(2012) *General Physiology and Biophysics*, 31 (1), pp. 85-91. Cited 1 time.

**DOI:** 10.4149/gpb\_2012\_009

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

<sup>b</sup> Genetics Department, Research Institute of Ophthalmology, Giza, Egypt

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

<sup>d</sup> Medical Physics Department, Faculty of Medicine, Jazan University, Saudi Arabia

**Abstract**

Cyclophosphamide (CP) is a widely used anticancer and immunosuppressant that induces oxidative stress. To ameliorate the side effects resulted from CP treatment, liposomes were tested as an efficient drug delivery system with or without vitamin C as an antioxidant. CP resulted in clastogenic and cytotoxic effects that significantly increased for the total chromosomal aberrations as well as the numerical ones in the CP group (150.8 and 6, respectively) than the control group (6.6 and 0.0) as mean values at  $p < 0.05$ . Micronucleus assay showed a significant increased micronucleated polychromatic erythrocytes percentage (MNPCEs% = 11.7%) and a significant decrease of polychromatic to normochromatic erythrocytes ratio (0.551) when compared to the group treated with liposomised CP and vitamin C (3.44%; 0.795, respectively) at  $p < 0.05$ . Also, the total glutathione S-transferase activity as a body antioxidant enzyme was decreased from 52.2 in the control to 16.09 nmol/min/mg protein in CP group at  $p < 0.05$ , while the highly significant amelioration results were observed in the liposomised vitamin C and CP group (40.88 nmol/min/mg protein). Our findings support the potential use of CP in a liposomal formulation doped with vitamin C to diminish the potential side effects of the agent.

**Author Keywords**

Chromosomal aberrations; Cyclophosphamide; Glutathione S-transferase; Liposomes; Micronucleus assay; Oxidative stress; Vitamin C

**Document Type:** Article

**Source:** Scopus

Gomaa, A.M.

**On four-point boundary value problems for differential inclusions and differential equations with and without multivalued moving constraints**

(2012) *Czechoslovak Mathematical Journal*, 62 (1), pp. 139-154. Cited 1 time.

**DOI:** 10.1007/s10587-012-0002-0

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

**Abstract**

We deal with the problems of four boundary points conditions for both differential inclusions and differential equations with and without moving constraints. Using a very recent result we prove existence of generalized solutions for some differential inclusions and some differential equations with moving constraints. The results obtained improve the recent results obtained by Papageorgiou and Ibrahim-Gomaa. Also by means of a rather different approach based on an existence theorem due to O. N. Ricceri and B. Ricceri we prove existence results improving earlier theorems by Gupta and Marano. © 2012 Institute of Mathematics of the Academy of Sciences of the Czech Republic, Praha, Czech Republic.

**Author Keywords**

bang-bang controls; differential equations; differential inclusions; Green functions; multipoint boundary value problems

**Document Type:** Article

**Source:** Scopus

Gomaa, A.<sup>a</sup>, Aly, W.I.A.<sup>a</sup>, Elsaid, A.M.<sup>a</sup>, Eid, E.I.<sup>b</sup>

**Thermal performance of the chilled water spirally coiled finned tube in cross flow for air conditioning applications**

(2012) *Ain Shams Engineering Journal*, 3 (1), pp. 49-59.

**DOI:** 10.1016/j.asej.2011.10.005

<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**

The thermal performance of spirally coiled finned tube in cross flow was investigated experimentally. The effects of curvature ratio, flow direction, fin pitch and flow rate of chilled water and air on thermal characteristics of spirally coiled finned tube have been studied. Six test sections with curvature ratios of 0.027, 0.03, 0.04, tube pitches of 18, 20, 30 mm, and fin pitches of 33, 22, 11 mm were used. The experiments were done using a pilot wind tunnel with air Reynolds number range 35,500-245,000. Innermost and outermost flow directions of chilled water with Reynolds number range 5700-25,300 have been investigated. The innermost flow direction has significant enhancement effect on the Nusselt number compared with outermost flow direction. The decrease of fin pitch enhances the Nusselt number on expense of pressure drop. Decreasing the curvature ratio increases air side Nusselt number on expense of pressure drop. A set of empirical expressions for predicting the friction factor and the Nusselt number for air flow across the spiral coils have been regressed based on the obtained data in the present experiments. © 2011 Ain Shams University. Production and hosting by Elsevier B.V.

**Author Keywords**

Curvature ratio; Heat exchanger; Heat transfer coefficient; Pressure drop; Spirally coiled tube

**Document Type:** Article

**Source:** Scopus

Kamel, D.<sup>a</sup>, Abdel-Hadi, A.<sup>b</sup>

**Space, color and quality of life in a nubian environment**

(2012) *Archnet-IJAR*, 6 (1), pp. 77-89.

<sup>a</sup> Interior and Furniture Department, The Faculty of Applied Arts, Helwan University, Egypt

<sup>b</sup> Interior Architecture, Fine-Arts Cairo, Helwan University, Egypt

**Abstract**

The Egyptian Nubians relocated after the construction of the High Dam South of Aswan to a completely different setting, adjusted with difficulty to their new environment and changed part of it to suit their needs. This paper is a longitudinal study; it deals with the issue of continuity in the patterns of lifestyle within the present Egyptian Nubian community. The aim is to seek evidence on such continuity and to explain the repercussions of previous socio-economic values on the actual residential built and lived-in environment. The methodology is based on earlier studies that were done before relocation and immediately after, also on site visits made by the authors to detect the current aspects of the built-environment. The field study focuses on changes made to the interior and exterior spaces, on the use of decorative patterns and color of the walls and on the residents' lifestyle. The tools for data gathering are annotated photographs and semi-structured interviews. The cases are chosen from a random sample in one of the 33 villages that constitute the Kom-Ombo site - the village of Eneba (Aniba). Results show evidence of change in all investigated aspects with a slight continuity in some of the culturally related values. © 2012 Archnet-IJAR.

**Author Keywords**

Cultural authenticity; Patterns of lifestyle; Residential built environment

**Document Type:** Article

**Source:** Scopus

Zawrah, M.F.<sup>a</sup>, Abdel-Kader, H.<sup>b</sup>, Elbaly, N.E.<sup>b</sup>

**Fabrication of Al 2O<sub>3</sub>-20 vol.% Al nanocomposite powders using high energy milling and their sinterability**

(2012) *Materials Research Bulletin*, 47 (3), pp. 655-661. Cited 12 times.

**DOI:** 10.1016/j.materresbull.2011.12.023

<sup>a</sup> National Research Center, Ceramics Department, Egypt

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

### Abstract

In this study, alumina-based matrix nanocomposite powders reinforced with Al particles were fabricated and investigated. The sinterability of the prepared nanocomposite powder at different firing temperature was also conducted. Their mechanical properties in terms of hardness and toughness were tested. Alumina and aluminum powder mixtures were milled in a planetary ball mill for various times up to 30 h in order to produce Al<sub>2</sub>O<sub>3</sub>-20% Al nanocomposite. The phase composition, morphological and microstructural changes during mechanical milling of the nanocomposite particles were characterized by X-ray diffraction (XRD), transmission electron microscope (TEM), scanning electron microscope (SEM) techniques, respectively. The crystallite size and internal strain were evaluated by XRD patterns using Scherrer methods. A uniform distribution of the Al reinforcement in the Al<sub>2</sub>O<sub>3</sub> matrix was successfully obtained after milling the powders. The results revealed that there was no any sign of phase changes during the milling. The crystal size decreased with the prolongation of milling times, while the internal strain increased. A simple model is presented to illustrate the mechanical alloying of a ductile-brittle component system. A competition between the cold welding mechanism and the fracturing mechanism were found during powder milling and finally the above two mechanisms reached an equilibrium. The maximum relative density was obtained at 1500 °C. The harness of the sintered composite was decreased while the fracture toughness was improved after addition Al into alumina. © 2011 Elsevier Ltd. All rights reserved.

### Author Keywords

Ceramics; Composites; Mechanical properties; Structural materials

**Document Type:** Article

**Source:** Scopus

Molnari, J.C.<sup>a</sup>, Hassan, H.E.<sup>b c</sup>, Myers, A.L.<sup>a</sup>

**Effects of sertraline on the pharmacokinetics of bupropion and its major metabolite, hydroxybupropion, in mice** (2012) *European Journal of Drug Metabolism and Pharmacokinetics*, 37 (1), pp. 57-63. Cited 2 times.

**DOI:** 10.1007/s13318-011-0065-6

<sup>a</sup> Department of Pharmaceutical, Biomedical and Administrative Sciences, College of Pharmacy and Health Sciences, Drake University, 2507 University Avenue, Des Moines, IA 50266, United States

<sup>b</sup> Pharmacokinetics and Biopharmaceutics Laboratory, School of Pharmacy, University of Maryland, 20 North Pine Street, Baltimore, MD 21201, United States

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

### Abstract

Sertraline potently inhibits cytochrome P450 2B6 (CYP2B6) in vitro. Bupropion is commonly co-prescribed with sertraline and is exclusively metabolized by CYP2B6 to its major active metabolite hydroxybupropion. Putatively the co-administration of bupropion and sertraline could lead to a significant pharmacokinetic drug-drug interaction. The aim of this study was to evaluate a possible drug interaction between these drugs in mice. To study this male CF-1 mice were administered sertraline 5 mg/kg once daily for 6 days, followed by a single dose of bupropion 50 mg/kg on the seventh study day. Plasma and brain samples were collected post-bupropion dose for measurement of bupropion and hydroxybupropion levels on HPLC. Pharmacokinetic parameters for bupropion and hydroxybupropion were calculated using noncompartmental analysis and the variance in AUC of each was computed using Bailer's analysis. We found that mice pretreated with sertraline exhibited a small elevation in bupropion metabolism. This was substantiated by Bailer's analysis which indicated that in the presence of sertraline, both plasma and brain bupropion exposure were significantly ( $p < 0.05$ ) decreased, while plasma hydroxybupropion exposure was significantly ( $p < 0.05$ ) increased. Also the plasma hydroxybupropion-to-bupropion ratio of AUC was increased by 27% in sertraline treated mice, indicative of increased CYP2B activity. This is the first study, to our knowledge, that reports a mild pharmacokinetic drug-drug interaction between bupropion and sertraline in mice. However, it is unknown whether these quantitative changes in enzyme activity and consequent drug exposure would equate to significant pharmacodynamic changes (e.g., perturbations in brain neurotransmitter levels) observed in the clinic. © 2011 Springer-Verlag France.

### Author Keywords

Bupropion; CYP2B6; Drug interaction; Pharmacokinetics; Sertraline

**Document Type:** Article

**Source:** Scopus

Eissa, M.M., Shehab-Eldin, E.H., Masoud, M.E., Abd-Elatif, A.S.

**Laboratory investigation for power transformer protection technique based on positive sequence admittance approach**

(2012) *European Transactions on Electrical Power*, 22 (2), pp. 253-270. Cited 1 time.

**DOI:** 10.1002/etep.647

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

### Abstract

This paper presents a new digital technique for transformer protection. The technique uses the accumulated positive sequence admittances at the two sides of the power transformer. The instantaneous measurements of phase voltage and line current signals at the transformer terminals are used to calculate the accumulated positive sequence admittances. A 500/230-kV Y/Y transformer connected to a 230-kV power system is simulated using MATLAB/SIMIULINK tool. The method depends on stand alone decision at the two terminals of power transformer. A real-time investigation for power transformer in normal and abnormal conditions based on experimental setup is given. The experimental setup uses a transformer of (5 kVA, 220/110 V) for testing purposes. The simulated and experimental results indicated that the proposed technique is stable, reliable, and fast during the discrimination between internal and external faults, magnetizing inrush currents, and switching on internal faults. Copyright © 2011 John Wiley & Sons, Ltd.

### Author Keywords

accumulated admittances; and experimental setup; data acquisition; instantaneous voltage and current measurements; Lab-View; positive sequence admittances; power transformer

**Document Type:** Article

**Source:** Scopus

Hamouda, T.M.<sup>a</sup>, El-Nawawy, O.A.<sup>a</sup>, Ghanem, G.M.<sup>b</sup>

### Behavior of RC Beams Strengthened with CFRP Laminates and Exposed to Fire Under Loading

(2012) *Arabian Journal for Science and Engineering*, 37 (2), pp. 357-364.

**DOI:** 10.1007/s13369-012-0171-z

<sup>a</sup> Structural Engineering Department, Ain Shams University, P.O. #11517, Cairo, Egypt

<sup>b</sup> Structural Engineering Department, Helwan University, P.O. #11795, Cairo, Egypt

### Abstract

This research focuses on studying the flexural behaviour of reinforced concrete beams externally strengthened with bonded CFRP laminates and subjected to high temperature (fire) for different exposure time and two cooling schemes (air and water). 12 reinforced concrete beams with 1,000 mm loading span and cross-sectional area of 100 × 200 mm and reinforced with 2 bars 12 mm diameter as main reinforcement were tested. The CFRP used was laminates of 50 mm width and 1.2 mm thick which were protected from fire using a perlite mortar cover of thickness 5 cm. The beams were loaded to their working load, and while maintaining the load, they were subjected to fire for 1, 2 and 3 h, respectively, then followed by cooling either by water or by left to slow cool in air at room temperature. After cooling, the load was increased up to failure. The structural behaviour of the tested beams was studied by applying a three-point bending test and the mid-span deflection was recorded using LVDT. The mode of failure was investigated and presented. Also, a comparison between strengthened and unstrengthened beams was performed and presented. The results show that the fire protective layer is essential to maintain and minimize the loss in the strength gained by applying CFRP laminates. Also, it indicates that abrupt water cooling reduces the strength gained by about 15-29%. © 2012 King Fahd University of Petroleum and Minerals.

### Author Keywords

CFRP laminates; Cooling regimes; Fire exposure; Fire protection; Flexural behavior; Perlite mortar; RC beams; Strengthening

**Document Type:** Article

**Source:** Scopus

Waffa, S.A.<sup>a</sup>, Al-Firdous, A.<sup>b</sup>

### Effect of consumption of Kiwi fruit on potassium bromate induced oxidative stress in rats

(2012) *Australian Journal of Basic and Applied Sciences*, 6 (3), pp. 519-524.

<sup>a</sup> Collegen of Home Economics, Helwan University, Egypt

<sup>b</sup> Department of Nutrition and Food Science, Home Economic Collage, Princess Nora Bent abdulrahman -University, Riyadh, Saudi Arabia

### Abstract

This study was conducted on sixty Sprague Dawley strain male rats and weighting 107±10 g. Ten rats served as



control (-ve) group while fifty rats were injected by a single dose of potassium bromate at dose 130 mg/kg body weight intraperitoneal to induce oxidative stress. These rats were reclassified into control (+ve), four treated rat groups that were 5% kiwi powder, 10% kiwi powder, aqueous extract, and methanolic extract rat groups. The study period was 60 days. The obtained results revealed that, All treated groups either treated with kiwi powder or extract showed a significant increase in final weight, weight gain and food efficiency ratio. In addition, they showed a significant increase in the values of serum superoxide dismutase (SOD), glutathione peroxidase (GPX) & catalase, kidney SOD, GPX & glutathione transferase (GST) and liver GST & catalase. However, all treated groups showed a significant decrease in the values of serum alanine and aspartate aminotransferase and alkaline phosphatase enzymes, creatinine, uric acid & malondialdehyde (MDA) and also kidney and liver MDA compared with control (+ve). Moreover, 10% kiwi powder, aqueous extract and methanolic extract rat groups showed a significant decrease in the value of serum urea and a significant increase in the values of serum GST and liver SOD compared with control (+ve).

**Author Keywords**

Kidney oxidative stress; Kiwi; Potassium bromate

**Document Type:** Article

**Source:** Scopus

Shaheen, A.M.A.<sup>a</sup>, Moustafa, A.<sup>b</sup>, Eissa, A.A.<sup>b</sup>, Omara, E.A.<sup>c</sup>, Nada, S.A.<sup>d</sup>

**Possible therapeutic effects of Lacprodan® alpha-10 (whey protein product) against lipopolysaccharide - induced hepatotoxicity in rats**

(2012) *Australian Journal of Basic and Applied Sciences*, 6 (3), pp. 19-27.

<sup>a</sup> Pharmacology and Toxicology Dep, Egyptian Russian University, Cairo, Egypt

<sup>b</sup> Pharmacology and Toxicology Dep, Faculty of Pharmacy-Helwan University, Egypt

<sup>c</sup> Pathology Dept, Egypt

<sup>d</sup> Pharmacology Dep, National Research Centre, Cairo, Egypt

**Abstract**

The aim of this study was to study the effects of the food supplement Lacprodan ® alpha-10 on oxidative stress induced by Escherichia coli endotoxin (LPS) in rat liver. Thirty six Sprague Dawley rats were assigned to six equal groups. Groups 1-3 received saline, Lacprodan ® alpha-10 (100mg/kg and 200 mg/kg), respectively. Groups 4-6 were injected with LPS (4 mg/kg, intraperitoneally) as a single dose 24 hrs prior to administration of Lacprodan ® alpha-10 (at two dose levels) for 15 days. Results revealed that Lacprodan ® alpha-10 treatment enhanced glutathione (GSH) and superoxidismutase (SOD) activities in liver homogenate in a dose response matter and decreased lipid peroxidation (MDA) and nitric oxide (NO) levels as well as the serum enzymes alkaline phosphatase (ALP), alanine and aspartate aminotransferase (ALT & AST) compared to LPS- treated group. Histopathological studies revealed that Lacprodan ® alpha-10 (100 mg/kg) normalized the architecture of liver more than the higher dose (200 mg/kg) in rats treated with LPS. Conclusion: Lacprodan ® alpha-10 proved a therapeutic value against hepatotoxicity induced by LPS and should be considered when over-consuming this food supplement in endotoxemic settings.

**Author Keywords**

Antioxidant; Hepatotoxicity; Histopathology; Lacprodan-alpha-10; Lipopolysaccharide; Rat

**Document Type:** Article

**Source:** Scopus

Bakr, I.M.<sup>a</sup>, Wahsh, M.M.S.<sup>b</sup>

**Fabrication and characterization of multi phase ceramic composites based on zircon-alumina-magnesia mixtures**

(2012) *Materials and Design*, 35, pp. 99-105. Cited 4 times.

**DOI:** 10.1016/j.matdes.2011.09.046

<sup>a</sup> Faculty of Engineering, Helwan University, Mattareya, Egypt

<sup>b</sup> National Research Center, Ceramic and Refractories Dept., 12622 Dokki, Cairo, Egypt

**Abstract**

Five composites were prepared from zircon, alumina and magnesia. The variation of densification parameters, phase composition, thermo-mechanical properties, and microstructure with the firing temperatures were investigated. The rate of zircon dissociation was very low in the free magnesia composite, while it increased abruptly when 2.5. mass% MgO was added, then changed gradually in the followed batches. At low silica content, the formation of magnesium silicate and magnesia alumina spinel was more preferred than the mullite. Firing at 1300 °C did not show remarkable variations in the sintering of the investigated composites, while great discrepancies were observed at higher temperature. Firing at 1500 °C resulted in dense bodies (1-5.5% apparent porosity) for all composites excepting the

magnesia free one (26% apparent porosity). The optimum properties were attained by the composite prepared from 62.5% zircon, 35% alumina and 2.5% magnesia, when fired at 1500 °C, 2. h. © 2011 Elsevier Ltd.

**Author Keywords**

A. Composites; C. Sintering; E. Mechanical

**Document Type:** Article

**Source:** Scopus

Hamdy, M.S.<sup>a b</sup>, Scott, E.L.<sup>a</sup>, Carr, R.H.<sup>c</sup>, Sanders, J.P.M.<sup>a</sup>

**A novel photocatalytic conversion of tryptophan to kynurenine using black light as a light source**

(2012) *Catalysis Letters*, 142 (3), pp. 338-344. Cited 6 times.

**DOI:** 10.1007/s10562-012-0775-7

<sup>a</sup> Valorisation of Plant Production Chains, Wageningen University and Research Centre, P.O. Box 17, Wageningen 6700 AA, Netherlands

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

<sup>c</sup> Huntsman Polyurethanes, Everslaan 45, Everberg 3078, Belgium

**Abstract**

The photocatalytic conversion of an aqueous solution of L-tryptophan (Trp) to kynurenine (KN) was investigated under the illumination of different light sources. Results show that Trp converted to KN with a selectivity of 64% under the illumination of a medium pressure (MP) Hg lamp. KN selectivity was increased to >90% when black light (BL) was used a light source. The novel use of BL in the photocatalytic conversion of Trp to KN significantly reduces the energy consumption compared with MP light. © 2012 The Author(s).

**Author Keywords**

Biomass; Building blocks; Industrial chemicals; Photocatalysis; Photolysis; TiO<sub>2</sub>; Tryptophan

**Document Type:** Article

**Source:** Scopus

Shehayeb, D.K.<sup>a</sup>, Abdelhalim, K.M.<sup>b c</sup>

**Issues of participation in Egypt**

(2012) *Journal of Architectural and Planning Research*, 29 (1), pp. 45-64.

<sup>a</sup> Shehayeb CONSULT, 3 Batal Mohamed Khairy Street, Mohandeseen, Giza, Cairo, Egypt

<sup>b</sup> GIZ and UN-HABI-TAT, Egypt

<sup>c</sup> Department of Architecture, Helwan University, Egypt

**Abstract**

Is the Egyptian government promoting participation? What are the chances for supporting decentralization and participatory practices on the regional and local levels? How has participation been implemented so far in the Egyptian context? Where has it led? This paper addresses these questions through a review of different expert-initiated projects with varying types and scales of participation in planning, housing, and urban development in Egypt. Each example is summarized in a model that clarifies the relations, motives, and conditions of participation in each case study. Through these models, one can gain an understanding of the politics of participation at different levels - national, regional, and local - and identify the types of participation that are attainable and/or sustainable and why. Drawing upon this discussion, the paper reflects on the future of participation in Egypt, addressing critical questions, such as what motivates people to participate? Where does the value of participation lie - in the process or in the product? And finally, should we try to institutionalize participation and why? Copyright © 2012, Locke Science Publishing Company, Inc.

**Document Type:** Article

**Source:** Scopus

ElBaz, A.M.<sup>a</sup>, Pitz, R.W.<sup>b</sup>

**N 2O molecular tagging velocimetry**

(2012) *Applied Physics B: Lasers and Optics*, 106 (4), pp. 961-969. Cited 4 times.

**DOI:** 10.1007/s00340-012-4872-5

<sup>a</sup> Mechanical Power Engineering Department, Helwan University, Cairo 021, Egypt

<sup>b</sup> Department of Mechanical Engineering, Vanderbilt University, Nashville, TN 37235, United States

### Abstract

A new seeded velocity measurement technique, N<sub>2</sub>O molecular tagging velocimetry (MTV), is developed to measure velocity in wind tunnels by photochemically creating an NO tag line. Nitrous oxide "laughing gas" is seeded into the air flow. A 193 nm ArF excimer laser dissociates the N<sub>2</sub>O to O(1D) that subsequently reacts with N<sub>2</sub>O to form NO. O<sub>2</sub> fluorescence induced by the ArF laser "writes" the original position of the NO line. After a time delay, the shifted NO line is "read" by a 226-nm laser sheet and the velocity is determined by time-of-flight. At standard atmospheric conditions with 4% N<sub>2</sub>O in air, ~1000 ppm of NO is photochemically created in an air jet based on experiment and simulation. Chemical kinetic simulations predict 800-1200 ppm of NO for 190-750 K at 1 atm and 850-1000 ppm of NO for 0.25-1 atm at 190 K. Decreasing the gas pressure (or increasing the temperature) increases the NO ppm level. The presence of humid air has no significant effect on NO formation. The very short NO formation time (<10 ns) makes the N<sub>2</sub>O MTV method amenable to low- and highspeed air flow measurements. The N<sub>2</sub>O MTV technique is demonstrated in air jet to measure its velocity profile. The N<sub>2</sub>O MTV method should work in other gas flows as well (e.g., helium) since the NO tag line is created by chemical reaction of N<sub>2</sub>O with O(1D) from N<sub>2</sub>O photodissociation and thus does not depend on the bulk gas composition. © Springer-Verlag 2012.

**Document Type:** Article

**Source:** Scopus

El-Zoghby, H.M., Sharaf, S.M., El-masry, S., El-harony, M.

**Dynamic response of a grid connected wind farm with different types of generators**

(2012) *International Journal of Power Electronics and Drive Systems*, 2 (1), pp. 85-98.

**DOI:** 10.11591/ijped.s.v2i1.175

Dep. of Electrical Power and Machine Engineering, Helwan University, Egypt

### Abstract

For a wide areas wind farm, which composed of different zones of different wind turbines and different generators, this paper aims to simulate a wind farm model that includes a wind turbine and three different types of generators, which are three phase synchronous generator, three phase squirrel-cage induction generator and three phase doubly-fed induction generator, these generators are the main machines that generally used in the field of wind energy generation. All generators are connected in parallel at the point of common coupling (PCC) and connected to the utility grid. This model is a simple representation of the actual model of zafarana wind farm, which is the biggest wind farm in Egypt and further to use it in different kinds of simulations, and display the difference in response among all generators, where all generators are 500 kw power rating, and subjected to the same operating conditions. After modeling the system, the transient response of the system will be studied and analyzed at different operating cases as: case.1 constant wind speed operation; case.2 variable wind speed operation; case.3 sudden change in turbine mechanical power; and case.4 sudden change in wind speed. So this paper introduces a survey on the dynamic response of a large wind farm of different generators at different operating conditions. © 2012 Institute of Advanced Engineering and Science. All rights reserved.

### Author Keywords

Induction generator; Synchronous generator; Transient analysis; Wind farm

**Document Type:** Article

**Source:** Scopus

El Semary, N.A.

**Bioactive compounds from microalgae: Interesting case studies from egypt**

(2012) *Bioactive Compounds: Types, Biological Activities and Health Effects*, pp. 319-332.

Department of Botany and Microbiology, Faculty of Science, Helwan University, Egypt

### Abstract

Microalgae are promising sources of bioactive compounds of diverse effects but still relatively underexplored and largely unexploited. In Egypt, bioactive compounds from local microalgal strains are currently under investigation. The present review focuses mainly on microalgal strains isolated from Helwan Governorate, the centre of many factories that impose many pollution challenges. The microalgal strains include cyanobacterial strains isolated from a wastewater canal and a chlorococoid strain isolated from the Nile River. The bioactive compounds extracted from these microalgae comprised vitamin C and antimicrobial bioactive compounds. In order to detect the latter compounds, the microalgal lipophilic extract was fractionated using column chromatography. The bioactive compounds that gave the highest broad-spectrum antimicrobial bioactivity were characterised using advanced chemical analyses including: UV, FTIR, proton-NMR and GC-MS. The bioactive compounds identified were oleic acid

amide and butylated hydroxytoluene from the cyanobacterial strains, whereas the bioactive compound derived from the chlorococcid was hexadecanoic fatty acid. The possible mode of action of each antimicrobial bioactive compound is discussed. The effect of different phosphate levels on the antimicrobial profile was also investigated. Results showed that the antimicrobial profile changed with prolonged phosphate stress and that the types of antimicrobial compounds differed accordingly. The identity of the bioactive compounds was revealed using chemical analyses and their possible role under different phosphate levels is discussed. Overall, this review highlights the importance of investigating local strains and their potential as promising sources of bioactive compounds. Algae are a large group of plant-like photosynthetic organisms. They widely differ in their cellular organisation, shape, size and structure. Microalgae are microscopic forms of algae which despite their minute size play an important role in primary production in vast areas of fresh and marine water bodies (Charpy-Roubaud and Sournia, 1990). Two major microalgal groups of wide occurrence are: Chlorophytes (green algae) and cyanobacteria (blue-green algae). These two groups differ significantly in their cellular structure with the former being eukaryotic, i.e. possessing true membrane-bound nucleus and organelles whereas the latter lacking both, thus being prokaryotic (Van den Hoek et al., 1995). They also occupy somewhat diverse habitats. Blue-green algae (also defined as cyanobacteria according to the Bacteriological code (Stanier et al., 1978) generally grow in all environments and are extremely abundant in the eutrophic niches. They even occupy the most extreme environments (Whitton and Potts, 2000). Most chlorophytes, on the other hand, inhabit less extreme and relatively unpolluted habitats (Van den Hoek et al., 1995). Those two groups of microalgae owe their success in dominating their niches to their remarkable metabolic ability that enabled them to efficiently utilize all available resources such as nutrients and light (Whitton and Potts, 2000). They also owe their ubiquity to the ability to out-competing other organisms mostly through the production of antagonistic compounds (Pratt et al., 1944; Issa, 1999; Mundt et al., 2003; Wu et al., 2006). Meanwhile, the characterization of some of those bioactive compounds was the core of numerous studies (Moore et al., 1987; Park et al., 1992, Falch et al., 1995; Østensvik et al., 1998; Jaki et al., 1999; Doan et al., 2000; Ghasemi et al., 2004; El-Sheekh et al., 2006). Nevertheless, the knowledge on bioactive compounds from microalgae is still fragmentary. Here, we discuss research reports on some bioactive compounds that were extracted from microalgae from Helwan Governorate, Egypt. © 2012 Nova Science Publishers, Inc. All rights reserved.

**Document Type:** Book Chapter

**Source:** Scopus

Awadalla, M.H.A.<sup>a</sup>, Abdellatif Sadek, M.<sup>b</sup>

**Spiking neural network-based control chart pattern recognition**

(2012) *Alexandria Engineering Journal*, 51 (1), pp. 27-35. Cited 2 times.

**DOI:** 10.1016/j.aej.2012.07.004

<sup>a</sup> Communications and Electronic Department, Faculty of Engineering, Helwan University, Egypt

<sup>b</sup> Information Technology Department, High Institute of Engineering, Shorouk Academy, Egypt

### Abstract

Due to an increasing competition in products, consumers have become more critical in choosing products. The quality of products has become more important. Statistical Process Control (SPC) is usually used to improve the quality of products. Control charting plays the most important role in SPC. Control charts help to monitor the behavior of the process to determine whether it is stable or not. Unnatural patterns in control charts mean that there are some unnatural causes for variations in SPC. Spiking neural networks (SNNs) are the third generation of artificial neural networks that consider time as an important feature for information representation and processing. In this paper, a spiking neural network architecture is proposed to be used for control charts pattern recognition (CCPR). Furthermore, enhancements to the SpikeProp learning algorithm are proposed. These enhancements provide additional learning rules for the synaptic delays, time constants and for the neurons thresholds. Simulated experiments have been conducted and the achieved results show a remarkable improvement in the overall performance compared with artificial neural networks. © 2012 Faculty of Engineering, Alexandria University. Production and hosting by Elsevier B.V. All rights reserved.

