

ABSTRACT BOOK

Seventh International Scientific
Conference, Al-Azhar University
(ISCAZ 2010),

Environment, Development, and Nanotechnology, 22 – 24
March 2010, Cairo, Egypt.

Under the Auspices of his Excellency

Prof. Dr. Ahmed Mohammad El-Tayyb

**Honorary Chairman
President of Al-Azhar University**

**Prof. Dr. Mohammad H. Awad
Chairman**

Dean, Faculty of Science, Al-Azhar University

**Prof. Dr. Ahmed M. El-Mezayen
Co-Chairman**

Vice-Dean, Faculty of Science, Al-Azhar University

**Prof. Dr. Mostafa M. Emara
Coordinator**

Date: 22–24 March 2010



Conference Program

Day One:

No.	Mon : 22-03-2010	Place	Start	End
1	Reception and Registration	Main Hall	08:00	09:30
2	Opening Ceremony	Main Hall	09:30	10:30
3	Honor scientists	Main Hall	10:30	11:00
4	Cofee Break	Main Hall	11:00	12:00
5	<p>Opening Session</p> <p>Polymer Colloids: From Design to Industrial and Biomedical Applications</p> <p>Prof. Dr. Mohamed S. El-Aasser ...Vice President for International Affairs, Lehigh University, USA</p> <p>CHAIR</p> <p>Prof. Dr. Sultan Abu Orabi Yarmouk University, JO</p> <p>Prof. Dr. Muhammad H. Awad Chairman of Seventh International Scientific Conference</p>	Main Hall	12:00	01:00
6	<p>Second Session [Round Table Discussion]</p> <p>Environment, Development, Nanotechnology and Quality of Higher Education</p> <p>Prof. Dr. Sultan Abu OrabiYarmouk University, JO</p> <p>Prof. Dr. Mahmoud Hashem AbdelKadderGerman University, EG</p> <p>Prof. Dr. Maghawry DiabMenofia University, EG</p> <p>Prof. Dr. Abdelhay ObaidAcademy Akhbar Elyom, EG</p> <p>Prof. Dr. Abdallah BarakatHelwan University, EG</p> <p>CHAIR</p> <p>Prof. Dr. Mohamed Raafat Mahmoud Misr for Tech. & Sci. University, EG</p> <p>Prof. Dr. sedeek Afifi El-Nahda University, EG</p> <p>Prof. Dr. Mohamed S. El-Aasser Lehigh University, USA</p>	Main Hall	01:00	03:00
7	Poster - Sec01	Hall[Poster]	03:00	03:30
8	Poster - Sec02	Hall[Poster]	03:30	04:00
9	Lunch at Nasr City Sporting Club	Nasr City	04:00	05:30

Plenary (POL) Speaker

Plenary (POL) Speaker

Polymer Colloids: From Design to Industrial and Biomedical Applications



Mohamed S. El-Aasser

Vice President for International Affairs

Department of Chemical Engineering

Emulsion Polymers Institute

Lehigh University Bethlehem, Pennsylvania 18015, USA

<https://fp2.cc.lehigh.edu/inemuls/MEAhome.htm>

Abstract

A wide variety of polymer colloids, more commonly known as latexes, comprising many families of polymers are prepared via free-radical emulsion polymerization and copolymerization of their respective monomers for use in a wide range of applications. These include synthetic rubber, floor coatings, paints, adhesives, binders for non-woven fabrics, high-impact polymers, latex foam, and additives for construction materials such as cement and concrete. Polymers that cannot be prepared by emulsion polymerization (such as ionic polymers and epoxies) can often be prepared by direct emulsification of their polymer solutions followed by solvent removal; the resulting latex is referred to as an artificial or pseudo-latex. Artificial latexes are prepared by applying miniemulsion process technology. The latter enables the formation of relatively stable submicron droplets through the use of a combination of a conventional surfactant and additionally a costabilizer that has the dual characteristics of very low water solubility and low molecular weight. This technology is applied more popularly in preparing synthetic latexes by miniemulsion polymerization of submicron size monomer droplets as the main sites for particle nucleation and growth via free radical polymerization. This has led to many interesting applications in latex technology including the preparation of hybrid latexes, high solids latexes, polymerization of highly water-insoluble monomers and macromonomers, controlled molecular weight via living free radical polymerization, controlled polymer microstructure and morphology, and encapsulation and entrapment of inorganic particles, metal particles, dyes, drugs, oils, and perfumes. The fundamental knowledge gained over the past 50 years in the art and science of polymer colloids and latex technology allows one to design and tailor-make polymer particles with the ability to exercise systematic control over many of the latex properties. These properties include particle size and distribution (narrow to broad to multimodal), and particle morphology including domain location, shape, nano to micron size monodisperse particles, and chemical composition. Other morphological features within the particles can be varied such as porosity with controlled pore size and their loading with various inorganic and metal particles and other fluids. The chemical nature of functional groups on the particle surfaces and their number density can be varied as well. The designed particles are finding use in numerous biomedical applications such as medical diagnostics and therapeutics, immunoassays, biological cell labeling, biosensors and drug delivery systems.

Biographical Sketch

Mohamed El-Aasser, Professor of Chemical Engineering (1974 – present), served Lehigh University as Provost and Vice President for Academic Affairs (2004 – 2009), Dean of the P.C. Rossin College of Engineering and Applied Science (2001 – 2004), Chairman of the Department of Chemical Engineering (1996 - 2001) and Director of the Emulsion Polymers Institute (1989 – 2009).

El-Aasser received his undergraduate BS and Master's degrees at the University of Alexandria, Egypt and his Ph.D. at McGill University, Montreal, Canada. He is internationally known for his research in the field of polymer colloids and emulsion polymerization processes, including miniemulsions which he and his colleagues at Lehigh pioneered. He and his students and postdoctoral fellows authored 400 published articles. He holds 9 U.S. patents, and published 5 edited books. He advised 65 Ph.D. students and co-advised 24 Ph.D. students, and also advised 53 M.S. students, 31 postdoctoral fellows. He currently advises 3 Ph.D. candidates. He has given numerous presentations and invited lectures at national and international conferences and universities. He received numerous awards, including the 2007 Fellow of the American Chemical Society's Division of Polymeric Materials Science and Engineering, the 2002 Roy W. Tess Award in Coatings, the American Chemical Society, co-shared the 1985 NASA Inventor of the Year Award, and Lehigh University's 1999 Hilman Extraordinary Service Award, and co-shared the 1988 Eleanor and Joseph Libsch Research Award.

Invited Speakers

Nanotechnology ∴∴ Invited Lecture

1

TUE : 23-03-2010 HALL[A] ORAL - SEC01 (1) 09:00 : 09:30

286

NANO - 6 EG PROF. HASSAN AZZAZY hazzazy@aucegypt.edu

NANOPARTICLES: SYNTHESIS, PROPERTIES & BIOMEDICAL APPLICATIONS

Hassan M. E. Azzazy, PhD, DABCC, FACB

Department of Chemistry, The American University In Cairo, New Cairo, Egypt

ABSTRACT

Nanoparticles are proposed as key components of novel diagnostic and therapeutic strategies. An assortment of nanoparticles, with various sizes, shapes, composition, surface chemistry, and unique photophysical properties have already been constructed. Their extremely small size allows them to penetrate cells and interact with cellular molecules. Quantum dots (QDs), gold nanoparticles (AuNPs), and superparamagnetic nanoparticles (SPMNs) are the most popular nanostructures employed for biomedical applications. These nanoparticles can be conjugated to recognition moieties such as antibodies or oligonucleotides for detection of target biomolecules. Nanoparticles have been utilized in immunoassays, DNA diagnostics, bioseparation of specific cell populations, cellular imaging, and photodynamic therapy. In this presentation, simple methods for in-house preparation of QDs, AuNPs, and SPMNs will be presented. Key photophysical properties of the three nanoparticles will be discussed in context of their various biomedical applications. Research activities to develop colorimetric assay for the detection of viruses in human serum will be summarized.

Nanotechnology .:: Invited Lecture

2

TUE : 23-03-2010 HALL[A] ORAL - SEC06 (1) 10:30 : 11:00

286

NANO - 11 PK PROF. FARHAN SAIF farhan.saif@fulbrightmail.org

RECURRENCE TRACKING MICROSCOPE BASED ON BOSE EINSTEIN CONDENSATES

Farhan Saif , Hayat Khan

Department of Electronics, Quaid-i-Azam University, Islamabad, Pakistan

Department of Electronics, Quaid-i-Azam University, Islamabad, Pakistan

ABSTRACT

Recurrence Tracking Microscope (RTM) scans surface structures with atomic size resolution. The device works on the principle of quantum recurrences of cold atoms reflected by an atomic mirror. The mirror is connected with a cantilever which moves on the surface under study. RTM is better than the existing devices as STM and AFM, as it scans all kind of surfaces and has no limitation due to impurity atoms. The resolution of the RTM is further increased as we use Bose Einstein Condensates.

Physics and its applications ::. Invited Lecture

3

TUE : 23-03-2010 HALL[A] ORAL - SEC11 (1) 01:00 : 01:30

286

PHY - 42 EG PROF. ALAEDDIN A. BAHGAT alaabahgat@gmail.com

SETTING A COMPUTER ASSISTED EXPERIMENT

Alaeddin A. Bahgat

Department of Physics, Faculty of Science, Al-Azhar University, Nasr city 11884, Cairo, Egypt

ABSTRACT

Nowadays computers are indispensable object in our daily life. This is also true in modern experimental laboratory. Usually one pays a great deal to have a computer assisted instrument without even bothering himself of how it is working. In the present presentation we will shed some light on how to build your own computer assisted experiment with the least expenses. Only you may need one of the common known ports a serial port, parallel port, A/D or D/A converters, sensor and with no doubt a good computer program. In this presentation we are going to demonstrate our experience in setting up computer assisted experiments which facilitate a fast and accurate collection of data for analysis and interpretations. Experiments such as: Magnetic AC susceptibility, Differential thermal analysis, Specific heat of materials, Mechanical creep, Ferromagnetic and Ferroelectric Hysteresis loops, Dc electrical properties of materials, Ac Dielectric properties of materials.

Physics and its applications ::. Invited Lecture

4

WED : 24-03-2010 HALL[A] ORAL - SEC16 (1) 09:00 : 09:30

286

PHY - 60 EG PROF. HUSSAM H. HASSAN hussam@yahoo.com

POLYMERIC COMPOSITES (SCIENCE & TECHNOLOGY)

Prof. Dr. Hussam H. Hassan

physics department, faculty of science, cairo university

ABSTRACT

Part One : Polymer Science 1. Introduction 2. Classification of polymers a) Chemical characterization b) Physical characterization c) According to regularity d) According to composition e) According to molecular mass f) According to shape g) According to chemical structure h) According to types of monomers i) According to Crystallinity j) According to polarity k) According to temperature effect l) According to mechanical effect m) According to radiation effect 3. Milling 4. Vulcanization 5. Pressing 6. Research activities • Antistatic Polymeric Composites • Conductive & Semi conductive Polymeric Composites • Thermally Sensitive Polymeric Composites • Pressure Sensitive Polymeric Composites • Optically Sensitive Polymeric Composites • Heat Resistant Polymeric Composites • Oil Resistant Polymeric Composites • Pressure Resistant Polymeric Composites • Shock Absorber Polymeric Composites • Abrasion Resistant Polymeric Composites • Nuclear Shielding Polymeric Composites • Radar Wave Absorber Polymeric Composites • Magnetic Polymeric Composites • Polymeric Fibers • Cyclic Fatigue Resistant Polymeric Composites • Thermoelectric power/ Polymeric Composites 7. Polymer technology (Industrial Application) • Preparation of Polymeric Coating Composites According to International Standardization • Vulcanization of Polymeric Composites Under the Heating Press to get Sample Sheet • Prepare test pieces with dumbbell shape for mechanical test • Mechanical Test • Electric Test • Dielectric Test • Thermal Test • Swelling Test • Abrasion Test • Compression Test • Adhesion test • Bad Adhesion • Good Adhesion • Final Product 8. Example of Different Products • Spare Parts of Concrete mixer • Spare Parts of Concrete Pump • Spare Parts of Buses & Trucks • Spare Parts of Cars • Spare Parts for Water Stations • Rubber Belts • 9. Recycling of Waste Polymeric Materials 10. Repairing Belts in The Production Location

Physics and its applications .:. Invited Lecture

5

WED : 24-03-2010 HALL[A] ORAL - SEC21 (1) 11:00 : 11:30

286

PHY - 31 EG PROF. MOHAMED EL-OKR moh_elokr@yahoo.com

SPECTROSCOPY OF RARE EARTH DOPED GLASSES

M. M. EL-OKR

Phys. Dept. Faculty of science, AL-Azhar Univ.