### Author Keywords

Control chart pattern recognition; Spikeprop algorithm; Spiking neural network

**Document Type:** Article

**Source:** Scopus

Semary, N.A.E.

**The characterisation of bioactive compounds from an Egyptian *Leptolyngbya* sp. strain**

(2012) *Annals of Microbiology*, 62 (1), pp. 55-59. Cited 6 times.

**DOI:** 10.1007/s13213-011-0226-5

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

**Abstract**

An investigation into the bioactive metabolites from a benthic, mat-forming strain dominating a polluted wastewater canal in Egypt was conducted. Phytochemical screening revealed the presence of saponins, flavonoids and alkaloids; vitamin C was also found at high concentrations. The isolate was investigated as a source of antimicrobial compounds. The lipophilic fraction was extracted using chloroform/methanol and bioassays for antimicrobial compounds were performed using strains of pathogenic bacteria. The fraction that showed the highest bioactivity was purified and its structure elucidated using UV, FTIR, proton-NMR and GC-MS. The compound's molecular weight was 220 and it was identified as butylated hydroxytoluene which has both antimicrobial and antioxidant activities. On the ecological front, this compound, and the other metabolites detected, seem to enable the isolate to dominate its niche and protect it from adverse conditions. On the commercial front, this compound is used as a food additive and was recently discovered in different cyanobacteria, and can be used as a lead compound for both drug and food industries to substitute for the expensive and hazardous synthetic analogs. Therefore, this strain can be considered as a potential source of bioactive compounds that should be further explored. © Springer-Verlag and the University of Milan 2011.

**Author Keywords**

Butylated hydroxytoluene; FTIR; GC-MS; Phytochemical screening; Proton-NMR; UV

**Document Type:** Article

**Source:** Scopus

Abd El-Mohsin, A.M.<sup>a</sup>, Hashim, A.A.<sup>a</sup>, Emara, I.A.<sup>b</sup>, El-Hefnawy, M.H.<sup>b</sup>, Hassan, Z.A.<sup>a</sup>

**How adiponectin correlates with disease duration and atherogenic indices in type 1 diabetes**  
(2012) *Diabetes, Stoffwechsel und Herz*, 21 (1), pp. 7-12.

<sup>a</sup> Biochemistry and Molecular Biology Department, Faculty of Pharmacy, Helwan University, Cairo, Egypt

<sup>b</sup> Biochemistry and Pediatric Departments, National Institute for Diabetes and Endocrinology (NIDE), Cairo, Egypt

**Abstract**

**Background:** The most common childhood-onset endocrine metabolic disorder, type 1 diabetes mellitus (T1DM), is usually an autoimmune disease. Adiponectin, an adipocyte-derived hormone, shows beneficial effects in both improving insulin sensitivity and mitigating vascular damage while enhancing cardioprotection. **Objectives:** Our aim was to investigate the relationship between adiponectin and plasma cardiovascular risk assessment ratios as atherogenic indices and diabetes duration in children and adolescents with type 1 diabetes mellitus in Egypt. **Subjects and methods:** Sixty clinically diagnosed T1DM patients subdivided according to diabetes duration were enrolled into the study. In addition, twenty healthy controls with comparable socioeconomic, age, body mass index, Tanner stage and sex distribution were selected for the study. We measured glycaemic control indices, lipid profiles, total adiponectin, microalbumin and urinary creatinine, estimated albumin-to-creatinine ratios, and subjected the results to statistical analysis. **Results:** Total adiponectin was significantly elevated in serum from children and adolescents with T1DM regardless of duration of disease. Adiponectin inversely correlated with triglyceride (TG) levels. **Conclusion:** Total serum adiponectin is elevated in T1DM regardless of disease duration; adiponectin does not correlate with atherogenic indices.

**Author Keywords**

Adiponectin; Atherogenic indices; Diabetes duration; Type 1 diabetes mellitus

**Document Type:** Article

**Source:** Scopus

Emara, M.<sup>a c</sup>, Royer, P.-J.<sup>a</sup>, Mahdavi, J.<sup>a</sup>, Shakib, F.<sup>a b</sup>, Ghaemmaghami, A.M.<sup>a b</sup>

**Retagging identifies dendritic cell-specific intercellular adhesion molecule-3 (ICAM3)-grabbing non-integrin (DC-SIGN) protein as a novel receptor for a major allergen from house dust mite**  
(2012) *Journal of Biological Chemistry*, 287 (8), pp. 5756-5763. Cited 21 times.

**DOI:** 10.1074/jbc.M111.312520

<sup>a</sup> School of Molecular Medical Sciences, Queen's Medical Centre, University of Nottingham, Nottingham NG7 2UH, United Kingdom

<sup>b</sup> Respiratory Biomedical Research Unit, University of Nottingham, Nottingham NG7 2UH, United Kingdom

<sup>c</sup> Faculty of Pharmacy, Helwan University, Helwan, Egypt

**Abstract**

Dendritic cells (DCs) have been shown to play a key role in the initiation and maintenance of immune responses to microbial pathogens as well as to allergens, but the exact mechanisms of their involvement in allergic responses and Th2 cell differentiation have remained elusive. Using retagging, we identified DC-SIGN as a novel receptor involved

in the initial recognition and uptake of the major house dust mite and dog allergens Der p 1 and Can f 1, respectively. To confirm this, we used gene silencing to specifically inhibit DC-SIGN expression by DCs followed by allergen uptake studies. Binding and uptake of Der p 1 and Can f 1 allergens was assessed by ELISA and flow cytometry. Intriguingly, our data showed that silencing DC-SIGN on DCs promotes a Th2 phenotype in DC/T cell co-cultures. These findings should lead to better understanding of the molecular basis of allergen-induced Th2 cell polarization and in doing so paves the way for the rational design of novel intervention strategies by targeting allergen receptors on innate immune cells or their carbohydrate counterstructures on allergens. © 2012 by The American Society for Biochemistry and Molecular Biology, Inc.

**Document Type:** Article

**Source:** Scopus

El-Hagary, M.<sup>a b</sup>, Emam-Ismael, M.<sup>a c</sup>, Shaaban, E.R.<sup>d</sup>, Al-Rashidi, A.<sup>e</sup>, Althoyaib, S.<sup>a</sup>

**Composition, annealing and thickness dependence of structural and optical studies on Zn 1-xMn xS nanocrystalline semiconductor thin films**

(2012) *Materials Chemistry and Physics*, 132 (2-3), pp. 581-590. Cited 18 times.

**DOI:** 10.1016/j.matchemphys.2011.11.072

<sup>a</sup> Physics Department, College of Science, Qassim University, P.O. 6644, 5145 Buryadh, Saudi Arabia

<sup>b</sup> Physics Department, Faculty of Science, Helwan University, 11792 Helwan, Cairo, Egypt

<sup>c</sup> Physics Department, Faculty of Science, Ain Shams University, 11566 Abbassia, Cairo, Egypt

<sup>d</sup> Physics Department, Faculty of Science, Al-Azhar University, Assuit, Egypt

<sup>e</sup> Physics Department, College of Science and Arts, Qassim University, Buryadh, Saudi Arabia

**Abstract**

Nanocrystalline diluted magnetic semiconductors Zn 1-xMn xS films ( $0 \leq x \leq 0.2$ ) were deposited on glass substrate by electron beam evaporation technique. The thickness of the films was varied in the range 300-830 nm. The films were annealed at different temperatures. The structural investigation was carried out by using X-ray diffraction measurements and energy dispersive X-ray analysis. All the films exhibit hexagonal type structure. The optical properties were performed by spectrophotometry measurements. The optical transition was found to be direct transition with energy gap decreases from 3.936 eV for  $x = 0$  to 3.416 eV for  $x = 0.2$ . It was also found that the range of optical band gap lie between 3.670 eV and 3.550 eV as the film thickness increases from 300 nm to 830 nm for  $x = 0.1$ . The decrease in the optical band gap with increasing the annealing temperature was observed. The refractive index of the nanocrystalline samples has been obtained and found to increase with the increase of the Mn content. Also, the increase in the refractive index was detected as both the thickness and annealing temperature increases. The results show that the annealing temperature and film thickness modifies the optical constants of Zn 1-xMn xS thin films. The dispersion of the refractive index is discussed in terms of the Wemple-DiDomenico single oscillator model. The oscillator parameters; the single oscillator energy  $E_0$ , the dispersion energy  $E_d$ , the static refractive index  $n_0$ , average interband oscillator wavelength  $\lambda_0$ , and the average oscillator strength  $S_0$  and optical conductivity were estimated. © 2011 Elsevier B.V. All rights reserved.

**Author Keywords**

Nanomaterial; Optical properties; Single oscillator parameters; XRD

**Document Type:** Article

**Source:** Scopus

El-Said, A.G.<sup>a</sup>, Gamal, A.M.<sup>a</sup>, Mansour, H.F.<sup>b</sup>

**Potential application of orange peel (OP) as an eco-friendly adsorbent for textile dyeing effluents**

(2012) *Journal of Textile and Apparel, Technology and Management*, 7 (3), . Cited 1 time.

<sup>a</sup> Chemistry Department, Faculty of Science, Al-Azhar University (Girls), Egypt

<sup>b</sup> Textile printing, Dyeing and Finishing Department, Faculty of Applied Arts, Helwan University, Egypt

**Abstract**

The use of low-cost and eco-friendly adsorbents has been investigated as ideal alternatives to the current expensive methods for removing dyes from waste water. Orange peel (OP) was used as a low cost natural waste adsorbent for the removal of textile effluents. The effectiveness of (OP) in adsorbing; C.I. Direct Red 79 (DR 79) and C.I. Direct Yellow 27 (DY 27) from their dye baths has been studied as a function of pH, solid/liquid ratio, agitation time and initial dye concentration. The sorption isotherms were analyzed using Langmuir and Freundlich models. The results indicated that acidic solutions supported the adsorption of the studied dyes within (OP). Adsorption kinetic models were analyzed using the pseudo-first, second order equation and intraparticle diffusion equation. The results showed that the order equation fitted the experimental data very well. By the way, the effect of adsorbent surface was analyzed

by scanning electron microscope (SEM), whereas the SEM images showed reasonable agreement with adsorption measurements.

#### Author Keywords

Clean chemistry; Direct dyes; Environmental technology; Green adsorbents; Textile dyes

**Document Type:** Article

**Source:** Scopus

Tera, F.M.<sup>a</sup>, Elnagar, K.E.<sup>a</sup>, Mohamed, S.M.<sup>b</sup>

**Dyeability and light fastness properties of onion scale dye on different fabric types for conservation applications** (2012) *Journal of Textile and Apparel, Technology and Management*, 7 (3), . Cited 2 times.

<sup>a</sup> Textile Metrology Lab, Chemistry Metrology Division, National Institute for Standards, Tersa St., P.O. Box: 136 Giza, Code No. 12211 Alharam, Egypt

<sup>b</sup> Cloth and textile Dept, Faculty of Home Economic, Helwan University, Egypt

#### Abstract

The present work is aimed at producing variety of colored samples of wool, silk and cotton from natural dye extracted from onion scales for the application in the field of conservation of archaeological textiles. Thus, wool, silk and cotton fabrics were dyed at three dye concentrations using five mordants, namely alum, tin chloride, potassium dichromate, copper sulfate and ferrous sulfate. Different strong bright fast colors were obtained. The dyeability, i.e. color and light fastness ratings were found to depend on the fabric type, dye concentration as well as the mordant used. Wool samples showed the best dyeability and light fastness rating followed by silk then cotton samples. High dye concentration gave the highest dyeability and stability to light. Also it was found that light fastness of the onion scales dye on the three fabrics is very good on using copper sulphate mordant. The least values were obtained with tin chloride mordant, especially on cotton samples. Unmordanted wool and silk fabrics samples gave medium values, while cotton samples recorded low light fastness ones.

#### Author Keywords

Cotton; Mordants; Natural dye; Onion scales; Post-mordant; Premordant; Silk; Wool

**Document Type:** Article

**Source:** Scopus

Farag, A.<sup>a</sup>, Fakhreldin, M.<sup>b</sup>

**Heart localization from magnetic resonance images sequence** (2012) *Journal of Computer Science*, 8 (4), pp. 499-505.

**DOI:** 10.3844/jcssp.2012.499.505

<sup>a</sup> Department of Biomedical, Faculty of Engineering, Helwan University, Cairo, Egypt

<sup>b</sup> Department of Computers and Systems, Electronic Research Institute, 12622 El-Bohoth St., Dokki, Giza, Egypt

#### Abstract

Problem statement: Heart localization is an important step in cardiac Magnetic Resonance Images (MRI) analysis. This study aims to locate the moving heart region from MRI sequence of images. Approach: The idea is to use the motion detection techniques to isolate the heart region from the background image and then apply morphological operations to construct a moving heart region mask. The mask is then applied to the MRI image to separate the Region Of Interest (ROI) that includes the heart. The K-means clustering algorithm is applied to the ROI to segment the heart walls. Results: Experimental results have shown that the performance of the proposed technique is superior to other MRI heart segmentation techniques in both complexity and accuracy. Conclusion: The proposed technique can be used as a pre segmentation step in any other future heart segmentation techniques to increase their accuracy through the localization of the moving heart region. The presented technique is fully automated technique and superior compared to other segmentation techniques. © 2012 Science Publications.

#### Author Keywords

Heart segmentation; K-means; Morphological operations

**Document Type:** Article

**Source:** Scopus

Youssef, M.<sup>a</sup>, Mahrous, A.<sup>b</sup>, Mawad, R.<sup>b</sup>, Ghamry, E.<sup>a b</sup>, Shaltout, M.<sup>a</sup>, El-Nawawy, M.<sup>b c</sup>, Fahim, A.<sup>b</sup>

**The effects of the solar magnetic polarity and the solar wind velocity on Bz-component of the interplanetary**

**magnetic field***Advances in Space Research*, . Article in Press.**DOI:** 10.1016/j.asr.2011.07.023<sup>a</sup> National Research Institute of Astronomy and Geophysics (NRIAG), Helwan 11421, Cairo, Egypt<sup>b</sup> Space Weather Monitoring Center, Helwan University, Helwan, Cairo, Egypt<sup>c</sup> Faculty of Science, Cairo University, Cairo, Egypt**Abstract**

We have studied the effect of both solar magnetic polarity and the solar wind velocity on the Bz-component of the interplanetary magnetic field, IMFBz, for the minimum activity of the solar cycles 21, 22, 23 and 24. We made a statistical study of IMFBz in the first section which is considered as an extension of . They made a statistical study of IMFBz for two periods of minimum solar activity 22 and 23 related to 1985-1987 and 1995-1997 when the solar magnetic field had opposite polarity. Our results seem to be consistent with the results obtained by . We found that there is a dependence of IMFBz on the IMF<sub>Bx</sub> and the solar magnetic polarity for the minimum periods of the selected four solar cycles. In addition, we found that there is a dependence of IMFBz on the solar wind velocity. © 2011 COSPAR.

**Author Keywords**

Interplanetary magnetic field; Solar wind velocity

**Document Type:** Article in Press**Source:** ScopusAbuelkhair, M.<sup>a</sup>, Abdu, S.<sup>a</sup>, Godman, B.<sup>b c</sup>, Fahmy, S.<sup>a d</sup>, Malmström, R.E.<sup>b</sup>, Gustafsson, L.L.<sup>b</sup>**Imperative to consider multiple initiatives to maximize prescribing efficiency from generic availability: Case history from Abu Dhabi**(2012) *Expert Review of Pharmacoeconomics and Outcomes Research*, 12 (1), pp. 115-124. Cited 6 times.**DOI:** 10.1586/erp.11.90<sup>a</sup> Drugs and Medical Products Regulation, Health Authority - Abu Dhabi, PO Box 5674, Abu Dhabi, United Arab Emirates<sup>b</sup> Department of Laboratory Medicine, Karolinska Institutet, Karolinska University Hospital Huddinge, SE-141 86, Stockholm, Sweden<sup>c</sup> Institute for Pharmacological Research 'Mario Negri', Via Giuseppe La Masa 19, 20156 Milan, Italy<sup>d</sup> Faculty of Pharmacy, Helwan University, Cairo, Egypt**Abstract**

Introduction: Pharmaceutical expenditure has risen rapidly in Abu Dhabi, resulting in policies surrounding generics. However, various circumstances will reduce potential savings, including pharmacists still being free to dispense either originator or branded generics and be fully reimbursed. Objectives: To research the changes in utilization patterns of proton pump inhibitors (PPIs) and lipid-lowering drugs before and after combined reforms on generics; and subsequently, calculate potential savings based on 'best practices' among Western European countries. Methods: An uncontrolled before-and-after observational study of utilization and expenditure of PPIs, statins and ezetimibe between 2004 and 2010, as well as up to 12 months before the first generic policy, to 1 year after the second generic policy, was carried out. Utilization was converted to defined daily doses (DDDs; 2011 DDDs) and DDDs/1000 inhabitants per day. Expenditure/DDD was calculated for omeprazole and simvastatin. Results: PPI utilization rose by 6.5-fold from 2004 to 2010, principally driven by increased utilization of patent-protected PPIs, although more recently stabilization in esomeprazole utilization has occurred. Similar changes were seen for statins. Introduction of best practices would reduce PPI expenditure in 2010 by 32.8 million United Arab Emirates dirham (AED; €6.26 million) and statins by over 27 million AED (€5.15 million). Conclusion: Limited demand-side measures led to increased utilization of patent-protected products in Abu Dhabi following the generic reforms. Successful measures will release considerable resources. © 2012 Expert Reviews Ltd.

**Author Keywords**

Abu Dhabi; demand-side measures; drug utilization; generics; pharmaceuticals

**Document Type:** Review**Source:** ScopusTaipaleenmäki, H.<sup>a b</sup>, Harkness, L.<sup>a</sup>, Chen, L.<sup>a</sup>, Larsen, K.H.<sup>a</sup>, Säämänen, A.-M.<sup>b</sup>, Kassem, M.<sup>a c</sup>, Abdallah, B.M.<sup>a d</sup>**The crosstalk between transforming growth factor-β1 and delta like-1 mediates early chondrogenesis during**



**embryonic endochondral ossification**

(2012) *Stem Cells*, 30 (2), pp. 304-313. Cited 5 times.

**DOI:** 10.1002/stem.792

<sup>a</sup> Endocrine Research Laboratory (KMEB), Department of Endocrinology and Metabolism, Odense University Hospital, Odense, Denmark

<sup>b</sup> Department of Medical Biochemistry and Genetics, University of Turku, Turku, Finland

<sup>c</sup> Department of Anatomy, College of Medicine, King Saud University, Riyadh, Saudi Arabia

<sup>d</sup> Faculty of Science, Helwan University, Cairo, Egypt

**Abstract**

Delta like-1 (Dlk1)/preadipocyte factor-1 (Pref-1)/fetal antigen-1 (FA1) is a novel surface marker for embryonic chondroprogenitor cells undergoing lineage progression from proliferation to prehypertrophic stages. However, mechanisms mediating control of its expression during chondrogenesis are not known. Thus, we examined the effect of a number of signaling molecules and their inhibitors on Dlk1 expression during in vitro chondrogenic differentiation in mouse embryonic limb bud mesenchymal micromass cultures and mouse embryonic fibroblast (MEF) pellet cultures. Dlk1/Pref-1 was initially expressed during mesenchymal condensation and chondrocyte proliferation, in parallel with expression of Sox9 and Col2a1, and was downregulated upon the expression of Col10a1 by hypertrophic chondrocytes. Among a number of molecules that affected chondrogenesis, transforming growth factor- $\beta$ 1 (TGF- $\beta$ 1)-induced proliferation of chondroprogenitors was associated with decreased Dlk1 expression. This effect was abolished by TGF- $\beta$  signaling inhibitor SB431542, suggesting regulation of Dlk1/FA1 by TGF- $\beta$ 1 signaling in chondrogenesis. TGF- $\beta$ 1-induced Smad phosphorylation and chondrogenesis were significantly increased in Dlk1  $-/-$  MEF, while they were blocked in Dlk1 overexpressing MEF, in comparison with wild-type MEF. Furthermore, overexpression of Dlk1 or addition of its secreted form FA1 dramatically inhibited TGF- $\beta$ 1-induced Smad reporter activity. In conclusion, our data identified Dlk1/FA1 as a downstream target of TGF- $\beta$ 1 signaling molecule that mediates its function in embryonic chondrogenesis. The crosstalk between TGF- $\beta$ 1 and Dlk1/FA1 was shown to promote early chondrogenesis during the embryonic endochondral ossification process. © AlphaMed Press.

**Author Keywords**

Chondrogenesis; Dlk1; FA-1; Pref-1; Signalling; Transforming growth factor- $\beta$ 1

**Document Type:** Article

**Source:** Scopus

Elazab, S.S.<sup>a</sup>, Elsayed, W.Z.<sup>b</sup>, Hasan, A.A.<sup>c</sup>, Abdelkhalek, R.A.<sup>b</sup>

**Magnetohydrodynamic stability of self gravitating streaming fluid cylinder**

(2012) *Journal of Applied Sciences Research*, 8 (2), pp. 1259-1270.

<sup>a</sup> Mathematics Department, Women University College, Ain-Shams University, Cairo, Egypt

<sup>b</sup> Physics and Engineering Mathematics Department, Faculty of Engineering (Matria), Helwan University, Cairo, Egypt

<sup>c</sup> Basic and Applied Sciences Department, College of Engineering and Technology, Arab Academy for Science and Technology and Maritime Transport (AASTMT), P.O. Box 2033, Elhorria, Cairo, Egypt

**Abstract**

The magnetohydrodynamic stability criterion of self-gravitating streaming fluid cylinder under the combined effect of inertia, pressure gradient and electromagnetic forces has been derived. The results are discussed analytically and some data are verified numerically for different parameters of the problem. The magnetic field is stabilizing, but the streaming is destabilizing while the self-gravitating is stabilizing or destabilizing according to restrictions. The stable and unstable domains are identified and moreover the influences of the magnetic field on the self - gravitating instability of the model have been examined. The including of the electromagnetic force together with self-gravitating force improve the instability of the model. However, the self-gravitating instability will never be suppressed whatever are the effects of the MHD force stabilizing effects.

**Author Keywords**

Magnetohydrodynamic; Self gravitating; Streaming

**Document Type:** Article

**Source:** Scopus

El Semaary, N.A.

**The antimicrobial profile of extracts of a Phormidium-like cyanobacterium changes with phosphate levels**

(2012) *World Journal of Microbiology and Biotechnology*, 28 (2), pp. 585-593. Cited 3 times.

**DOI:** 10.1007/s11274-011-0851-y

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

### Abstract

The antimicrobial activity of lipophilic extracts of mat-forming Phormidium-like cyanobacterium isolated from Egypt was investigated under different phosphate concentrations. The antimicrobial profile changed with different phosphate levels indicating metabolic changes under stressful conditions. The fractions that resulted in highest antimicrobial activity from the three different phosphate concentrations were chosen for further analyses. The bioactive compounds were identified using chromatographic and spectroscopic techniques including UV, FTIR, GC-MS and proton-NMR. The chemical analyses indicated that the compound at standard phosphate concentration was eugenol whereas the bioactive compound at half phosphate concentration was 4-tert-butylcyclohexanol. The third bioactive compound at quarter phosphate concentration was octadecanoic acid. The eugenol is known for its antimicrobial as well as pain relief properties and can be used in many pharmaceutical preparations whereas the octadecanoic acid and cyclohexanol derivative are used in some antimicrobial pharmaceuticals. The study highlights the change in antimicrobial profile of bioactive compounds derived from cyanobacteria through manipulating the concentration of a key nutrient in growth medium. This strategy can be employed for mass production of these compounds and others for future biotechnological applications. © 2011 Springer Science+Business Media B.V.

### Author Keywords

Antimicrobial activity; Eugenol; Lipophilic fraction; Octadecanoic acid; Phormidium-like cyanobacterium; Phosphate

**Document Type:** Article

**Source:** Scopus

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

### Liver response of rabbits to *Eimeria coecicola* infections

(2012) *Parasitology Research*, 110 (2), pp. 901-911. Cited 9 times.

**DOI:** 10.1007/s00436-011-2574-2

<sup>a</sup> Department of Zoology, College of Science, King Saud University, PO Box 2455, Riyadh 11451, Saudi Arabia

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

<sup>c</sup> Department of Zoology, Faculty of Science, Beni-Suef University, Beni-Suef, Egypt

### Abstract

Intestinal coccidiosis of rabbits induced by *E. coecicola* causes enormous economic losses in rabbit farms. Here, we investigate the effect of *E. coecicola* on the liver of the rabbit *Oryctolagus cuniculus*. On day 7 p.i., fecal expulsion of *E. coecicola* oocysts is maximal and rabbits have lost approximately 25% of their weight. The liver, though not targeted by parasites, exhibits several signs of moderate inflammations, i.e., inflammatory cellular infiltrations around the central vein, dilated blood sinusoids, increase in vacuolated hepatocytes, hypertrophic Kupffer cells, and lipid peroxidation as well as decreases in catalase and superoxide dismutase activities. Liver injuries are also indicated by an increase in blood plasma, by an increase in liver enzymes such as alanine transaminase, aspartate transaminase, alkaline phosphatase, and gamma glutamyl transferase, and a decrease in total protein and albumin. Circulating neutrophils have increased from 61% on day 0 p.i. to 71.3% on day 7 p.i., while lymphocytes are decreased from 37% to 26%. Agilent two-color oligo microarray technology, in combination with quantitative PCR, reveals that the expressions of 56 genes are upregulated and that of 22 genes are downregulated in the liver. The genes are largely involved in metabolism, calcium homeostasis, transport, and diverse signaling processes in the liver. In addition, numerous genes encoding for different regions of T-cell receptor as well as IgM, IgG, and IgA antibodies are both up- and downregulated in the liver by *E. coecicola* infections. The latter data suggest that the liver is not only 'passively' inflamed by intestinal infections with *E. coecicola* but rather is actively involved in the host defense against the intestinal *Eimeria* parasites. © Springer-Verlag 2011.

**Document Type:** Article

**Source:** Scopus

Dief, M.E.<sup>a</sup>, Font, X.<sup>b</sup>

### Determinants of environmental management in the red sea hotels: Personal and organizational values and contextual variables

(2012) *Journal of Hospitality and Tourism Research*, 36 (1), pp. 115-137. Cited 13 times.

**DOI:** 10.1177/1096348010388657

<sup>a</sup> Tourism and Hospitality Management, Helwan University, Egypt

<sup>b</sup> Leeds Metropolitan University, United Kingdom

**Abstract**

What motivates firms to adopt environmental management practices is one of the most significant aspects in the contemporary academic debate in which the review of the existing literature yields, with an obvious contextual bias toward developed world, contested theories and inconclusive findings. Providing a unique model that brings together the individual and organizational levels of analysis on firms' adoption of environmental management practices, this study aims to provide a new insight from the context of developing world. Data from 158 Red Sea hotels reveal two identifiable dimensions of environmental management-planning and organization, and operations-that can be explained as originating from different values. Whereas organizational altruism is a powerful predictor of both dimensions, managers' personal values and organizational competitive orientation are only relevant to environmental operations. The evidence also indicates that contextual variables such as chain affiliation, hotel star rating, and size are important to explain hotels' environmental management behaviors. © 2012 ICHRIE.

**Author Keywords**

ethics; hotel management; lodging operations

**Document Type:** Review

**Source:** Scopus

El-Din Ahmed Salama, N.N.N.<sup>a</sup>, El Ries, M.A.<sup>a</sup>, Toubar, S.<sup>b</sup>, Hamide, M.A.<sup>a</sup>, Walash, M.I.<sup>c</sup>

**Validated TLC and HPLC stability-indicating methods for the quantitative determination of dapsone** (2012) *Journal of Planar Chromatography - Modern TLC*, 25 (1), pp. 65-71.

**DOI:** 10.1556/JPC.25.2012.1.11

<sup>a</sup> National Organization for Drug Control and Research, Pharmaceutical Chemistry Department, Giza, Egypt

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

<sup>c</sup> Mansoura University, Analytical Chemistry Department, Faculty of Pharmacy, Mansoura, Egypt

**Abstract**

Two stability-indicating chromatographic methods were developed for the analysis of dapsone in presence of its oxidative degradants. Forced degradation studies were performed on the drug substance using 30% hydrogen peroxide. The degradation products were identified by infrared spectroscopy and mass spectrometry, and a pathway is illustrated. The first method was based on thin-layer chromatographic separation of the drug from its oxidative degradants, followed by densitometric measurement of the intact drug spot at 289 nm. The developing system used for separation is ethyl acetate-toluene in the ratio 1:1 (v/v). The linear range was 0.5-6.0 µg/spot, with mean recoveries of 99.37 ± 0.96%. The second method was based on reversed-phase liquid chromatographic separation of the drug from its oxidative degradants on a C18 column, using the mobile phase methanol-water (65:35, v/v) at the controlled temperature of 25°C. Quantification was achieved by UV detection at 289 nm, based on peak area. The linear range was 5-65 µg mL<sup>-1</sup> with mean recoveries 99.50 ± 1.70%. The methods were validated according to guidelines of International Conference on Harmonization. The HPLC method was used to investigate the kinetics of oxidative degradants at different temperatures. © Akadémiai Kiadó, Budapest.

**Author Keywords**

Dapsone; Densitometry-TLC; HPLC; Kinetics; Stability studies

**Document Type:** Article

**Source:** Scopus

El-Bitar, T.<sup>b</sup>, Fouad, N.<sup>a</sup>, Zaky, A.I.<sup>b</sup>, El-Rady, S.A.<sup>a</sup>

**Effect of cooling rate after controlled forging on properties of low carbon multi-microalloyed steels** (2012) *Materials Science and Engineering A*, 534, pp. 514-520. Cited 3 times.

**DOI:** 10.1016/j.msea.2011.11.101

<sup>a</sup> Central Metallurgical R and D Institute (CMRDI), P.O. Box 87, Helwan, Cairo, Egypt

<sup>b</sup> Mechanical Engineering Department, Faculty of Engineering, Helwan University, 1 Sherif Street, Helwan, Cairo 11792, Egypt

**Abstract**

Two low carbon steel grades were used in the present investigation. One of them was microalloyed with Ti, V, and Nb. Both steel grades were subjected to a controlled hot forging followed by either cooling in air or quenching water. The microstructures of all TMT conditions are dominated by ferrite phase with different morphologies and grain sizes according to both chemical composition and cooling rate. Polygonal ferrite is considered to be a dominated phase of air cooled microstructures for both steel grades that is responsible for decreasing the hardness, yield, and tensile strength with the attendant increase in ductility. Water quenching leads to a formation of relatively fine polygonal

ferrite in low carbon steel or transformation into acicular ferrite in low carbon microalloyed steel. Relatively fine polygonal ferrite and acicular ferrite increase strength but decrease ductility. The cooling rate has a negligible effect on the impact toughness at room temperature. © 2011 Elsevier B.V.

**Author Keywords**

Low carbon (LC) steel; Low carbon microalloyed (LC-MA) steel

**Document Type:** Article

**Source:** Scopus

Hegazy, G.H.<sup>a</sup>, Ali, H.I.<sup>b</sup>

**Design, synthesis, biological evaluation, and comparative Cox1 and Cox2 docking of p-substituted benzylidenamino phenyl esters of ibuprofenic and mefenamic acids**

(2012) *Bioorganic and Medicinal Chemistry*, 20 (3), pp. 1259-1270. Cited 9 times.

**DOI:** 10.1016/j.bmc.2011.12.030

<sup>a</sup> Pharmaceutical Chemistry Department, Faculty of Pharmacy, Cairo University, Cairo, Egypt

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

**Abstract**

Nonsteroidal anti-inflammatory drugs (NSAIDs) are frequently associated with gastric mucosal and renal adverse reactions, related to inhibition of cyclooxygenase1 (Cox1) in tissues where prostaglandins exert physiological effects. This led us to develop a set of ibuprofenic acid and mefenamic acid esters, namely: 4-((4-substituted benzylidene)amino)phenyl 2-(4-isobutylphenyl) propanoate and 4-((4-substituted benzylidene)amino)phenyl 2-((2,4-dimethylphenyl)amino)benzoate analogs, which were synthesized by condensation of the corresponding acids with Schiff's bases [4-(4-substituted benzylideneamino)phenols] involving dicyclohexyl carbodiimide (DCC) as mild dehydrating agent. The main objective is to reduce the GIT toxicity associated with acute and chronic NSAIDs use. Anti-inflammatory, analgesic as well as ulcerogenic activities of the prepared esters were evaluated in vivo and compared with that of ibuprofen as reference standard in all screenings, involving the carrageenan induced paw oedema model and hot plate method. Most of the synthesized esters showed remarkable analgesic and anti-inflammatory activities. Interestingly, all of the compounds were found to be non-ulcerogenic under the tested conditions. This evidence have suggested that modification of the carboxyl function of representative NSAIDs results in retained or enhanced anti-inflammatory and analgesic activities with reduced ulcerogenic potential. Additionally, a comparative AutoDock study into Cox 1 and Cox2 has been done involving both of rigid and flexible docking for potential selectivity of our compounds within different Cox enzymes and to find out the binding orientation of these novel esters into their binding site. Some of the newly prepared aforementioned compounds showed considerable more Cox2 over Cox1 binding affinities by flexible docking better than rigid one. © 2011 Elsevier Ltd. All rights reserved.

**Author Keywords**

Cox; Ibuprofen; Mefenamic acid; Molecular docking; NSAIDs

**Document Type:** Article

**Source:** Scopus

Kalender, M.Y.<sup>a</sup>, Zaffan, H.A.<sup>b</sup>, Dadoura, H.H.<sup>b</sup>

**Influence of reinforcement fibers on friction induced noise of automotive disc brake pad**

(2012) *Journal of Engineering and Applied Science*, 59 (1), pp. 53-64.

<sup>a</sup> Industrial Training Institute, Shuwaikh, Kuwait

<sup>b</sup> Automotive and Tractors Engineering Department, Faculty of Engineering, Helwan University, Egypt

**Abstract**

Friction noise responses of automotive brake pad composite materials containing different ingredients of reinforcement fibers were investigated to analyze their effect on friction stability. This friction material is composed namely of; resin matrix, reinforcement fibers, filling powders with surface dry lubricants and frictional additives. Rock wool fibers were added at different ratios to frictional composite material as a reinforcement to improve its frictional behavior and friction acoustic noise in accordance with wear rate stability. A Pin-On-Disc Tester, Sound Level Meter "SLM", and PC MATLAB program have been used to analyze the performance of the tested composite samples using the near field technique measurements of friction noise response. The results obtained of this experimental investigation illustrated that these advanced friction composite materials, which provided to be used as a braking material in automotive applications. Furthermore, high ingredients of rock wool fibers can be used to improve the frictional stability and emission level of the material friction process, while significant signal attenuation has been generated in the high frictional temperature range for high fiber concentrations.

**Author Keywords**

Brake pad; Friction composite; Friction noise response; Rock wool fiber

**Document Type:** Article

**Source:** Scopus

Zhou, H.<sup>a</sup>, Lawrence, J.G.<sup>a</sup>, Touny, A.H.<sup>b</sup>, Bhaduri, S.B.<sup>c d</sup>

**Biomimetic coating of bisphosphonate incorporated CDHA on Ti6Al4V**

(2012) *Journal of Materials Science: Materials in Medicine*, 23 (2), pp. 365-374. Cited 17 times.

**DOI:** 10.1007/s10856-011-4524-z

<sup>a</sup> Department of Bioengineering, University of Toledo, Toledo, OH, United States

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

<sup>c</sup> Department of Mechanical, Industrial and Manufacturing Engineering, University of Toledo, Toledo, OH, United States

<sup>d</sup> Department of Surgery (Dentistry), University of Toledo, Toledo, OH, United States

**Abstract**

Bi-functional coatings of carbonated calcium deficient hydroxyapatite (CDHA) on Ti alloys were developed by using a biomimetic coating process. The bi-functionality was achieved by loading alendronate sodium (AS), an approved bisphosphonate drug used for the treatment of osteoporosis, into the inner layers of CDHA coatings. Three possible methods of loading AS into CDHA coatings were systematically studied and compared. The results indicated that the co-precipitation method had greater benefits and can modify the release profile of AS by incorporating AS in the inner layers of the coatings. As a preliminary study, the influences of applied AS dosage to CDHA coatings were evaluated using XRD and SEM. In vitro tests indicated that the AS content on CDHA coatings played a significant role, and optimum AS content in local area is beneficial for osteoblast cells proliferation. It is expected that the CDHA-AS coatings via the co-precipitation approach have potential for bone tissue engineering applications. © 2011 Springer Science+Business Media, LLC.

**Document Type:** Article

**Source:** Scopus

Hegazy, T.<sup>a</sup>, Elhakeem, A.<sup>b</sup>, Singh Ahluwalia, S.<sup>c</sup>, Attalla, M.<sup>d</sup>

**MOST-FIT: Support techniques for inspection and life cycle optimization in building asset management**

(2012) *Computer-Aided Civil and Infrastructure Engineering*, 27 (2), pp. 130-142. Cited 4 times.

**DOI:** 10.1111/j.1467-8667.2011.00729.x

<sup>a</sup> Civil Engineering Department, University of Waterloo, Ontario, Canada

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

<sup>c</sup> Civil Engineering Department, University of Waterloo, Ontario, Canada

<sup>d</sup> Toronto District School Board, Toronto, Canada

**Abstract**

Among the various asset management functions that support capital renewal decisions, both inspection and fund-allocation are very challenging in terms of time, cost, and technology. To support these functions, this article introduces two unique techniques that can be implemented, individually or combined, into any asset management system: (1) Focused-Inspection Technique (FIT); and (2) Multiple Optimization and Segmentation Technique (MOST). FIT improves inspection by incorporating an analysis of reactive-maintenance data to predict components' conditions, thus saving the time and cost of indiscriminate inspections. The MOST technique, on the other hand, has a unique formulation for large-scale optimization involving thousands of assets simultaneously, thus maximizes the return of renewal dollars. The article provides a description of the MOST-FIT techniques and discusses their implementation in a prototype system that suits a large school board in North America. The proposed techniques are innovative and help organizations with large building assets improve the overall condition of their inventory with highest return on the limited renewal budget. © 2011 Computer-Aided Civil and Infrastructure Engineering.

**Document Type:** Article

**Source:** Scopus

Affify, A.A.<sup>a b</sup>, Elgazery, N.S.<sup>a c</sup>

**Lie group analysis for the effects of chemical reaction on MHD stagnation-point flow of heat and mass transfer towards a heated porous stretching sheet with suction or injection**

(2012) *Nonlinear Analysis: Modelling and Control*, 17 (1), pp. 1-15. Cited 7 times.

<sup>a</sup> Department of Mathematics, Deanship of Educational Services, Qassim University, P.O. Box 6595, Buraidah: 51452, Saudi Arabia

<sup>b</sup> Department of Mathematics, Faculty of Science, Helwan University Ain Helwan, P.O. Box 11795, Cairo, Egypt

<sup>c</sup> Department of Mathematics, Faculty of Education, Ain Shams University Roxy, Heliopolis, Cairo, Egypt

### Abstract

An analysis is carried out to study two dimensional stagnation-point flow of heat and mass transfer of an incompressible, electrically conducting fluid towards a heated porous stretching sheet embedded in a porous medium in the presence of chemical reaction, heat generation/absorption and suction or injection effects. A scaling group of transformations is applied to the governing equations. After finding three absolute invariants a third order ordinary differential equation corresponding to the momentum equation and two second order ordinary differential equation corresponding to energy and diffusion equations are derived. Furthermore the similarity equations are solved numerically by using shooting technique with fourth-order Runge-Kutta integration scheme. A comparison with known results is excellent. The phenomenon of stagnation-point flow towards a heated porous stretching sheet in the presence of chemical reaction, suction or injection with heat generation/absorption effects play an important role on MHD heat and mass transfer boundary layer. The results thus obtained are presented graphically and discussed. © Vilnius University, 2012.

### Author Keywords

Chemical reaction; Heat generation/absorption; MHD; Porous medium; Similarity solutions; Stagnation-point; Suction/injection

**Document Type:** Article

**Source:** Scopus

Sarhan, E.<sup>a</sup>, Khalifa, E.<sup>a</sup>, Nabil, A.M.<sup>b</sup>

### Post classification using Cellular Automata for Landsat images

(2012) *Advanced Materials Research*, 433-440, pp. 5431-5435.

**DOI:** 10.4028/www.scientific.net/AMR.433-440.5431

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

<sup>b</sup> Misr International University, Cairo, Egypt

### Abstract

The research presented in this paper aims at improving the accuracy of land-use maps produced from classification of Landsat images of mega cities in developing countries. In other words, the main objective of this paper is to find a suitable post classification technique that gives optimum results for Landsat images of mega cities in developing countries. To reach our goal, the paper presents a classification of two TM-Landsat sub scenes using a traditional statistical classifier (Maximum Likelihood) into four land cover classes (vegetation-water-Desert-Urban); then the accuracy assessment for the produced land-cover map will be calculated. Following to this step, three post processing techniques- Majority Filter, Probability label Relaxation (PLR), and Cellular Automata (CA) - will be applied in order to improve the accuracy of the previously produced land cover map. Finally, the same accuracy assessment measurements will be calculated for the two land-cover maps produced by each of the above post classification techniques. Initial results will show that CA outperformed the other techniques. In this paper we propose a methodology to implement a satellite image post classification Algorithm with cellular Automata. © (2012) Trans Tech Publications, Switzerland.

### Author Keywords

Cellular Automata; Landsat images; Majority filter; Probability Labeling Relaxation

**Document Type:** Conference Paper

**Source:** Scopus

El-mezayen, H.A.<sup>a</sup>, Toson, E.-S.A.<sup>b</sup>, Darwish, H.<sup>c</sup>, El-Badry, E.<sup>d</sup>

### Discriminant function based on parameters of hyaluronic acid metabolism and nitric oxide to differentiate metastatic from non-metastatic colorectal cancer patients

(2012) *Tumor Biology*, pp. 1-10. Article in Press. Cited 4 times.

**DOI:** 10.1007/s13277-012-0332-4

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

<sup>b</sup> Chemistry Department, Mansoura University, Damietta, Egypt

<sup>c</sup> Medical Oncology Department, Damietta Cancer Institute, Damietta, Egypt

<sup>d</sup> Clinical Pathology Department, Damietta Cancer Institute, Damietta, Egypt

### Abstract

Colorectal cancer (CRC) is one of the most common causes of cancer-related deaths worldwide. Because there is currently no useful serological marker for metastatic colorectal cancer, the search for simple biomarkers for colorectal cancer diagnosis and prognosis is needed. Hyaluronic acid level was determined by ELISA; in addition to its degrading enzymes, degradation products and nitric oxide were determined by standard techniques in 185 CRC patients with and without metastases. Statistical analyses were performed by logistic regression and receiver-operating characteristic (ROC) curves. The multivariate discriminate analysis (MDA) selects a function based on absolute values of six biochemical markers; score =  $[-0.62 \text{ (numerical constant)} + \text{hyaluronic acid (pg/l)} \times 0.002 + \text{hyaluronidase (mg N-acetyl glucosamine/ml/18 h)} \times 0.009 - \beta\text{-glucuronidase } (\mu\text{mol/ml/min}) \times 0.07 + \text{N-acetyl-}\beta\text{-d-glucosaminidase } (\mu\text{mol/ml/min}) \times 0.019 - \text{glucuronic acid } (\mu\text{g/dl}) \times 0.001 + \text{nitric oxide } (\mu\text{mol/l}) \times 0.01]$ . The selected MDA function correctly classified 92% of the metastatic CRC patients at a discriminate cut-off score = 0.24 (i.e., less than 0.24 indicated patients with non-metastatic colon cancer, and greater than 0.24 indicated patients with metastatic colon cancer with high degrees of sensitivity (100%) and specificity (93%)). The positive predictive and negative predictive values were also high (81% and 85%, respectively). Colorectal cancer patients can be simply and efficiently classified into metastatic or non-metastatic using their MDA score. © 2012 International Society of Oncology and BioMarkers (ISOBM).

### Author Keywords

Biomarkers; Blood; Colorectal cancer; Hyaluronic acid; Nitric oxide

**Document Type:** Article in Press

**Source:** Scopus

Ayoub, N.<sup>a b</sup>, Yuji, N.<sup>a</sup>

### Demand-driven optimization approach for biomass utilization networks

(2012) *Computers and Chemical Engineering*, 36 (1), pp. 129-139. Cited 3 times.

**DOI:** 10.1016/j.compchemeng.2011.09.005

<sup>a</sup> Chemical Resources Laboratory, Process Systems Engineering Division, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku Yokohama 226-8503, Japan

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

### Abstract

Building Biomass Networks (B-NETs) is one of the techniques used to overcome the seasonal fluctuation in biomass supply and tapping new utilizations ways. The B-NETs are built based on a super class model for the available and possible kinds of utilization processes in the local area. Hence, the decision of selecting possible networks and scenarios can be made before using optimization methods to fix on the optimal network. In this paper, an optimization model for a Demand-driven biomass processing network is proposed. This is done through selecting alternative production paths for the same product depending on the resources availability. The unit process capacities and biomass resource availability constraints were presented to overcome their limitations in the local area. The genetic algorithms (GAs) were used in solving the problem because of their ability to deal with large search spaces and capability to calculate material flows, through networks, with no previous estimations. © 2011 Elsevier Ltd.

### Author Keywords

Biomass utilization networks; Demand-driven; Genetic algorithms; Network flow

**Document Type:** Article

**Source:** Scopus

El-Kady, M.

### Jacobi discrete approximation for solving optimal control problems

(2012) *Journal of the Korean Mathematical Society*, 49 (1), pp. 99-112. Cited 6 times.

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

### Abstract

This paper attempts to present a numerical method for solving optimal control problems. The method is based upon constructing the n-th degree Jacobi polynomials to approximate the control vector and use differentiation matrix to approximate derivative term in the state system. The system dynamics are then converted into system of algebraic equations and hence the optimal control problem is reduced to constrained optimization problem. Numerical

examples illustrate the robustness, accuracy and efficiency of the proposed method. © 2012 The Korean Mathematical Society.

**Author Keywords**

Differentiation and integration matrices; Jacobi polynomials; Optimal control problem

**Document Type:** Article

**Source:** Scopus

Tiwari, R.<sup>a</sup>, Toppino, A.<sup>a b</sup>, Agarwal, H.K.<sup>a</sup>, Huo, T.<sup>c</sup>, Byun, Y.<sup>a d</sup>, Gallucci, J.<sup>e</sup>, Hasabelnaby, S.<sup>a f</sup>, Khalil, A.<sup>a g</sup>, Goudah, A.<sup>a h</sup>, Baiocchi, R.A.<sup>i</sup>, Darby, M.V.<sup>a</sup>, Barth, R.F.<sup>c</sup>, Tjarks, W.<sup>a</sup>

**Synthesis, biological evaluation, and radioiodination of halogenated closo-carboranylthymidine analogues(1)** (2012) *Inorganic Chemistry*, 51 (1), pp. 629-639. Cited 17 times.

**DOI:** 10.1021/ic202150b

<sup>a</sup> Division of Medicinal Chemistry and Pharmacognosy, Ohio State University, 500 West 12th Avenue, Columbus, OH 43210, United States

<sup>b</sup> Dipartimento di Chimica Generale e Chimica Organica, Università Degli Studi di Torino, Torino, Italy

<sup>c</sup> Department of Pathology, Ohio State University, Columbus, OH 43210, United States

<sup>d</sup> College of Pharmacy, Korea University, Chungnam, South Korea

<sup>e</sup> Department of Chemistry and Biochemistry, Ohio State University, Columbus, OH 43210, United States

<sup>f</sup> Division of Pharmaceutical Organic Chemistry, College of Pharmacy, Helwan University, Cairo, Egypt

<sup>g</sup> Chemistry Department, Faculty of Science, Zagazig University, Zagazig, Egypt

<sup>h</sup> Division of Pharmacology, College of Veterinary Medicine, Cairo University, Giza, Egypt

<sup>i</sup> Division of Hematology and Oncology, Department of Internal Medicine, Ohio State University, Columbus, OH 43210, United States

**Abstract**

The synthesis and initial biological evaluation of 3-carboranylthymidine analogues (3CTAs) that are (radio)halogenated at the closo-carborane cluster are described. Radiohalogenated 3CTAs have the potential to be used in the radiotherapy and imaging of cancer because they may be selectively entrapped in tumor cells through monophosphorylation by human thymidine kinase 1 (hTK1). Two strategies for the synthesis of a 127I-labeled form of a specific 3CTA, previously designated as N5, are described: (1) direct iodination of N5 with iodine monochloride and aluminum chloride to obtain N5- 127I and (2) initial monoiodination of o-carborane to 9-iodo-o-carborane followed by its functionalization to N5- 127I. The former strategy produced N5- 127I in low yields along with di-, tri-, and tetraiodinated N5 as well as decomposition products, whereas the latter method produced only N5- 127I in high yields. N5- 127I was subjected to nucleophilic halogen- and isotope-exchange reactions using Na 79/81Br and Na 125I, respectively, in the presence of Herrmann's catalyst to obtain N5- 79/81Br and N5- 125I, respectively. Two intermediate products formed using the second strategy, 1-(tert-butylidimethylsilyl)-9-iodo-o-carborane and 1-(tert-butylidimethylsilyl)-12-iodo-o-carborane, were subjected to X-ray diffraction studies to confirm that substitution at a single carbon atom of 9-iodo-o-carborane resulted in the formation of two structural isomers. To the best of our knowledge, this is the first report of halogen- and isotope-exchange reactions of B-halocarboranes that have been conjugated to a complex biomolecule. Human TK1 phosphorylation rates of N5, N5- 127I, and N5- 79/81Br ranged from 38.0% to 29.6% relative to that of thymidine, the endogenous hTK1 substrate. The in vitro uptake of N5, N5- 127I, and N5- 79/81Br in L929 TK1(+) cells was 2.0, 1.8, and 1.4 times greater than that in L929 TK1(-) cells. © 2011 American Chemical Society.

**Document Type:** Article

**Source:** Scopus

Nassar, E.A.<sup>a</sup>, El-Dougdoug, K.A.<sup>b</sup>, Osman, M.E.<sup>a</sup>, Dawoud, R.A.<sup>c</sup>, Kinawy, A.H.<sup>a</sup>

**Characterization and elimination of a TMV isolate infecting chrysanthemum plants in Egypt** (2012) *International Journal of Virology*, 8 (1), pp. 14-26. Cited 2 times.

**DOI:** 10.3923/ijv.2012.14.26

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

<sup>b</sup> Department of Microbiology, Faculty Agric, Ain Shams University, Egypt

<sup>c</sup> Department of Virus and Phytoplasma Plant Disease Institute, Agricultural Research Centre, Egypt

**Abstract**

An Egyptian isolate of a Tobamovirus was isolated and identified from Chrysanthemum cultivation in Egypt. Both biological, serological and sequence analysis of the coat protein gene demonstrated that the virus represents an



isolate of the Tobamoviridae family. The isolated virus was nominated as TMV Chrysanthemum Egyptian isolate (TMV-Cfo-EG). This virus isolate caused severe disease symptoms in Chrysanthemum plants with mosaic, mottling and flower discoloration. The virus was purified biologically using serial transfer of the single local lesion technique on *Nicotianagultinosa*. The induced antiserum for the isolated virus had a titer 1X10<sup>24</sup>. 600 bp DNA fragments from the coat protein gene (CP) of TMV-Ch-EG was amplified with R<sub>t</sub>-BCR technique. Phylogenetic analysis of the TMV-Ch-EG/CB- gene showed 89% nucleotide sequence homology with other published strains of TMV in GenBank and 81% amino acid sequence homology. Tissue culture approach was used to permit the recovery of TMV-Ch-free micropropagated shoots via application of 20 mg L<sup>-1</sup> virazole followed by thermotherapy at 38°C for two weeks and early screening to facilitate the efficient production of virus-free tissue culture derived propagules using the produced antiserum against TMV-Ch-EG. © 2012 Academic Journals Inc.

**Author Keywords**

Chrysanthemum; DNA sequencing; ELISA; RT-PCR; TMV

**Document Type:** Article

**Source:** Scopus

Gharib, M.E.<sup>a</sup>, Obeid, M.A.<sup>b</sup>, Ahmed, A.H.<sup>a</sup>

**Paleozoic alkaline volcanism: geochemistry and petrogenesis of um khors and um shaghir trachytes of the central eastern desert, egypt**

(2012) *Arabian Journal of Geosciences*, 5 (1), pp. 53-71. Cited 1 time.

**DOI:** 10.1007/s12517-010-0212-4

<sup>a</sup> Geology Department, Helwan University, Cairo, Egypt

<sup>b</sup> Geology Department, El Fayoum University, El Fayoum, Egypt

**Abstract**

The Um Khors and Um Shaghir trachyte (UKT and UST) plugs and sheets represent two conspicuous outcrops of Paleozoic alkaline volcanism in the central Eastern Desert of Egypt. The trachyte magmatism erupted along the Pan-African NW-trending shear zone (302±15 and 273±15 Ma, respectively) and intruded the Late Proterozoic rocks of the studied area. The trachyte rocks consist mainly of sanidine, anorthoclase, albite, and quartz with a noticeable amount of aegirine-augite, aegirine, hedenbergite, and arvedsonite. The studied trachytes are moderately evolved in composition (with 62-67.5 wt.% SiO<sub>2</sub>) and exhibit a limited compositional range in most of the major elements. They are alkaline in nature and considered as silicaoversaturated rocks. The rare earth elements (REE) patterns are somewhat uniform and highly fractionated, being enriched in light REE over heavy REE and show prominent negative Eu anomalies. The UKT and UST are enriched in high field strength elements Nb, Zr, and Y, consistent with typical within-plate alkaline magmatism of extensional tectonic regimes. They were generated through the fractional crystallization of mantle-derived magmas. Although the UST is younger than the UKT, they show approximately similar chemical compositional ranges of the most major and trace elements, with somewhat higher MgO, Cr, Ni, and Ba contents in the former. This may argue against the evolution of the UST via a continuous fractional crystallization of the residual magmatic melt of the UKT. Thus, the UKT and UST are genetically related but could be emplaced through two various magmatic pulses of the same parent source (i.e., asthenospheric mantle source) at different times. The ascending magmatism was subjected to variable significant degrees of crustal contamination during their generation. © Saudi Society for Geosciences 2010.

**Author Keywords**

Asthenospheric mantle; Eastern Desert; Egypt; Paleozoic alkaline volcanism; Trachyte; Um Khors; Um Shaghir

**Document Type:** Article

**Source:** Scopus

Mohamed, S.H.<sup>a b</sup>, El-Hagary, M.<sup>a c</sup>, Althoyaib, S.<sup>a</sup>

**Photocatalytic and optical properties of nanocomposite TiO<sub>2</sub>-ZnO thin films**

(2012) *EPJ Applied Physics*, 57 (2), art. no. 20301, . Cited 2 times.

**DOI:** 10.1051/epjap/2012110312

<sup>a</sup> Physics Department, College of Science, Qassim University, P.O. 6644, 51452 Buryadh, Saudi Arabia

<sup>b</sup> Physics Department, Faculty of Science, Sohag University, 82524 Sohag, Egypt

<sup>c</sup> Physics Department, Faculty of Science, Helwan University, 11792 Helwan, Cairo, Egypt

**Abstract**

Nanocomposite TiO<sub>2</sub>-ZnO thin films, with different ZnO content, were deposited by electron-beam evaporation on glass and Si(1 0 0) substrates. The resulting films were annealed in air for 1 h at 450 °C. X-ray diffraction revealed the presence of monoclinic β-TiO<sub>2</sub> and hexagonal ZnO for the films prepared with ZnO content of 0 at.% and 100 at.%,

respectively. Mixed monoclinic  $\beta$ -TiO<sub>2</sub> and hexagonal ZnO phases were observed at higher ZnO content between 50 at.% and 85 at.%. Spectroscopic ellipsometry (SE) was employed to determine the film thickness and optical constants. A two-layer model was used to describe the experimental ellipsometric data. At any wavelength longer than 390 nm, the refractive index decreases gradually with increasing ZnO content in the composite films. The optical band gap increased with increasing ZnO content. The photocatalytic behavior of TiO<sub>2</sub>-ZnO thin films was mainly evaluated by measuring the decomposition of methylene blue. The nanocomposite film with ZnO content of 8 at.% has the best photocatalytic activities. © 2011 EDP Sciences.

**Document Type:** Article

**Source:** Scopus

Youssef-Elabd, E.M.<sup>a</sup>, McGee, K.C.<sup>b</sup>, Tripathi, G.<sup>b</sup>, Aldaghri, N.<sup>f</sup>, Abdalla, M.S.<sup>c</sup>, Sharada, H.M.<sup>c</sup>, Ashour, E.<sup>a</sup>, Amin, A.I.<sup>d</sup>, Ceriello, A.<sup>e</sup>, O'Hare, J.P.<sup>b</sup>, Kumar, S.<sup>b</sup>, McTernan, P.G.<sup>b</sup>, Harte, A.L.<sup>b</sup>

**Acute and chronic saturated fatty acid treatment as a key instigator of the TLR-mediated inflammatory response in human adipose tissue, in vitro**

(2012) *Journal of Nutritional Biochemistry*, 23 (1), pp. 39-50. Cited 20 times.

**DOI:** 10.1016/j.jnutbio.2010.11.003

<sup>a</sup> Biochemistry Department, National Research Centre, Dokki, Giza, 12622, Egypt

<sup>b</sup> University of Warwick, Unit for Diabetes and Metabolism, Warwick Medical School, Clinical Sciences Research Institute, UHCW, Coventry, CV2 2DX, United Kingdom

<sup>c</sup> Chemistry Department, Faculty of Science, Helwan University, 11795, Egypt

<sup>d</sup> Clinical Pathology Department, National Institute of Diabetes and Endocrinology, Cairo, 11562, Egypt

<sup>e</sup> Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Calle Mallorca 183, Piso P01, 08036 Barcelona, Spain

<sup>f</sup> King Saud University, College of Science Biochemistry Department, Riyadh 11451, Saudi Arabia

### Abstract

A post-prandial increase in saturated fatty acids (SFAs) and glucose (Glc) activates an inflammatory response, which may be prolonged following restoration of physiological SFAs and Glc levels - a finding referred to as 'metabolic memory'. This study examined chronic and oscillating SFAs and Glc on the inflammatory signalling pathway in human adipose tissue (AT) and adipocytes (Ads) and determined whether Ads are subject to "metabolic memory".

Abdominal (Abd) subcutaneous (Sc) explants and Ads were treated with chronic low glucose (L-Glc): 5.6 mM and high glucose (H-Glc): 17.5 mM, with low (0.2 mM) and high (2 mM) SFA for 48 h. Abd Sc explants and Ads were also exposed to the aforementioned treatment regimen for 12-h periods, with alternating rest periods of 12 h in L-Glc. Chronic treatment with L-Glc and high SFAs, H-Glc and high SFAs up-regulated key factors of the nuclear factor- $\kappa$ B (NF $\kappa$ B) pathway in Abd Sc AT and Ads (TLR4, NF $\kappa$ B;  $P < .05$ ), whilst down-regulating MyD88. Oscillating Glc and SFA concentrations increased TLR4, NF $\kappa$ B, IKK $\beta$  ( $P < .05$ ) in explants and Ads and up-regulated MyD88 expression ( $P < .05$ ). Both tumor necrosis factor  $\alpha$  and interleukin 6 ( $P < .05$ ) secretion were markedly increased in chronically treated Abd Sc explants and Ads whilst, with oscillating treatments, a sustained inflammatory effect was noted in absence of treatment. Therefore, SFAs may act as key instigators of the inflammatory response in human AT via NF $\kappa$ B activation, which suggests that short-term exposure of cells to uncontrolled levels of SFAs and Glc leads to a longer-term inflammatory insult within the Ad, which may have important implications for patients with obesity and Type 2 diabetes. © 2012 Elsevier Inc.