ABSTRACT

Such complex wave functions usually are not used, but a linear combinations give a real wave functions as; Transition Metals: Rare Earth Elements (Lanthanides): Type of optical transitions in RE □ Intraconfigurational: $4f^N \rightarrow 4f^N$, gives long lifetimes & sharp absorption lines □ Interconfigurational: $4f^N \rightarrow 4f^{N-1}5d$ transitions, gives large oscillator strengths, broad absorption bands, and fast response times. Energy Level Diagram for RE (Dieke Diagram) Judd-Ofelt Theory: Quimby Method: The calculated values I_s used to calculate the goodness of the fitting through the equation Luminescence: Samarium doped borate glasses. Absorption Spectrum: Time Resolved Luminescence: Upconversion: Hole Burning (HB): All memory devices depend on permanent variation in given material. The most simple example is the magnetic devices. It depends on the spin orientation → magnetic non-isotropic energy. Optical memory devices depend principally on local variation of the R.I as shown Hole Burning □ It defines as remove from an inhomogeneously broadened spectral line a narrow, homogeneous line causing the appearance of dip (hole) in the resultant spectrum. □ Hole Burning 1- Transient HB 2- Persistent HB Transient spectral (HB) □ It refers to storage of the ion population in some state other than the original G.S □ In which the laser beam is resonant with one of the transition between particular set of hyperfine levels of the ground and excited state. □ In the following figure: Persistent spectral holeburning PSHB occurs due to □ The system is said to undergo (PSHB) when the optical transition frequencies are altered permanently (long time). □ This occurs when those ions resonant with laser are photoionized, producing a new valence state whose optical absorption is totally different, so the removal of the original absorption results in spectral hole. Ex. Divalent rare earth ions such as Sm^{2+} and Eu^{2+} in both ordered and disordered systems. Why it takes place at low temperature? □ In general, optical absorption takes place when an incoming photon has exactly the right amount of energy to take an electron from one allowed energy level to another. (1) The change of the environment The spectral holes are burned by the rearrangement of the hydroxyl bonds surrounding active ions (ex. Eu^{2+} or Sm^{2+}).

Chemistry and its applications ... Invited Lecture

6

TUE : 23-03-2010 HALL[B] ORAL - SEC02 (1) 09:00 : 09:30

286

CHEM - 59 EG PROF. MOHAMED ABDEL GAWAD ZAYED mazayed429@yahoo.com

CHEMISTRY OF BIODIESEL AS BIOMASS ENERGY SOURCE IN EGYPT. IT IS A HOPE AND TARGET

mohammed zayed

D.Sc. Analytical and Inorganic Chemistry, Chemistry Department, Faculty of Science, Cairo University

ABSTRACT

Biodiesel is a fuel made from vegetable oil that runs in any unmodified diesel engine. It can be made from any vegetable oil including oils pressed straight from the seed (virgin oils) such as soy, sunflower, canola, coconut and jatropha. Biodiesel can also be made from recycled cooking oils from fast food restaurants. Even animal fats like beef tallow and fish oil can be used to make biodiesel fuel. Biodiesel is a clean, renewable and domestically produced diesel fuel, which has many characteristics of a promising alternative energy resource. The most common process for making biodiesel is known as transesterification. This process involves combining any natural oil (vegetable or animal) with virtually any alcohol, and a catalyst. There are other thermochemical processes available for making biodiesel, but transesterification is the most commonly used one due to the simplicity and high energy efficiency. The high energy efficiency of transesterification is an important aspect of Biodiesel, which makes it favorable in the competitive energy market. The following is a transesterification reference guide that can be used to process Biodiesel on an experimental scale for classroom demonstrations. It can be done with basic equipment and common chemicals. Be sure to use extreme caution when carrying out this procedure, the methanol and catalyst are toxic, and give off potentially harmful vapors. Proper personal protection is imperative, including thorough ventilation. Links will also be given for more information on building more sophisticated small-scale ("homebrew") biodiesel processors. This demonstration can be done with a food processor or a large, empty (and clean) soda bottle (using shaking to mix the oil and methoxide).

Chemistry and its applications ...: Invited Lecture

7

TUE : 23-03-2010	HALL[B]	ORAL - SEC07 (1)	10:30 : 11:00
CHEM - 63	EG	PROF. AHMAD SAMI SHAWALI	scdreh1@yahoo.com

286

THE BUBBLING FOUNTAIN OF CHEMICAL SELECTIVITIES IN REACTIONS OF NITRILIMINES IN SHAWALI'S LABORATORY

Ahmad Sami Shawali, D. Sc.

Professor of Physical organic Chemistry, Faculty of Science, University of Cairo, Giza, Egypt

ABSTRACT

The chemistry of nitrilimines and their precursors has attracted the interest of numerous investigators all the world. At present there are more than 1775 articles and patents dealing with their reactions and applications in various fields of chemistry and industry. In Shawali's laboratory, the various aspects of their reactions namely the kinetics, stereoselectivity, site-selectivity, regio-selectivity as well as periselectivity and their synthetic utility in heterocyclic chemistry have been studied from practical and theoretical points of view since 1970. The goal of the present lecture is to highlight the various selectivities encountered in 1,3-dipolar cycloaddition and 1,5-electrocyclization reactions of nitrilimines that have studied in Shawali's laboratory. Qualitative rationalization of these selectivities in terms of the frontier molecular orbital (FMO) theory and Fukui's principle as well as their quantitative prediction by means of HSAB principle and the density functional theory (DFT) will be outlined. Also, the lecture will shed some light on the utility of such reactions as facile synthetic strategies for synthesis of annulated triazoles and their C-nucleosides of biological and pharmacological interest.

Astronomy and Meteorology ::: Invited Lecture

8	TUE : 23-03-2010	HALL[B]	ORAL - SEC12 (1)	01:00 : 01:30
286	AST - 23	IT	PROF. FRANCO PORCELLI	franco.porcelli@esteri.it

ASTRONOMY

Franco Porcelli

Scientific Attache Italian Embassy in Egypt

ABSTRACT

Astronomy and Meteorology ... Invited Lecture

9	WED : 24-03-2010	HALL[B]	ORAL - SEC17 (1)	09:00 : 09:30
286	AST - 22	US	PROF. XUBIN ZENG	xubin@atmo.arizona.edu

AVANCES IN LAND-ATMOSPHERE INTERACTION STUDIES

Xubin Zeng

The university of Arizona, Tucson, USA

ABSTRACT

Development, Environment and Quality Assurance ... Invited Lecture

10

TUE : 23-03-2010

HALL[D]

ORAL - SEC14 (1)

01:00 : 01:30

286

DEQ - 14

EG

PROF. AHMAD HEGAZY

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LIFE CYCLE AND IMPACTS ON SUSTAINABILITY OF THE ENVIRONMENT

Prof. Ahmad K. Hegazy

Faculty of Science, Cairo University

ABSTRACT

Life cycle analysis (LCA) or "Total system approach" is crucial evaluation to identifying opportunities for improvement of an environmental situation. This evaluation identifies the energy use, material inputs and wastes generated during a product's life; from extraction and processing of raw materials, to manufacture and transport of the product to the marketplace, and finally, to use and dispose. The major goal of LCA offers the advantage of designing developmental operations to use less energy and resources, and produce less waste. LCA offers practical and sustainable solutions to environmental problems including reduction of resource consumption and prevent pollution and health risks, reduction of the product life-cycle costs and impacts, building community and enhancement of social development, and achieving multiple economic benefits. However, some drawbacks are expected, as LCA may be time consuming, that requires large amounts of data. Also, LCA results are often dependent upon the assumptions made, and sometimes not suitable for assessing all environmental impacts. The tools for support of environmental sustainability and decision-making are discussed. These include: Life Cycle Assessment (LCA), Cleaner Production (CP), Environmental Impact Assessment (EIA), Cost-Benefit Analysis (CBA), and Eco-efficiency. The trade-offs among stages of a product's life cycle and the expected environmental, economic and social impacts are considered. The Best Practice approach for environmental sustainability, using the hierarchical LCA applications is reviewed on some case studies either from bottom-up or top-down sides. In bottom-up analysis, the target problem is analyzed first without a concrete goal. This approach may not be adequate for the achievement of specific goals. The top-down analysis scheme starts with defining the assessment goals and aims to evaluate the accomplishment of specific goals. The limitation of this approach is that pre-defined goals sometime have to be compromised with indicator availability.

Development, Environment and Quality Assurance ... Invited Lecture

11	TUE : 23-03-2010	HALL[D]	ORAL - SEC14 (2)	01:30 : 02:00
286	DEQ - 16	EG	PROF. ABDULRADY ALMARAGHY	almaraghy@yahoo.com

"APPLICATION OF QUALITY ASSURANCE AND ACCREDITATION TO DEVELOP THE HIGHER EDUCATION"

Prof Dr. Abdulrady Hassan Almaraghy

Department of Zoology, Faculty of Science, Alazhar University, Cairo, Egypt

ABSTRACT

يعتمد تطبيق نظام ضمان الجودة التعليمية والإعتماد لتطوير التعليم العالى على تطوير شامل للعملية التعليمية تشمل تطوير المناهج الدراسية وطرق التدريس ورفع كفاءة أعضاء هيئة التدريس ويتم ذلك بنشر ثقافة جودة التعليم ومعايير الإعتماد. وعلى سبيل المثال يتم تطوير المنهج الدراسى بتقسيمه الى وحدات لكل منها أهداف ومخرجات ويستخرج من كل وحدة تدريسية مجموعة من الأسئلة التى تستخدم فى التقويم والاختبارات الأسبوعية القصيرة وتكليف الطلاب بالقيام بالمهام التعليمية المنهجية والقيام بإتجاز المشروعات. ويعتمد التقويم على هذه المحاور ولا يعتمد على الاختبارات النهائية كما ان هناك معايير للإعتماد سوف يتم توضيحها فى العرض.

Development, Environment and Quality Assurance ... Invited Lecture

12

WED : 24-03-2010

HALL[D]

ORAL - SEC19 (1)

09:00 : 09:30

286

DEQ - 7

EG

PROF. MOSTAFA EMARA

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THE ROLE OF AL-AZHAR UNIVERSITY IN MAINTAINING GREEN ENVIRONMENT

M. Emara

Director of Science Center for Detection and Remediation of Environmental Hazards (SCDREH)

ABSTRACT

This presentation will deal with the well known environmental term "green Environment" and how can Universities help in maintaining such an environment .AL-Azhar University is taking a positive role in creating centers of Excellency just to fulfill this goal. One of these centers "Science center for detection and remediation of environmental hazards" (SCDREH) since 2000. We shall take this center as a case study in terms of its goal, the services offered. Also specific environmental examples in studying air, water, soil and food, will be presented in full details.

Development, Environment and Quality Assurance ... Invited Lecture

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WED : 24-03-2010 HALL[D] ORAL - SEC19 (4) 10:00 : 11:30

286

DEQ - 20 EG PROF. MOSTAFA SALEH mostafasaleh@hotmail.com

TOWARDS A HABITAT CLASSIFICATION FRAMEWORK IN EGYPT

Mostafa Abbas Saleh

Faculty of Science, Al Azhar University, Nasr City, Cairo, Egypt

ABSTRACT

Biodiversity is generally defined as the species of living things, their intra-specific variations and the habitats in which they live. In many ways, biodiversity is the key resource base for life on earth, including human life. Accurate identification of types, distribution and characteristics of habitats is crucial to the management and conservation of the diversity of species and sub-specific variations. In Egypt, habitats are traditionally classified and described on a purely geographic basis, i.e. Western Desert, Eastern Desert, Sinai and the Nile Valley, with each geographical region being divided into several sub-regions. This type of classification is also supported by major geomorphologic features that distinguish these vast geographical regions. However, ecological features of any given habitat are determined by a multitude of factors that go far beyond the mere geographical location and geomorphologic setting. In this paper I introduce a framework for classification of land-based habitats of Egypt. The classification is primarily based upon the availability of water, as the most critical resource, and the physical factors that control its accessibility to plant and animal physiological systems and processes. The proposed habitat classification framework also takes into account the multitude of factors that seem to contribute to the ecological features of each habitat type and hence its characteristic biota.

Development, Environment and Quality Assurance

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TUE : 23-03-2010

HALL[D]

ORAL - SEC14 (5)

02:30 : 02:45

286

DEQ - 1

EG

DR. MOSTAFA EMARA

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TREATMENT OF WASTE WATER USING NEWLY DEVELOPED HYBRID NANO ION EXCHANGERS

M. Emara , I. elsabagh , N. M. Refaat

Scdreh, Al-Azhar University, Cairo, Egypt

Faculty of Science(Girls), Al-Azhar University, Cairo, Egypt

Faculty of Pharm., Nahda University, Cairo, Egypt

ABSTRACT

Throughout recent decades, the wastewater treatment industry has identified the discharge of heavy metals, nutrients, including phosphates and nitrates, into waterways as a risk to natural environments due to the serious effects they may cause. This study reports the results of using fixed bed sorption process very effectively in removing high concentrations of heavy metals (200-500ppm) namely Copper, Zinc, Cadmium, and Lead, nutrients and other anionic pollutants. The sorbent used, referred to as hybrid ion exchanger or HIX, namely HIX-C used in removal of heavy metals, HIX-A selectively removes phosphates and nitrates from the background of competing anions, both types of exchangers combine excellent mechanical and hydraulic properties of spherical beads. Equally important, no pH adjustment, pre- or post-treatment was warranted. HIX was amenable to efficient in situ regeneration and reuse for multiple cycles with high efficiency. The current paper describes the simple chemical – thermal technique to produce a hybrid spherical macroporous polymeric cation exchanger beads within which HMO (where M = Co, Mn, Ni, and Cu) particles have been uniformly irreversibly dispersed, these hybrid exchangers were used in complete removal of one of the most hazardous pollutants Cadmium.