### Author Keywords

Glucose; Human adipose tissue; Inflammation; Obesity; Saturated fatty acids; Toll-like receptors

**Document Type:** Article

**Source:** Scopus

Mohamed, M.<sup>a c</sup>, Lin, J.<sup>a</sup>, Dean, T.<sup>a</sup>, Darlington, R.<sup>b</sup>, Sellors, J.<sup>b</sup>

**An investigation of damage theories in predicting phenomena in stamping process**

(2012) *Steel Research International*, SPL. ISSUE, pp. 1219-1222.

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

<sup>b</sup> Lotus Engineering, Hethel, Norwich, Norfolk, NR14 8EZ, United Kingdom

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

### Abstract

The failure criteria selection is a crucial factor for optimizing sheet metal forming processes. Forming limit diagrams (FLD) offer a convenient and useful tool in sheet products manufacturing analysis at 20°C. However, at elevated

temperature, the temperature and strain rate vary dynamically from one location to another in the sheet metal and change during the forming process. Thus the current FLDs, which are established for a certain temperature and strain rate, cannot be used directly to predict the forming limit of sheet metals in hot stamping. A novel plane-stress continuum damage mechanics (CDM) model for the prediction of failure under hot stamping conditions is investigated. This paper presents a comparative analysis of failure prediction for the stamping of an aluminium alloy AA6082 b-pillar by using the conventional FLD and the newly developed damage theory. The model is calibrated from tensile experimental data of AA6082 at a temperature range of 450 °C-525°C and strain rates of 0.1, 1.0 and 10s-1 and the FLD data at 20°C for AA6082. Using the CDM model, the formability of the material at different temperature and strain rate forming conditions is predicted. The calibrated CDM model is then implemented in the commercial finite element code LS-DYNA via a user-defined material subroutine, UMAT. A finite element forming process model was built for simulating hot stamping of a b-pillar panel part at 500°C providing a good agreement between the experimental and numerical data. © 2012 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim.

**Author Keywords**

Continuum damage mechanics (CDM); Fe process modeling; FLD; Formability

**Document Type:** Conference Paper

**Source:** Scopus

El-Demirdash, M.

**Egypt's strides towards a green and sustainable construction**

(2012) *Global Thinking in Structural Engineering: Recent Achievements*, .

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

**Abstract**

The paper covers the different steps taken by Egypt in view of achieving a green and sustainable constructional development. It shows why it is crucial for Egypt to adopt such a sustainable approach.

**Author Keywords**

Green building; Green building council; Green pyramid rating system

**Document Type:** Conference Paper

**Source:** Scopus

El-Kady, M.

**Efficient pseudospectral Legendre preconditioner for minimum time orbit problem**

(2012) *Journal of Computational Analysis and Applications*, 14 (5), pp. 934-949.

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

**Abstract**

In this paper the relation between the pseudospectral integration and differentiation matrices has been presented. It has been proved that the integration matrix may be used as an optimal preconditioner. In addition, a new integral Legendre preconditioner has been suggested to convert the pseudospectral approximation of the differential equation arise in optimal control problems to integral pseudospectral approximation of its integral form. This preconditioner, in effect, makes the pseudospectral methods insensitive to specific grid points. The numerical results show the efficiency of the method. © 2012 EUDOXUS9 P3R4ESS, LLC.

**Author Keywords**

Legendre pseudospectral approximation methods; Preconditioner matrix

**Document Type:** Article

**Source:** Scopus

Abdel Hameed, A.A.<sup>a</sup>, Khoder, M.I.<sup>b</sup>, Ibrahim, Y.H.<sup>a</sup>, Saeed, Y.<sup>a</sup>, Osman, M.E.<sup>a c</sup>, Ghanem, S.<sup>a c</sup>

**Study on some factors affecting survivability of airborne fungi**

(2012) *Science of the Total Environment*, 414, pp. 696-700. Cited 4 times.

**DOI:** 10.1016/j.scitotenv.2011.10.042

<sup>a</sup> Air Pollution Dept., National Research Centre, Dokki, Giza, Egypt

<sup>b</sup> Environmental Science Department, Faculty of Meteorology, Environment and Arid Land Agriculture, King AbdulAziz University, Jeddah, Saudi Arabia

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

### Abstract

The aim of the present study was to investigate the effect of some air pollutants and meteorological parameters on the survivability of airborne fungi. Fungi were collected by using a slit impactor sampler calibrated to draw 20L/min, for 3min. Nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM), relative humidity (RH %), temperature (T °C) and wind speed (WS) were also measured. Air samples were taken during the period from March 2006 to February 2007. Fungal concentrations ranged between 45 and 451CFU/m<sup>3</sup> with an annual mean concentration of 216CFU/m<sup>3</sup>. The lowest fungal concentration was found in the summer, however the highest one was found in the autumn. NO<sub>2</sub>, SO<sub>2</sub> and PM averaged 83.66µg/m<sup>3</sup>, 67.01µg/m<sup>3</sup>, and 237.69µg/m<sup>3</sup>, respectively. T°C was positively and negatively correlated with *Aspergillus* (P=0.000) and *Penicillium* (P=0.007), respectively. RH% was positively correlated with total fungi (P=0.001), *Aspergillus* (P=0.002) and *Cladosporium* (P=0.047). Multiple regression analysis showed that T°C and RH% were the most predicted variants. Non-significant correlations were found between fungal concentrations and air pollutants. Meteorological parameters were the critical factors affecting fungal survivability. © 2011 Elsevier B.V.

### Author Keywords

Air; Air pollution; Fungi; Meteorological parameters; Survivability

**Document Type:** Article

**Source:** Scopus

Shaker, M.A.<sup>a b</sup>, Daneshtalab, N.<sup>c</sup>, Doré, J.J.E.<sup>c</sup>, Younes, H.M.<sup>a</sup>

### **Biocompatibility and biodegradability of implantable drug delivery matrices based on novel poly(decane-co-tricarballlylate) photocured elastomers**

(2012) *Journal of Bioactive and Compatible Polymers*, 27 (1), pp. 78-94. Cited 2 times.

**DOI:** 10.1177/0883911511431877

<sup>a</sup> Pharmaceutics and Polymeric Drug Delivery Research Lab, College of Pharmacy, Qatar University, Doha, Qatar

<sup>b</sup> Department of Pharmaceutics, Faculty of Pharmacy and Pharmaceutical Sciences, Helwan University, Cairo, Egypt

<sup>c</sup> Division of Biomedical Sciences, Memorial University of Newfoundland, St. John's, NL, Canada

### Abstract

Visible light photo-cross-linked biodegradable amorphous elastomers based on poly(decane-co-tricarballlylate) (PDET) with different cross-linking densities were synthesized, and their cytotoxicity, biocompatibility, and biodegradability were reported. Cytotoxicity of PDET extracts of the elastomers was assessed for mitochondrial succinate dehydrogenase activity by 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT assay) and inhibition of [3H] thymidine incorporation into DNA of epithelial cells. The in vivo biocompatibility and biodegradability were determined by subcutaneous implantation of PDET microcylinders in 25 male Sprague-Dawley rats over a period of 12 weeks. The in vivo changes in physical and mechanical parameters of the implants were compared with those observed in vitro. The treated epithelial cells revealed no signs of cytotoxicity, and the elastomer degradation products caused only a slight stimulation to both mitochondrial activity and DNA replication. The implants did not exhibit any macroscopic signs of inflammation or adverse tissue reactions at implant retrieval sites. The retrieved implanted microcylinders maintained their original geometry and extensibility in a manner similar to those observed in vitro. These new elastomers have excellent biocompatibility and are considered promising biomaterials for controlled drug delivery and tissue engineering applications. © SAGE Publications 2011.

### Author Keywords

biocompatibility; biodegradation; drug delivery systems; elastomers; photopolymerization; poly(decane-co-tricarballlylate)

**Document Type:** Article

**Source:** Scopus

El-Kady, M., Mokhtar, M.

### **Pseudospectral numerical treatments for linear delay differential equations**

(2012) *Journal of Applied Sciences Research*, 8 (1), pp. 106-117.

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

### Abstract

In this paper, two different efficient numerical techniques to solve time delay differential equations (DDEs) are presented. These techniques are based on Chebyshev interpolating polynomials and shifted Legendre polynomials. Moreover, differentiation matrices have been used to get the approximate solutions of DDEs. Illustrative examples are

included to demonstrate the validity and applicability of the presented techniques.

#### Author Keywords

Chebyshev and legendre differentiation matrices.; Delayed differential equation; Pseudospectral methods

**Document Type:** Article

**Source:** Scopus

Hassan, W.E.<sup>a</sup>, El-Rify, G.H.<sup>b</sup>

#### **ELearning in Egypt - Challenges and imperatives: Considerations of (design education) eLearning courses in Egypt**

(2012) *Proceedings of the International Conference on e-Learning, ICEL*, pp. 117-124.

<sup>a</sup> Department of Metal Furniture and Constructions, Faculty of Applied Arts, Helwan University, Egypt

<sup>b</sup> Department of Advertising, Faculty of Applied Arts, Helwan University, Egypt

#### Abstract

eLearning is currently applied to several academic programs in Egypt's universities. As a result, eLearning infrastructure and the technical expertise came to light. Helwan University administrations are well aware of the system; its contents and its benefits. This field addresses opportunities offered by eLearning used to improve student learning and quality of the assessment tasks prepared by professors of design education at the Faculty of Applied Arts. Due to author's perspective, design education faces many challenges in Egypt recently. Application of information technology in delivery of design education continues to grow at a steady pace. This paper has presented the most influential developments of eLearning courses in design education. It has been the professors' preoccupation at Helwan University as they are very interested in methods of improving the quality of their eLearning courses. On basis of instructional design (ID), certain models and techniques have been adopted to enhance instructional quality of eLearning courses in various aspects: How to facilitate material learned, how to make material easier to be understood, how to allow material to be more attractive, etc. We demonstrated design method for the implementation of E-course content using available tools easier to be used through a proposed methodology, which is in compatible with the nature of Egyptian universities students. Finally, the paper proposes considerations of eLearning courses of "Design Education" by presenting planning framework for effective utilization of eLearning in design education at the Department of Metal Furniture and Constructions) and Advertising Department. This shows how the proposed considerations can be applied to design high quality eLearning courses in the Faculty of Applied Arts - Helwan University in Egypt.

#### Author Keywords

Design education; Education quality; ELearning courses; ELearning in Egypt; ELearning infrastructure; Instructional design

**Document Type:** Conference Paper

**Source:** Scopus

El Hawary, R.<sup>a b</sup>, Yumoto, K.<sup>c d</sup>, Yamazaki, Y.<sup>d</sup>, Mahrous, A.<sup>a b</sup>, Ghamry, E.<sup>b e</sup>, Meloni, A.<sup>f</sup>, Badi, K.<sup>g</sup>, Kianji, G.<sup>h</sup>, Uiso, C.B.S.<sup>i</sup>, Mwiinga, N.<sup>j</sup>, Joao, L.<sup>k</sup>, Affluo, T.<sup>l</sup>, Sutcliffe, P.R.<sup>m</sup>, Mengistu, G.<sup>n</sup>, Baki, P.<sup>h</sup>, Abe, S.<sup>c</sup>, Ikeda, A.<sup>d</sup>, Fujimoto, A.<sup>d</sup>, Tokunaga, T.<sup>d</sup>

#### **Annual and semi-annual S<sup>inf>q</sup> variations at 96° MM MAGDAS I and II stations in Africa**

(2012) *Earth, Planets and Space*, 64 (6), pp. 425-432. Cited 2 times.

**DOI:** 10.5047/eps.2011.10.013

<sup>a</sup> Department of Physics, Helwan University, 11795 HU Cairo, Egypt

<sup>b</sup> Space Weather Monitoring Center, Helwan University, 11795 HU Cairo, Egypt

<sup>c</sup> Space Environment Research Center, Kyushu University, Fukuoka, Japan

<sup>d</sup> Department of Earth and Planetary Science, Kyushu University, Fukuoka, Japan

<sup>e</sup> National Research Institute of Astronomy and Geophysics, 11421, Helwan, Egypt

<sup>f</sup> INGV, Italy, 00143 Rome, Italy

<sup>g</sup> Department of Engineering, Sudan University of Science and Technology, 407 Khartoum, Sudan

<sup>h</sup> Department of Physics, University of Nairobi, Kenya, P.O Box 30197, 00100 Nairobi, Kenya

<sup>i</sup> Department of Physics, University of Dar Es Salaam, Tanzania, 35063 Dar Es Salaam, Tanzania

<sup>j</sup> Department of Physics, University of Zambia, 32379 Lusaka, Zambia

<sup>k</sup> Department of Physics, Eduardo Mondlane University, Mozambique, 257 Maputo, Mozambique

<sup>l</sup> Department of Electronic Engineering, University of Kwazulu-Natal, South Africa, Private bag X54001, Durban 4000, South Africa

<sup>m</sup> Hermanus Magnetic Observatory, South Africa, 32 Hermanus, 7200, South Africa

<sup>n</sup> Department of Physics, Addis Ababa University Ethiopia, 1176 Addis Ababa, Ethiopia

### Abstract

The quiet daily variations of the geomagnetic field ( $S_q$ ) have been studied by using the geomagnetic data of the 10 International Quietest Days. Geomagnetic data from MAGDAS I and II stations - ten stations were selected around the 96° magnetic meridian (MM) - over Africa have been analyzed from September 2008 to August 2009. The analysis of this unique data set clarifies the characteristics of the  $S_q$  variations over the African sector for the first time by observational geomagnetic data. In this paper, we found that  $S_q(H)$  and  $S_q(D)$  show a predominantly annual variation. The most interesting result, and a new finding in the African sector, is the appearance of two vortices in the day lit southern hemisphere during spring. Further data analysis also revealed many other interesting characteristics for the  $S_q$  over the African sector. Copyright © The Society of Geomagnetism and Earth, Planetary and Space Sciences (SGEPSS).

### Author Keywords

Ground-based magnetometers; Ionospheric currents; Northward current

**Document Type:** Article

**Source:** Scopus

Azam, F.<sup>a</sup>, Madi, A.M.<sup>b</sup>, Ali, H.I.<sup>c</sup>

**Molecular docking and prediction of pharmacokinetic properties of dual mechanism drugs that block MAO-B and adenosine A 2A receptors for the treatment of Parkinson's disease**

(2012) *Journal of Young Pharmacists*, 4 (3), pp. 184-192. Cited 5 times.

**DOI:** 10.4103/0975-1483.100027

<sup>a</sup> Department of Pharmaceutical Chemistry, NIMS Institute of Pharmacy, NIMS University, Jaipur, Rajasthan, India

<sup>b</sup> Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Misurata University, Misurata, India

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

### Abstract

Monoamine oxidase B (MAO-B) inhibitory potential of adenosine A 2A receptor (AA 2A R) antagonists has raised the possibility of designing dual-target-directed drugs that may provide enhanced symptomatic relief and that may also slow the progression of Parkinson's disease (PD) by protecting against further neurodegeneration. To explain the dual inhibition of MAO-B and AA 2A R at the molecular level, molecular docking technique was employed. Lamarckian genetic algorithm methodology was used for flexible ligand docking studies. A good correlation ( $R^2 = 0.524$  and  $0.627$  for MAO-B and AA 2A R, respectively) was established between docking predicted and experimental  $K_i$  values, which confirms that the molecular docking approach is reliable to study the mechanism of dual interaction of caffeinyl analogs with MAO-B and AA 2A R. Parameters for Lipinski's "Rule-of-Five" were also calculated to estimate the pharmacokinetic properties of dual-target-directed drugs where both MAO-B inhibition and AA 2A R antagonism exhibited a positive correlation with calculated LogP having a correlation coefficient  $R^2$  of  $0.535$  and  $0.607$ , respectively. These results provide some beneficial clues in structural modification for designing new inhibitors as dual-target-directed drugs with desired pharmacokinetic properties for the treatment of PD.

### Author Keywords

docking; dual-target-directed drugs; monoamine oxidase B

**Document Type:** Article

**Source:** Scopus

Montaser, A.M.<sup>a</sup>, Mahmoud, K.R.<sup>b</sup>, Elmikati, H.A.<sup>c</sup>

**An interaction study between pifas handset antenna and a human hand-head in personal communications**

(2012) *Progress In Electromagnetics Research B*, (37), pp. 21-42. Cited 5 times.

<sup>a</sup> Sohag University, Sohag, Egypt

<sup>b</sup> Department of Electronics and Communications Engineering, Faculty of Engineering, Helwan University, Cairo, Egypt

<sup>c</sup> Mansoura University, Mansoura 35516, Egypt

### Abstract

In this paper, the interaction of a planar inverted-F antennas array, mounted on a mobile handset, with a human hand-head phantom is investigated in the 1.9 GHz band. The hybrid approach involving the particle swarm optimization (PSO) and Nelder-Mead (NM) algorithm is considered to optimize the complex excitations of the adaptive array

elements in a mutual coupling environment for different beamforming synthesis. Firstly, the effect of the human hand-head on the handset radiation characteristics is studied. Then, the spatial-peak specific absorption rate (SAR) values of 2- and 4-element PIFA arrays for mobile handset in the vicinity of a human hand-head are evaluated numerically for different scenarios. The antenna is analyzed completely using finite difference time domain (FDTD) method while the interaction is performed using the CST Microwave Studio software.

**Document Type:** Article

**Source:** Scopus

Fahmi, W.S.

**Navigating flow: Architecture of the blogosphere**

(2012) *Architecture in the Space of Flows*, pp. 179-198.

**DOI:** 10.4324/9780203721018

Architecture Department, Helwan University, Cairo, Egypt

**Document Type:** Book Chapter

**Source:** Scopus

El-Kady, A.M.<sup>a c</sup>, Ali, A.F.<sup>b c</sup>, Rizk, R.A.<sup>d</sup>, Ahmed, M.M.<sup>a</sup>

**Synthesis, characterization and microbiological response of silver doped bioactive glass nanoparticles**

(2012) *Ceramics International*, 38 (1), pp. 177-188. Cited 29 times.

**DOI:** 10.1016/j.ceramint.2011.05.158

<sup>a</sup> Biomaterials Department, National Research Center, 33 El-Bohooth St., Dokki, 12622, Cairo, Egypt

<sup>b</sup> Inorganic Chemistry Department, National Research Center, 33 El-Bohooth St., Dokki, 12622, Cairo, Egypt

<sup>c</sup> Advanced Materials and Nanotechnology Lab., Center of Excellence, National Research Center, Dokki, 12622, Cairo, Egypt

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

### Abstract

Glass nanoparticles containing 1, 3, 5, and 10 wt% of Ag<sub>2</sub>O (coded; GAg1%, GAg3%, GAg5%, and GAg10%, respectively) were synthesized through a quick alkali mediated sol-gel method and were characterized by TEM, XRF, FT-IR, XRD, TGA, and DSC. Thermal analysis showed that all organic and inorganic by-products were completely decomposed before 700 °C and, hence, all glass samples were stabilized at this temperature. XRD confirmed the amorphous nature of all glasses after stabilization. TEM micrographs showed that the average particle sizes of all samples were less than 100 nm in diameter and the XRF showed that the compositions of the obtained glasses were almost consistent with the designed ones. The samples GAg1%, GAg3%, GAg5%, and GAg10%, showed average pore diameters of 19.85, 18.22, 13.32, and 19.62 nm and specific surface areas of 73.18, 100.38, 192.6, and 55.7 m<sup>2</sup>/g, respectively. In addition, their porosity% was 76.53, 83.20, 77.97, and 79.61%, respectively. The FT-IR spectra of all glasses showed bands located in the range of 1000-1200, 725-800, and 450-480 cm<sup>-1</sup> that correspond to the Si-O-Si asymmetric stretching vibration, the Si-O-Si symmetric stretching vibration, and the Si-O-Si bending mode, respectively. Finally, all samples had an anti-bacterial effect against different types of bacteria and the extraction of silver ions from them followed a diffusion-controlled mechanism, which could demonstrate their ability to treat bone infection. © 2011 Elsevier Ltd and Techna Group S.r.l. All rights reserved.

### Author Keywords

Antibacterial; Bioactive glass nanoparticles; Bone treatment; Silver; Sol-gel processes

**Document Type:** Article

**Source:** Scopus

Kamel, O.M.<sup>a</sup>, Soliman, A.S.<sup>b</sup>, Ammar, M.K.<sup>c</sup>

**Effect of galactic rotation on radial velocities and proper motion Part I**

(2012) *Mechanics and Mechanical Engineering*, 16 (1), pp. 41-49.

<sup>a</sup> Astronomy and Space Science Dept., Faculty of Sciences, Cairo University, Giza, Egypt

<sup>b</sup> Theoretical Physics Dept., National Research Center, Dokki, Giza, Egypt

<sup>c</sup> Mathematics Dept., Faculty of Sciences, Helwan University, Helwan, Egypt

### Abstract

We expand  $\Delta p$  the radial velocity of a group of stars moving around the center of galaxy, firstly in circular orbits. The expansion of  $\Delta p$  is performed up to the third order of  $O(r/R_0)^3$ . A new result is encountered. The Oort constant is splitted into 3 parts  $A_1, A_2, A_3$  instead of one constant  $A$ . Moreover we verify the problem when the motion of the stars is elliptic. For proper motion components, there is no split of the second Oort's constant  $B$ . In all involved expansions orders of magnitude higher than the third in  $\Delta R$  or  $r/R_0$  are neglected. © Technical University of Lodz.

#### Author Keywords

Galactic dynamics; Orbital mechanics of the stars; Stellar kinematics

**Document Type:** Article

**Source:** Scopus

Fatthalla, M.I.<sup>a b</sup>, Elkholy, Y.M.<sup>b</sup>, Abbas, N.S.<sup>b</sup>, Mandour, A.H.<sup>c</sup>, Jørgensen, P.T.<sup>a</sup>, Bomholt, N.<sup>a</sup>, Pedersen, E.B.<sup>a</sup>  
**Conjugation of a 3-(1H-phenanthro[9,10-d]imidazol-2-yl)-1H-indole intercalator to a triplex oligonucleotide and to a three-way junction**  
 (2012) *Bioorganic and Medicinal Chemistry*, 20 (1), pp. 207-214. Cited 1 time.

**DOI:** 10.1016/j.bmc.2011.11.013

<sup>a</sup> Nucleic Acid Center, Department of Physics, Chemistry and Pharmacy, University of Southern Denmark, Campusvej 55, 5230 Odense M, Denmark

<sup>b</sup> Department of Chemistry, Faculty of Science, Helwan University, 11795 Ain Helwan, Cairo, Egypt

<sup>c</sup> Natural Product Chemistry, National Research Center, Dokki, Egypt

#### Abstract

A new intercalating nucleic acid monomer  $M$  comprising a 4-(1-indole)-butane-1,2-diol moiety was synthesized via a classical alkylation reaction of indole-3-carboxaldehyde followed by a condensation reaction with phenanthrene-9,10-dione in the presence of ammonium acetate to form a phenanthroimidazole moiety linked to the indole ring. Insertion of the new intercalator as a bulge into a Triplex Forming Oligonucleotide resulted in good thermal stability of the corresponding Hoogsteen-type triplexes. Molecular modeling supports the possible intercalating ability of  $M$ . Hybridisation properties of DNA/DNA and RNA/DNA three-way junctions (TWJ) with  $M$  in the branching point were also evaluated by their thermal stability at pH 7. DNA/DNA TWJ showed increase in thermal stability compared to wild type oligonucleotides whereas this was not the case for RNA/DNA TWJ. © 2011 Elsevier Ltd. All rights reserved.

#### Author Keywords

Fluorescence; Indole; Molecular modeling; Thermal stability; Three-way junction; Triplex Forming Oligonucleotide

**Document Type:** Article

**Source:** Scopus

Faridooon<sup>a b</sup>, Hussein, W.M.<sup>a c</sup>, Vella, P.<sup>a</sup>, Islam, N.U.<sup>b</sup>, Ollis, D.L.<sup>d</sup>, Schenk, G.<sup>a e</sup>, McGeary, R.P.<sup>a f</sup>  
**3-Mercapto-1,2,4-triazoles and N-acylated thiosemicarbazides as metallo- $\beta$ -lactamase inhibitors**  
 (2012) *Bioorganic and Medicinal Chemistry Letters*, 22 (1), pp. 380-386. Cited 19 times.

**DOI:** 10.1016/j.bmcl.2011.10.116

<sup>a</sup> University of Queensland, School of Chemistry and Molecular Biosciences, Brisbane, QLD 4072, Australia

<sup>b</sup> Institute of Chemical Sciences, University of Peshawar, Peshawar 25120, Pakistan

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

<sup>d</sup> Australian National University, Research School of Chemistry, Canberra, ACT 0200, Australia

<sup>e</sup> National University of Ireland-Maynooth, Department of Chemistry, Maynooth, Co. Kildare, Ireland

<sup>f</sup> University of Queensland, School of Pharmacy, Brisbane, QLD 4072, Australia

#### Abstract

The production of  $\beta$ -lactamases is an effective strategy by which pathogenic bacteria can develop resistance against  $\beta$ -lactam antibiotics. While inhibitors of serine- $\beta$ -lactamases are widely used in combination therapy with  $\beta$ -lactam antibiotics, there are no clinically available inhibitors of metallo- $\beta$ -lactamases (MBLs), and so there is a need for the development of such inhibitors. This work describes the optimisation of a lead inhibitor previously identified by fragment screening of a compound library. We also report that thiosemicarbazide intermediates in the syntheses of these compounds are also moderately potent inhibitors of the IMP-1 MBL from *Pseudomonas aeruginosa*. The interactions of these inhibitors with the active site of IMP-1 were examined using in silico methods. © 2011 Elsevier Ltd. All rights reserved.

#### Author Keywords

3-Mercapto-1,2,4-triazoles; Antibiotic resistance; Inhibition assays; Metallo- $\beta$ -lactamases; Thiosemicarbazides



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

El-Nagdy, M.S.<sup>a</sup>, Abdelsalam, A.<sup>b</sup>, Badawy, B.M.<sup>c</sup>, Algaood, A.<sup>d</sup>

**Topology of 28Si fragmentation at different energies**

(2012) *Journal of Physical Studies*, 16 (4), art. no. 4201, 8 p. Cited 1 time.

<sup>a</sup> Physics Department, Helwan University, Helwan, Egypt

<sup>b</sup> Physics Department, Cairo University, Giza, Egypt

<sup>c</sup> Reactor Physics Department, Nuclear Research Center, Atomic Energy Authority, Egypt

<sup>d</sup> Physics Department, Amran University, Amran, Yemen

**Abstract**

This paper presents the projectile fragments emerged from non-central events of 3.7A GeV 28Si collisions in nuclear emulsion. The charges of these fragments were carefully measured and compared with those obtained from 3.7A GeV 28Si. The distributions of those charges were given and fitted by the Gaussian shapes. The topology of 28Si fragmentation is given. The dependence of fragmentation process on incident beam energy is studied. The presence of  $\alpha$ -cluster inside silicon beam is investigated. © 2011, Iranian Epidemiological Association. All rights reserved.

**Author Keywords**

28Si ions; Nuclear charge identification; Projectile fragmentation

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

Kaytbay, S.H.<sup>a</sup>, Elkady, O.A.M.<sup>b</sup>

**Manufacturing of porous Ni-Al intermetallics by direct laser reaction sintering**

(2012) *Proceedings of the International Euro Powder Metallurgy Congress and Exhibition, Euro PM 2012*, 1, .

<sup>a</sup> Department of Production, Helwan University, Helwan, Egypt

<sup>b</sup> Powder Technology Division, Manufacturing Technology Department, Central Metallurgical R and D Institute (CMRDI), P.O. Box 87, Helwan, 11421 Cairo, Egypt

**Abstract**

Porous Intermetallic Ni-Al alloys were fabricated by laser reactive sintering technique (laser-induced self-propagation sintering). The heat generated from the formation of the intermetallics was sufficient to obtain bulk products whereas pores were formed during the reaction. The aluminum-to-nickel ratio was an important factor controlling the porosity of the synthesized nickel aluminide alloy. The recorded relative density of the green compact was more than 73% for effective foam formation. The exothermic behavior of the alloys was characterized by the relation between the starting reaction time and the Al content. The different phases of the sintered alloys formed during the sintering process were identified by X-ray diffraction, and the microstructure was studied.

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

Ebead, U.<sup>a</sup>, Saeed, H.<sup>b</sup>

**Hybrid mechanically fastened/externally bonded frp for RC beam shear strengthening**

(2012) *Proceedings of the 6th International Conference on FRP Composites in Civil Engineering, CICE 2012*, .

<sup>a</sup> United Arab Emirates University, P.O. Box 17555, Al Ain, United Arab Emirates

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

**Abstract**

Fifteen (15) reinforced concrete beams, were tested to assess the hybrid mechanically fastened-externally bonded fiber reinforced polymer (MF/EB FRP) strengthening technique to enhance the shear capacity of reinforced concrete beams. The results of this research work can be added to those few existing in the literature on the use of mechanically fastened fiber-reinforced polymer strengthening system. This research aims to investigate the shear contribution of MF/EB FRP to the shear resistance of RC beams. It was possible through this research to study the effect of using diagonal MF/EB strips versus that of using the vertical strips. The failure mode of the externally bonded system was mostly categorized as premature debonding that is associated with shear failure. As for the MF/EB

specimens, the failure mode was categorized as flexural failure associated with detachment within the concrete. This indicated the superior behavior of this system that eliminated the shear failure of the strengthened beams.

**Author Keywords**

Externally bonded FRP; Fasteners; Hybrid; Mechanically fastened FRP; Reinforced concrete beams; Shear strengthening

**Document Type:** Conference Paper

**Source:** Scopus

El-Leithy, E.S.<sup>a</sup>, Nasr, M.<sup>b</sup>, El-Moneum, R.A.<sup>a</sup>

**Development and characterization of solid lipid dispersion as delivery system for hydrophilic antihypertensive drug atenolol**

(2012) *International Journal of Drug Delivery*, 4 (2), .