Development, Environment and Quality Assurance

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TUE : 23-03-2010

HALL[D]

ORAL - SEC14 (6)

02:45 : 03:00

286

DEQ - 2

EG

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CADMIUM REMOVAL USING NEWLY HYBRID SORBENT

M. Emara , Aida A.Salmanb , Medhat M.El moselhy , Samah A.Fattah

Scdreh, Al-Azhar University, Cairo, Egypt

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ABSTRACT

The contamination of water by toxic heavy metals is a worldwide environmental problem. Discharges containing cadmium in particular, are strictly controlled due to the highly toxic nature of this element and its tendency to accumulate in the tissues of living organisms. This study reports the results of an extensive investigation pertaining to cadmium removal properties of a polymeric/inorganic hybrid sorbent. Each hybrid sorbent particle is essentially a spherical macroporous cation exchanger bead within which agglomerates of nanoscale hydrated Fe oxide (HFO) particles have been uniformly and irreversibly dispersed using a simple chemical–thermal treatment. The new sorbent, referred to as hybrid ion exchanger or HIX, combines excellent mechanical and hydraulic properties of spherical polymeric beads with selective cadmium sorption properties of HFO nanoparticles at circum-neutral pH. A fixed-bed sorption process was performed as a function of solute concentration, contact time, pH, and exchanger mass. The effect of other competing ions on the removal process was then studied including calcium ions as an example of light metals, lead ions as an example of other heavy metal. The effect of different anions either as single or as mixture and at different concentrations was also investigated. Results showed that by decreasing cadmium concentration the removal efficiency improved which gave a prediction that this new sorbent can efficiently remove cadmium ions from low concentration cadmium bearing streams. The removal efficiency improved as the time of contact increased and also by increasing the exchanger mass. Equally important no pH adjustment. Besides the absence of cadmium, the treated water composition was identical to that of influent water. HIX was amenable to efficient in situ regeneration with diluted hydrochloric acid and could subsequently be brought into service following a short rinse with carbon dioxide sparged water. Repeated use of the same HIX particles during various laboratory investigations provided strong evidence that the new sorbent possesses excellent attrition resistance properties and retains its cadmium removal capacity over cycles.

Development, Environment and Quality Assurance

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WED : 24-03-2010 HALL[D] ORAL - SEC19 (6) 10:45 : 11:00

286

DEQ - 3 EG DR. MOSTAFA EMARA memara48@yahoo.com

REMOVAL OF ACID RED 44 DYE FROM ITS LIQUID WASTE UNDER WIDE PHOTOCATALYTIC CONDITIONS

M. Emara , L. F. Ismail, , N. S. Zaghlof , O. K. Hussien

Scdreh, Al-Azhar University, Cairo, Egypt

Faculty of Science (Girls), Al-Azhar University, Cairo, Egypt

Faculty of Science (Girls), Al-Azhar University, Cairo, Egypt

Scdreh, Al-Azhar University, Cairo, Egypt

ABSTRACT

The homogeneous photocatalytic oxidation of Acid Red 44 (AR44) with Fenton ($\text{Fe}^{2+}/\text{H}_2\text{O}_2$), photo-Fenton, ($\text{Fe}^{2+}/\text{H}_2\text{O}_2/\text{UV}$), and Fenton-like ($\text{Fe}^{3+}/\text{H}_2\text{O}_2$), photo-Fenton-like ($\text{Fe}^{3+}/\text{H}_2\text{O}_2/\text{UV}$) had been investigated in aqueous solution $[\text{H}_2\text{O}_2] = 5.0 \times 10^{-2} \text{ M}$ and $[\text{AR44}] = 1.0 \times 10^{-5} \text{ M}$, $7.0 \times 10^{-5} \text{ M}$ and at $\text{pH} = 3.0$. However, decolorization exhibited different rates for the two systems. The degradation rate in Fenton and photo-Fenton oxidation was much faster than that of the Fenton-like and photo-Fenton-like reaction in the initial stages. The effects of operating parameters are also investigated, such as: Fe^{2+} and Fe^{3+} concentrations, initial dye concentration, and H_2O_2 concentration and light intensity. Decolorization of model wastewater was rather successful using Fe^{2+} or Fe^{3+} . In the case of Fenton and photo-Fenton oxidation, the extent of degradation was 96%, 99% after 175, 66 minutes respectively, when the Fe^{2+} ion concentration was $\leq 1 \times 10^{-4} \text{ M}$. When the Fe^{2+} ion concentration was $> 1.0 \times 10^{-4} \text{ M}$, the extent of dye degradation was 100%, 100% after 25, 20 minutes, respectively. For Fenton-like and photo-Fenton-like oxidation, if the Fe^{3+} ion concentration was $\leq 1.0 \times 10^{-4} \text{ M}$, dye degradation was only 97%, 97% after 200, 158 minutes, respectively. However, the extent of degradation was 98%, 99% after 64, 38 minutes, respectively at a Fe^{3+} ion concentration $1.0 \times 10^{-4} \text{ M}$.

Development, Environment and Quality Assurance

17

WED : 24-03-2010

HALL[D]

ORAL - SEC19 (10)

11:45 : 12:00

286

DEQ - 17

EG

PROF. NAGLA ZAKY ELALFY

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CELLS AND TISSUE CULTURES IN VITRO TECHNIQUES

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ABSTRACT

A more recent advance is the use of animal tissue culture along with genetic modification using viral and bacterial vectors and gene guns to create genetically engineered organisms. Animal Tissue culture has several critical requirements. In vitro systems include subcellular fractions, Primary cell cultures, Cell lines, Organs and Slices . Advantages and Disadvantages of cell and tissue cultures will be discussed. Steps Culturing Animal tissue and uses will be included. Sources of cells and tissues cultures are very important in vitro laboratory. Some experiments use in vitro laboratory; Basic Techniques to grow viruses and study virus-host Interactions, Making a primary cell line and Culturing Fibroblasts of mammalian cells.

Nanotechnology

Nanotechnology

18

TUE : 23-03-2010

HALL[A]

ORAL - SEC01 (2)

09:30 : 09:45

286

NANO - 1

EG

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OPTICAL PROPERTIES OF ONE-DIMENSIONAL PHOTONIC CRYSTALS

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ABSTRACT

We have investigated the optical properties of one-dimensional high temperature superconducting-dielectric photonic crystal (HTcScDPCs) composed of superconductor and dielectric layers. The variance of the intensity and the bandwidth of the transmission and reflection are strongly dependent on the different thicknesses, different temperatures, and different incident angles.

Nanotechnology

19

TUE : 23-03-2010 HALL[A] ORAL - SEC01 (3) 09:45 : 10:00

286

NANO - 2 EG DR. WAEL BASSUONI wael_bassuoni@yahoo.com

THE APPLICATIONS OF NANOTECHNOLOGY IN MEDICAL FIELD (CANCER)

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ABSTRACT

Nanotechnology involves manipulating properties and structures at the nanoscale, often involving dimensions that are just tiny fractions of the width of a human hair. Nanotechnology is already being used in products in its passive form, such as cosmetics and sunscreens, and it is expected that in the coming decades, new phases of products, such as better batteries and improved electronics equipment, will be developed and have far-reaching implications. One area of nanotechnology application that holds the promise of providing great benefits for society in the future is in the realm of medicine. Nanotechnology is already being used as the basis for new, more effective drug delivery systems and is in early stage development as scaffolding in nerve regeneration research. Moreover, the National Cancer Institute has created the Alliance for Nanotechnology in Cancer in the hope that investments in this branch of nanomedicine could lead to breakthroughs in terms of detecting, diagnosing, and treating various forms of cancer. The manufacturing technology of the 21st century," should let us economically build a broad range of complex molecular machines (including, not incidentally, molecular computers). It will let us build fleets of computer controlled molecular tools much smaller than a human cell and built with the accuracy and precision of drug molecules. Such tools will let medicine, for the first time, intervene in a sophisticated and controlled way at the cellular and molecular level. They could remove obstructions in the circulatory system, kill cancer cells, or take over the function of subcellular organelles. Just as today we have the artificial heart, so in the future we could have the artificial mitochondrion. Given such molecular tools, we could design a small device able to identify and kill cancer cells. The device would have a small computer, several binding sites to determine the concentration of specific molecules, and a supply of some poison which could be selectively released and was able to kill a cell identified as cancerous.

Nanotechnology

20

TUE : 23-03-2010

HALL[A]

ORAL - SEC01 (4)

10:00 : 10:15

286

NANO - 3

EG

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ENVIRONMENTAL HEALTH HAZARDS OF NANOPARTICLES

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ABSTRACT

Nanotechnology is an essentially modern scientific field that is constantly evolving as commercial and academic interest continues to increase and as new research is presented to the scientific community. The field's simplest roots can be traced, albeit arguably, to 1959 but its primary development occurred in both the eighties and the early nineties. In addition to specific scientific achievements such as the invention of the STM, this early history is most importantly reflected in the initial vision of molecular manufacturing as it is outlined in three important works. Overall, an understanding of development and the criticism of this vision is integral for comprehending the realities and potential of nanotechnology today. On the other hand, ideal understanding of the multiple effects of nanoparticles on human health are of prime importance in order to evaluate the risk of these effects and to minimize it if possible. Moreover, the route of administration of nanoparticles into the body must be clear in order to evaluate its effects in different body systems. While ingestion (drug delivery) and skin penetration are potential exposure routes for engineered nanomaterials, the inhalation route for airborne nanomaterials has perhaps received the most attention. For some materials, studies have shown that the toxicity of inhaled particles increases as particle size becomes smaller and as the overall surface area of inhaled material becomes larger. Although, particles shape, amount and character had a great effects. Nanoparticles inhaled into the respiratory system, nanotubes (depending on their content) are capable of eliciting an inflammatory, granulomatous, and fibrogenic response. Concerns regarding dermal penetration include (1) skin or other organ cytotoxicity, (2) accumulation in skin or other organs resulting in toxicity after long-term exposure, (3) metabolism to even smaller particles with potentially increased toxicity, or (4) toxicity of photoactivated nanoparticles. Additionally, ingested nanoparticles had different effects on cardiovascular system and brain. Finally, To use the potential of Nanotechnology in Nanomedicine, full attention is needed to safety and toxicological issues.

Nanotechnology

21	TUE : 23-03-2010	HALL[A]	ORAL - SECO6 (2)	11:00 : 11:15
286	NANO - 10	EG	PROF. WAFAA EL-SAYED	wafaa49@yahoo.com

FUNCTIONALIZATION OF VISCOSE/POLYESTER FABRIC SURFACE BY SOL-GEL APPROACH

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ABSTRACT

In this study viscose/polyester fabric was successfully modified by sol-gel process to imparting high ultraviolet radiation scattering property in the fabric surface. Active ingredient was titanium isopropoxide. The viscose/polyester fabric was padded with nanosol solution dried and cured at low temperature (°C) designed for practical application. The pristine and treated fabrics have been characterized by UV-Spectrophotometer, scanning electron microscopy (SEM), Transmission electron microscopy (TEM) , Fourier transform infrared (FTIR), crease recovery angles, surface roughness, color strength, as well as mechanical properties. The treatment forms a thin layer of titania on the surface of viscose/polyester fibers, and the treated fabric shows much improved protection against ultraviolet radiation with ultraviolet protection factor (UPF) of 40< or excellent protection according to the Australian/NewZealand Standards. The treated fabric also tested for washfastness. The results show that ultraviolet protection rating of the treated fabrics can be maintained at good protection even after 40 home laundering. The mechanical strength tests of the treated fabric shows no adverse effect from the treatment. The treated fabric attain antibacterial properties against Staphylococcus aureus(S. aureus) and Escherichia coli (E. coli) bacteria.

Nanotechnology

22

TUE : 23-03-2010

HALL[A]

ORAL - SECO6 (3)

11:15 : 11:30

286

NANO - 9

EG

PROF. WAFAA EL-SAYED

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NEW APPROACH TO UV-BLOCKING TREATMENT OF COTTON FABRICS

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ABSTRACT

Cotton fabrics were successfully modified by sol-gel process to impart ultraviolet blocking properties via titanium nanosol treatment. The treatment forms a thin layer of titania on the surface of fabrics, ultraviolet protection factor values were calculated and show much improvement, in addition to excellent UV protection rating of the treated fabrics can be maintained even after 40 home laundering. The prepared nanosol was investigated by Transmission electron microscopy; while the fabric surfaces have been investigated by scanning electron microscopy and Fourier transform infrared. Antibacterial properties were assessed and the treated fabrics show high bacterial reduction. The effect of the treatment on mechanical properties, color strength and fastness properties was investigated, although there is no negative effect on them, they are also affected by sol-gel treatment.

Nanotechnology

23

TUE : 23-03-2010 HALL[A] ORAL - SEC06 (4) 11:30 : 11:45

286

NANO - 8 EG DR. NESREEN EL-NAKIB nana_fashion2000@yahoo.com

NANO–TEXTILE TREATMENT TO PRODUCE SELF-CLEANING FABRIC AND ITS BIOLOGICAL IMPACT. B) THE BIOLOGICAL IMPACT OF SELF CLEANED COTTON FABRIC TREATED WITH TIO₂ NANOPOWDER

Maha M. Mohamed , Wafaa A. EL-Sayed , Nesreen A. EL-Nakib

Ain Shams University- Women's College

Ain Shams University- Women's College

Ain Shams University- Women's College

ABSTRACT

The biological impact of cotton treated fabric with photocatalytic Titanium (IV) oxide, nanopowder, 99.7% anatase to produce self cleaning was investigated. Fourteen male New Zealand white rabbits have body weigh ranged from 1,300 – 1,700 gm, were divided into two groups. One, control, was dressed untreated cotton fabric. The other, test, was dressed treated fabric for 5 weeks. Body weight, absolute and relative weights of organs, blood picture, serum total protein, albumin, alanine transaminase (ALT) and aspartate transaminase (AST), total bilirubin, urea, creatinine, alkaline phosphatase (ALP), lactate dehydrogenase (LDH), C-reactive protein (CRP) and titanium were estimated. The test group gave rise to significant higher level of serum bilirubin, AST, ALT, urea, creatinin, ALP and (CRP) while serum total protein, albumin and (LDH) showed no significant change as compared to control. In the test group, titanium was detected in the skin as shown by scanning electron microscopy and in serum as shown by inductively coupled/ Argon plasma (iCAP). Using light microscope, histological analysis of liver, heart, lung, spleen, kidney and skin sections revealed focal necrosis associated with leucocytes infiltration in most these organs. These findings indicate that TiO₂ nanoparticles could leave the treated fabric and penetrate the skin and cause potential adverse health effects. Further studies must be carried out to determine the suitable application in clothing and textile medium.