**DOI:** 10.5138/ijdd.v4i2.625

<sup>a</sup> Department of Pharmaceutics and Industrial Pharmacy, Helwan University, Helwan, 11790, Cairo, Egypt

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

**Abstract**

Atenolol is a hydrophilic  $\beta$ -blocker drug characterized by high solubility and low permeability which corresponds to BCS class III drug. The purpose of the study was to develop solid dispersion of atenolol with fatty excipients to modify the release and enhance intestinal permeability of the drug. The solid dispersions containing atenolol were prepared using lipophilic surfactants, saturated fatty acid, triglycerides and phospholipids by co-evaporation method. The obtained solid dispersions were characterized by differential scanning calorimetry, infrared spectroscopy, drug solubility, % yield, % encapsulation efficiency and in vitro drug release. The results of in vitro release studies indicated that drug release from the drug: phosphatidylcholine dispersion (1:1w/w) showed a sustained release in comparison with the pure atenolol and the other solid dispersions. The influence of phosphatidylcholine on drug intestinal permeation was further evaluated versus pure drug. The results of in vitro permeability revealed that drug-phosphatidylcholine solid dispersion significantly enhanced % permeation of atenolol in comparison with the pure drug. This could be attributed to higher lipophilicity acquired by incorporation of the drug within the solid lipid dispersion. On the basis of the result obtained, it was concluded that solid dispersion of atenolol with phosphatidylcholine is a good approach to modify the release and enhance permeability of water soluble drug. However, the influence of lipophilic solid dispersion on atenolol bioavailability needs further investigation.

**Author Keywords**

Atenolol; Lipophilic excipients; Permeation; Solid dispersion; Sustained release; Water soluble drug

**Document Type:** Article

**Source:** Scopus

El-Morsy, A.-W.<sup>a b</sup>, Farahat, A.I.Z.<sup>c</sup>

**The influence of age hardening on the microstructure and mechanical behavior of wrought magnesium alloy AZ61**

(2012) *Steel Research International*, SPL. ISSUE, pp. 827-830. Cited 1 time.

<sup>a</sup> Mechanical Engineering Department, King Abdulaziz University, P.O. Box 344, Rabigh21911, Saudi Arabia

<sup>b</sup> Mechanical Engineering Department, Helwan University, 1 Sherif Str, Helwan 11792, Cairo, Egypt

<sup>c</sup> Plastic Deformation Dept. Central Metallurgical R and D Institute, P.O. Box 87, Helwan, Egypt

**Abstract**

The aim of this paper is to investigate an effect of aging time on the microstructure and the mechanical properties of the Mg-6Al-1Zn alloy. Age-treatment response and microstructural variation were examined by tensile test, hardness test, optical and scanning electron microscopy. The solution treatment was carried out at 410°C for 24hrs followed by water quenching. Subsequent aging was carried out at 200°C with various aging intervals of time from 0.2hr to 183hrs. The as-cast microstructure revealed that the majority phase (Mg-solid solution,  $\alpha$ -Mg), discontinuous and continuous precipitates (Mg<sub>17</sub>Al<sub>12</sub>) are present. During the solution treatment, Mg<sub>17</sub>Al<sub>12</sub> completely dissolved into the magnesium matrix. Upon ageing for 2hrs there was a reappearance of the discontinuous precipitation. After aging, the mechanical properties are continuously decreased up to approximately 2hrs. After prolonged aging time up to 34hrs, the mechanical properties are slightly increasing. With further increases in the aging time up to 167hrs, the dependence of mechanical properties on the aging time became more pronounced. © 2012 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim.

**Author Keywords**

Aging treatment; Heat treatments; Mechanical properties; Mg-6Al-1Zn alloy; Precipitates Mg<sub>17</sub>Al<sub>12</sub> phase; Solid solution

**Document Type:** Conference Paper

**Source:** Scopus

Eid, H.F.<sup>a</sup>, Darwish, A.<sup>b</sup>, Hassanien, A.E.<sup>c</sup>, Kim, T.-H.<sup>d</sup>

**Intelligent hybrid anomaly network intrusion detection system**

(2011) *Communications in Computer and Information Science*, 265 CCIS (PART 1), pp. 209-218. Cited 4 times.

**DOI:** 10.1007/978-3-642-27192-2\_25

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

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

<sup>c</sup> Cairo University, Faculty of Computers and Information, Cairo, Egypt

<sup>d</sup> Hannam University, South Korea

**Abstract**

Intrusion detection systems (IDSs) is an essential key for network defense. The hybrid intrusion detection system combines the individual base classifiers and feature selection algorithm to maximize detection accuracy and minimize computational complexity. We investigated the performance of Genetic algorithm-based feature selection system to reduce the data features space and then the hidden naïve bays (HNB) system were adapted to classify the network intrusion into five outcomes: normal, and four anomaly types including denial of service, user-to-root, remote-to-local, and probing. In order to evaluate the performance of introduced hybrid intrusion system, several groups of experiments are conducted and demonstrated on NSL-KDD dataset. Moreover, the performances of intelligent hybrid intrusion system have been compared with the results of well-known feature selection algorithms. It is found that, hybrid intrusion system produces consistently better performances on selecting the subsets of features which resulting better classification accuracies (98.63%). © 2011 Springer-Verlag.

**Author Keywords**

Feature selection; Genetic algorithm; Hidden naïve bays; Intrusion detection system; Network security

**Document Type:** Conference Paper

**Source:** Scopus

Othman, K.A.A.A.<sup>a</sup>, Gomma, H.W.<sup>b</sup>

**Reducing the bullwhip effect in supply chains using genetic algorithm and control engineering**

(2011) *Conference Proceedings - IEEE International Conference on Systems, Man and Cybernetics*, art. no. 6083705, pp. 440-445. Cited 1 time.

**DOI:** 10.1109/ICSMC.2011.6083705

<sup>a</sup> Tabbin Institute for Metallurgical Studies, Tabbin, Cairo, Egypt

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

**Abstract**

Supply chains suffer from bullwhip effect which is the amplified variance of the demand information at the order end of the chain. Differently from the majority of research efforts in reducing the bullwhip efforts that consider business modeling approaches and use information technology enhancements, this paper introduces alternative techniques that mainly focus on using the strength of Genetic Algorithm (GA), PI and PID controllers as tools for the bullwhip reduction. The results show the ability of the proposed techniques in providing substantial reduction specially when compared with the current conventional approaches. © 2011 IEEE.

**Document Type:** Conference Paper

**Source:** Scopus

Helmy, E.M.

**Benchmarking the Egyptian medical tourism sector against international best practices: An exploratory study**

(2011) *Tourismos*, 6 (2), pp. 293-311. Cited 1 time.

Faculty of Tourism and Hotel Management, Department of Tourism Studies, Helwan University, Orman Post Office, Cairo, 12612, Egypt

**Abstract**

This paper argues that any compatible strategy for the development of medical tourism at a developing nation should be based primarily on a comprehensive benchmarking study. It has employed the benchmarking phase of a national project for the development of an Egyptian medical tourism strategy to showcase significance of such benchmarking implications. The benchmarking phase of the Egyptian project has used two main data sets to reach reliable findings: a series of best practice destinations claimed to be key players leading the future of the medical tourism sector worldwide and an extensive survey of the Egyptian medical tourism sector. Arguably, the benchmarking process was crucial for the development of the strategy to measure performance of Egypt's medical tourism sector against international best practices, to identify gaps in the Egyptian medical tourism sector and to address main areas required to develop 'service value chain' for the Egyptian medical tourism sector. © University of the Aegean.

**Author Keywords**

Benchmarks; Best practices; Egypt; Healthcare providers; Medical tourism

**Document Type:** Article

**Source:** Scopus

Anis, A.M.<sup>a</sup>, Abutaleb, M.M.<sup>a</sup>, Ragai, H.F.<sup>b</sup>, Eladawy, M.I.<sup>a</sup>

**SiC capacitive pressure sensor node for harsh industrial environment**

(2011) *Proceedings - CIMSIm 2011: 3rd International Conference on Computational Intelligence, Modelling and Simulation*, art. no. 6076396, pp. 413-416. Cited 3 times.

**DOI:** 10.1109/CIMSIm.2011.82

<sup>a</sup> Department of Communication and Electronics Engineering, Helwan University, Cairo, Egypt

<sup>b</sup> Department of Communication and Electronics Engineering, Ain Shams University, Cairo, Egypt

**Abstract**

This paper presents an analytical and simulation solution for MEMS (Microelectromechanical Systems) capacitive pressure sensor operating in harsh environment. The proposed sensor consists of a circular SiC (Silicon Carbide) diaphragm suspended over sealed cavity on a Si (Silicon) substrate. SiC is selected in this work due to its excellent electrical stability, mechanical robustness and chemical inertness properties, which is very adequate for harsh environment. The design is based on the use of COMSOL multiphysics structural analysis to design and obtain analytical solution for a circular diaphragm deflection. The proposed sensor demonstrated diaphragm of 100  $\mu\text{m}$  diameter with the gap depth 0.64  $\mu\text{m}$  and the sensor exhibit a linear response with pressure load up to 3.5 MPa with maximum deflection up to 0.52  $\mu\text{m}$ . © 2011 IEEE.

**Author Keywords**

COMSOL; harsh environment; high dielectric materials; silicon carbide

**Document Type:** Conference Paper

**Source:** Scopus

Walash, M.I.<sup>a</sup>, Rizk, M.S.<sup>b</sup>, Sheribah, Z.A.<sup>a</sup>, Salim, M.M.<sup>a</sup>

**Derivative spectrophotometric analysis of benzophenone (as an impurity) in phenytoin**

(2011) *Chemistry Central Journal*, 5 (1), art. no. 85, . Cited 5 times.

**DOI:** 10.1186/1752-153X-5-85

<sup>a</sup> Department of Analytical Chemistry, Faculty of Pharmacy, University of Mansoura, Mansoura, Egypt

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

**Abstract**

Three simple and rapid spectrophotometric methods were developed for detection and trace determination of benzophenone (the main impurity) in phenytoin bulk powder and pharmaceutical formulations. The first method, zero-crossing first derivative spectrophotometry, depends on measuring the first derivative trough values at 257.6 nm for benzophenone. The second method, zero-crossing third derivative spectrophotometry, depends on measuring the third derivative peak values at 263.2 nm. The third method, ratio first derivative spectrophotometry, depends on measuring the peak amplitudes of the first derivative of the ratio spectra (the spectra of benzophenone divided by the spectrum of 5.0  $\mu\text{g}/\text{mL}$  phenytoin solution) at 272 nm. The calibration graphs were linear over the range of 1-10  $\mu\text{g}/\text{mL}$ . The detection limits of the first and the third derivative methods were found to be 0.04  $\mu\text{g}/\text{mL}$  and 0.11  $\mu\text{g}/\text{mL}$  and the quantitation limits were 0.13  $\mu\text{g}/\text{mL}$  and 0.34  $\mu\text{g}/\text{mL}$ , respectively, while for the ratio derivative method, the detection limit was 0.06  $\mu\text{g}/\text{mL}$  and the quantitation limit was 0.18  $\mu\text{g}/\text{mL}$ . The proposed methods were applied successfully to the assay of the studied drug in phenytoin bulk powder and certain pharmaceutical preparations. The results were statistically compared to those obtained using a polarographic method and were found to be in good agreement. © 2011 Salim et al.

**Document Type:** Article

**Source:** Scopus

Hebeish, A.<sup>a</sup>, Ragheb, A.A.<sup>a</sup>, Nassar, S.H.<sup>a</sup>, Allam, E.E.<sup>b</sup>, El-Thalouth, J.I.A.<sup>b</sup>

**Eco-friendly technology for textile printing using innovative self printing paste**

(2011) *Egyptian Journal of Chemistry*, 54 (6), pp. 663-678.

<sup>a</sup> Textile Research Division, National Research Center, United States

<sup>b</sup> Faculty of Applied Arts, Helwan University, Cairo, Egypt

#### **Abstract**

TARA SEEDS were subjected to mechanical crushing sieving and soaking in water followed by filtration to obtain galactomannan gum. Rheological properties of this gum were investigated before and after the gum was treated with sodium hydroxide (0.5 to 10%). Experience gained from this study was used to concurrently isolate eco-friendly galactomannan gum and safety natural dye from Tara seeds in one step process. Evaluation was made of the obtained self printing paste for printing cotton, wool and silk fabrics in presence and absence of different mordants. It was found that pastes of Tara gum treated with sodium hydroxide at a range of 0.5 to 2 % exhibit non-Newtonian pseudo plastic behavior, whereas the latter is converted at higher alkali concentrations to non-Newtonian Thixotropic behavior; similar to pastes prepared from the untreated gum. The colored printing paste, which was isolated from Tara seeds, could successfully be used in printing of silk, wool and cotton fabrics without any additives, but the shade was only confined to one color. It was also found that the K/S values of silk and wool are practically equal meanwhile they are higher than that of cotton. Mordants enhance printing and create different colors, depending upon their nature. For example the K/S of printed cotton samples displays the highest value with tannic acid and the lowest with alum and follows the order: tannic acid > copper sulphate > ferrous sulphate > potassium dichromate > alum; an order which is also valid for wool and silk fabrics. Fabrics printed by the self printing paste acquire color fastness to rubbing, to washing, and to perspiration ranging from very good to excellent, besides, resistance of the prints to alkali treatment.

#### **Author Keywords**

Cotton; Mordants; Self printing paste; Tara gum; Wool and Silk

**Document Type:** Article

**Source:** Scopus

Amr, A.R.<sup>a</sup>, Abeer, E.E.<sup>b</sup>

**Hypolipideimic and hypocholestermic effect of pine nuts in rats fed high fat, cholesterol-diet**

(2011) *World Applied Sciences Journal*, 15 (12), pp. 1667-1677. Cited 9 times.

<sup>a</sup> Department of Nutrition and Food Science, Faculty of Home Economics, Helwan University, 65 St. Elmatba Elahlia, Bolaq Abu Elaala, Cairo, Egypt

<sup>b</sup> Department of Nutrition and Food Science, Faculty of Specific Education, Port-Said University, Port-Said, Egypt

#### **Abstract**

Pine nuts are cholesterol-free and good source of nutrients. It is rich in energy and consists of protein, carbohydrates, fatty acids, vitamins and minerals. The present study was carried out to investigate the hypolipideimic and hypocholestermic effect of pine nuts on rats fed high fat, cholesterol-diet. Rats were divided into five groups of seven rats each. Group (1) kept as negative control group; the remaining four groups fed high fat, cholesterol diet. Group (2) kept as positive control group; groups (3), (4) and (5) fed diets supplemented with 5, 10 and 15% pine nuts, respectively. Data illustrated that positive control group had significant reduction in food intake and no significant change in body weight gain. It also had significant increase in serum levels of total lipid (TL), triglycerides (TG), total cholesterol (TC), LDL-C, VLDL-C, AST, ALT and ALP and had significant decrease in serum level of HDL-C and value of HDL-C/TC ratio, compared to the negative control group. In contrast, supplemented diet with pine nuts caused significant reduction in food intake and non significant change in body weight gain. In addition to, a significant decrease in serum levels of the above mentioned parameters as well as significant increase in serum level of HDL-C and values of HDL-C/TC ratio, except low level of pine nuts (5%) induced no significant change in TG and HDL-C, as compared the positive control group. Normal histological structure was observed in heart of treated rats with 10 and 15% pine nuts and in aorta of treated rats with 15% pine nuts. It is concluded that pine nuts increased the reduction in lipid profile, lipoprotein cholesterol and liver enzymes. These decreases were increased with increase pine nut level. © IDOSI Publications, 2011.

#### **Author Keywords**

Hypercholesterolemia; Hypertriglyceridemia; Pine nuts; Rats; Serum lipoproteins

**Document Type:** Article

**Source:** Scopus

Dakrory, A.I.<sup>a</sup>, Issa, A.Z.<sup>a</sup>, Ali, R.S.<sup>b</sup>

**Nervi terminalis, vomeronasalis and olfactorius of uromastyx aegyptius (squamata - lacertilia-agamidae)**  
(2011) *Life Science Journal*, 8 (4), pp. 900-907.

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

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

### Abstract

The present work was aimed to study the anterior cranial nerves which innervate the olfactory apparatus of *Uromastyx aegyptius*. The olfactory apparatus of *Uromastyx aegyptius* includes the main olfactory organ and the vomeronasal organ or organ of Jacobson. The main olfactory organ is innervated by the olfactory nerve which arises from the sensory olfactory epithelium and leaves the capsular cavity through a separate foramen, i.e., there is no foramen olfactorium advehens. The vomeronasal organ is innervated by two nerves: the terminal and the vomeronasal nerves. They arise from the sensory epithelium in combination. The terminal nerve carries a terminal ganglion. The nervi terminalis and vomeronasalis combined together as one separate nerve which leaves the cavity of the nasal capsule together with few bundles of the olfactory nerves through a special foramen. The nervi terminalis, vomeronasalis and olfactorius enter the cranial cavity through a large foramen olfactorium evehens and they connect separately the anterior part of the brain. The vomeronasal nerve enters the accessory olfactory bulb (vomeronasal formation) of the fore brain. The nervus olfactorius enters the main olfactory bulb whereas the terminal nerve connects the anterior end of the olfactory lobe. The olfactory bulb has a long olfactory peduncle. The three nerves carry pure special somatic sensory fibres.

### Author Keywords

Nervus olfactorius; Nervus terminalis; *Uromastyx aegyptius*

**Document Type:** Article

**Source:** Scopus

Al-Atabany, W.<sup>a b</sup>, Degenaar, P.<sup>a c</sup>

**Scene optimization for optogenetic retinal prosthesis**

(2011) *2011 IEEE Biomedical Circuits and Systems Conference, BioCAS 2011*, art. no. 6107820, pp. 432-435.

**DOI:** 10.1109/BioCAS.2011.6107820

<sup>a</sup> School of Electrical, Electronic and Computer Engineering, Newcastle University, Newcastle upon Tyne, United Kingdom

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

<sup>c</sup> Institute of Neuroscience, Newcastle University, Newcastle upon Tyne, United Kingdom

### Abstract

Optogenetic retinal prosthesis is promising a new technique aiming to restore vision to those with disorders of the retina. However, to restore mobility and scene recognition to the patients, the transferred visual information to these patients should be optimized. In this paper we present a processing scheme to simplify and spatially compress the visual scene prior to transfer to the retina prosthesis. © 2011 IEEE.

**Document Type:** Conference Paper

**Source:** Scopus

Soliman, O.A.H.

**Furniture design education strategy for the development of creative thinking for students to develop the curriculum design of the product: Education strategy course design furniture**

(2011) *Design Principles and Practices*, 5 (5), pp. 683-696.

Helwan University, Cairo, Egypt

### Abstract

In contemporary society today it has become important to guide the thinking of students in technical colleges and design stages of the strategy and steps that must be followed and the standards to achieve outstanding design models. As observed in many universities, technical colleges and in design students the direction of their projects from design to transfer in the contemporary world, there is no regard to the compatibility of the design with what surrounds it in a vacuum, of the functions required by it, and the convenience of raw materials. Choice became a formality only, without taking into account the previous vocabulary. It is here that the research problem is how you can

train the thought of students on a strategy for design to help in the creation of curriculum design and to clear up the design, product model location, and to contribute to the training of their thoughts on design, not tradition, the analysis and not flattening in order to achieve the content and not just form. The research deals with the subject through the following points: - The definition of furniture: types - characteristics - criteria. - Furniture and its association with contemporary environmental heritage. - Furniture and its association with contemporary function. - Contemporary Furniture and its association with emptiness. - Furniture and its association with contemporary Bsvp. - Elements of building design strategy is proposed: • design philosophy. • design goals. • curriculum design. • design style. • design mechanisms. • the design proposal and the various stages. © Common Ground, Ola Ali Hashem Soliman, All Rights Reserved.

**Author Keywords**

Arts; Development of design thought; Education furniture design; Education strategy

**Document Type:** Review

**Source:** Scopus

Hegazy, M.M.<sup>a</sup>, Eissa, M.M.<sup>b</sup>, El-Mahdy, G.A.<sup>a</sup>, Fathy, A.M.<sup>b</sup>, Sayed, F.M.<sup>a</sup>

**Influence of microalloying elements addition on the corrosion resistance of reinforced carbon steel in a simulated concrete environment**

(2011) *Egyptian Journal of Chemistry*, 54 (3), pp. 389-409.

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

<sup>b</sup> Steel Technology Department, Central Metallurgical Research and Development Institute (CMRDI), Cairo, Egypt

**Abstract**

THE INFLUNENCE of addition of Vanadium and Titanium microalloying elements on the corrosion resistance of reinforced carbon steel in saturated Ca(OH)<sub>2</sub> solutions has been investigated. Metallographic examination, weigh change, Open Circuit Potential (OCP), Potentiodynamic Polarization and Electrochemical Impedance Spectroscopy (EIS) were employed. The monitoring data obtained from the steady state potential (ESS) and the polarization resistance (Rp) meassurments indicated beneficial effects of Ti and V as microalloying elements addition in suppression of the corrosion resistance of steel in saturated Ca(OH)<sub>2</sub> solutions. The grain refining due to microalloying addition plays an important role in an improvement of the corrosion resistance of the investigated steel. Addation of Chloride ions markedly increased the corrosion rate of carbon steel.

**Author Keywords**

Carbon steel; Concrete; Corrosion; Microalloying elements (Vanadium, Titanium); Polarization and Electrochemical Impedance Spectroscopy

**Document Type:** Article

**Source:** Scopus

Mohamed, M.S.<sup>a</sup>, Kamel, R.<sup>b</sup>, Fathallah, S.S.<sup>a</sup>

**Synthesis of new pyrroles of potential anti-inflammatory activity**

(2011) *Archiv der Pharmazie*, 344 (12), pp. 830-839. Cited 6 times.

**DOI:** 10.1002/ardp.201100056

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

<sup>b</sup> Toxicology and Pharmacology Department, Faculty of Pharmacy, Helwan University, Ein Helwan, Cairo, Egypt

**Abstract**

We herein disclose a series of novel pyrrole derivatives 1-4 and pyrrolo[2,3-d]pyrimidine derivatives 6-11 as novel potent anti-inflammatory compounds. The structures were confirmed by IR, <sup>1</sup>H-NMR, and MS. Some newly synthesized compounds were examined for their in-vivo anti-inflammatory activity. Several derivatives showed a promising anti-inflammatory activity compared to ibuprofen. In this paper, we examine and discuss the structure-activity relationships and anti-inflammatory activities of these compounds. A series of heterocyclic compounds as potential anti-inflammatory agents was synthesized and evaluated. Several derivatives as, e.g., 6-11 showed a promising anti-inflammatory activity compared to ibuprofen. Copyright © 2011 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

**Author Keywords**

Anti-inflammatory activity; Pyrrole; Pyrrolo[2,3-d]pyrimidine; Structure-activity-relationship

**Document Type:** Article

**Source:** Scopus

Samy, N.<sup>a</sup>, Abd El-Maksoud, M.D.<sup>a</sup>, Mousa, T.E.<sup>a</sup>, El-Mezayen, H.A.<sup>b</sup>, Shaalan, M.<sup>c</sup>

**Potential role of serum level of soluble CD44 and IFN- $\gamma$  in B-cell chronic lymphocytic leukemia**  
(2011) *Medical Oncology*, 28 (SUPPL. 1), pp. S471-S475. Cited 2 times.

**DOI:** 10.1007/s12032-010-9661-6

<sup>a</sup> Biochemistry Department, National Research Centre, Cairo, Egypt

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

<sup>c</sup> Surgical Department, National Cancer Institute, Cairo, Egypt

### Abstract

Evidence indicates that the slowly expanding population of B cells that characterizes chronic lymphocytic leukemia (CLL) results primarily from defects in responses to cytokines. We evaluated the prognostic value of soluble CD44 and IFN- $\gamma$  in B-cell chronic lymphocytic leukemia (B-CLL) and analyzed their source and regulation secretion in B-CLL clones in vitro. Levels of soluble CD44 standard (sCD44s) and IFN- $\gamma$  were analyzed by enzyme-linked immunosorbent assay. B-CLL cells were separated and stimulated in vitro for the detection of both markers. Serum levels of sCD44s and IFN- $\gamma$  were significantly elevated in patients with B-CLL in comparison with normal persons. Elevated levels of sCD44s and IFN- $\gamma$  were associated with an advanced disease as reflected by increased values as stage progress. In B-CLL, sCD44s as well as IFN- $\gamma$  was shed from leukemia cells as shown by in vitro cultures. Stimulation of B-CLL clones results in a proliferation-associated increased secretion of sCD44s and IFN- $\gamma$ . B-CLL clones from advanced-stage patients are characterized by an increased capacity for proliferation and production of both markers in comparison with early-stage patients. Our present results suggest that sCD44 and IFN- $\gamma$  may be of major importance in the pathogenesis of B-CLL, and inhibition of the effects of sCD44 and IFN- $\gamma$  could be a potential therapeutic strategy. © 2010 Springer Science+Business Media, LLC.

### Author Keywords

B-Cell chronic lymphocytic leukemia; IFN- $\gamma$ ; Soluble CD44

**Document Type:** Article

**Source:** Scopus

Hammad, N.M.

### Automotive battery modelling and management

(2011) *Journal of Engineering Science and Technology Review*, 4 (2), pp. 140-145.

Faculty of Engineering, Helwan University, Cairo, Egypt

### Abstract

The estimation of vehicle battery performance is typically addressed by testing the battery under specific operation conditions by using a model to represent the test results. Approaches for representing test results range from simple statistical models to neural networks to complex, physics-based models. Basing the model on test data could be problematical when testing becomes impractical with many years life time tests. So, real time estimation of battery performance, an important problem in automotive applications, falls into this area. In vehicles it is important to know the state of charge of the batteries in order to prevent vehicle stranding and to ensure that the full range of the vehicle operation is exploited. In this paper, several battery models have studied including analytical, electrical circuits, stochastic and electro-chemical models. Valve Regulated Lead Acid "VRLA" battery has been modelled using electric circuit technique. This model is considered in the proposed Battery Monitoring System "BMS". The proposed BMS includes data acquisition, data analysis and prediction of battery performance under a hypothetical future loads. Based on these criteria, a microprocessor based BMS prototype had been built and tested in automotive Lab.. The tests show promising results that can be used in industrial applications. © 2011 Kavala Institute of Technology.

### Author Keywords

Automotive; Battery modelling; Management

**Document Type:** Article

**Source:** Scopus

Ding, L.<sup>a b</sup>, Seliem, H.M.<sup>c</sup>, Rizkalla, S.H.<sup>d</sup>, Wu, G.<sup>a</sup>, Wu, Z.<sup>e f</sup>

### Behavior of concrete piles confined with CFRP grid

(2011) *American Concrete Institute, ACI Special Publication*, 1 (275 SP), pp. 189-205.

<sup>a</sup> College of Civil Engineering, Southeast University, Nanjing, Jiangsu Province, China



<sup>b</sup> Department of Civil, Construction and Environmental Engineering, North Carolina State University, Raleigh, NC, United States

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

<sup>d</sup> NSF I/UCRC-CICI, North Carolina State University, Raleigh, NC, United States

<sup>e</sup> International Institute for Urban Systems Engineering, Southeast University, Nanjing, Jiangsu Province, China

<sup>f</sup> Department of Urban and Civil Engineering, Ibaraki University, Hitachi City, Ibaraki Prefecture, Japan

### Abstract

This paper describes an experimental program undertaken to study the behavior and effectiveness of using Carbon Fiber Reinforced Polymer (CFRP) Grid, as an alternative for steel spirals to confine precast concrete piles. The research focuses on the effectiveness of the confinement of the specified C-Grid on the concrete core of piles. The experimental program consists of a total of seven short piles including one without confinement, two with steel spiral and four with C-Grid. The parameters included in the study were the number of grid layers, the overlap length, and the spacing between the circumferential wires of C-Grid. All the specimens were subjected to concentric axial compression up to failure. Results indicate that the specified C-Grid can provide equivalent performance or more than typical spiral steel reinforcement for precast prestressed concrete piles. The paper also presents an analytical model to predict the performance of piles reinforced with C-Grid as spiral reinforcement. The analytical model yields results that match well with the experimental results.

### Author Keywords

Axial compression; CFRP grid; Concrete piles

**Document Type:** Conference Paper

**Source:** Scopus

Mahmoud, S.A.S.<sup>a</sup>, Hanaa, A.A.Y.<sup>b</sup>, Safaa, S.I.<sup>c</sup>

**Health promotion program to improve the lifestyle of school children living in slum areas in helwan governorate (2011)** *Life Science Journal*, 8 (4), pp. 618-627.

<sup>a</sup> Community health Nursing, Faculty of Nursing, Helwan University, Egypt

<sup>b</sup> Community health Nursing, Faculty of Nursing, Benha University, Egypt

<sup>c</sup> Paediatric nursing, Faculty of nursing, Helwan University, Egypt

### Abstract

The school years are a time when the foundations of a healthy lifestyle are formed and when health promotion programs are likely to have the greatest impact. The aim of this study was to evaluate the effect of health promotion program on improving lifestyle of school children living in slum areas. Design: A quasi -experimental design was used. Setting: The study was conducted at two governmental primary schools in Azbat Elwalda, in Helwan Sample: A stratified multi-stage cluster random sample was used for selection of school children in slum areas, the total number of governmental primary schools in Azbat Elwalda are (3), two were chosen randomly. One class from fifth grade and one from sixth grade were selected randomly from each school. The total number of children for two schools were 200 (both sexes). Tools: 3 tools were used 1) A structured interviewing questionnaire was used to assess students socio-demographic characteristics, students' perception of social and physical environment of school, students' common health problems during the past two years and students' knowledge about healthy life style. These tools were used before and after program. 2) A physical examination to assess the student from head to toe. 3) An observational checklist for assessing in and out school's environment. Results: the study confirms that diseases of respiratory system had the highest frequencies among the students as follows: less than two fifths for common cold, more than one third for tonsillitis and bronchitis and more than one quarter for influenza. There was difference between before and after program implementation concerning students' health promoting life style, perception of social and physical school environment. The differences were statistically significant for all of variables ( $P < 0.001$ ). Conclusion: The study concluded that students perception improved toward their social, physical school environment and their knowledge about healthy life style after implementing the health promotion program. This improvement was proved statistically. Recommendations: The study recommended that a health promotion program are strongly needed to school children to improve their lifestyle especially school children living in slum areas and the necessity of improving school environmental sanitation for the promotion of students health.

### Author Keywords

Environment; Health promotion program; Lifestyle; School age children; Slum area

**Document Type:** Article

**Source:** Scopus

Abbas, H., Hussein, M., Etman, M.

**A hybrid genetic algorithm approach for optimizing dynamic multi-commodity supply chains**

(2011) *41st International Conference on Computers and Industrial Engineering 2011*, pp. 303-316.

Mechanical Engineering Dept., Helwan University, Faculty of Engineering, Cairo, Egypt

### Abstract

In this paper, a dynamic supply chain network (SCN) model is developed in which both dynamic facility locations and dynamic distributed quantities of materials and products are assumed. The problem is formulated mathematically using the mixed integer linear programming (MILP). The solution methodology adopted in this research is the hybrid genetic algorithm (hGA) comprising genetic algorithm (GA) and pattern search (PS) optimization techniques. A study is conducted in this research and experimental work is performed in order to validate the proposed hGA. In this study, several comparisons are made between the solutions of the designed hGA and the solutions of the branch-and-bound algorithm used by the LINGO 12 as a commercial package. Results show that the developed hGA is an appropriate and a useful solution methodology for largesize SCN with a small number of manufactured products and used raw materials.

### Author Keywords

Dynamic supply chains; Forward logistics networks; Genetic algorithm; HGA; MILP; Pattern search

**Document Type:** Conference Paper

**Source:** Scopus

Hadhoud, M.M.A.<sup>a</sup>, Eladawy, M.I.<sup>b</sup>, Farag, A.<sup>a</sup>

### Automatic global localization of the heart from Cine MRI images

(2011) *ITME 2011 - Proceedings: 2011 IEEE International Symposium on IT in Medicine and Education*, 2, art. no. 6132051, pp. 35-38. Cited 1 time.

**DOI:** 10.1109/ITIME.2011.6132051

<sup>a</sup> Biomedical Engineering Department, Faculty of Engineering, Helwan University, Cairo, Egypt

<sup>b</sup> Communication and Electronics Department, Faculty of Engineering, Helwan University, Cairo, Egypt

### Abstract

In this paper, we present a method for localizing the global position of the heart from Cine MRI images. This method is fast, and fully automatic. It depends on the standard deviation from the stack of images that we work on, and the position of the heart will have the greatest motion standard deviation because the heart is almost the only organ moves in the images. We test this method on 14 patients, and we get 100% accuracy of localizing the heart. © 2011 IEEE.

### Author Keywords

Cardiac MRI; Medical Imaging

**Document Type:** Conference Paper

**Source:** Scopus

Abdelaziz, D.H.A.<sup>a b</sup>, Gavrillin, M.A.<sup>a</sup>, Akhter, A.<sup>a</sup>, Caution, K.<sup>a</sup>, Kotrange, S.<sup>a</sup>, Khweek, A.A.<sup>a</sup>, Abdulrahman, B.A.<sup>a b</sup>, Hassan, Z.A.<sup>b</sup>, El-Sharkawi, F.Z.<sup>b</sup>, Bedi, S.S.<sup>a</sup>, Ladner, K.<sup>c</sup>, Gonzalez-Mejia, M.E.<sup>d</sup>, Doseff, A.I.<sup>d</sup>, Mostafa, M.<sup>a</sup>, Kanneganti, T.-D.<sup>e</sup>, Guttridge, D.<sup>c</sup>, Marsh, C.B.<sup>a</sup>, Wewers, M.D.<sup>a</sup>, Amer, A.O.<sup>a</sup>

### Asc-dependent and independent mechanisms contribute to restriction of Legionella pneumophila infection in murine macrophages

(2011) *Frontiers in Microbiology*, 2 (FEB), art. no. Article 18, . Cited 17 times.

**DOI:** 10.3389/fmicb.2011.00018

<sup>a</sup> Division of Pulmonary, Allergy, Critical Care, and Sleep Medicine, Center for Microbial Interface Biology and the Department of Internal Medicine, Ohio State University, Columbus, OH, United States

<sup>b</sup> Faculty of Pharmacy, Department of Biochemistry and Molecular Biology, Helwan University, Helwan, Egypt

<sup>c</sup> Human Cancer Genetics Program, Ohio State University, Columbus, OH, United States

<sup>d</sup> Department of Molecular Genetics, Davis Heart and Lung Research Institute, The Ohio State University, Columbus, OH, United States

<sup>e</sup> Department of Immunology, St Jude Children's Research Hospital, Memphis, TN, United States

### Abstract

The apoptosis-associated speck-like protein containing a caspase recruitment domain (Asc) is an adaptor molecule that mediates inflammatory and apoptotic signals. Legionella pneumophila is an intracellular bacterium and the

causative agent of Legionnaire's pneumonia. *L. pneumophila* is able to cause pneumonia in immuno-compromised humans but not in most inbred mice. Murine macrophages that lack the ability to activate caspase-1, such as caspase-1<sup>-/-</sup> and Nlrp4<sup>-/-</sup> allow *L. pneumophila* infection. This permissiveness is attributed mainly to the lack of active caspase-1 and the absence of its down stream substrates such as caspase-7. However, the role of Asc in control of *L. pneumophila* infection in mice is unclear. Here we show that caspase-1 is moderately activated in Asc<sup>-/-</sup> macrophages and that this limited activation is required and sufficient to restrict *L. pneumophila* growth. Moreover, Asc-independent activation of caspase-1 requires bacterial flagellin and is mainly detected in cellular extracts but not in culture supernatants. We also demonstrate that the depletion of Asc from permissive macrophages enhances bacterial growth by promoting *L. pneumophila*-mediated activation of the NF- $\kappa$ B pathway and decreasing caspase-3 activation. Taken together, our data demonstrate that *L. pneumophila* infection in murine macrophages is controlled by several mechanisms: Asc-independent activation of caspase-1 and Asc-dependent regulation of NF- $\kappa$ B and caspase-3 activation. © 2011 Abdelaziz, Gavrilin, Akhter, Caution, Kotrange, Khweek, Abdulrahman, Hassan, El-Sharkawi, Bedi, Ladner, Gonzalez-Mejia, Doseff, Mostafa, Kanneganti, Guttridge, Marsh, Wewers and Amer.

**Author Keywords**

Asc; Caspase-1; Inflammasome; Legionella pneumophila

**Document Type:** Article

**Source:** Scopus

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

**Basic completely monotone functions as coefficients and solutions of linear q-difference equations with some applications**

(2011) *Physics Essays*, 25 (1), pp. 38-42. Cited 3 times.

**DOI:** 10.4006/0836-1398-25.1.38

<sup>a</sup> Mathematics Department, Faculty of Science, Taif University, P.O. 888, Hawea, Taif, Saudi Arabia

<sup>b</sup> Mathematics Department, Faculty of Industrial Education, Helwan University, Sawah Street, America (P.O. 11282), Cairo, Egypt

**Abstract**

This paper is devoted to give some properties of the q derivatives of basic hypergeometric series with respect to parameters. The q derivatives of the basic hypergeometric functions with respect to parameters are employed to show and explain some properties of the solutions of q-difference equations with basic completely monotone functions as coefficients. As an application, some physical problems related to Jacobi  $\Theta$  functions and its q derivatives are illustrated. © 2012 Physics Essays Publication.

**Author Keywords**

Basic hypergeometric functions; Jacobi H functions; Q derivative; Q difference

**Document Type:** Article

**Source:** Scopus

Selim, M.Y.E.<sup>a</sup>, Al-Omari, S.-A.B.<sup>a</sup>, Elfeky, S.M.S.<sup>b</sup>, Radwan, M.S.<sup>b</sup>

**Utilization of extracted jojoba fruit as a fuel**

(2011) *International Journal of Sustainable Energy*, 30 (SUPPL. 1), pp. S106-S117.

**DOI:** 10.1080/14786451.2011.622760

<sup>a</sup> Mechanical Engineering Department, UAE University, Al-Ain, United Arab Emirates

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

**Abstract**

Extracted jojoba solid waste has been used for almost the first time in this study as renewable solid fuel for furnaces. The extracted jojoba is derived from the fruit waste after extracting the oil from seeds. The jojoba remains are analysed and their physical and chemical features are reported. It is found that they contain much volatile combustible material which is expected to ease its combustion in furnaces. The performance of such solid fuels in a small-scale furnace with a fixed bed at its bottom has been investigated. The furnace considered has been equipped in some of the runs with baffles in an attempt to increase the residence time of combustible gases, and hence ensure better combustion and heat transfer performance. Different experimental runs with different air-to-fuel ratios (from 7:1 to 20.8:1 compared with the theoretical value of 9.7:1) have been tested. The results indicate a good feasibility of jojoba remains as a renewable fuel for furnaces. Theoretical modelling or extended experiments will be needed to further investigate the heat of combustion at other conditions. © 2011 Copyright Taylor and Francis Group, LLC.

**Author Keywords**

biomass; combustion; furnace; jojoba; renewable energy; solid fuel

**Document Type:** Article

**Source:** Scopus

Kandil, A.<sup>a</sup>, Yakout, M.<sup>b</sup>, Zakaria, A.<sup>b</sup>

**On bipreordered approximation spaces**

(2011) *Life Science Journal*, 8 (3), pp. 505-509.

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

<sup>b</sup> Mathematics Department, Ain Shams University, Egypt

#### Abstract

We used preordered relations to define a bipreordered space and hence bitopological space and introduced a condition (\*) on these relations such that  $R(A \cup B) = R(A) \cup R(B)$ , where  $R(A) = R^{-1}(A) \cap R^{-2}(A)$ , and hence we get a topology  $\tau_{R12}$  on  $X$  satisfies  $A = R(A) = R^{-1}(A) \cap R^{-2}(A) = \{x \in X: xR1 \cap xR2 \cap A \neq \emptyset\} = A^{-1} \cap A^{-2}$  and  $\tau_{R12} = \tau_{R1} \cap \tau_{R2} = \tau_{R1} \vee \tau_{R2}$ . We deal with bitopological spaces  $(X, \tau_1, \tau_2)$  which satisfying a certain condition (\*\*) and proved that the family of all such bitopological spaces  $BTS^{**}$  is equivalent to the family of all bipreordered spaces  $BPS^*$ .

#### Author Keywords

Approximation; Bipreorder; Space

**Document Type:** Article

**Source:** Scopus

Emam, M.A.A.<sup>a</sup>, Shaaban, S.M.<sup>a</sup>, El-Demerdash, S.M.<sup>a</sup>, El-Zomor, H.M.<sup>b</sup>

**A computerized tyre pressure control system for off-road vehicles**

(2011) *International Journal of Vehicle Structures and Systems*, 3 (4), pp. 210-218.

**DOI:** 10.4273/ijvss.3.4.01

<sup>a</sup> Automotive and Tractor Engineering Dept., Helwan University, Egypt

<sup>b</sup> Higher Technological Institute, 10th of Ramadan City, Egypt

#### Abstract

This paper presents a computerized tyre pressure control system for off-road vehicles to achieve the required tyre flotation pressure during their mobility. This method accounts for soil deformation and tyre deflection in the vehicle tyre-terrain interaction. A test rig has been designed to apply vertical load to the tyre at the tyre to terrain surface. The deflection and inflation pressure of the tyre were recorded by a data acquisition system. The test rig is integrated with a pressure system for tyre inflation and deflation. The proposed control system ensures that the soil deformation is higher than the tyre deflection. Experimental results showed that the proposed control system adjusted the tyre pressure to the flotation pressure for a given load and soil conditions within a reasonably shorter elapsed time. © 2011. MechAero Foundation for Technical Research & Education Excellence.

#### Author Keywords

Off-road mobility; Tyre flotation; Tyre pressure control; Tyre sinkage

**Document Type:** Article

**Source:** Scopus

Abo-State, M.A.M.<sup>a</sup>, Khatib, O.<sup>b</sup>, Abo-El Nasar, A.<sup>b</sup>, Mahmoud, B.<sup>b</sup>

**Factors affecting laccase production by *Pleurotus ostreatus* and *Pleurotus sajor-caju***

(2011) *World Applied Sciences Journal*, 14 (11), pp. 1607-1619. Cited 2 times.

<sup>a</sup> National Center for Radiation Research and Technology (NCRRT), Nasr. City, Cairo, Egypt

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

#### Abstract

The highest laccase production by *P. ostreatus* and *P. sajor-caju* (0.190 and 0.612 U/ml) had been recorded on medium II. *P. sajor-caju* produced laccase higher than *P. ostreatus* on both medium I or II. Also the amount of laccase produced by *P. sajor-caju* and assayed by ABTS (0.468 and 0.612 U/ml) were more than that produced and assayed by DMP (0.357 and 0.467 U/ml) on medium I and II, respectively. The results revealed that the highest laccase (1.800

U/ml) was recorded on medium I supplemented with 200  $\mu$ M CuSO<sub>4</sub> and assayed by ABTS after 21 days incubation. Comparing different three buffers used in laccase assay, it was clear that citrate buffer was the best one. Citrate buffer gave laccase (4.917 and 4.270 U/ml) on media I and II respectively. *P. sajor-caju* could remove 98.0% of 25 mg/L M.B after 7 days and 32.0% of 500 mg/L M.B after the same period. *P. sajor-caju* could removed more than 92% of M.B till concentration 150 mg/L, while it could removed 100% of Max. up to 200 mg/L after the same incubation period. The results revealed that as the dose of gamma radiation increased, the growth and laccase production by *P. sajor-caju* decreased gradually. © IDOSI Publications, 2011.

#### Author Keywords

Cu<sup>2+</sup> concentrations; Gamma radiation; Laccase; *Pleurotus*

**Document Type:** Article

**Source:** Scopus

EI-AdII, M.E.

#### On some properties of generalized order statistics

(2011) *American Journal of Mathematical and Management Sciences*, 31 (3-4), pp. 141-153.

Dept. of Mathematics, Faculty of Science, Helwan University, Ain Helwan, Cairo, Egypt

#### Abstract

In this paper, two distributional properties of generalized order statistics are studied. It is proved that the first and the last generalized order statistics are positive quadrant dependent. Moreover, a measure of dependence between the first and the last generalized order statistics is derived and used to show that they are asymptotically independent. For illustrative purposes, a simulation study is conducted to demonstrate the obtained results. © 2011 by American Sciences Press, Inc.

#### Author Keywords

Copulas; Generalized order statistics; Measures of dependence; Simulation techniques.; Weak convergence

**Document Type:** Article

**Source:** Scopus

Amer, F.Z.<sup>a</sup>, El-Garhy, A.M.<sup>a</sup>, Awadalla, M.H.<sup>a</sup>, Rashad, S.M.<sup>b</sup>, Abdien, A.K.<sup>c</sup>

#### A real-valued genetic algorithm to optimize the parameters of support vector machine for classification of multiple faults in NPP

(2011) *Nukleonika*, 56 (4), pp. 323-332. Cited 1 time.

<sup>a</sup> Faculty of Engineering, Department of Electronics, Communications and Computers, Helwan University, Helwan Governorate, Helwan, Egypt

<sup>b</sup> Department of Nuclear Law, Emergency Control Center (ECC), 3 Ahmed el-Zomor, Nasr city, Cairo, Egypt

<sup>c</sup> Department of Quality Assurance and Quality Control, Emergency Control Center (ECC), 3 Ahmed el-Zomor, Nasr city, Cairo, Egypt

#### Abstract

Two parameters, regularization parameter  $c$ , which determines the trade off cost between minimizing the training error and minimizing the complexity of the model and parameter  $\sigma$  ( $\sigma$ ) of the kernel function which defines the non-linear mapping from the input space to some high-dimensional feature space, which constructs a non-linear decision hyper surface in an input space, must be carefully predetermined in establishing an efficient support vector machine (SVM) model. Therefore, the purpose of this study is to develop a genetic-based SVM (GASVM) model that can automatically determine the optimal parameters,  $c$  and  $\sigma$ , of SVM with the highest predictive accuracy and generalization ability simultaneously. The GASVM scheme is applied on observed monitored data of a pressurized water reactor nuclear power plant (PWRNPP) to classify its associated faults. Compared to the standard SVM model, simulation of GASVM indicates its superiority when applied on the dataset with unbalanced classes. GASVM scheme can gain higher classification with accurate and faster learning speed.

#### Author Keywords

Fault classification; Genetic algorithm (GA); Machine learning; Multi fault classification; Support vector machine (SVM)

**Document Type:** Article

**Source:** Scopus

El-Ashiry, M.

**A second-century A.D. Petition in the Cairo collection**

(2011) *Chronique d'Egypte*, 171-172, pp. 223-227.

**DOI:** 10.1484/J.CDE.1.102488

Helwan University, Egypt

**Document Type:** Article

**Source:** Scopus

Abd El-Haleem, A.M., Ali, I.A., Ibrahim, I.I., El-Sawy, A.R.H.

**TRIDNT: Isolating dropper nodes with some degree of selfishness in MANET**

(2011) *Communications in Computer and Information Science*, 131 CCIS (PART 1), pp. 236-247. Cited 1 time.

**DOI:** 10.1007/978-3-642-17857-3\_24

Communication Department, Faculty of Engineering, Helwan University, Helwan, Egypt

**Abstract**

In Mobile ad-hoc network, nodes must cooperate to achieve the routing purposes. Therefore, some network nodes may decide against cooperating with others; selfish nodes; to save their resources. Also these networks are extremely under threat to insider; malicious nodes; especially through packet dropping attacks. In this paper, we design a novel monitoring and searching scheme to detect and isolate the dropper nodes in ad-hoc networks, called TRIDNT (Two nodedisjoint Routes scheme for Isolating Dropper Node in MANET). TRIDNT allows some degree of selfishness to give an incentive to the selfish nodes to declare itself to its neighbors, which reduce the misbehaving nodes searching time. In TRIDNT two node-disjoint routes between the source and destination are selected based on their trust values. We use both DLL-ACK and end-to-end TCP-ACK to monitor the behavior of routing path nodes: if a malicious behavior is detected then the path searching tool starts to identify the malicious nodes and isolate them. Finally our scheme reduces the searching time of malicious nodes, and avoids the isolated misbehaving node from sharing in all future routes, which improve the overall network throughput. © Springer-Verlag Berlin Heidelberg 2011.

**Author Keywords**

Ad hoc network; Network security; Secure routing protocol

**Document Type:** Conference Paper

**Source:** Scopus

Ibrahim, G.E., Dorgham, M.E.

**Effect of some production parameters on net wrap used in agricultural products packaging on the end use properties**

(2011) *Life Science Journal*, 8 (3), pp. 148-155.

Weaving and Knitting Dept, Helwan University, Cairo, Egypt

**Abstract**

This research is mainly concerned with designing net wrap used for packaging agricultural products. Twenty seven samples were produced using polyethylene yarns. Warp knitted technique was applied to produce all samples under study using different parameters. Different parameters were studied including, inlay tape thickness 20,25 and 30 micron, inlay tape width 1,1.25 and 1.5 mm, pillar blades number 99, 101 and 213,treatment with ultra violet and anti static. Many tests were carried out in order to evaluate the net according to the final product needs such as tensile strength and elongation of net and inlay tape and linear meter tests. Some more results were reached concerning structures and materials. The results showed that there is a direct relationship between tensile strength and number of pillar, the more inlay tape width, the higher tensile strength of the sample become, the more inlay tape thickness per unit area the more tensile strength of the sample become, the more number of pillar yarns the lower elongation the samples become, and the higher pillar yarns per unit area the more linier meter weight the sample become.

**Author Keywords**

Agricultural product; End use property; Net wrap; Packaging; Production parameter

**Document Type:** Article

**Source:** Scopus

Abdallah, I.Z.A.<sup>a</sup>, Khattaba, H.A.H.<sup>a</sup>, Heebab, G.H.<sup>b</sup>

**Gastroprotective effect of Cordia Myxa L. fruit extract against indomethacin-induced gastric ulceration in rats**

(2011) *Life Science Journal*, 8 (3), pp. 433-445. Cited 9 times.

<sup>a</sup> Nutrition and Food Science Department, Helwan University, Egypt

<sup>b</sup> Pharmacology and Toxicology Department, Minia University, Egypt

### Abstract

Gastric ulcer is one of the most serious diseases in the world. Although there are many drugs used for the treatment of gastric ulcer, most of these produce several adverse reactions. This study investigated the protective effects of Assyrian plum (*Cordia myxa* L.) fruit extract (CME) against indomethacin-induced gastric ulcer in rats. Gastric ulceration was induced by a single intraperitoneal injection of indomethacin (30 mg/kg-1 b.wt.). CME was administered orally at a dose of 125 mg/kg b.wt. and ranitidine (RAN), a reference drug, at a dose of 50 mg/kg b.wt. two weeks prior to indomethacin injection. Pretreatment with CME produced significant reduction in gastric mucosal lesions (U.I.), malondialdehyde (MDA), and serum tumor necrosis factor (TNF $\alpha$ ) associated with significant increase in gastric juice mucin content and gastric mucosal catalase (CAT), nitric oxide (NO), and prostaglandin E2 (PGE2) levels. A similar increase in mucin content, NO and PGE2 was not observed with RAN although it generated a preventive index of 75.9%. RAN significantly increased pH value and decreased pepsin activity, and gastric juice free and total acidity. Histological studies of stomach mucosa confirmed these results. Stomach of rats administered with RAN showed leukocytic infiltration in submucosal layer. Meanwhile, stomach of rats administered CME either alone or with RAN showed no histopathological changes. CME can protect indomethacin-induced gastric ulceration due to its antioxidative and mucin enhancing properties. The protection afforded by co-administration of CME and RAN was found to be better than that of RAN alone. Results of the present study suggest that RAN should be used together with CME for better gastroprotective effect as well as to reduce H2 antagonists drugs adverse effects.

### Author Keywords

*Cordia myxa* extract; Gastroprotective; Indomethacin; Ranitidine

**Document Type:** Article

**Source:** Scopus

Mahmoud, D.A.R.<sup>a</sup>, Refaat, H.W.<sup>a</sup>, Abdel-Fattah, A.F.<sup>a</sup>, Mahdy, E.-S.M.E.<sup>b</sup>, Shousha, W.G.<sup>b</sup>

### Novel application of *Luffa cylindrica* in production of fructose

(2011) *Australian Journal of Basic and Applied Sciences*, 5 (12), pp. 2127-2137.

<sup>a</sup> Chemistry of Natural and Microbial Products Department, National Research Centre, Tahrir Street, Dokki, 12311 Cairo, Egypt

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

### Abstract

In comparison with the main advancements achieved in the last decades in the study of fructose production process by inulin enzymatic hydrolysis and in comparison with the majority of the knowledge in the area of application of *Luffa cylindrica*, the application of *Luffa cylindrica* as a carrier for inulinase immobilization is a novel and effective method for production of high amount of fructose not only from inulin but also from garlic, chicory, Jerusalem artichoke and artichoke. In this work, the characteristics of free and immobilized inulinase were investigated. The influence of this new carrier on the optimal temperature and pH, the stabilities to temperature and the kinetic parameters were evaluated. The results showed that the optimal pH, in free or immobilized inulinase were 4.8 and 5.2 respectively. For the immobilized enzyme, the optimal temperature was 55°C. However, at 60°C and higher temperature the immobilized inulinase was more active than the free one. Also, the stability of the immobilized enzyme was increased against temperature. Immobilization of inulinase protected the enzyme against heat inactivation. The calculated half-life values of the immobilized enzyme at 50, 55, 60, 65 and 70°C were 1195, 762, 156, 67 and 38 min. Activation energy (E) of the native enzyme was 11.4Kcal/mol which higher than those of immobilized enzymes (8 Kcal/mol). The utilization of *Luffa cylindrica* fibers showed the tendency to increase the values of the kinetic parameters  $K_m$  and decrease  $V_{max}$  for immobilized inulinase. The effect of various metal ions showed the protection of the enzyme by immobilization.

### Author Keywords

Fructose; Immobilization; Inulinase; Raw garlic

**Document Type:** Article

**Source:** Scopus

Abdel-Kader, T.G., Ali, R.S., Ibrahim, N.M.

### The cranial nerves of *mabuya quinquetaeniata* III: Nervus trigeminus

(2011) *Life Science Journal*, 8 (4), pp. 650-669.

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

### Abstract

The present study deals with the nervus trigeminus of *Mabuya quinquetaeniata*. The results showed that the nervus trigeminus has one root, and two separate ganglia, a maxillomandibular ganglion and an ophthalmic one. The maxillomandibular ganglion is continuous with the ophthalmic ganglion. The lateral part of the ventromedial division of the trigeminal root gives off the anguli oris nerve and nerves to the adductor mandibularis externus and the pseudotemporalis muscles. The constrictor dorsalis nerve innervates the protractor pterygoideus, levator pterygoideus, and depressor palabrae inferioris muscles. It has no anastomosis with ramus palatinus of the nervus facialis. The ramus frontalis is connected with the lacrimal plexus. The ramus nasalis anastomoses with the ethmoidal ganglion and divides into its two rami lateralis and medialis nasi within the nasal capsule. The ramus maxillaris gives off lacrimal and temporal branches in the postorbital region. In the orbital region, it is termed infraorbital nerve and gives off a nerve to the Harderian gland, the supralabial gland and the upper teeth. It fuses with the ramus palatinus lateralis of the nervus facialis. It receives an anastomosing branch from the ramus palatines medialis and fuses with the ramus palatines intermedialis for a short distance. It carries ganglionic cells at the point of fusion. It enters the maxilla as superior alveolar nerve and gives off nerve to the nasal muscles. The ramus mandibularis gives off nerves to the pseudotemporalis and pterygomandibularis muscles. It gives off the ramus cutaneous recurrens and then enters the primordial canal as the inferior alveolar nerve, where it gives off a mixed nerve and a sensory one and then receives the chorda tympani (N.VII). The mixed nerve (the inferior alveolar nerve + chorda tympani) gives rise to the rami intermandibularis oralis, intermandibularis medius (ramus paralingualis) and intermandibularis caudalis. The ramus intermandibularis medius is connected with the ramus lingualis lateralis (N.XII). The ramus intermandibularis caudalis gives motor fibres to the intermandibularis muscle.

### Author Keywords

Cranial nerves; *Mabuya*; Nervus trigeminus

**Document Type:** Article

**Source:** Scopus

Salama, M.A.<sup>a</sup>, Eid, H.F.<sup>b</sup>, Ramadan, R.A.<sup>c</sup>, Darwish, A.<sup>d</sup>, Hassanien, A.E.<sup>e</sup>

### Hybrid intelligent intrusion detection scheme

(2011) *Advances in Intelligent and Soft Computing*, 96 AISC, pp. 293-303. Cited 3 times.

<sup>a</sup> Department of Computer Science, British University in Egypt, Cairo, Egypt

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

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

<sup>d</sup> Faculty of Science, Helwan University, Cairo, Egypt

<sup>e</sup> Faculty of Computers and Information, Cairo University, Egypt

### Abstract

This paper introduces a hybrid scheme that combines the advantages of deep belief network and support vector machine. An application of intrusion detection using imaging has been chosen and hybridization scheme have been applied to see their ability and accuracy to classify the intrusion into two outcomes: normal or attack, and the attacks fall into four classes; R2L, DoS, U2R, and Probing. First, we utilize deep belief network to reduce the dimensionality of the feature sets. This is followed by a support vector machine to classify the intrusion into five outcomes; Normal, R2L, DoS, U2R, and Probing. To evaluate the performance of our approach, we present tests on NSL-KDD dataset and show that the overall accuracy offered by the employed approach is high. © Springer-Verlag Berlin Heidelberg 2011.

### Author Keywords

Deep belief network (DBN); Dimensional reduction; Network intrusion detection system; Support vector machines (SVMs)

**Document Type:** Conference Paper

**Source:** Scopus

Merey, H.A.<sup>a</sup>, Helmy, M.I.<sup>b</sup>, Tawakkol, S.M.<sup>b</sup>, Toubar, S.S.<sup>b</sup>, Risk, M.S.<sup>a</sup>

### Potentiometric membrane sensors for determination of memantine hydrochloride and pramipexole dihydrochloride monohydrate

(2011) *Portugaliae Electrochimica Acta*, 30 (1), pp. 31-43.

**DOI:** 10.4152/pea.201201031

<sup>a</sup> Analytical Chemistry Department, Faculty of Pharmacy, Cairo University, Kasr El Aini st, 11562-Cairo, Egypt



<sup>b</sup> Analytical Chemistry Department, Faculty of Pharmacy, Helwan University, Ain Helwan, 11790-Cairo, Egypt

### Abstract

Five solid membrane sensors responsive to memantine hydrochloride (MEM) and pramipexole dihydrochloride monohydrate (PXL) are described for simple and fast determination of these drugs in pharmaceutical preparation and human plasma. The first and the second sensors are based on the formation of an ion association complex between MEM as a cationic drug with Na tetra phenyl borate and ammonium reineckate (as anionic exchanger), respectively. The third sensor is based on the formation of an ion association complex between PXL with ammonium reineckate. The produced electroactive material is dispersed in PVC matrix. While the other fourth and fifth sensors are based on using functionalized lipophilic cyclodextrin derivative (2-hydroxypropyl- $\beta$ -cyclodextrin) as sensor ionophore for the determination of MEM and PXL. The performance characteristics of these sensors-evaluated according to IUPAC recommendations-reveal fast, stable and near Nernstian response for  $1 \times 10^{-4}$ - $1 \times 10^{-1}$  M and  $1 \times 10^{-6}$ - $1 \times 10^{-2}$  M for (MEM) and (PXL), respectively. Many inorganic and organic substances such as drug excipients and diluents normally used in drug formulations do not interfere with drugs response. Statistical comparison between the results obtained by applying the proposed potentiometric method for the determination of the (MEM) and (PXL) in their pure powder forms and those obtained by applying the reported methods was done and no significant difference was found at  $p = 0.05$ . Validation of the method according to ICH guidelines shows the suitability of the sensors for quality control analysis of the cited drugs in pharmaceutical formulations and human plasma. The proposed sensors can also be used as a detector for HPLC.

### Author Keywords

Memantine hydrochloride; Membrane sensors; Potentiometry; Pramipexol dihydrochloride

**Document Type:** Article

**Source:** Scopus

Dakrory, A.I.<sup>a</sup>, Abdel-Kader, T.G.<sup>b</sup>

### Comparative anatomical study on the ciliary ganglion of birds

(2011) *Australian Journal of Basic and Applied Sciences*, 5 (12), pp. 37-48. Cited 2 times.