Nanotechnology

24

TUE : 23-03-2010 HALL[A] ORAL - SEC06 (5) 11:45 : 12:00

286

NANO - 7 EG DR. NESREEN EL-NAKIB nana_fashion2000@yahoo.com

NANO–TEXTILE TREATMENT TO PRODUCE SELF CLEANING FABRIC AND ITS BIOLOGICAL IMPACT. A) NANO–TEXTILE TREATMENT TO PRODUCE SELF CLEANING FABRIC.

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ABSTRACT

Cotton fabric treated with titanium IV Oxide nanopowder 99.7 anatase (5nm in size) to enhance cotton inferior properties. Dip-pad-dry-cure technique has been used in the treatment process. The optimization of the treatment condition has been reached via studying TiO₂ concentration, temperature and time of the treatment bath as well as curing temperature and time. The liquor ratio of the treatment bath has also studied. Both untreated and treated cotton fabric subjected to investigate via scanning electron microscopy, X-Ray diffractometry as well as IR spectroscopy. Physico-mechanical properties of the investigated fabrics (warp and weft sett, fabric weight, stiffness, thickness, crease recovery angles, tearing resistance, tensile strength and elongation at break) were determined. The treated cotton fabrics possess significant photocatalytic self cleaning properties of Hibiscus stain when exposed to sunlight. As a result some textile industrial application as outdoor applications have been performed to enhance poor soiling behavior.

Nanotechnology

25

TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (15) 03:20 : 04:00

286

NANO - 4 EG PROF. M EL-DESOKY mmdesoky@gmail.com

EFFECT OF NANOCRYSTALLIZATION ON THE ELECTRICAL CONDUCTIVITY ENHANCEMENT AND MÖSSBAUER HYPERFINE PARAMETERS OF IRON BASED

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ABSTRACT

Effect of nanocrystallization on the electrical conductivity enhancement and Mössbauer hyperfine parameters of iron based glasses M. M. El-Desoky *, A.G. Mostafa² , F. A. Ibrahim¹ and M. Y. Hassaan² ¹Department of Physics, Faculty of Education, Suez Canal University, Al-Arish, Egypt ²Department of Physics, Faculty of Science, Al-Azhar University, Nasr City, 11884, Cairo, Egypt. Selected glasses of Fe₂O₃- PbO₂ –Bi₂O₃ system have been transformed into nanomaterials by annealing at temperature close to crystallization temperature (T_c) for one hour. The effects of the annealing of the present samples on the structural and electrical properties were studied by Mössbauer spectroscopy, transmission electron micrograph (TEM), differential scanning calorimeter (DSC) and dc conductivity (σ). Mössbauer spectroscopy was used in order to determine of the states iron and its hyperfine structure. The effect of nanocrystalization on the Mössbauer hyperfine parameters did not induce significant modifications in present glasses. However, in case of glass-ceramic nanocrystals show a distinct decrease in the quadrupole splitting (Δ), reflecting an evident decrease in the distortion of structural units like FeO₄ units. The Mössbauer parameters of the nanocrystalline phase exhibit tendency to increase with PbO₂ content. TEM of as quenched glasses confirm the homogeneous and essentially featureless morphology. TEM of the corresponding glass-ceramic nanocrystals indicate nanocrystals embedded in the glassy matrix with average particle size of 32nm. The glass transition temperature (T_c) was observed to decrease with PbO₂ content. The glass-ceramic naocrystals obtained by annealing at T_c exhibit improvement of electrical conductivity up to four orders of magnitude than the starting glasses. This considerable improvement of electrical conductivity after nanocrystallization is attributed to formation of extensive and dense network of electronic conduction paths " easy conduction paths" which are situated between iron nanocrystals and on their surface.

Nanotechnology

26

TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC04 (16)

03:20 : 04:00

286

NANO - 5

EG

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EFFECT OF SULFUR ADDITION AND NANOCRYSTALLIZATION ON THE ELECTRICAL CONDUCTIVITY OF BARIUM VANADATE GLASS CONTAINING IRON

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ABSTRACT

Six glass samples of composition 75 V₂O₅ + 10 BaO + 15 Fe₂O₃ mol%, further more sulfur which was added as 0, 10, 15, 20, and 25 mass percent to each sample mixture, respectively. The glass samples were prepared at 1050°C for an hour then quenched in air. Each sample was measured by XRD, DSC, TEM, Mössbauer effect and d.c. conductivity. The prepared samples were annealed at temperature close to its crystallization temperature, and then the previous measurements were repeated again for the heat treated samples. The results showed that the treatment process caused the formation of V₂O₅ and FeVO₄ nanocrystals of size 17nm dispersed in the glass matrix. The sulfur addition reduced only the vanadium ions to V⁴⁺, while it was found iron ions as Fe³⁺ only which means that it is not affected by sulfur as a reducing agent. The d.c. conduction enhanced due to the small polaron or electron hopping from V⁴⁺ to V⁵⁺ and Fe³⁺ ions. Nanocrystals were found embedded with the glass matrix due to the heat treatment. The nanocrystals exhibit much higher conductivity and much lower activation energy than the as received glasses. Such nanocrystals are low thermally stable as sulfur content increases. This considerable enhancement of electrical conductivity after nanocrystallization refers to the formation of extensive and dense network of electronic conduction paths which are situated between V₂O₅ nanocrystals and on their surfaces

Nanotechnology

27

TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (17) 03:20 : 04:00

286

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APPLICATIONS OF NANOTECHNOLOGY IN BIOLOGY AND MEDICINE

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ABSTRACT

Nanotechnology is the technology that has allowed for the control, manipulation, study, and manufacture of structures and devices at the atomic and molecular scale. It has the potential to create many new materials and devices with wide-ranging applications, such as in medicine, electronics, and energy production. In future, it may be used to engineer nanobots which can act as personalized doctors acting round the clock. Or it may be used to create tiny cell-bombs which seek and destroy tumor cells while making sure that healthy cells are unaffected. Apart from medical applications, this technology may be employed to harvest energy directly from photosynthetic bacteria and convert it into electricity. In theory, medical nanotechnology could make us smarter, stronger and give us other abilities could we continue to call ourselves human, or would we become transhuman -- the next step on man's evolutionary path?

Nanotechnology

28

TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (18) 03:20 : 04:00

286

NANO - 15 EG PROF. AHMED RADWAN aaradwan2008@yahoo.com

EFFICIENT EVALUATION OF RELEVANCE FEEDBACK ALGORITHMS FOR XML CONTENT-BASED RETRIEVAL SYSTEMS

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ABDALLAH

The Dean of Faculty of computer science Nahda university Baney Swaif

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ABSTRACT

Information retrieval and feedback in XML are rather new fields for researchers; natural questions arise, such as: how good are the feedback algorithms in XML IR? Can they be evaluated with standard evaluation tools? Even though some evaluation methods have been proposed in the literature it is still not clear yet which of them are applicable in the context of XML IR, and which metrics they can be combined with to assess the quality of XML retrieval algorithms that use feedback. In this paper, we create an efficient XML retrieval system that based on a query refinement by making a feedback processing and extend the main query terms with new terms mostly related to the main terms. Our system based on the keyword-based queries whether on the main query or in the relevance feedback processing instead of the XPath and structure query languages which are more complex. For measuring the efficiency of our system we use the extended Relevance Feedback algorithms (Residual Collection and freezeTop) for evaluating the performance of the XML search engines. Compared to previous approaches, we aim at removing the effect of the results for which the system has knowledge about their relevance, and at measuring the improvement on unseen relevant elements. We implemented our proposed evaluation methodologies by extending a standard evaluation tool with a module capable of assessing feedback algorithms for a specific set of metrics.

Nanotechnology

29

TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (19)

03:20 : 04:00

286

NANO - 14

EG

ASSOC.PROF. MOHAMED MOHY ELDIN mohyeldinmohamed@yahoo.com

PREPARATION OF POLY (ARYLONITRILE-CO-METHYL METHACRYLATE) (P (AN-CO-MMA)) NANOSPHERES FOR COVALENT IMMOBILIZATION OF **B**-GALACTOSIDASE I- " NANOSPHERES MODIFICATION AND CHARACTERIZATION"

M. S. Mohy Eldin , A.A. El.Zatahry , M. B. EL-Sabbah , M. R. Elaassar

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ABSTRACT

Immobilized proteins and enzymes were widely investigated in medical field as well as in food and environmental fields. In this paper, **B**-Galactosidase was covalently immobilized on the surface of P (AN-co-MMA) nanospheres. P (AN-co-MMA) nanospheres were modified through introducing terminal amine groups via aminoalkylation process with ethylene diamine. Different factors affecting the aminoalkylation process were investigated and its impact on the activity and the retention of immobilized enzyme activity was monitored. The P (AN-co-MMA) nanospheres were characterized by scanning electron microscope (SEM), Thermal Characterization (TGA), FT-IR Spectroscopic Analysis and Particle size Analysis, the maximum immobilization capacity was 1250 activity units and retained about 96% of its initial activity.

Nanotechnology

30

TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (20) 03:20 : 04:00

286

NANO - 13 EG PROF. AHMED RADWAN aaradwan2008@yahoo.com

PERFORMANCE MEASUREMENT OF SOME AD HOC NETWORK ROUTING PROTOCOLS

ABSTRACT

A mobile ad hoc network (MANET) is a wireless network that uses multi-hop peer to peer routing instead of static network infrastructure to provide network connectivity. A user can move anytime in an ad hoc scenario and, as a result, such a network needs to have routing protocols which can adopt dynamically changing topology. To accomplish this, a number of ad hoc routing protocols have been proposed and implemented such as, Ad hoc On-Demand Distance Vector routing (AODV), Fisheye State Routing (FSR) and Location-Aided Routing (LAR). This paper compares the major characteristics of these protocols such as, routing messages overhead, throughput and end to end delay using a parallel discrete event-driven simulator, GloMoSim. The experimental results show that FSR protocol has low control overhead compared with AODV and LAR. Regarding the throughput, AODV has a high throughput compared with the other considered protocols. Considering the end to end delay, LAR protocol shows better performance over FSR and AODV protocols.

Pure and Applied Mathematics

Mathematics

31	TUE : 23-03-2010	HALL[E]	ORAL - SEC05 (1)	09:00 : 09:15
286	MATH - 21	EG	PROF. S.A. ELZAHABY	zoulati@yahoo.com

OPTIMAL CONTROL PROBLEM GOVERNED BY ELLIPTIC VARIATIONAL INEQUALITIES FOR INFINITE ORDER

S.A. El-Zahaby , Ibtissam M. Zoulati

ABSTRACT

Mathematics

32

TUE : 23-03-2010 HALL[E] ORAL - SEC05 (2) 09:15 : 09:30

286

MATH - 15 EG DR. SALAH KHAFAGY el_gharieb@hotmail.com

MAXIMUM PRINCIPLE AND EXISTENCE OF WEAK SOLUTIONS FOR AN $N \times N$ NONLINEAR SYSTEM INVOLVING DIFFERENT DEGENERATED p -LAPLACIAN OPERATORS ON R^N

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ABSTRACT

In this paper, we study the maximum principle and existence of weak solutions for an $n \times n$ nonlinear system involving different degenerated p -Laplacian operators on R^N . We give sufficient conditions to have a maximum principle for this system and then we prove the existence of weak solutions for the same system by using an approximation method.

Mathematics

33

TUE : 23-03-2010 HALL[E] ORAL - SEC05 (3) 09:30 : 09:45

286

MATH - 2 EG PROF. KHALED MEKHEIMER kh_mekheimer@yahoo.com

LIE GROUP ANALYSIS AND SIMILARITY SOLUTIONS FOR A COUPLE STRESS FLUID WITH HEAT TRANSFER

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ABSTRACT

The equations of two dimensional incompressible steady couple stress fluid flow with the heat transfer have been studied. Lie group analysis has been employed and the group invariant solutions corresponding to translational and rotational symmetry are developed. A boundary value problem for the translational symmetry is investigated and the results are also sketched graphically. The effect of the couple stress material constant have been noticed.

Mathematics

34

TUE : 23-03-2010

HALL[E]

ORAL - SEC05 (4)

09:45 : 10:00

286

MATH - 4

EG

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STABILITY AND STABILIZATION OF HIV MODEL WITH CTL IMMUNE RESPONSE

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ABSTRACT

In this paper, we study the stability and stabilization of human immunodeficiency virus (HIV) model. The model is a 6-dimensional nonlinear ODEs that describes the interaction of the HIV with two target cells, CD4+ T cells and macrophages and takes into account the Cytotoxic T Lymphocytes (CTL) immune response. Lyapunov functions are constructed to establish the global asymptotic stability of the steady states of the model. In a control system framework, the HIV model incorporating the effect of Highly Active AntiRetroviral Therapy (HAART) is considered as a nonlinear control system with drug dose as control input. We developed treatment schedules for HIV infected patients by using Model Predictive Control (MPC)-based method. Stabilization of the uninfected steady state of the HIV model by MPC is established. The robustness of the MPC against small model uncertainties or disturbances is also shown.

Mathematics

35

TUE : 23-03-2010

HALL[E]

ORAL - SEC05 (5)

10:00 : 10:15

286

MATH - 5

LY

DR. ABDALSALAM ALDAIKH

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LINEAR DIFFERENTIAL EQUATIONS OF THE SECOND ORDER WITH VARIABLE COEFFICIENTS "OPERATIONAL FACTORING METHOD"

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OMAR AL-MUKHTAR UN. LIBYA

ABSTRACT

There is no generally applicable method of solving differential equations with coefficients that are functions of the independent variable x . Nevertheless, there are certain cases in which a solution is possible. Different methods have been proposed in literatures. The method, proposed here is based on factorization of operator. It is not easy because the factors here contain the independent variable x , they are not commutative and not unique extra care is needed . By the aid of solving Riccati's equation, the problem is then reduced to that of solving two linear equations of order one.

Mathematics

36

TUE : 23-03-2010

HALL[E]

ORAL - SEC05 (6)

10:15 : 10:30

286

MATH - 6

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APPLICATIONS OF BILINEAR TRANSFORMATION

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ABSTRACT

A conformal map is a change of variables from plane to plane that simplifies the given two-dimensional potential problem by simplifying the domain, while preserving the governing Laplace differential equation. Besides simplifying the domain while preserving the Laplace equation, such maps are conformal in the sense that they preserve angles, both in magnitude and sense. Thus, our program consists mainly of studying the bilinear map (transformation) which has the useful property of sending circles, it is the only map that is one-to-one. In this paper we considered only the simplest boundary conditions (constant boundary conditions of Dirichlet type), and we illustrate with representative examples using bilinear transformation.

Mathematics

37

TUE : 23-03-2010 HALL[E] ORAL - SEC10 (1) 10:30 : 10:45

286

MATH - 14 EG PROF. ABDEL-SHAFY OBADA mohamadmath@yahoo.com

DYNAMICS OF THREE-ATOMS TAVIS-CUMMINGS MODEL: COOPERATIVE CASE

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Department of Mathematics, Faculty of Science, South Valley University, Aswan, Egypt.

Department of Mathematics, Faculty of Science, Al-Azhar University, Nasr City, Cairo 11884, Egypt.

ABSTRACT

In this paper we consider a system of identical three two-level atoms interacting at resonance with a single-mode of the quantized field in a lossless cavity. The initial cavity field is prepared in the coherent state while the atoms are taken initially to be either in the uppermost excited state "eee" or The GHZ-state or the "W" state. For this system we investigate the collapses and revivals in the atomic inversion where superharmonic effects appear, is discussed. Most remarkably it is found that the GHZ-state is more robust against energy losses, showing almost coherent trapping.

Mathematics

38

TUE : 23-03-2010

HALL[E]

ORAL - SEC10 (2)

10:45 : 11:00

286

MATH - 9

EG

MR. AHMED ADLY

abuadly80@yahoo.com

HORN MATRIX FUNCTION AND HADAMARD PRODUCT OF TWO HORN'S MATRIX FUNCTIONS OF TWO COMPLEX VARIABLES

K. A. M. Sayyed , M. S. Metwally , A. A. Mahmoud

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Department of Mathematics, Faculty of Science, Assiut University

Department of Mathematics, Faculty of Science, Al-Azhar University

ABSTRACT

In this paper, the Horn's matrix function of two complex variables $H_2(A, B, B_0; C; z, w)$ is studied. The convergent properties, an integral representation and a contiguous function relations for it are investigated. Operating on Horn's matrix functions with the differential operator $D^{(N)}$ is studied. The Hadamard product of two Horn's matrix functions is studied, certain results as, the domain of regularity, a contiguous function relations and operating with the differential operator D and D^2 are established.

Mathematics

39

TUE : 23-03-2010

HALL[E]

ORAL - SEC10 (3)

11:00 : 11:15

286

MATH - 11

EG

MR. ALI ABU-BAKR

alibakrm@yahoo.com

A RATE GROWTH OF VAPOUR BUBBLE BETWEEN TWO-PHASE TURBULENT FLOW

Selim ali Mohammadein , Ali Abu-bakr

Applied Math. Department, Faculty of science, Tanta University, Tanta Egypt,
Math. Department, Faculty of science, Menoufiya University, Shebin El-Kom Egypt

ABSTRACT

In this paper, the growth of vapour bubble in superheated water is studied for two-phase turbulent flow. The mixture surrounded a growing vapour bubble is a non viscous superheated with turbulent flow. The growth problem is formulated by mass and momentum equations under physical assumptions between two finite boundaries. Thermal diffusivity, superheating and Péclet number are a dominant parameters for bubble growth. The scale of bubble is larger than the scale of turbulence in the mixture surrounded growing bubble is considered. The previous models of growth for laminar flow are obtained as a special cases of present model for some values of parameters a , b , and n respectively.

Mathematics

40

TUE : 23-03-2010

HALL[E]

ORAL - SEC10 (4)

11:15 : 11:30

286

MATH - 12

EG

PROF. AHMED ZABEL

zabelahmed@hotmail.com

PSEUDO DIFFERENTIAL OPERATORS WITH INFINITE NUMBER OF VARIABLES GENERATING FELLER SEMIGROUPS

A. M. Zabel , Maryam A. Alghamdi

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Dept. Mathematics, Faculty of science for Girls, King Abdul-Aziz Univ., Jeddah, Saudi Arabia.

ABSTRACT

In the infinite tensor product of Hilbert spaces, we define pseudo differential operators with symbol in terms of negative definite functions. The main result is to show that under suitable conditions closed extensions of these operators form generators of Feller semigroups. Our construction uses the Yosida-Hille-Ray theorem and some estimates in anisotropic Sobolev spaces of functions with infinite number of variables.

Mathematics

41

TUE : 23-03-2010

HALL[E]

ORAL - SEC10 (5)

11:30 : 11:45

286

MATH - 13

EG

MR. MAMDOUH OMRAN

dr_alibakr@yahoo.com

A NEW TREATMENT OF THE BUBBLE GROWTH AND RELAXATION TIMES BETWEEN TWO-PHASE FLOW

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Math. Department, Faculty of Science, Tanta University, Tanta, Egypt

ABSTRACT

The growth of vapour bubble between two-phase flow is formulated by a new assumption, which different than that studied before. The pressure and temperature fields are obtained analytically in terms of bubble radius. The pressure and thermal relaxation times between non-equilibrium systems of bubbly flow are derived in terms of void fraction. The obtained results of relaxation times performed a good agreement with MOBY DICK experiment.

Mathematics

42

TUE : 23-03-2010

HALL[E]

ORAL - SEC10 (6)

11:45 : 12:00

286

MATH - 8

EG

MR. MOHAMED BARAKAT

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A FIXED POINT THEOREM FOR UNIFORMLY GENERALIZED LIPSCHITZIAN MAPPINGS WITH UNIFORM NORMAL STRUCTURE ON METRIC SPACES

R. A. Rashwan , Ahmed H. Soliman , Mohamed A. Barakat

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Department of Mathematics, Faculty of Science, Al-Azhar University, Assiut, Egypt

bDepartment of Mathematics, Faculty of Science, Al-Azhar University, Assiut, Egypt

ABSTRACT

In this work, we define a new generalized uniformly Lipschitzian type conditions for a family of selfmappings which are asymptotically regular in a complete bounded metric space. some examples are presented to show the difference between our condition, the condition of generalized uniformly Lipschitzian mappings which introduced by Ahmed H. Soliman in [9] (Ahmed H. Soliman, A Fixed point theorem for semigroups on metric spaces with uniform normal structure, *Scientiae Mathematicae Japonicae* (2009), 93-98.) and Lipschitz condition, a fixed point theorem for this mappings are presented which extend the fixed point theorem due to [6](T.-C. Lim & H.-K. Xu, Uniformly lipschitzian mappings in metric spaces with uniform normal structure, *Nonlinear Analysis, Theory Methods & Applications*. Vol. 25. No. 11 (1995), 1231-1235.).

Mathematics

43

TUE : 23-03-2010

HALL[E]

ORAL - SEC10 (7)

12:00 : 12:15

286

MATH - 23

LY

DR. ABDALSALAM ALDAIKH

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DETERMINISTIC AND STOCHASTIC MODELS IN BIOLOGY " A COMPARISON STUDY"

Abdassalam B. Aldaikh

Department of Mathematics, Faculty of Science , Omar Al-Mukhtar University Al-Baida, Libya

ABSTRACT

Both deterministic and stochastic models have important roles to play and should therefore be considered together. Numerous deterministic models from biology for single and two interacting species are presented, such as: Exponential Growth Model, Logistic Growth Model, Competition Model, Predator-Prey Model and Harvesting Problem. For these models, the behavior of deterministic model is discussed, and then developed to the corresponding stochastic model, to show the importance of considering stochastic models, by introducing a stochastic analogue to each one of the previous deterministic models. The explicit solutions of some few models are presented. For the majority, however, it is impossible to get such solutions. Itô SDEs for Interacting Populations offer much help to solve many population models numerically. Although full conditions for agreement between deterministic and expected stochastic solutions are at present unknown, it could be, however, compared them. A comparison between the deterministic & stochastic models is given to show their features which made clear by graphs generated through MATHEMATICA-4.1 and MATLAB-6.2. software.

Mathematics

44

TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC04 (21)

03:20 : 04:00

286

MATH - 1

EG

DR. HODA SAYED AHMED

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ON NEURAL NETWORK METHODS FOR MIXEDBOUNDARY VALUE PROBLEMS

S.A .Hoda Ibrahim

Faculty of Science, University of Zagazig, Egypt

ABSTRACT

In this paper a numerical solution for solving partial differential equations(PDEs),with mixed boundary conditions,is described.This articledeals the irregular boundaries where the boundary is determined by anumber of points that belong to it.We employed a multilayer perceptronartificial neural network and a radial basis function network to accountfor the exact satisfaction of the boundary conditions. Also in this article,we illustrate the method by solving a variety of problems on two andthree-dimensional PDEs that has yielded accurate solutions.

Mathematics

45

TUE : 23-03-2010

HALL[POSTER]

POSTER - SECO4 (22)

03:20 : 04:00

286

MATH - 3

EG

MR. SAED RAMADAN

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INTEGRAL REPRESENTATION OF BASIC POSITIVE AND NEGATIVE DEFINITE FUNCTIONS.

A. S. Okb El Bab , H. A. Ghany , S. Ramadan

Prof. and Chairman of Department of Mathematics, Faculty of Science, Azhar University, Cairo, Egypt.

Department of Mathematics, Faculty of Industrial Education, Helwan University, Cairo, Egypt.

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

ABSTRACT

We denote a q-analogue of the so called positive definite functions and also for functions that belongs to the class of completely monotonic functions, then we give some properties of these two classes . Finally, we give the integral representation of these analogue functions and explain our results by some examples.

Mathematics

46

TUE : 23-03-2010

HALL[POSTER]

POSTER - SECO4 (23)

03:20 : 04:00

286

MATH - 7

EG

MR. MOHAMED BARAKAT

barakat96@yahoo.com

COMMON FIXED POINT THEOREMS FOR MULTI-VALUED MAPPINGS IN SOME NEW GENERALIZED COMPLETE METRIC SPACES AND ITS APPLICATIONS

Ahmed H. Soliman , Mohamed A. Barakat

Department of Mathematics, Faculty of Science, Al-Azhar University, Assiut, Egypt

Department of Mathematics, Faculty of Science, Al-Azhar University, Assiut, Egypt

ABSTRACT

In this paper, some new generalized complete metric space are defined. Some common fixed point results in these types of completeness and for multi-valued mappings are presented. Also, we apply the obtained results to fuzzy multi-valued mappings.

Mathematics

47

TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC04 (24)

03:20 : 04:00

286

MATH - 10

EG

MR. AHMED ADLY

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INEQUALITIES OF BESSEL FUNCTIONS OF TWO INDEX OF TWO COMPLEX VARIABLES

K. A. M. Sayyed , M. S. Metwally , A. A. Mahmoud

Department of Mathematics, Faculty of Science, Assiut University

Department of Mathematics, Faculty of Science, Assiut University

Department of Mathematics, Faculty of Science, Al-Azhar University, Assiut

ABSTRACT

Inequalities of Bessel functions of two index of two complex variables, modified Bessel functions of two index of two complex variables, Tricomi functions of two index of two complex variables and of their ratios are obtained.

Mathematics

48

TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (25) 03:20 : 04:00

286

MATH - 16 EG DR. AHMED SOLIMAN ahsolimanm@gmail.com

ASYMPTOTIC STABILITY OF NONLINEAR GENERALIZED CONTRACTION SEMIGROUPS

Afaf A. Saleh, , Ahmed. H. Soliman , Doaa. R. Abd-Elwahad

Department of Mathematics, Faculty of Science for Girls, Al-Azhar University, Egypt
Department of Mathematics, Faculty of Science, Al-Azhar University, Assiut 71524, Egypt
Department of Mathematics, Faculty of Science, Al-Azhar University, Assiut 71524, Egypt

ABSTRACT

In this paper, we prove asymptotic stability theorem for a new concept of nonlinear generalized contraction semigroups (in short GCO–Semigroups) on Banach spaces. Also, we generalized Crandall-Liggett Theorem for GCO–Semigroups. Our results are generalizations of certain results due to Crandall-Liggett and I. Aksikas, J. Winkin, D. Dochain [Asymptotic Stability of Infinite-Dimensional semilinear systems: Application to a nonisothermal reactor, System and Control Letters, 2008].