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

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

### Abstract

This study deals with the ciliary ganglion of three species of birds belonging to three different orders and families. The fully formed embryos are collected from the fertilized eggs in lab. The heads were fixed, embedded in paraffin, then sectioned serially and stained. The ciliary ganglia were examined by the light microscope. The results can be summarized as follows: The ciliary ganglion was rounded shape in *Bubulcus ibis* and oval shape in *Halcyon smyrnensis* and *Pterocles alchata*. The ganglion receives the parasympathetic fibres (root), carried by *nervus oculomotorius*, either through an obvious branch; the *radix ciliaris brivis* which is long and arises from *ramus superior* as in *Halcyon* or short and arises from *ramus inferior* as in *Pterocles* or through the intermingling surface between the *ramus inferior* and the ganglion as in *Bubulcus*. The *radix ciliaris longa* "sensory root" originates from the *ramus ophthalmicus profundus* and is attached to either the ciliary nerves as in *Halcyon* and *Pterocles* or to the ganglion and the nerve as in *Bubulcus*. There is no connection between the ganglion and the sympathetic carotid plexus, i.e., there is no sympathetic root. The number of the ciliary nerves varies from species to another; there are three in *Halcyon*, four in *Pterocles* and seven in *Bubulcus*. The ganglion consists of two types of neurons; large ciliary cells and small choroidal ones.

### Author Keywords

*Bubulcus ibis*; Ciliary Ganglion; *Halcyon smyrnensis*; *Pterocles Alchata*

**Document Type:** Article

**Source:** Scopus

Sarhan, E.<sup>a</sup>, Khalifa, E.<sup>a</sup>, Nabil, A.M.<sup>b</sup>

### Road extraction framework by using cellular neural network from remote sensing images

(2011) *ICIIP 2011 - Proceedings: 2011 International Conference on Image Information Processing*, art. no. 6108892, .

**DOI:** 10.1109/ICIIP.2011.6108892

<sup>a</sup> Computer Science Department, Helwan University, Cairo, Egypt

<sup>b</sup> Computer Science Department, Misr International University, Cairo, Egypt

### Abstract

Researches on Road Extraction are incessant. These researches aims at the automatic identification of remote

sensing images. The way to extract roads quickly, accurately and automatically has been a cutting-edge problem in remote sensing related fields, since the availability of high spatial resolution images from new generation commercial sensors. In this paper, we present a novel automatic road extraction approach which uses a Cellular neural Network. The approach makes full use of spectral and geometric properties of roads in the imagery, and proposes a Framework named "CNN- Cellular neural Network". A primary result shows that the accuracy of this algorithm is very high, fast and can be implemented on hardware chipset. © 2011 IEEE.

#### Author Keywords

CNN; remote sensing images; road extraction

**Document Type:** Conference Paper

**Source:** Scopus

Eldomany, R.<sup>a</sup>, Abdelaziz, N.A.<sup>b</sup>

#### **Characterization and antimicrobial susceptibility of gram negative bacteria isolated from cancer patients on chemotherapy in Egypt**

(2011) *Archives of Clinical Microbiology*, 2 (6), .

**DOI:** 10:3823/243

<sup>a</sup> Department of Microbiology, Faculty of Pharmacy Helwan University, Egypt

<sup>b</sup> Department of Microbiology, Faculty of Pharmaceutical sciences and pharmaceutical industries Future University, Egypt

#### Abstract

Background: Infections due to gram-negative bacilli are common in cancer patients during aggressive therapy. The presented study determined the microbial spectrum and antimicrobial susceptibility of gram-negative bacteria isolated from various infection sites in hospitalized cancer patients in Egypt. Methods: A total of 343 samples were collected from cancer patients. The microbial spectrum of bacteria isolated from various infection sites was determined with full characterization of isolated microorganisms, quantitative and qualitative determination of antimicrobial susceptibility patterns of isolates to the most frequently used antimicrobial agents using Microscan PID, Microscan WalkAway Systems and manual methods. Results: From Out of 343 gram-negative isolates collected from different clinical specimens *Escherichia coli* were the most frequent isolates (30%) followed by *Pseudomonas aeruginosa* (24.5%) then *Acinetobacter baumannii/haemolyticus* (18.7%). *Acinetobacter baumannii/shaemolyticus* was the main isolated gram-negative bacteria from blood sputum and throat. The most frequent gram-negative bacteria isolated from skin infection, urine and stool were *Escherichia coli*. Isolates of *Escherichia coli*, *Klebsiella*, *Enterobacter*, *Pseudomonas* and *Acinetobacter* species were resistant to most of the tested antibiotics including non- $\beta$ -lactam antibiotics such as aminoglycosides (gentamicin) and quinolones (ciprofloxacin, levofloxacin). Conclusion: This is the first comprehensive study to report the evolution of resistance to imipenem and simultaneous resistance to cefotaxime and ceftazidime with alarming rates in to *Acinetobacter* species, *Enterobacter*, *Klebsiella* and *Pseudomonas* species. Policies restricting antibiotic consumption should be implemented to avoid the evolution of resistance against newer generations of antibiotic. © Copyright iMedPub.

**Document Type:** Article

**Source:** Scopus

El-Dais, F.M.S.E.<sup>a</sup>, Sayed, A-E.O.<sup>b</sup>, Salah, B.A.<sup>a</sup>, Shalabi, M.E.H.<sup>c</sup>

#### **Removal of nickel (II) from aqueous solution via carbonized date pits and carbonized rice husks**

(2011) *Eurasian Chemico-Technological Journal*, 13 (3-4), pp. 267-277. Cited 1 time.

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

<sup>b</sup> Egyptian Iron And Steel Company, El-Tabbin, Helwan, Cairo, Egypt

<sup>c</sup> CMRDI, El-Tabbin, Helwan, Cairo, Egypt

#### Abstract

The adsorption of nickel from liquid solutions onto carbonized date pits (CDP) and rice husks (CRH) has been investigated in the current study. The process was studied in a batch system with respect to the initial pH, contact time, temperature, adsorbent dose and nickel initial concentration. The results showed that the experimental data was well represented by first order model for CDP and second order model for CRH. Based on the kinetic modeling, the apparent activation energies calculated were 7.84 kJ and 18.502 kJ/mol for CDP and CRH, respectively. The results also indicated that process of nickel uptake by CDP and CRH was physical adsorption process. The equilibrium data for CDP indicated that it fitted both Freundlich and Langmuir models. However, adsorption onto CRH fitted Freundlich model better based upon the higher value of R<sup>2</sup> obtained. The thermodynamic parameters ( $\Delta H^\circ$ ,  $\Delta S^\circ$  and  $\Delta G^\circ$ ) calculated from the experimental data indicated that the process was endothermic and spontaneous. © 2011 al-Farabi Kazakh National University.

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

Kantouch, A.<sup>a</sup>, Khalil, E.M.<sup>b</sup>, El-Sayed, H.<sup>a</sup>, Mowafi, S.<sup>a</sup>

**A novel application of ionic liquid in improvement of the felting resistance of wool**  
(2011) *Egyptian Journal of Chemistry*, 54 (4), pp. 481-493.

<sup>a</sup> Textile Research Division, National Research Centre, Helwan University, Cairo, Egypt

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

#### **Abstract**

THE EFFECT of treatment of wool using two different ionic liquids namely 1-ethyl -3-methyl imidazolium acetate (EMIA), and 1-butyl -3-methyl imidazolium chloride (BMIC), on the felting resistance of wool was studied. The effect of treatment temperature and treatment time on the yellowing index, tenacity, and elongation at break of the treated wool fibres, was examined. Elemental analysis elucidated a remarkable reduction in sulphur content of the treated wool, which is mainly present in the wool scales. Scanning electron microscopy confirmed partial removal of wool scales under the effect of ionic liquid.

#### **Author Keywords**

Imidazolium salts and Anti-felting; Ionic liquid; Wool fibre

**Document Type:** Article

**Source:** Scopus

Mahmoud, S.A.S.<sup>a</sup>, Ahmad, M.A.<sup>b</sup>

**Promoting life style among sheltered school children in Banha City, Qualiobia Governorate**  
(2011) *Life Science Journal*, 8 (4), pp. 517-528.

<sup>a</sup> Community Health Nursing, Faculty of Nursing, Helwan University, Cairo, Egypt

<sup>b</sup> Community Health Nursing, Faculty of Nursing, Ain Shams University, Cairo, Egypt

#### **Abstract**

Shelter is a place affording protection against danger, or it is a structure that provides privacy and protection for children who have no fixed night time residence. This study aims to evaluate the effect of nursing intervention on promoting life style of school children's shelters in Banha City, Qualiobia Governorate. Design: A quasi experimental design was used to conduct the study. Setting: This study was carried out at two shelters, affiliated to social welfare institutions for boys and girls in Banha City in the academic years 2009 /2010. Sample: All children 55: 36 boys &19 girls in primary, preparatory and secondary school ages (6-18 years). Tool: Three Tools were used for data collection: 1) An interviewing questionnaire for the children concerning socio-demographic characteristics, 2) Assessment of health problems: physical, social, psychological and emotional problems: (a) Psychological tests as Fear and Anxiety Test, Poor Relationships, Depression Test, and Emotional Test), (b) Social problems: violence Test, Withdrawal Test and Sexual Abuse Test, 3): Life Style Assessment Sheet. Results: Revealed that the majority of the studied subjects were males, more than two thirds had basic education, according to their health problems, there were statistically significant improvements after the intervention. Concerning self health responsibilities, the mean was 31.222, 32.053 pre program which improved to 50.456, 50.150 after program, the nutritional awareness mean was 28.139, 29.158 pre program, improved to 34.540, 35.150 with a significant difference at  $p < 0.001$ . Statistically, there were improvements after the intervention program in physical activity, stress management and environmental safety. Conclusion: The results revealed a significant effect of the intervention program in promoting life-style and providing favorable impact on the health condition of children's shelters. The finding of this study recommended the need for integration between Ministry of Health and Ministry of Society Affairs and Solidarity to develop health care services such as providing periodic check up under supervision of the Ministry of Health and providing shelters with nurses working for 24 hrs/day.

#### **Author Keywords**

Health needs; Health problems; Life style promotion; Shelter children's

**Document Type:** Article

**Source:** Scopus

Eldeberky, Y.

**Wind-wave prediction models in ocean and coastal regions**  
(2011) *International Journal of Oceans and Oceanography*, 5 (1), pp. 9-21.

Helwan University, Department of Civil Engineering, Faculty of Engineering, P.O. Box 11718, Cairo, Egypt

### Abstract

Wind-generated waves are the prime source of energy in both offshore and nearshore areas. It is logical therefore that they are a prime subject of research in coastal and ocean dynamics, which has led to significant advances in understanding as well as modeling capability. Prediction of wind waves in extensive areas such as oceans, seas, and large nearshore areas is only practically feasible in a phase-averaged sense. This has led to numerical models based on the spectral wave energy balance, with linear propagation and a set of source terms accounting for wind input, nonlinear wave-wave cross-spectral transfer and dissipation. Spectral wave models have been operationally used for global and regional wave forecasts as well wave hindcast. This paper presents a review of spectral wave models in both ocean and coastal areas. This review covers both deep-water and nearshore spectral wave models. In addition to the physical processes dominant in deep water, nearshore spectral wave models include shallow water processes such as bottom dissipation, depth induced wave breaking and nonlinear energy transfer due to triad wave interaction. The underlying theory and physics of each model are briefly described. Recent advances in the development of spectral wave models are discussed. The limitations and the approximations for each model are briefly mentioned. Results of some applications of spectral wave models are presented. Despite the development in spectral wave modeling research, no model is perfect, and research efforts in the growth, propagation, and transformation of random waves in both offshore and nearshore areas will continue in the future. © Research India Publications © Research India Publications © Research India Publications.

### Author Keywords

Dissipation; Generation; Nearshore; Ocean Waves; Propagation; Spectral Models

**Document Type:** Article

**Source:** Scopus

Shafaa, M.W.<sup>a b</sup>, Sabra, N.M.<sup>c</sup>, Fouad, R.A.<sup>a</sup>

**The extended ocular hypotensive effect of positive liposomal cholesterol bound timolol maleate in glaucomatous rabbits**

(2011) *Biopharmaceutics and Drug Disposition*, 32 (9), pp. 507-517. Cited 6 times.

**DOI:** 10.1002/bdd.778

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

<sup>b</sup> Medical Physics Department, Faculty of Medicine, Jazan University, Saudi Arabia

<sup>c</sup> Physiological Optics Department, Research Institute of Ophthalmology, Giza, Egypt

### Abstract

Increased intraocular pressure (IOP) is a significant risk factor for the development of glaucoma. Timolol maleate is a beta-adrenergic receptor blocking agent and it is used for the treatment of glaucoma in order to reduce the elevated IOP that is characteristic of this eye disease. Systemic toxicity from topical timolol occurs more frequently than local toxicity and can affect the pulmonary, cardiac and central nervous systems. The objective of the present study, therefore, was to formulate multilamellar vesicles (MLVs) liposomal preparations of timolol maleate using their advantage of being less toxic compared with non-liposome-based drugs to be applied topically and to evaluate the in vivo performance of the prepared liposomes to extend the time of reduced IOP of glaucomatous rabbit's eye measured using a standard Shiotz tonometer. The encapsulation efficiency of MLVs was measured using a spectrophotometric technique. Differential scanning calorimetry (DSC) was used to monitor the effects of timolol maleate in the absence and presence of cholesterol on liposome thermal behaviour. Positively charged MLVs of timolol in the presence of a lower amount of cholesterol (DPPC(7):Chol(2):Timolol(2):SA(1) molar ratio) were found to be superior compared with other formulations in extending the ocular hypotensive effect approximately for 1 week (160 h) which encourages its physiological effectiveness. The increase of the cholesterol molar ratio in the prepared liposomal formulations serves to decrease the permeability of the lipid bilayer that is manifested by a low rate of drug release, an increased percentage of entrapment efficiency and a consequently lower bioavailability. Copyright © 2011 John Wiley & Sons, Ltd.

### Author Keywords

DSC; glaucomatous rabbits; intraocular pressure; liposomes; timolol maleate

**Document Type:** Article

**Source:** Scopus

Sarhan, E.<sup>a</sup>, Khalifa, E.<sup>a</sup>, Nabil, A.M.<sup>b</sup>

**Post classification using cellular automata for Landsat images in developing countries**

(2011) *ICIIIP 2011 - Proceedings: 2011 International Conference on Image Information Processing*, art. no. 6108838, .

**DOI:** 10.1109/ICIP.2011.6108838

<sup>a</sup> Computer Science Department, Helwan University, Cairo, Egypt

<sup>b</sup> Computer Science Department, Misr International University, Cairo, Egypt

### Abstract

The research presented in this paper aims at improving the accuracy of land-use maps produced from classification of Landsat images of mega cities in developing countries. In other words, the main objective of this paper is to find a suitable post classification technique that gives optimum results for Landsat images of mega cities in developing countries. To reach our goal, the paper presents a classification of two TM-Landsat sub scenes using a traditional statistical classifier (Maximum Likelihood) into four land cover classes (vegetation-water-Desert-Urban); then the accuracy assessment for the produced land-cover map will be calculated. Following to this step, three post processing techniques- Majority Filter, Probability label Relaxation (PLR), and Cellular Automata (CA) - will be applied in order to improve the accuracy of the previously produced land cover map. Finally, the same accuracy assessment measurements will be calculated for the two land-cover maps produced by each of the above post classification techniques. Initial results will show that CA outperformed the other techniques. In this paper we propose a methodology to implement a satellite image post classification Algorithm with cellular Automata. © 2011 IEEE.

### Author Keywords

Cellular Automata; Landsat images; majority filter; Probability Labeling Relaxation

**Document Type:** Conference Paper

**Source:** Scopus

Yousif, G.A.<sup>a</sup>, Mohamed, R.S.<sup>b</sup>

### The best printing methods to print satellite images

(2011) *Egyptian Journal of Remote Sensing and Space Science*, 14 (2), pp. 113-119.

**DOI:** 10.1016/j.ejrs.2011.11.002

<sup>a</sup> National Authority for Remote Sensing and Space Sciences (NARSS), Cairo, Egypt

<sup>b</sup> Printing, Publishing and Packaging Department, Faculty of Applied Arts, Helwan University, Cairo, Egypt

### Abstract

Printing systems operate in general as a system of color its color scale is limited as compared with the system color satellite images. Satellite image is building from very small cell named pixel, which represents the picture element and the unity of color when the image is displayed on the screen, this unit becomes lesser in size and called screen point. This unit possesses different size and shape from the method of printing to another, depending on the output resolution, tools and materials of each system scribal. Lithography using ink pasta, the laser uses a powder color. Ink-jet uses liquid inks water and photography based on the optically sensitive colors. All of these factors and substances affect the quality of the printed image. In this paper different printing systems were used to print an image of SPOT-4 satellite, caver part of Sharm Elshekh area, Sinai, Egypt, on the same type of paper as much as possible, especially in the photography. This step is followed by measuring the experimental data, and analyzed colors to determine the best printing systems for satellite image printing data. The laser system is the more printing system where produce a wider range of color and highest densities of ink and access much color detail. Followed by the offset system which it recorded the best dot gain. Moreover, the study shows that it can use the advantages of each method according to the satellite image color and quantity to be produced. © 2011 National Authority for Remote Sensing and Space Sciences. Production and hosting by Elsevier B.V. All rights reserved.

### Author Keywords

Color gamut; Density; Dot gain; Ink-jet; Laser; Offset; Photography

**Document Type:** Article

**Source:** Scopus

Mohammed, M.I.<sup>a</sup>, Noussier, Z.B.<sup>b</sup>, Abdel Maksoud, R.M.<sup>c</sup>, Amer, F.Z.<sup>b</sup>

### Surge avoidance using speed and valve methodologies controlled by PID, fuzzy and neural networks approaches

(2011) *Proceedings - ICCES'2011: 2011 International Conference on Computer Engineering and Systems*, art. no. 6141015, pp. 73-78.

**DOI:** 10.1109/ICCES.2011.6141015

<sup>a</sup> Instrumentation Dept., Helwan Fertilizers Company, Helwan Fertilizers, Cairo, Egypt

<sup>b</sup> Dept. of Communications Eng., Faculty of Engineering, Helwan University, Cairo, Egypt

<sup>c</sup> Dept. of Mechanical Power Eng., Faculty of Engineering, Helwan University, Cairo, Egypt

### Abstract

Surge is a global nonlinear instability that affects compression systems. It limits the operating range and degrades the system performance. This paper introduces two common surge avoidance techniques to extend the operation range of the compressor. These two methods are controlling the compressor flow and controlling the compressor speed. Air bleeding is utilized by two bleeding valves one of them with high gain and the second with low gain. Fuzzy logic, PID, and neural networks were used to control such two methods. A comparison between the three control techniques is performed to demonstrate the most effective of them using simulations based on SIMULINK. The results show that the two bleeding valves produce more stable behavior than using one bleeding valve. Furthermore, neural network controller shows quick arrival for the different set points and also is more stable than other techniques in avoiding the surge. © 2011 IEEE.

### Author Keywords

bleeding; compressor; controllers; surge; valve

**Document Type:** Conference Paper

**Source:** Scopus

Hamid, A.S.<sup>a e</sup>, Uedono, A.<sup>b</sup>, Major, Z.<sup>c</sup>, Haynes, T.D.<sup>c</sup>, Laverock, J.<sup>c</sup>, Alam, M.A.<sup>c</sup>, Dugdale, S.B.<sup>c</sup>, Fort, D.<sup>d</sup>  
**Electronic structure and Fermi surface of the weak ferromagnet Ni 3Al**  
 (2011) *Physical Review B - Condensed Matter and Materials Physics*, 84 (23), art. no. 235107, . Cited 3 times.

**DOI:** 10.1103/PhysRevB.84.235107

<sup>a</sup> Deanship of the Educational Services, Qassim University, Buridah 81999, Qassim, Saudi Arabia

<sup>b</sup> Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki 3058573, Japan

<sup>c</sup> H. H. Wills Physics Laboratory, University of Bristol, Tyndall Avenue, Bristol BS8 1TL, United Kingdom

<sup>d</sup> School of Metallurgy and Materials, University of Birmingham, Birmingham B15 2TT, United Kingdom

<sup>e</sup> Department of Physics, Faculty of Science, Helwan University, Helwan 31888, Cairo, Egypt

### Abstract

We report a positron annihilation study of the electronic structure of both the paramagnetic and ferromagnetic phases of the weak ferromagnet Ni 3Al. A tomographic technique was used to reconstruct the full three-dimensional electron momentum density for both phases, from which Fermi surface topologies were extracted. Comparison with ab initio calculations finds good agreement between experiment and theory and emphasizes the importance of the inclusion of spin-orbit coupling in the correct description of the electronic structure of this alloy. © 2011 American Physical Society.

**Document Type:** Article

**Source:** Scopus

Abo-State, M.A.M.<sup>a</sup>, Othman, M.<sup>b</sup>, Khatab, O.<sup>b</sup>, Abd-Elfattah, E.A.<sup>b</sup>

**Enhanced production of MnP enzyme produced by pleurotus sajor-caju exposed to gamma radiation**  
 (2011) *World Applied Sciences Journal*, 14 (10), pp. 1457-1468.

<sup>a</sup> National Center for Radiation Research and Technology (NCRRT), Nasr City, Cairo, Egypt

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

### Abstract

Production of MnP enzymes on different media by different white rot fungi (WRF) has been investigated. *P. ostreatus*, *P. sajor-caju*, *P. chrysosporium* 34541 and *P. chrysosporium* 24725 were used for studying their abilities to produce MnP by different submerged liquid media (I,II,III). The highest MnP (0.720 U/ml) in general have been produced by *P. sajor-caju* on medium (I) and assayed by ABTS. MnP produced and assayed by ABTS was higher than that assayed by DMP (0.720 and 0.550 U/ml) respectively. The results revealed that, MnP produced by *P. sajor-caju* on both medium (I) and medium (II) supplemented with 1000 uM MnSO 4 was (0.741 and 0.576 U/ml) respectively. However, MnP produced by *P. sajor-caju* on medium (I) and assayed by McIlvaine buffer (pH 5.0) proved that it was the best organic acid (0.918 U/ml) than both acetate (0.597U/ml) and citrate buffers. But MnP produced on medium (II) and assayed by different buffers proved that acetate was the best buffer (2.422 U/ml). Also, as the inoculum size increased, the MnP activities increased. So, the highest MnP (1.648 U/ml) produced by 4 discs of *P. sajor-caju* incubated at 30°C for 3 weeks incubation period. On the other hand a gradually decrease in growth of *P. sajor-caju* was observed as a result of increasing in gamma radiation doses. However, gamma irradiation by different doses enhanced MnP production on medium (II). *P. sajor-caju* exposed to 0.75 and 1.0 kGy produced MnP 4.5 times that of the parent strain. © IDOSI Publications, 2011.

**Author Keywords**

Gamma radiation; Media; MnP; MnsO 4; White-rot fungi (WRF)

**Document Type:** Article

**Source:** Scopus

Hamid, A.S.<sup>a b</sup>

**Study on the Fermi surface and the spin-dependent momentum space density of ferromagnetic Gd by positron annihilation experiments**

(2011) *Philosophical Magazine*, 91 (34), pp. 4302-4310.

**DOI:** 10.1080/14786435.2011.587466

<sup>a</sup> Department of Deanship of the Educational Science, Qassim University, Buraidah 81999, Qassim, Saudi Arabia

<sup>b</sup> Department of Physics, Faculty of Science, Helwan University, Helwan 12812, Cairo, Egypt

**Abstract**

The Fermi surface (FS) and spin-dependent momentum space density distribution of ferromagnetic Gd was studied via longitudinally polarised positrons. The measurements were performed using a 2D angular correlation of the annihilation radiation experiments with the reversal magnetic field direction parallel and anti-parallel to the polarisation direction of the positron. It was found that the minority-spin states were concentrated in the basal plane and majority-spin states were concentrated around the A, L and H points. The analysis confirmed that the main contributions to the FS of Gd were influenced by the mixing of both the 5d-6s and the 4f-5d hybrid bands. The general layout of this FS was observed as two hole-like surfaces running along the  $[\Gamma A]$  axis and one electron-like surface running along the  $[MK]$  direction. In general, the experimental results showed good agreement with earlier investigations. © 2011 Taylor & Francis.

**Author Keywords**

Electronic structure; FEM; Fermi surface; Ferrimagnetism; Ferromagnetic; Positron annihilation; Spin dynamics; Spin-dependent momentum space density

**Document Type:** Article

**Source:** Scopus

Eltokhy, M.A.R.

**Switched-capacitor filter based on unity gain buffer for high speed analog signal processing applications**

(2011) *Proceedings - ICCES'2011: 2011 International Conference on Computer Engineering and Systems*, art. no. 6141031, pp. 151-155. Cited 1 time.

**DOI:** 10.1109/ICCES.2011.6141031

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

**Abstract**

In this paper a new voltage buffer to realize high speed and low power dissipation switched-capacitor filters is proposed. The drain-follower achieves 300MHz bandwidth with 2pF load; DC gain of 0.993V/V, 1mV offset voltage, -60 dB total harmonic distortion at 0.4 V PP output voltage and 58.5 $\mu$ W power dissipation from 1.5V supply. A unity-gain buffer switched-capacitor biquad filter has been implemented in 0.5 $\mu$ m CMOS technology. The circuit has been sending for fabrication. Simulation results of the biquad filter indicate operation at 100 MHz with 6mW power consumption from a 1.5 V supply can be achieved. © 2011 IEEE.

**Author Keywords**

analog signal processing; high speed; switched-capacitor; unity gain buffer

**Document Type:** Conference Paper

**Source:** Scopus

Emam, M.A.

**A new empirical formula for calculating vehicles' frontal area**

(2011) *SAE Technical Papers*, .

Helwan University, Egypt

**Abstract**

The main objective of this research is to find a general empirical formula to predict vehicle frontal area applied to most

types of vehicles. This was done on 21 vehicles; passenger cars, buses and trucks by calculating their frontal area by using image processing technique on cars photos extracted from catalogues. The software (Data Fit) is used to establish the required empirical formula. The results showed that the empirical formula is simple and accurate enough for finding out the vehicles frontal areas. Copyright © 2011 SAE International.

**Document Type:** Conference Paper

**Source:** Scopus

Abdel-Rahman, M.H.<sup>a</sup>, Youssif, A.A.A.<sup>b</sup>, Ghaleb, F.F.M.<sup>a</sup>, Salem, A.-B.M.<sup>c</sup>

**An intelligent technique for endogenously silencing a specific human gene by siRNA**

(2011) *2011 E-Health and Bioengineering Conference, EHB 2011*, art. no. 6150328, .

<sup>a</sup> Math. Dept., Faculty of Science, Ain Shams University, Cairo, Egypt

<sup>b</sup> CS Dept., Faculty of Computers and Information, Helwan University, Ain Helwan, Cairo, Egypt

<sup>c</sup> CS Dept., Faculty of Computer and Information Sciences, Ain Shams University, Cairo, Egypt

#### Abstract

The use of short interfering RNA (siRNA) is an emerging powerful method for gene silencing. siRNA is a short RNA sequence that targets mRNA and causes the sequence-specific degradation of the mRNA. Despite its importance, few efforts have been made to develop algorithms and computational tools to detect genes controlled by siRNA process. This paper introduces an algorithm that uses an intelligent technique based on voting to determine whether a specific gene can be endogenously controlled by the cell using a siRNA sequence. When applying the proposed algorithm; the experimental results show that it requires relatively small memory space (not more than 70 MB) and in less than 3 minutes to determine whether a human gene can endogenously controlled. This makes the proposed algorithm practical to run into large genomes, specially the Human genome, and its specificity for only single gene increases its medical benefit as a tool for detecting treatments for specific diseases. © 2011 GR T Popa University.

#### Author Keywords

ESSG problem; Gene silencing; Hashing Algorithms; siRNA; Voting Algorithms

**Document Type:** Conference Paper

**Source:** Scopus

Mostafa, A.E.A., Ouf, M.E.-S., Ibrahim, M.

**Investigating the economic design of airport rigid pavement on expansive clay soil using waste materials**

(2011) *Proceedings, Annual Conference - Canadian Society for Civil Engineering*, 1, pp. 667-676.

Civil Engineering, Helwan University, Egypt

#### Abstract

Rigid pavement rested on clayey soil may be adversely affected by the behaviour of sub-grade soil. The clayey soil may swell or shrink which causes unexpected cracks in pavement and therefore needs greater thickness to sustain the expected loads. The objective of this study is to achieve an economic design of rigid pavement on expansive clay. Specimens of reinforced concrete slabs were tested on a bed of Egyptian soil and were loaded until failure. A reinforced concrete slab especially designed to sustain the expected airport loads, supported on the natural clayey soil was tested as a control specimen in the first phase. In the second phase, the natural soil was stabilized using two mixes, cement dust and lime by ratio (3:1), while the second mix was ground granulated blast furnace slag (GGBS) and lime by ratio (3:1). In the third phase, a control specimen was tested on soil replacement by sand layer. The results of this study proved that the best alternative to obtain the best stress / strain ratio was using GGBS and lime (3:1 ratio) to stabilize the natural soil and the percentage of total binder was 6% by dry weight of soil.

**Document Type:** Conference Paper

**Source:** Scopus

Metwally, F.M.<sup>a</sup>, El-Mezayen, H.A.<sup>b</sup>, Ahmed, H.H.<sup>c</sup>

**Significance of vascular endothelial growth factor, interleukin-18 and nitric oxide in patients with breast cancer: Correlation with carbohydrate antigen 15.3**

(2011) *Medical Oncology*, 28 (SUPPL. 1), pp. S15-S21. Cited 3 times.

**DOI:** 10.1007/s12032-010-9657-2

<sup>a</sup> Environmental and Occupational Medicine, National Research Center, Dokki, Cairo, Egypt

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



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

### Abstract

The aim of this study was to determine serum concentrations of angiogenic factors including vascular endothelial growth factor (VEGF), interleukin 18 (IL-18) and nitric oxide (NO) in patients with breast cancer and to evaluate whether these factors will be correlated with CA 15.3, as a routine tumor marker for breast cancer or not. This study was conducted on 44 patients with breast cancer and 15 healthy individuals as a control group. The results demonstrated significant increase in serum IL-18, NO and CA 15.3 levels in sera of breast cancer patients when compared to those of the control group ( $P < 0.001$ ,  $P = 0.016$  and  $P < 0.001$ , respectively). However, the mean serum level of VEGF in patients as showed insignificant increase compared to that of the controls was not significant ( $P = 0.311$ ). Sensitivity of CA 15.3, VEGF, IL-18 and NO to detect patients with disease was 52.2, 21.3, 77.2 and 70.4 %, respectively. In addition, positive status of serum CA 15.3 and/or IL-18 was found in 39 out of 44 (88.6 %) patients, and the positive status of serum CA 15.3 and/or NO was only found in 35 out of 44 (79.5 %). In conclusion, the simultaneous determination of IL-18 or NO in combination with the CA 15.3 may increase the sensitivity to diagnose breast cancer and may aid in disease prognosis. © 2010 Springer Science+Business Media, LLC.

### Author Keywords

Angiogenesis; Breast cancer; IL-18 and NO; VEGF

**Document Type:** Article

**Source:** Scopus

Elgendy, E.<sup>a</sup>, Schmidt, J.<sup>a</sup>, Khalil, A.<sup>b</sup>, Fatouh, M.<sup>c</sup>

### Modelling and validation of a gas engine heat pump working with R410A for cooling applications

(2011) *Applied Energy*, 88 (12), pp. 4980-4988. Cited 5 times.

**DOI:** 10.1016/j.apenergy.2011.06.046

<sup>a</sup> Institute of Fluid Dynamics and Thermodynamics, Faculty of Process and System Engineering, Otto-von-Guericke University, Universitätsplatz 2, D-39106 Magdeburg, Germany

<sup>b</sup> Mechanical Power Engineering Department, Faculty of Engineering, Cairo University, Giza 12316, Egypt

<sup>c</sup> Mechanical Power Engineering Department, Faculty of Engineering at El-Mattaria, Helwan University, Masaken El-Helmia P.O., Cairo 11718, Egypt

### Abstract

Gas engine heat pumps play an important role in energy saving and environment protection in both cooling and heating applications. In the present work, a thermal modelling of the gas engine driven heat pump in cooling mode is performed and system main parameters such as cooling capacity, gas engine energy consumption and primary energy ratio (PER) are computed. The modelling of the gas engine heat pump includes modelling of the scroll compressor, the plate evaporator and the gas engine. Discharged refrigerant mass flow rate and compressor power represent the main output parameters of the compressor semi-empirical model. Using the discharged refrigerant mass flow rates along with the available evaporation heat transfer correlations, the system cooling capacity is deduced. Based on the present experimental data, a correlation of gas engine energy consumption as function of compressor power, engine speed and ambient air temperature is obtained. Furthermore, the gas engine heat pump model is validated by comparing experimental and simulation data. The model error percentages to predict the cooling capacity, the gas engine energy consumption and the PER are 7%, 5%, 6% respectively. © 2011 Elsevier Ltd.

### Author Keywords

Cooling applications; Gas engine heat pump; Modelling; R410A

**Document Type:** Article

**Source:** Scopus

Abu-Gharbieh, E.<sup>a</sup>, Fahmy, S.<sup>b</sup>, Rasool, B.A.<sup>a</sup>, Bashedi, I.<sup>c</sup>, Mohammad, M.<sup>d</sup>, Bustanji, Y.<sup>d</sup>

### Prevalence of aspirin use and its concurrent use with ibuprofen among two Middle Eastern Countries: Jordan and the UAE - a cross sectional study

(2011) *Jordan Journal of Pharmaceutical Sciences*, 4 (3), pp. 155-165.

<sup>a</sup> Dubai Pharmacy College, Dubai, United Arab Emirates

<sup>b</sup> Faculty of Pharmacy, Helwan University, Egypt

<sup>c</sup> Faculty of Pharmacy, Applied Science University, Jordan

<sup>d</sup> Faculty of Pharmacy, University of Jordan, Jordan

### Abstract

The objective of this study was to assess the prevalence of aspirin use as a prophylactic agent in two countries: Jordan and the United Arab Emirates in addition to the frequency of concurrent use of aspirin and ibuprofen which might be associated with lower cardio protection. The data was collected using a structured questionnaire from December 2009 to February 2010. The results showed significantly higher proportion of Jordanian patients with cardiovascular problems (85.97%) who were using aspirin as compared to patients from the United Arab Emirates (71.26%) ( $p=0.0205$ , chi square test). The percentage of Jordanian patients with different cardiovascular problems taking aspirin concurrently with ibuprofen was relatively high. Patients' adherence to aspirin administration in both populations was suboptimal. Patients' age and previous myocardial infarction episodes were found to have a significant ( $p<0.001$ ) association with the use of aspirin in both populations. These results call for reasonable strategies for aspirin administration in both countries. © 2011 DAR Publishers/University of Jordan. All Rights Reserved.

**Author Keywords**

Cardiovascular diseases; Pharmacodynamic interaction; Primary prophylaxis; Secondary

**Document Type:** Article

**Source:** Scopus

Emam, O.E.

**Interactive bi-level multi-objective integer non-linear programming problem**

(2011) *Applied Mathematical Sciences*, 5 (65-68), pp. 3221-3232. Cited 7 times.

Department of Information Systems, Faculty of Computer Science and information, Helwan University, P.O. Box 11795, Egypt

**Abstract**

This paper presents a bi-level multi-objective integer non-linear programming (BLMINP) problem with linear or non-linear constraints and an interactive algorithm for solving such model. At the first phase of the solution algorithm to avoid the complexity of non convexity of this problem, we begin by finding the convex hull of its original set of constraints using the cutting-plane algorithm to convert the BLMINP problem to an equivalent bi-level multi-objective non-linear programming (BLMNP) problem. At the second phase the algorithm simplifies an equivalent (BLMNP) problem by transforming it into separate multi-objective decision-making problems with hierarchical structure, and solving it by using  $\epsilon$  constraint method to avoid the difficulty associated with non-convex mathematical programming. In addition, the author put forward the satisfactoriness concept as the first-level decision-maker preference. Finally, an illustrative numerical example is given to demonstrate the obtained results.

**Author Keywords**

Bi-level programming; Integer programming; Management decision making; Nonlinear programming

**Document Type:** Article

**Source:** Scopus

El-Morsy, M.S.<sup>a</sup>, Abouel-Seoud, S.<sup>b</sup>, Rabeih, E.-A.<sup>a</sup>

**Gearbox damage diagnosis using wavelet transform technique**

(2011) *International Journal of Acoustics and Vibrations*, 16 (4), pp. 173-179. Cited 2 times.

<sup>a</sup> Department of Mechanical Design, Helwan University, P.O box 11718, Cairo, Egypt

<sup>b</sup> Department of Automotive Engineering, Helwan University, P.O box 11718, Cairo, Egypt

**Abstract**

Vibration-based schemes are founded on the assumption that vibration signals from gearboxes measured using accelerometers reflect their condition accurately. A large number of vibration based techniques are used to make this reflection. They include various spectral analyses such as traditional Fourier transform, short-time Fourier transform, amplitude phase modulation and time synchronous averaging and non-parametric special estimation.

Recently, Wavelet Transform (WT) has been proven to be more suitable for analysis of vibration signals, since most of the time-vibration signals have instantaneous impulse trains and exhibit a transient (non-stationary) nature. This paper uses an adaptive wavelet filter, based on the Morlet wavelet, applied on the torsional vibration data measured from a single-stage gearbox with artificially induced cracks in the gear. This is done to extract some parameters and check their diagnostic behavior in an effort to search for those with the most potential and appropriateness for future health monitoring schemes. The results demonstrate that the adaptive wavelet filter is found to be very effective in detection of symptoms from vibration signals of a gearbox with early tooth cracks. Moreover the influence of crack depth, speed, and load on the wavelet entropy are interduced. Multi-hour tests were conducted and recordings were acquired using torsional vibration monitoring. The transitions in the wavelet entropy values with the recording time were highlighted suggesting critical changes in the operation of the gearbox.

**Document Type:** Article

**Source:** Scopus

Farahat, A.Z.<sup>a</sup>, El-Morsy, A.<sup>b c</sup>, El-Bitar, T.A.<sup>a</sup>

**Microstructure and tensile properties of severely deformed Nb-microalloyed steel**

(2011) *Proceedings of the 10th International Conference on Technology of Plasticity, ICTP 2011*, pp. 1208-1212.

<sup>a</sup> Plastic Deformation Department, Central Metallurgical R and D Institute, Cairo, Egypt

<sup>b</sup> Mechanical Engineering Department, Faculty of Engineering, King Abdulaziz University, Rabigh, Saudi Arabia

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

**Abstract**

Microstructures and tensile properties of medium carbon steel micro-alloyed with Nb addition in the as-cast condition subject to severe plastic deformation processing were investigated. The Nb-microalloyed steel was processed through two hot forging processing routes using pneumatic hammer: unidirectional and multi-directional forging processes. The steel was processed through the multi-directional forging technique to approximately the 4 accumulated strains. The specimens of unidirectional forging were processed to approximately the same final diameter obtained in the multi-directional forging (15mm diameter). Grain refinement caused by dynamic recrystallization was introduced to explain the effects accumulated strain on the microstructure and tensile properties of Nb-microalloyed steel. The characterization of microstructure revealed that the multi-directional forging process exhibits finer and homogeneous microstructure and produces degenerated pearlite in ferrite matrix. The investigation of tensile properties clarified that the tensile strength highly increases due to severe forging while elongation slightly deteriorates. © 2011 IBF (RWTH Aachen) & IUL (TU Dortmund).

**Author Keywords**

Multi-directional forging; Nb-microalloyed steel; Severe plastic deformation; Unidirectional forging

**Document Type:** Conference Paper

**Source:** Scopus

Mohamed, M.S.<sup>a</sup>, Kamel, M.M.<sup>b</sup>, Kassem, E.M.M.<sup>b</sup>, Abotaleb, N.<sup>a</sup>, Khedr, M.<sup>c</sup>, Ahmed, M.F.<sup>a</sup>

**Synthesis, biological evaluation and molecular docking of quinazoline-4(1H)-one derivatives as anti-inflammatory and analgesic agents**

(2011) *Acta Poloniae Pharmaceutica - Drug Research*, 68 (5), pp. 665-675. Cited 3 times.

<sup>a</sup> Faculty of Pharmacy, Helwan University, Egypt

<sup>b</sup> Department of Therapeutical Chemistry, National Research Centre, Dokki, Cairo, Egypt

<sup>c</sup> Welsh School of Pharmacy, Cardiff University, United Kingdom

**Abstract**

Two series of 2-phenyl-4(3H) quinazolinone derivatives have been synthesized. Most of the tested quinazolinone derivatives showed considerable potent anti-inflammatory and analgesic activity of superior GIT safety profile in experimental rats in comparing to indomethacin as reference drug. Compounds VIa, VIb were the most potent anti-inflammatory in experimental rats in comparing to indomethacin as reference drug. Docking study into COX-2 has been made for derivatives of anti-inflammatory activity.

**Author Keywords**

Analgesic; Anti-inflammatory; Molecular docking; Quinazolin-4-ones; Ulcerogenic effect

**Document Type:** Article

**Source:** Scopus

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

**Limit load determination and material characterization of cracked polyethylene miter pipe bends**

(2011) *American Society of Mechanical Engineers, Pressure Vessels and Piping Division (Publication) PVP*, 3, pp. 1049-1058.

**DOI:** 10.1115/PVP2011-57587

<sup>a</sup> Mechanical Design Department Faculty of Engineering Mataria, Helwan University, Cairo, Egypt

<sup>b</sup> Mechanical Engineering Department, American University in Cairo AUC, Cairo, Egypt

<sup>c</sup> KSA, Civil Engineering Dept., Jazan University, Zagazig, Egypt

**Abstract**

The quality of Natural Gas Piping Systems, NGPS, must be ensured against manufacturing defects. The main purpose of the present paper is to investigate the effect of loading mode and load angle ( $30^\circ$ ,  $45^\circ$ , and  $60^\circ$ ) on the limit load of miter pipe bends, MPB, under different crack depths  $a/W = 0$  to  $0.4$  at a crosshead speed  $500$  mm/min. The geometry of cracked and un-cracked multi miter pipe bends are: pipe bend angle,  $\alpha=90^\circ$ , pipe bend factor,  $h=0.844$ , standard dimension ratio,  $SDR=11$ , and three junctions,  $m=3$ . The material of the investigated pipe is a high-density polyethylene, HDPE, which is commonly used in natural gas piping systems. The welds at the miter pipe junction are produced by butt-fusion welding. For all loading modes the limit load is obtained by the tangent intersection method, TI, from the load deflection curves produced by the specially designed and constructed testing machine at the laboratory<sup>1</sup>. Tensile tests are conducted on specimens longitudinally extruded from the pipe with thickness,  $T= 10, 30$  mm, at different crosshead speeds ( $5$ - $500$  mm/min), and different gauge lengths ( $G=20, 25,$  and  $50$  mm) to determine the mechanical properties of welded and un-welded specimens. The fracture toughness is determined on the basis of elastic plastic fracture mechanics, EPFM. Curved three-point bend specimens, CTPB, are used. All specimens are provided with artificially pre-crack at the crack tip,  $a/W=0.5$ . The effect of specimen thickness variation ( $B= 10, 15, 22.5, 30, 37.5,$  and  $45$ mm) for welded and un-welded specimens is studied at room temperature ( $T_a = 23^\circ\text{C}$ ) and at different crosshead speeds, VC.H, ranging from  $5$  to  $500$  mm/min. The study reveals that increasing the crack depth leads to a decrease in the stiffness and limit load of MPB for both in-plane, and out-of-plane bending moment. In case of combined load (out-of-plane and in-plane opening; mode) higher load angles lead to an increase in the limit load. The highest limit load value occurs at a loading angle,  $\phi = 60^\circ$ . In case of combined load (out-of-plane and in-plane closing; mode) the limit load decreases with increasing load angles. On the other hand, higher limit load values are proved at a load angle,  $\phi = 30^\circ$ . For combined load opening case; higher values of limit load are obtained. The crosshead speed has a significant effect on the mechanical behavior of both welded and unwelded specimens. The fracture toughness, JIC, is greater for un-welded than welded specimen. © 2011 by ASME.

**Author Keywords**

Butt-fusion (BF) method; Curved three point bend (CTPB); High density polyethylene (HDPE); High-density polyethylene (HDPE); Miter pipe bends (MPB); Tangent intersection (TI) method

**Document Type:** Conference Paper

**Source:** Scopus

Daous, M.A.<sup>a</sup>, Arafat, A.<sup>a b</sup>, Al-Shareef, E.<sup>a</sup>

**Photocatalytic degradation of organic contaminants in wastewater using visible light irradiation**  
(2011) *AIChE Annual Meeting, Conference Proceedings*, 8 p.

<sup>a</sup> Chemical and Materials Engineering Department, King Abdulaziz University, P.O. Box 80204, Jeddah, 21589, Saudi Arabia

<sup>b</sup> Chemistry Department, Faculty of Science, Helwan University, Ain Helwan, Helwan, 17790, Egypt

**Abstract**

Titanium dioxide nanoparticles successfully anchored into 3-D mesoporous material (TUD-1) using a sol-gel preparation strategy were prepared and tested as photocatalysts, employing only visible light ( $\lambda = 447$  nm), for the treatment of wastewaters containing organic contaminants, such as phenol and azo dyes. Samples of different Si/Ti ratio,  $\infty, 100, 75, 50$  and  $25$  and  $10$  w/w were prepared and characterized by X-ray diffraction (XRD), transmission electron microscopy (TEM), ultraviolet spectroscopy (UV), and nitrogen adsorption at  $77\text{K}$ . These samples were found to have mesoporous structure and only samples of high loadings of titania were found to have anatase in very small amount, while low loading samples didn't show separate phases of  $\text{TiO}_2$ . Diffuse reflectance UV-VIS spectra of the catalysts showed absorption bands in both the UV and visible region of the spectra. The prepared samples were tested for the photocatalytic treatment of simulated wastewaters contaminated with phenol and azo dye as organic contaminants by irradiation with visible light only ( $\lambda = 447$  nm). The newly developed Ti-TUD-1 photocatalysts showed excellent activity towards the removal of the tested organic compounds. Up to  $99\%$  of phenol and  $98\%$  of azodyes were successfully removed from the contaminated wastewater. Moreover, the catalysts showed remarkable stability under the relatively mild irradiation conditions used. Repeated photodegradation tests demonstrated remarkable reproducibility and showed no decrease in photocatalytic activity after  $5$  cycles.

**Document Type:** Conference Paper

**Source:** Scopus

Hassaneen, A.E.<sup>a</sup>, Samuel, S.<sup>b</sup>, Whelan, I.<sup>b</sup>

**Combustion instabilities and nanoparticles emission fluctuations in GDI spark ignition engine**  
(2011) *International Journal of Automotive Technology*, 12 (6), pp. 787-794. Cited 12 times.

**DOI:** 10.1007/s12239-011-0091-z

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

<sup>b</sup> School of Technology, Oxford Brookes University, OX33 1HX Oxford, United Kingdom

### Abstract

The main challenge facing the concept of gasoline direct injection is the unfavourable physical conditions at which the premixed charge is prepared and burned. These conditions include the short time available for gasoline to be sprayed, evaporated, and homogeneously mixed with air. These conditions most probably affect the combustion process and the cycle-by-cycle variation and may be reflected in overall engine operation. The aim of this research is to analyze the combustion characteristics and cycle-by-cycle variation including engine-out nanoparticulates of a turbocharged, gasoline direct injected spark ignition (DISI) engine at a wide range of operating conditions. Gasoline DISI, turbo-intercooled, 1.6L, 4 cylinder engine has been used in the study. In-cylinder pressure has been measured using spark plug mounted piezoelectric transducer along with a PC based data acquisition. A single zone heat release model has been used to analyze the in-cylinder pressure data. The analysis of the combustion characteristics includes the flame development (0-10% burned mass fraction) and rapid burn (10-90% burned mass fraction) durations at different engine conditions. The cycle-by-cycle variations have been characterized by the coefficient of variations (COV) in the peak cylinder pressure, the indicated mean effective pressure (IMEP), burn durations, and particle number density. The combustion characteristics and cyclic variability of the DISI engine are compared with data from throttle body injected (TBI) engine and conclusions are developed. © 2011 The Korean Society of Automotive Engineers and Springer-Verlag Berlin Heidelberg.

### Author Keywords

Combustion characteristics; Cyclic variability; DISI engine; Nanoparticulates

**Document Type:** Article

**Source:** Scopus

Hashad, A.<sup>a</sup>, Amer, F.Z.<sup>b</sup>, El-Garhy, A.M.<sup>b</sup>, Youssef, A.R.<sup>c</sup>, Aly, S.M.<sup>d</sup>

### Integrated controller for fixed speed, grid connected wind turbine, based on neural networks

(2011) *Proceedings of the 2011 International Conference on Artificial Intelligence, ICAI 2011*, 2, pp. 791-797.

<sup>a</sup> Al-Naeim Consultancy, Qassim University, Buraydah, Saudi Arabia

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

<sup>c</sup> Information systems Department, King Saud University, Riyadh, Saudi Arabia

<sup>d</sup> Wind Power Studies Department, New and Renewable Energy Authority, Cairo, Egypt

### Abstract

Electrical power production is the main target required from wind turbines. This paper describes an approach for wind turbine controller as a vital part of the turbine, where this controller is based on Artificial Neural Network technique and a control scheme has been applied and validated by detailed simulation in MATLAB 6.5/Simulink. The proposed controller enhances the reactive power affected by electrical grid voltage and/or load disturbances where the controlled variables for the controller are system voltage and power production. Final results were compared with practical database of wind turbine runs by conventional controllers without applying ANN, and found positive. The controller model is useful for wind energy developers for designing wind energy conversion systems, where ANN based controller is much faster and adaptive to maintain maximum power conversion efficiency which appears steady at maximum in the same area of the power/wind speed curve during load or wind sudden variances.

### Author Keywords

Artificial Neural Network; Capacity factor; Generator; Simulation; Voltage stability; Wind turbine controller

**Document Type:** Conference Paper

**Source:** Scopus

Mohamed, M.S.<sup>a</sup>, Hussein, W.M.<sup>a b</sup>, McGeary, R.P.<sup>b c</sup>, Vella, P.<sup>b</sup>, Schenk, G.<sup>b d</sup>, Abd El-Hameed, R.H.<sup>a</sup>

### Synthesis and kinetic testing of new inhibitors for a metallo- $\beta$ -lactamase from *Klebsiella pneumonia* and *Pseudomonas aeruginosa*

(2011) *European Journal of Medicinal Chemistry*, 46 (12), pp. 6075-6082. Cited 20 times.

**DOI:** 10.1016/j.ejmech.2011.10.030

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

<sup>b</sup> University of Queensland, School of Chemistry and Molecular Biosciences, Brisbane, QLD 4072, Australia

<sup>c</sup> University of Queensland, School of Pharmacy, Brisbane, QLD 4072, Australia

<sup>d</sup> National University of Ireland- Maynooth, Department of Chemistry, Maynooth, Co. Kildare, Ireland

**Abstract**

There are currently no clinically useful inhibitors against metallo- $\beta$ -lactamases (MBLs), enzymes that confer resistance against a broad spectrum of commonly used antibiotics and that are produced by an increasing number of bacterial pathogens. New pyrrole derivatives were synthesized and assayed for their inhibitory effect on the catalytic activity of the IMP-1 MBL from *Pseudomonas aeruginosa* and *Klebsiella pneumoniae*. Six compounds tested (3a-3c, 5, 7 and 8) show micromolar inhibition constants ( $K_i$  values range from  $\sim 10$  to  $30 \mu\text{M}$ ). In silico docking was employed to investigate the binding mode of the strongest inhibitor, 3b, in the active site of IMP-1. Implications for further improvements of binding efficiency and specificity are discussed. © 2011 Elsevier Masson SAS. All rights reserved.

**Author Keywords**

Metallo- $\beta$ -lactamase inhibitors; Pyrrole; Pyrrolo[2,3-d]pyrimidine; Structure-activity relationship

**Document Type:** Article

**Source:** Scopus

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

**Effects of flaxseed oil on lead acetate-induced neurotoxicity in rats**

(2011) *Biological Trace Element Research*, 144 (1-3), pp. 904-913. Cited 13 times.

**DOI:** 10.1007/s12011-011-9055-4

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

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

**Abstract**

It is well known that chronic exposure to lead (Pb +2) alters a variety of behavioral tasks in rats and mice. Here, we investigated the effect of flaxseed oil (1,000 mg/kg) on lead acetate (20 mg/kg)-induced brain oxidative stress and neurotoxicity in rats. The levels of Pb +2, lipid peroxidation, nitric oxide (NO), and reduced glutathione (GSH) and the activity of catalase (CAT), superoxide dismutase (SOD), glutathione reductase (GR), glutathione-S-transferase (GST), and glutathione peroxidase (GPx) were determined in adult male albino rats. The level of Pb +2 was markedly elevated in brain and blood of rats. This leads to enhancement of lipid peroxidation and NO production in brain with concomitant reduction in GSH, CAT, SOD, GR, GST, and GPx activities. These findings were associated with DNA fragmentation. In addition, lead acetate induced brain injury as indicated by histopathological changes of the brain. Treatment of rats with flaxseed oil resulted in marked improvement in most of the studied parameters as well as histopathological features. These findings suggest to the conclusion that flaxseed oil significantly decreased the adverse harmful effects of lead acetate exposure on the brain as well as Pb +2-induced oxidative stress. © Springer Science+Business Media, LLC 2011.

**Author Keywords**

Flaxseed oil; Lead; Neurotransmitters; Oxidative stress; Rat

**Document Type:** Article

**Source:** Scopus

Youssif, A.A.A., Ghalwash, A.Z., Amer, E.A.

**HSWS: Enhancing efficiency of Web Search engine via Semantic Web**

(2011) *Proceedings of the International Conference on Management of Emergent Digital EcoSystems, MEDES'11*, pp. 212-219.

**DOI:** 10.1145/2077489.2077530

Computer Science Department, Helwan University, Helwan, Egypt

**Abstract**

With the tremendous growth of information availability to users through the Web, search engines come to play ever a more critical role. However, search engines retrieve vast amount of information that is far larger than an individual capability of processing. Also enormous amount of such information are not related to user search query. The semantic web provides a promising approach to enhance the search operation. Ontologies can capture concepts for any topic to enable machines to deal with data semantically. In this paper, a proposed technique called HSWS (Hybrid Semantic Web Search) is used to automatically generate ontology concepts for any topic by extracting semantic relationships between concepts from information sources that represent such topic; the resultant ontology concepts is used to re-rank results returned by a search engine for such topic. A new relevancy measure is proposed to rank retrieved documents. The new relevancy measure depends on the degree of semantic similarity between concepts extracted from web pages resulted from query on a topic and indexed ontology concepts that represents the topic. The proposed technique is fully unsupervised; it doesn't require any type of training. HSWS outperforms

semantic similarity state-of-the-art methods and web-based methods. The proposed technique shows the highest Pearson correlation coefficient to human judgments (0.888) compared to other similarity methods. Copyright © 2011 ACM.

#### Author Keywords

Ontology; Ranking; Semantic similarity; Semantic web; Web search engines

**Document Type:** Conference Paper

**Source:** Scopus

Allam, F.<sup>a</sup>, Nossair, Z.<sup>b</sup>, Gomma, H.<sup>b</sup>, Ibrahim, I.<sup>b</sup>, Abd-El Salam, M.<sup>c</sup>

#### **Prediction of subcutaneous glucose concentration for type-1 diabetic patients using a feed forward neural network**

(2011) *Proceedings - ICCES'2011: 2011 International Conference on Computer Engineering and Systems*, art. no. 6141026, pp. 129-133. Cited 2 times.

**DOI:** 10.1109/ICCES.2011.6141026

<sup>a</sup> Electrical Engineering Dep., Tabbin Institute for Metallurgical Studies, Cairo, Egypt

<sup>b</sup> Comm., Elec. and Computer Engineering Dep., Faculty of Engineering, Helwan Univ., Cairo, Egypt

<sup>c</sup> Endocrinology and Metabolism Dep., Faculty of Medicine, Ain Shams Univ., Cairo, Egypt

#### Abstract

Insulin Dependent Diabetes Mellitus (IDDM) is a chronic disease characterized by the inability of the pancreas to produce sufficient amount of insulin. Daily compensation of the deficiency requires 4-6 insulin injections to be taken every day. The aim of this insulin therapy is to maintain normoglycemia - i.e., a blood glucose level between 4-7 [mmol/L]. To determine the quantity and timing of these injections, several different approaches are used. Prediction of future glucose values can be used for early hypoglycemic/hyperglycemic alarms for adjustment of insulin injections or insulin infusion rates of manual or automated pumps. Recent developments in continuous glucose monitoring (CGM) devices open new opportunities for glycemia management of diabetic patients. CGM technologies provide glucose readings at high frequency and consequently detailed insight into the subject's glucose variations. The objective of this research is to use glucose readings that are obtained from CGM devices, to develop a feed forward neural network model (NNM) to predict future glucose values. This NNM can be used in model predictive control systems to automatically adjust the glucose level in type-1 diabetic patients. The results of our research indicate that the NNM can be used to accurately predict future glucose values for prediction horizons of 30 minutes or less without time delay between the predicted output and the real glucose samples. © 2011 IEEE.

#### Author Keywords

blood glucose prediction model; CGM; feed forward neural network; glucose regulation

**Document Type:** Conference Paper

**Source:** Scopus

Fahmy, A.G., El-Bakry, A.A.

#### **Phytogeographical significance of Wadi Wateer (Sinai), Egypt, with special reference to *Cocculus hirsutus* (L.) W.Theob.**

(2011) *Plant Systematics and Evolution*, 297 (3-4), pp. 299-303.

**DOI:** 10.1007/s00606-011-0531-2

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

#### Abstract

The botanical survey of Wadi Wateer, located in the southeastern Sinai, revealed the presence of a plant that provides an important new record to the Flora of Egypt: *Cocculus hirsutus* (L.) Theob. This plant has not been recorded previously as existing in its wild form in the Flora of Egypt. The plant cover in Wadi Wateer is dominated by plant taxa belonging to the Saharo-Sindian phytogeographical element. However, many plants in the wadi have been attributed to the Sudanian chorotype, such as *Acacia tortilis* (Forssk.) Hayne subsp. *raddiana* (Savi) Brenan, *Chrozophora brocchiana* Vis., *Lycium shawii* Roem & Schult., *Moricandia sinaica* (Boiss.) Boiss., *Cocculus hirsutus* (L.) Theob. and *Cocculus pendulus* (J. R. & G. Forst.) Diels. The presence of Sudanian chorotype plant taxa [including the newly recorded *Cocculus hirsutus* (L.) Theob.] provides evidence that Wadi Wateer and Aqaba Gulf functioned as migratory tracks for these African plants, assisting their penetration into the Saharo-Sindian, Mediterranean and Irano-Turanian phytogeographical regions in the Sinai and Asia. This study suggests that Wadi Wateer should be declared a protected area for its habitat and climatic diversity as well as for its phytogeographical significance. © 2011 Springer-Verlag.

#### Author Keywords

Cocculushirsutus; Egypt; New record; Sinai; Sudanian plants; Wadi Wateer

**Document Type:** Article

**Source:** Scopus

Kandil, A.<sup>a</sup>, Tantawy, O.<sup>b</sup>, Barakat, K.<sup>a</sup>, Abdanabi, N.<sup>a</sup>

**Double paraproximity spaces**

(2011) *Life Science Journal*, 8 (4), pp. 800-804.

<sup>a</sup> Mathematics Department, Faculty of Science, Helwan University, P.O. Box 11795, Cairo, Egypt

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

**Abstract**

We introduce the concept of a double completely normal topological space or DT5 - space and double Paraproximity space showing that every double space induces a double completely normal topological space and vice versa.

**Author Keywords**

Double paraproximity space; Mathematics; Topological space

**Document Type:** Article

**Source:** Scopus

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