Mathematics

49

TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC04 (26)

03:20 : 04:00

286

MATH - 17

LY

PROF. AMANI ABODI

amaniabodi@yahoo.com

إلصاق الفضاءات التفاضلية خصائصها وتطبيقاتها

ABSTRACT

في هذا البحث تم تعريف الخواص الأساسية للفضاءات التفاضلية, كما تناول البحث المبرهنات الخاصة للفضاءات التفاضلية وتطرقنا لحلول بعض الأمثلة في هذا المجال. واحتجنا في هذا البحث أيضاً إلى الفضاءات المولدة محلياً فتناولنا بعض التعريفات والمبرهنات الخاصة به. ثم وصلنا إلى الموضوع الأساسي في بحثنا وهو إلصاق الفضاءات التفاضلية فتناولنا الخواص الأساسية لإلصاق الفضاءات التفاضلية وقمنا بدراسة النظرية الأساسية لإلصاق الفضاءات التفاضلية ودرسته نظريات أخرى وبعض التعريفات في هذا المجال. أخيراً تم تعميم ما يعرف بإلصاق الفضاءات التفاضلية على بعض التطبيقات

Mathematics

50

TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC04 (27)

03:20 : 04:00

286

MATH - 18

EG

DR. OMAR EL-LEITHY

ah_moukh81@yahoo.com

PERSISTENCE IN MODEL OF FOUR INTERACTING PREY – PREDATOR POPULATION

Dr Omar El-Leithy , S.M.Elleh

Department of mathematics, Faculty of Science, Al-Azhar University, Assiut

ABSTRACT

This paper considers a class of deterministic model of four interacting populations with a view towards determining when all of the populations persist. The class of system considered allows four level food webs, two competing predators feeding on two prey or a single predator feeding on three competing prey populations.

Mathematics

51

TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC04 (28)

03:20 : 04:00

286

MATH - 19

LY

PROF. MOUNIRA SAKI

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GLUING OF DIFFERENTIAL SPACES AND APPLICATION

ABSTRACT

في هذا البحث تم تعريف الخواص الأساسية للفضاءات التفاضلية, كما تناول البحث المبرهنات الخاصة للفضاءات التفاضلية وتطرقنا لحلول بعض الأمثلة في هذا المجال. واحتجنا في هذا البحث أيضاً إلى الفضاءات المولدة محلياً فتناولنا بعض التعريفات والمبرهنات الخاصة به. ثم وصلنا إلى الموضوع الأساسي في بحثنا وهو إصاق الفضاءات التفاضلية فتناولنا الخواص الأساسية لإصاق الفضاءات التفاضلية وقمنا بدراسة النظرية الأساسية لإصاق الفضاءات التفاضلية ودرسنا نظريات أخرى وبعض التعريفات في هذا المجال. أخيراً تم تعميم ما يعرف بإصاق الفضاءات التفاضلية على بعض التطبيقات.

Mathematics

52

TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC04 (29)

03:20 : 04:00

286

MATH - 20

EG

PROF. TAHA SOLTAN

sultan@yahoo.com

SOME OPERATIONAL FORMULAS CONNECTED WITH A FUNCTION DEFINED BY A GENERALIZED RODRIGUS

T.I.Sultan

Al-Azhar University

ABSTRACT

Mathematics

53

TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (30) 03:20 : 04:00

286

MATH - 22 EG DR. FATMA ABD ENABY fatmaabdelnaby@yahoo.com

EFFECT OF HEAT TRANSFER ON A CARREAU FLUID IN A VERTICAL CHANNEL WITH PERISTALSIS

Kh.S. Mekheimer , Y. Abd Elmaboud , F.M. Abd Elnaby

ABSTRACT

We investigated the effect of heat transfer on the peristaltic flow of a Carreau fluid in a vertical channel under the assumptions of long wavelength and low Reynolds number. Long wavelength approximation is used to linearize the governing equations. The system of the governing nonlinear PDE is solved by using the perturbation method. The solution are obtained for the velocity and the temperature fields. Numerical calculations are carried out for the pressure rise, frictional forces and the features of the flow and temperature characteristics are analyzed by plotting graphs and discussed in detail.

Statistics

Statistics

54

TUE : 23-03-2010 HALL[E] ORAL - SEC15 (1) 01:00 : 01:15

286

STAT - 1 EG ASSOC.PROF. MOHAMED MOSHREF mmoshrefy@yahoo.com

MOMENTS OF ORDER STATISTICS FROM WEIBULL DISTRIBUTION IN THE PRESENCE OF OUTLIERS

M. E. Moshref

Faculty of Science, Al-Azhar University, Nasr City, Cairo, Egypt.

ABSTRACT

In this paper, we derive the exact expressions for the single and product moments of order statistics from Weibull distribution under contamination model. We assume that X_1, X_2, \dots, X_{n-p} are independent with probability density function $f(x)$ while the remaining, p observations (outliers) X_{n-p+1}, \dots, X_n are independent (and independent of X_1, X_2, \dots, X_{n-p}) with probability density function arises from some modified version of $f(x)$, which call $g(x)$, in which the location and/ or scale parameters have been shifted in value. Finally, some numerical calculations are given to illustrate the theoretical results,

Statistics

55

TUE : 23-03-2010

HALL[E]

ORAL - SEC15 (2)

01:15 : 01:30

286

STAT - 2

EG

DR. NASHWA YHIEA

n_yhiea@hotmail.com

INFERENCE FOR THE GENERALIZED PARETO DISTRIBUTION BASED ON PROGRESSIVELY TYPE-II CENSORED DATA

M. A. W. Mahmoud , Nashwa Mohamed El-sayed Yhiea (N. M. Yhiea)

Department of Mathematics, Faculty of Science, Al-Azhar University Naser City, Cairo 11884, Egypt

Department of Mathematics, Faculty of Science Suez Canal University. Ismailia.

ABSTRACT

The moments of progressively Type-II censored sample from the generalized Pareto distribution are derived and used to obtain estimation result for the location and scale parameters. The Best Linear Unbiased estimates (BLUE's) and the maximum likelihood estimates (MLE's) methods are derived. Finally, simulation study is given to compare between these estimates.

Statistics

56

TUE : 23-03-2010 HALL[E] ORAL - SEC15 (3) 01:30 : 01:45

286

STAT - 3 EG MR. MOANIS MOAZ moanismoaz71@hotmail.com

ON RELIABILITY OF A TWO-UNIT COLD STANDBY REDUNDANT SYSTEM SUBJECT TO WEATHER EFFECT AND PARTIAL FAILURE.

M.A.W. Mahmoud , M. Moshref , M. A.T. MOAZ

Department of Mathematics, Faculty of Science, Al-Azhar University, Nasr City, Cairo 11884, EGYPT.

Department of Mathematics, Faculty of Science, Al-Azhar University, Nasr City, Cairo 11884, EGYPT.

Physical and Mathematical Engineering Dep., Faculty of Engineering, Suez Canal University, Port Said City, EGYPT.

ABSTRACT

We estimate various measurers of reliability for two-unit standby system subject to weather effect and partial failure distribution are obtained based on the regenerative point technique. Two type of failure are assumed. Finally, a numerical example is presented to illustrate the theoretical results.

Statistics

57

TUE : 23-03-2010 HALL[E] ORAL - SEC15 (4) 01:45 : 02:00

286

STAT - 4 EG ASSOC.PROF. AHMED ABD ELLAH ahmhamed@hotmail.com

EXACT TWO SAMPLE BAYESIAN PREDICTION BOUNDS FOR THE EXPONENTIAL DISTRIBUTION WITH RANDOM SAMPLE SIZE

Ahmed Hamed Abd Ellah

Sohag University, Faculty Of Science, Mathematics Department, Sohag, 82524

ABSTRACT

This paper is concerned with the Bayesian prediction limits problem of the s -th order statistics when the size of the future sample is a random variable. The one parameter exponential distribution with constant failure rate is considered. Using the gamma prior, the paper derives the posterior distribution for that failure rate and hence the predictive distribution of future observations. Available data are from type II censored sampling. The analysis depends mainly on assuming that the future sample size m is a random variable having Poisson or binomial distribution. Simulation study and numerical examples are used to illustrate the procedure.

Statistics

58

TUE : 23-03-2010 HALL[E] ORAL - SEC15 (5) 02:00 : 02:15

286

STAT - 5 EG DR. MONTASER AMEIN alamen_2003@yahoo.com

ORDER STATISTICS AND CHARECTERIZATION FROM INDEPENDENT AND IDENTICAL EXPONENTIAL (BERNOULLI) MIXTURE DISTRIBUTION AND INFERENCE

M. M. Mohie El-Din , M. M. Amein

Faculty of Science , Al-Azhar University,Cairo, Egypt .

Faculty of Science , Al-Azhar University, Cairo, Egypt .

ABSTRACT

The main aim in this article is deriving recurrence relations between moments of order statistics for doubly-truncated exponential (Bernoulli) mixture distribution. The recurrence relation of order statistics for exponential (Bernoulli) mixture distribution are obtained as special cases. The characterizations for doubly-truncated exponential (Bernoulli) mixture distribution are also established .

Statistics

59

TUE : 23-03-2010

HALL[E]

ORAL - SEC15 (6)

02:15 : 02:30

286

STAT - 7

EG

DR. BHADY KAMEL

bhadykamel@yahoo.com

AN EXTENDED BURR (XII) DISTRIBUTION AND ITS APPLICATION TO CENSORED DATA

M. Gharib , M. M. Mohie El-Din , B. E. Mohammed

Department of Mathematics, Faculty of Science, Ain Shams University. Cairo, Egypt.

Department of Mathematics, Faculty of Science, Al-Azhar University. Nasr City 11884, Cairo, Egypt

Department of Mathematics, Faculty of Science, Al-Azhar University. Nasr City 11884, Cairo, Egypt

ABSTRACT

This paper investigates properties of a new parametric distribution generated by using Marshall-Olkin (1997) extended family of distribution based on Burr (XII) model. It is shown that the proposed distribution can be obtained as a compound distribution with mixing exponential distribution. Simple sufficient conditions for the shape behavior of the density and hazard rate function for the new distribution are given. Finally, utilizing maximum likelihood estimation the extended distribution is fitted to a set of randomly censored data and its goodness of fit is demonstrated.

Statistics

60

TUE : 23-03-2010 HALL[E] ORAL - SEC15 (7) 02:30 : 02:45

286

STAT - 8 EG DR. MOHAMMED KOTB msakotb1712@yahoo.com

CHARACTERIZATIONS OF THE GENERALIZED PARETO DISTRIBUTION BASED ON K-TH RECORD VALUES

M. M. Mohie El-Din , Y. Abdel-Aty , M. S. Kotb

Department of Mathematics, Faculty of Science, Al-Azhar University.

Department of Mathematics, Faculty of Science, Al-Azhar University.

Department of Mathematics, Faculty of Science, Al-Azhar University.

ABSTRACT

In this paper, we obtain the exact explicit expressions for the single, double, triple and quadruple of k-th upper record values from a generalized Pareto distribution (GPD). We establish some recurrence relations between single, double, triple and quadruple moments of k-th upper record values from the GPD. Using a recurrence relation for single moments we obtain a characterization of GPD, also a characterization by considering the conditional expectation for GPD is obtain.

Statistics

61

TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (14) 03:20 : 04:00

286

STAT - 6 EG DR. FATHY HAMDY fathyhamdi2008@yahoo.com

ESTIMATIONS OF THE PARAMETERS OF THE INVERSE WEIBULL DISTRIBUTION WITH PROGRESSIVELY CENSORED DATA

M.M. Mohie El-Din , Y. Abdel-Aty , Fathy H. Riad

Faculty of Science, Al-Azhar University, Egypt.

Faculty of Science, Al-Azhar University, Egypt.

Faculty of Science, Minia University, Egypt.

ABSTRACT

In this paper, we obtained estimation results concerning a progressively type II censored sample from a two parameters Inverse Weibull. The maximum likelihood method is used to derive the point estimators of the parameters. An exact Confidence interval and an exact joint Confidence region for the parameters are constructed. A numerical example is presented to illustrate the methods proposed here.

Computer Science

Computer Science

62

TUE : 23-03-2010	HALL[POSTER]	POSTER - SEC04 (31)	03:20 : 04:00
CSC - 5	EG	MS. NIVEEN SAMY	niveen1975@yahoo.com

286

NEW GREEDY ALGORITHM FOR MINIMUM MEMBERSHIP SET COVER PROBLEM

Niveen Samy , Sameh Sami Daoud , Fayed F.Ghalib

Ain Shams university-Cairo-Egypt

Ain Shams university-Cairo-Egypt

Ain Shams university-Cairo-Egypt

ABSTRACT

Minimum membership set cover (MMSC) problem is an NP-problem and is very important in many applications. Until recently there was no algorithm that solves it approximately except relaxation to Linear programming problem. Relaxation to Linear programming algorithm is a probabilistic algorithm. In this paper we introduce a Greedy algorithm that gives a feasible solution and prove that its approximation ratio is $O(\ln n)$.

Computer Science

63

TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC04 (32)

03:20 : 04:00

286

CSC - 8

EG

DR. EMAD ATYA

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CRYPTOGRAPHIC KEY GENERATION BASED ON SPEECH SIGNAL

Emad Masamer

Faculty of Science, Al-Azhar University

ABSTRACT

In this paper, we propose to use speech signal for generating sequences of random bits. The key bits are built using the Automatic Speech Recognition Technology to detect the speech utterance.

Computer Science

64

TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (33) 03:20 : 04:00

286

CSC - 10 EG MS. ENAS ELSHA3RAWY dr_enas_idm@yahoo.com

MEASUREMENTS OF SOFTWARE QUALITY METRICS

Gaber Elsha3rawy , Nahed EIDesoki , Enas Elsha3rawy

Computer Science Department of Al-Azhar University

Computer Science Department of Al-Azhar University

Computer Science Department of Al-Azhar University

ABSTRACT

In Our search we will define the depth meaning & definition of software quality " The Ultimate Goal of Software Engineering" that indicates software quality importance according to the world : " People have been killed by defective software". The whole world take SQ in its Consideration Every one asked for it so we also browsing the studying of Sq in a broad as Software Quality Management Syllabus Robinson college of Business Georgia state University Second explain different overview in SQ."Quality Management Philosophies" Third , We use the ISO 9126 model to measure the reliability of code by using RSM Program that is famous tool in many countries that measure SQ of Code "Resource Standard Metrics is a source code metrics and quality analysis tool for ANSI C, ANSI C++, C# and Java for use on all Windows and UNIX operating systems". Finally we try to improve our software by easy way instead of calculation of complex mathematics operation .

Computer Science

65

TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (34) 03:20 : 04:00

286

CSC - 11 EG PROF. AHMED RADWAN aaaradwn2008@yahoo.com

PERFORMANCE MEASUREMENT OF SOME AD HOC NETWORK ROUTING PROTOCOLS

Ahmed. A. A. Radwan , Tark . Mostfa. Mahmoud , Esam Halim Houssein

The Dean of Faculty of computer science Nahda yuniversity Baney Swaif
Associate professor at aculty of computer science ,Faculty of Science ,Minia University,Egypt

ABSTRACT

A mobile ad hoc network (MANET) is a wireless network that uses multi-hop peer to peer routing instead of static network infrastructure to provide network connectivity. A user can move anytime in an ad hoc scenario and, as a result, such a network needs to have routing protocols which can adopt dynamically changing topology. To accomplish this, a number of ad hoc routing protocols have been proposed and implemented such as, Ad hoc On-Demand Distance Vector routing (AODV), Fisheye State Routing (FSR) and Location-Aided Routing (LAR). This paper compares the major characteristics of these protocols such as, routing messages overhead, throughput and end to end delay using a parallel discrete event-driven simulator, GloMoSim. The experimental results show that FSR protocol has low control overhead compared with AODV and LAR. Regarding the throughput, AODV has a high throughput compared with the other considered protocols. Considering the end to end delay, LAR protocol shows better performance over FSR and AODV protocols.

Computer Science

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WED : 24-03-2010

HALL[E]

ORAL - SEC20 (1)

09:00 : 09:15

286

CSC - 9

EG

MR. AMR ABOZEID

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MOBILE INTERACTIVE CLASSROOM SYSTEM

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Fayed F. M. Ghaleb

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Abdulaziz University, Saudi Arabia

Qatar University, Qatar

Ain Shams University, Cairo

ABSTRACT

Nowadays become possible to learn at any time and any place. This is advantage results mainly from the electronic and mobile learning systems. The style of communications and interactions offered by classical classroom or face-to-face learning is still the most common style way of learning. Unfortunately, the increasing number of students and the constraints of time and place lead to a lack of interactions and communications in the classroom. In this paper we introduce a system based on Bluetooth technology to build an interactive learning environment in classroom. The proposed system: " Mobile Interactive Classroom System (MICSystem)" improves the learning processes in the classroom and activates the interaction between instructors and students. The system helps instructor to make quick quizzes and voting, allow students to ask questions and write suggestions.

Computer Science

67

WED : 24-03-2010 HALL[E] ORAL - SEC20 (2) 09:15 : 09:30

286

CSC - 3 EG MR. MAZHAR HEFNAWI mmaazz_2222@yahoo.co.uk

NEW ENVIRONMENTAL PREDICATION MODEL USING FUZZY LOGIC AND NEURAL NETWORKS

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ABSTRACT

This paper introduces a new predication model. This predication model is designed to accomplish its task by only one type of measurements while other predication models need at least three types of measurements. This feature makes this model less expensive than other models. The user who works with other models such as Statistical model, Chemical model, Physical model and neural network model needs more than two types of measurements. On the other hand, the user who uses this model can use only one type of data to operate his or her model. In this case, the user saves a lot of time and money. This feature also saves a lot of effort required to link different types of data with each other by a certain relationship between them.. In this paper, this model is implemented on predication of Gamma radiation levels measurements in ambient air. The results from this model are good enough to depend on it for predication, recognizing the artificial or strange phenomena, covering lost or missing data and making a temporally monitoring system. This model can be used in any continues environmental monitoring system, and environmental decision maker.

Computer Science

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WED : 24-03-2010 HALL[E] ORAL - SEC20 (3) 09:30 : 09:45

286

CSC - 4 EG MR. MAZHAR HEFNAWI mmaazz_2222@yahoo.co.uk

DESIGN OF DIGITAL RADIATION IMAGE BY FUZZY LOGIC

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ABSTRACT

This work introduces a new way of the data visualization. This new kind of data visualization is called "Digital Measurements Image" or " Digital 'Application name' Image". It is known that the normal digital image is created by digital camera or digital scanner but digital measurements image is created by measurements of monitoring data. This work uses the data which is measured by some radiation monitoring stations and classifies it using a fuzzy logic classification technique to create some digital measurements images or digital radiation images. The main unique advantage of digital measurements image is that it expresses thousands of measurements in a very clear form through only one photo while the maximum number of measurements does not exceed 100 for other conventional data visualization methods. This feature gives a facility to view all measurements which are taken in one year in only one photo. This photo helps the user to observe the behavior of thousands of measurements in few minutes instead of spending few hours in reviewing hundreds of charts for the same measurements.

Computer Science

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WED : 24-03-2010 HALL[E] ORAL - SEC20 (4) 09:45 : 10:00

286

CSC - 7 EG DR. EMAN ELSAYED emankaram10@hotmail.com

AMELIORATE THE ELECTRONIC COURSE BY USING VAK-TEST, GRAPHOLOGY AND CARTOON MOVIES

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ABSTRACT

The growing acceptance of online learning has made it possible for anyone to become an instructor , without even being affiliated with an educational organization or even being educational. In spite of the existence of standards to design e-learning systems, but still we need specialized educators to administrate the e-course. So this paper propose ameliorate e-course standards from two sides. From students' side, by using the educational rules in the course presentations. And from teacher side by design graphology web expert system and adding VAK –test to give the teacher clear view, and uploading e-course on web edu-portal for easy LMS learning management system. The proposed methodology is applied to the computer maintenance e-course for children.

Computer Science

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WED : 24-03-2010 HALL[E] ORAL - SEC20 (5) 10:00 : 10:15

286

CSC - 6 EG MR. OSAMA GHONEIM osama_ghoneim@yahoo.com

A NEW CROSSOVER OPERATOR FOR TREATING TRANSPORTATION PROBLEMS

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Demonstrator, Department of Math, Faculty of Science, Tanta University, Tanta, Egypt

ABSTRACT

This paper introduces a genetic algorithm for solving transportation problems. A simple form of the problem is a discussion of a single commodity transported from a set of sources to a set of destinations. The transportation cost from a particular source to a particular destination is not fixed, since it depends on the transported units from a source to a destination. To solve this problem using genetic algorithm, authors give a new crossover operator matching matrix representation which is models the problem. The given crossover has an important advantage; producing valid offspring which don't need any repairs. According to this advantage, the execution time of the modified genetic algorithm is very fast. Combing the given crossover with a specified relevant mutation of matrix representation (MMR),[5],[8], leads to finding best solutions to the underlying problem. Furthermore, the results of the modified genetic algorithm affect with the changing values of the probability of mutation p_{mute} . So, the study includes the relation between the optimal solutions and generations with respect to various values of p_{mute} for some examples.

Physics

Physics and its applications

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TUE : 23-03-2010 HALL[A] ORAL - SEC11 (2) 01:30 : 01:45

286

PHY - 62 EG MS. ASMAA MAHMOUD AWADALLAH emam_ramadan@ymail.com

EFFECT OF ANNEALING ON THE ELECTRICAL AND OPTICAL PROPERTIES OF CU₅GA₃₃TE₆₂ THIN FILM

D.Goneim , S.Nasser , N.A.Mohsen , A.Awad

ABSTRACT

Thin film of Cu₅Ga₃₃Te₆₂ system has been prepared by using thermal evaporation technique with 45 nm thickness. The electrical conductivity assessment has been carried out on this film in the temperature range of 300- 425 K. The film has been annealed at 323, 348, 373, 398, 423 and 453 K under vacuum for 3hr . The temperature dependence of the electrical conductivity for all annealing temperatures has been recorded and discussed .The results were analyzed in order to establish the activation energy of each state. With the increase in the annealing temperature the film under phase transition to the crystalline state .The optical properties of Cu₅Ga₃₃Te₆₂ system have been studied as a function of annealing temperature. The results showed that the optical transitions in the wave length range (200- 1100) nm are direct transitions where the values of E_g are decreased with increasing annealing temperature , i.e., the absorption edge shift toward a higher wavelength or a lower energy . The optical constants k , n , ϵ_r and ϵ_o of the film at different temperatures are influenced by the heat treatment.

Physics and its applications

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TUE : 23-03-2010 HALL[A] ORAL - SEC11 (3) 01:45 : 02:00

286

PHY - 1 EG PROF. SALAH AWADALLA syaw2410@hotmail.com

SOIL VISCOSITY AS A NEW PHYSICO-CHEMICAL APPROACH FOR MEASURING THE IMPROVEMENT IN CALCAREOUS SOIL TREATED WITH COMPOST

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Professor of Analytical chemistry and director of Micro analytical Center, Faculty of Science, Cairo University

Professor of Inorganic Chemistry, Chemistry Department, Faculty of Science, Cairo University

Researcher in Physics and Chemistry Department DRC

ABSTRACT

Soil viscosity has been provided as a new parameter for measuring the improvement of calcareous soils those treated with several samples of plant residues compost. The aim of this paper is to study the soil viscosity and its relations with some soil properties as affected by twenty four compost samples prepared from rice and corn wastes, by two different composting methods with some additional treatments through composting process were used in ameliorating Maryut calcareous soil. The data indicate good response of treated soils, referring to viscosity values, due to either kind or amount of compost samples. Furthermore, the degree of effectiveness correlated significantly with many of compost characters either as structure like molecular weight (M.wt), thermal index (RI) and degree of humification (RF) or as physico-chemical properties like heat capacity (Cp), water holding capacity (WHC), moisture content, organic matter content (OM%) and cation exchange capacity (CEC). Soil viscosity have significant negative correlations with CP, WHC and EC , while it have significant positive correlation with bulk density. Finally, we provide this new aspect to be considered to the classic soil measurements which it may need more investigations to verify its relations with other soil types.

Physics and its applications

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TUE : 23-03-2010 HALL[A] ORAL - SEC11 (4) 02:00 : 02:15

286

PHY - 2 EG PROF. SALAH AWADALLA syaw2410@hotmail.com

ENVIRONMENTAL DIMENSIONS IN DEVELOPING NEWLY RECLAIMED DESERT LANDS

Prof. Dr. Salah Y. Awad Alla

Professor of Soil Physics in Desert Research Center DRC, Matariya ,Cairo

ABSTRACT

The global expression of "Environment "is nowadays involves almost all items those related to human life as it is the main target for any environmental improvement. The proposed system of World Bank (WB) in 2005 for assessment of 5 main headlines with 28 indices with 76 characters had been adopted on large scale for about 150 regions. Egypt, as one of these studied regions, ranked in late order which we can attribute to the following reasons: 1- The majority of desert area all over the region with about 96 % (~ 965,000,000 km²) so the so-called "desert character "control many of life style parameters. 2- The population growth impact (~ 2.2 % /year) in front of lower rate of suitable lands for agriculture (~ 1.4 % / year) which shrink the cultivated land per capita progressively. 3-The environmental impact of increasing consumption more than production especially for agricultural commodities. 4-The environmental impact of refused organic wastes especially in-farm ones than the recycled amount into beneficial forms (~ 4- 5 % only recycled). 5-The dramatic expansion of using agrochemicals for upraising the agriculture production and also dense cultivation as reached to ~ 3 times / year in some locations. 6-The gradual increase of water resources consumption which in turn decline the amount of water per capita (~ 630 m³ / year / person). 7-The high costs of agricultural production in desert than old areas which impact on the economic situations of the farmers in these areas, so their settlement. 8-Habazardeous selection of crop pattern in these locations (Rice and Banana in some areas dependant on groundwater). 9-Risks of wind and water erosion in many regions due to the so-called "desert character ". On the other hand, there are many efforts those directed to improve some or even all these stresses through adopting some new complemented approaches for avoiding or eliminating the deterioration of these locations. The lecture will spot light on some of these activities.

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TUE : 23-03-2010

HALL[A]

ORAL - SEC11 (5)

02:15 : 02:30

286

PHY - 5

YE

ASSOC.PROF. SAMI AL ARIKI

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EFFECT OF TEMPERATURE AROUND TG AND TC ON THE OPTICAL CONSTANTS OF CD₆SE₈₄TE₁₀ THIN FILM

S. A. Al Ariki

ABSTRACT

Thin films of Cd₆Se₈₄Te₁₀ were prepared by thermal evaporation technique on glass, using the source materials have been prepared in our laboratory by direct reaction of high purity elemental Cd(99.9999%), Se(99.9999%), Te(99.9999%). The optical behavior of Cd₆Se₈₄Te₁₀ amorphous thin films have been determined and analyzed. Normal-incidence transmission spectra have been measured in the range from 500 to 750 nm. Transmission spectra were used to determine the optical constants. Temperature effects on film properties through the changes optical constants have been investigated. Optical absorption measurements showed that fundamental absorption edge is a function of temperatures around T_g and T_c. The structure of the Cd₆Se₈₄Te₁₀ films was investigated by scanning electron microscopy (SEM), microprobe analyses and X-ray diffraction (XRD).

Physics and its applications

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TUE : 23-03-2010 HALL[A] ORAL - SEC11 (6) 02:30 : 02:45

286

PHY - 8 EG PROF. NADIA ABD EL-MOHSEN mohsen.nadia@yahoo.com

THE PHOTOCATALYTIC ACTIVITY OF SPRAYED ZNO THIN FILMS DOPED WITH MG

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ABSTRACT

As recalcitrant organic pollutants continue to increase in air and wastewater streams, the development of newer eco-friendly methods of destroying these pollutants became an imperative task. Among these methods, heterogeneous photocatalysis has proved to be of real interest as efficient tool for degrading both aquatic and atmospheric organic contaminants. As a well-known photocatalyst, ZnO has received much attention in the degradation and complete mineralization of environmental pollutants. For the purpose of increasing the photocatalytic efficiency of ZnO, Mg was doped into ZnO thin films. ZnO and Zn_{1-x}Mg_xO thin films were prepared by spray pyrolysis method. Glass slides were used as substrates. The deposition temperature was 500°C. Mg concentration was varied in the range of 0.05 to 0.3 in intervals of 0.05. The photocatalytic activity increased with Mg, and the film with x = 0.3 showed the best result.

Physics and its applications

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (1) 02:30 : 03:10

286

PHY - 61 EG PROF. AHMED GAMAL EL DEEN MOSTAFA drahemedgamal@yahoo.com

STRUCTURAL AND ELECTRICAL PROPERTIES OF V₂O₅ - Pb₃O₄ - Fe₂O₃ -Li₂O GLASSES

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ABSTRACT

Glasses with molar composition of [(70-x) V₂O₅. x Pb₃O₄. 10Fe₂O₃. 20Li₂O], x = 0, 2.5, 5,7.5 and 10, was prepared by the melt-quenching method. The structure of the glass was investigated by IR and ME spectroscopy. The IR analysis confirm the supposed transformations among the present structural groups in the glass networks. In all glasses, it can be concluded that iron cations appeared in two different sits as (Fe³⁺)_T. The density was found to increase linearly, while the molar volume show approximately linear increase. The frequency dependent ac conductivity measured in the frequency range 1Hz to 100kHz in the temperature range from room temperature to 423K. It can be concluded that the CBH model is the predominant conduction mechanism in these glasses. The Dc conductivity as a function of Pb₃O₄ content showed firstly sharp decrease then it show slight increase. Cole-Cole equations are used to described both the dielectric constant and the dielectric loss.

Physics and its applications

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TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC03 (2)

02:30 : 03:10

286

PHY - 4

SA

DR. ALI AL-SALAMI

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OPTICAL AND THERMAL PROPERTIES OF BISMUTH TELLURITE GLASS IN COMPOSITION $\text{TeO}_2\text{-Bi}_2\text{O}_3\text{-Nb}_2\text{O}_5\text{-ZnO}$

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ABSTRACT

The relationship between optical and thermal properties of bismuth tellurite glass in the system $\text{TeO}_2/\text{Bi}_2\text{O}_3/\text{Nb}_2\text{O}_5/\text{ZnO}$ are investigated. Thermal characteristic were determined using DTA. The glass transition temperature, (T_g), transformation temperatures of glass sample near the eutectic composition (softening temperature, T_s), and onset temperature of crystallization, (T_c), were measured. The optical absorption in the wavelength range (300- 3200 nm) was measured. From the absorption edge studies, the values of optical band gap (E_{opt}) and Urbach energy (E_U) have been evaluated. The density, molar volume, refractive index, polarizability, molar refraction and third order nonlinear optical susceptibility have been calculated. Results obtained are discussed in terms of the glass structure. Keywords: tellurite glasses; thermal and optical properties.

Physics and its applications

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (3)

02:30 : 03:10

286

PHY - 6

EG

ASSOC.PROF. AZZA SAYED MAHMOUDE ABDRABO aza_abdrboo@yahoo.com

ELECTRICAL CONDUCTIVITY AND THERMOELECTRIC POWER OF $\text{Ge}_{10}\text{-In}_x\text{Se}_{(90-x)}$ THIN FILMS

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ABSTRACT

The dc conductivity and thermo-electric power of $\text{Ge}_{10}\text{In}_x\text{Se}_{(90-x)}$ ($x=5,10,15$) thin films are reported in the present work. The free-charge-carrier concentration is calculated with the help of dc conductivity and thermo-electric power measurements. The calculated values of the free-charge-carrier concentration have been used to evaluate the free-charge-carrier mobility from which the grain boundary potential was evaluated. The results are interpreted in terms of band tailing.

Physics and its applications

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TUE : 23-03-2010	HALL[POSTER]	POSTER - SEC03 (4)	02:30 : 03:10
PHY - 7	EG	DR. SAMIA NEGM	samiadourgham@yahoo.com

286

PHYSICAL STUDY OF A GLASSY NANOCOMPOSITE STRUCTURE BI 51.6PB 40.2CD 8.2 ALLOY

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Professor of metal physics physics, faculty of science Al-Azhar University (Girls)

Lecturer of physics, faculty of science Al-Azhar University (Girls)

ABSTRACT

The Bi_{51.6}Pb_{40.2}Cd_{8.2} alloy is a member of radiation shielding alloy group that have the general formula Bi_{51.6}Pb_{48.4-x}Cd_x. The Bi_{51.6}Pb_{40.2}Cd_{8.2} alloy is prepared in ribbon and wire forms. Both two forms were subjected to different tests. This alloy shows similar or different behaviors with other members alloyed group. The most interesting and abnormal behavior is observed using the X-ray diffraction on Bi_{51.6}Pb_{40.2}Cd_{8.2} alloy, due to the highest degree of crystallization that found in the smooth ribbon surface. On the contrary with this behavior, it shows a glassy nanocomposite structure on its rough surface. This uncommon behavior of the sample for both smooth and rough surfaces can't be refer to the drum speed (5.09, 5.93 and 18.65 m/s respectively), because all the samples were prepared with the same speeds. The glassy nanocomposite structure phenomena studied by different techniques (XRD-measurements, scanning electron microscopy, transmission electron microscopy and hardness) to reveal whether this property refers to the change in its internal structure and differentiation in its rate of solidification on both sides.

Physics and its applications

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TUE : 23-03-2010 HALL[POSTER] POSTER - SECO3 (5) 02:30 : 03:10

286

PHY - 9 EG PROF. KAMILIA SEDEEK kamiliasedeek@gawab.com

THE EFFECT OF FE AND CO SUBSTITUANTS ON THE STRUCTURAL AND MICROSTRUCTURAL PROPERTIES OF INTE AND INSE COMPOUNDS

Prof. Z.K. Heiba , H.H. Hantour , Prof.K. Sedeek , Prof.K. El-Sayed

ABSTRACT

For the first time, the structure and the microstructure of the two systems $\text{InTe}_{1-x}\text{Fe}_x(\text{Co}_x)$ and $\text{InSe}_{1-x}\text{Fe}_x(\text{Co}_x)$ are investigated using x-ray powder diffraction (XRD), transmission electron microscope (TEM) and scanning electron microscope (SEM). The SEM images demonstrate the presence of stacking faults in all samples while the TEM confirms the scattering of the particle sizes between the quantum dot range and the bigger nano size. The XRD indicates the presence of a non-magnetic second minor phase of In_4Te_3 and In_4Se_3 in the InTe and InSe respectively. The content of this phase increases with the addition of Fe or Co. The presence of this phase enhances the ferromagnetic and the spintronic character of the systems. The refined structural parameters were obtained from Rietveld refinement using the program Material Analysis Using Diffraction MAUD. Applying the Win-fit program, the resulting apparent crystallite size (D) and the root mean square strain $\langle \epsilon \rangle$ from single and multiple line analysis of the systems under study were calculated. The D was found to cover the small and large nano-scale. Applying the MAUD and Win-Fit programs for microstructural analysis, the crystallite size is found to spread from 10 to 50 nm for InSe(Fe/Co) systems, a pronounced anisotropic crystallite size is found. Inserting Fe and Co increase both the crystallite size and lattice microstrain.

Physics and its applications

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (6)

02:30 : 03:10

286

PHY - 59

EG

PROF. AHMED GAMAL EL DEEN MOSTAFA draahmedgamal@yahoo.com

EFFECT OF (LI/FE) RATIO ON THE STRUCTURE OF SOME LITHIUM FERRITE SAMPLES

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ABSTRACT

Soft magnets are now the basic elements of many electronic, electro-techniques and mechanical devices, and they can be used now in many appliances to prepare different techniques. However, some lithium ferrite samples were prepared chemically, to investigate the effect of lithium concentration and the calcination temperature on the ferrite formation and structural changes in these samples. The effect of the ratio (Li/Fe) on the ferrite formation was checked by X- ray diffraction, where single phase of lithium ferrite was obtained only when such ratio was (1/5). Mossbauer effect spectroscopy was also applied to investigate the structure of iron ions in the ferrite matrix as well as to calculate the internal magnetic field of both iron sites in the ferrite phase. The internal magnetic field that detected by ME spectroscopy was found to depend on both the (Li/Fe) ratio and the heat treatment regime. Different structural groups were characterized to be present in the ferrite matrix as concluded by FTIR spectroscopic analysis.

Physics and its applications

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TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC03 (7)

02:30 : 03:10

286

PHY - 14

EG

PROF. NADIA MOHSEN

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INFLUENCE OF ZINC ON OPTICAL, ELECTRICAL AND STRUCTURAL PROPERTIES OF (ZNX CD1-X) S FILMS

D. Ghoneim

Physics Department Faculty of Science, Al-Azhar University For Girls, Cairo, Egypt

ABSTRACT

(Znx Cd1-x) S thin films have been prepared in the entire composition range from Cds to Zns on glass substrate using the solution growth technique. To deposit good quality films, optimum conditions have been determined. Wide band gap ternary films have many applications in hetero junction solar cells. The optical, electrical resistivity and structure of these films have been studied by optical transmission, conductivity technique, scanning electron microscope (SEM) and X-ray diffraction (XRD). It was noticed that the microstructure and lattice parameter and the values of the absorption edge shifted towards the shorter wave length region and hence the direct band gap energy varied from 2.47 eV for Cds 3.5 eV for Zns films. Electrical conductivity studies revealed that the resistivity increases with increasing Zn content.

Physics and its applications

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TUE : 23-03-2010	HALL[POSTER]	POSTER - SEC03 (8)	02:30 : 03:10
PHY - 15	EG	DR. SAMIA NEGM	samiadourgham@yahoo.com

286

THERMAL, ELECTRICAL AND MECHANICAL PROPERTIES OF LEAD-FREE TIN SOLDER ALLOYS CONTAINING BI AND IN

M. M. EL-BAHAY , S. S. NEGM , A. A. BAHGAT

ABSTRACT

Two groups of low melting temperature lead-free solder alloys with tin base metal 75 and 80 Wt. % and bismuth > 12.5 Wt. % and 10 Wt % namely: (A) Sn75 In25, Sn75 In12.5 Bi12.5 and Sn75 Bi25 and (B) Sn80 In14, Bi6 and Sn80 In20 alloys were prepared. Both groups were subjected to thermal, electrical and mechanical studies to reveal their physical properties. The study carried out shows that the soldering sub-groups namely: Sn75In25 and Sn80In20 show good ductility character. Accordingly, they respond to the creep and microstructure mechanical tests. The additions of few % of bismuth to other prepared samples of the two sub-groups increase their brittle character. While the addition of Bi to Sn-In alloys causes decreases their amorphous character. The study also revealed that the alloys, which offer the suitable properties for solders application are Sn75-Bi25 from sub-group A and Sn80-In20 from sub-group B. This is because they have the lowest electrical resistivity, low pasty range and good wettability with Cu and suitable mechanical properties.

Physics and its applications

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (9) 02:30 : 03:10

286

PHY - 17 EG DR. FATMA AHMAD fatma.ahmad@ymail.com

CORRELATION BETWEEN ELECTRICAL CONDUCTIVITY AND POSITRON ANNIHILATION LIFETIME MEASUREMENTS IN SUPERIONIC GLASSY SYSTEM

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ABSTRACT

Superionic glassy system $x\text{AgCl}-(100-x)(\text{Ag}_2\text{O}-\text{GeO}_2)$, where x ranged from 10 to 40% has been investigated. The variations of glass density, electrical conductivity and positron annihilation lifetime have been studied. It is observed that the addition of AgCl cause remarkable increase in the free Ag^+ ion responsible for conductivity of glass. The increase in the size of vacancies has been proved by positron annihilation lifetime measurements being responsible for the increase in the mobility of charge carriers and hence the conductivity.

Physics and its applications

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (10) 02:30 : 03:10

286

PHY - 18 EG DR. FATMA AHMAD fatma.ahmad@ymail.com

STRUCTURAL PROPERTIES OF SILVER BOROGERMANTE SUPERIONIC GLASSY SYSTEM

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ABSTRACT

The structure of supersonic system $50\text{AgI}-20\text{Ag}_2\text{O}-y\text{GeO}_2-(30-y)\text{B}_2\text{O}_3$ where $y=0, 5, 10, 20, 30$ % have been prepared and investigated by X-ray diffraction, MIR and DSC analysis. By increasing temperature and/or heat treatment peaks due to growth of AgI microdomains are observed in XRD patterns due to α -AgI microdomain. IR spectra show that the addition GeO_2 reduces the germanium non bridging oxygen, and enhances the formation of octahedral groups, as well as the borate non bridging oxygen increases, and the formation of tetrahedral groups decrease. The addition of GeO_2 to B_2O_3 content enhances glass forming ability and stability.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (11) 02:30 : 03:10

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PHY - 19 EG DR. FATMA AHMAD fatma.ahmad@ymail.com

OPTICAL PROPERTIES AND I-V CHARACTERISTIC CURVE OF CHALCOGENIDE AMORPHOUS GE–SB–TE FILMS

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ABSTRACT

The optical properties of solid films of chalcogenide glass system Ge-Sb-Te were investigated. Elemental composition of the two investigated samples is determined by the energy dispersion X-ray technique. They were found to be Ge₅ Sb₃₂ Te₆₃ and Ge₉ Sb₂₇ Te₆₄, denoted by C1 and C2, respectively. X-ray diffraction technique is employed to characterize the structure of the prepared samples, before and after annealing. The influences of composition and film thickness on the optical band gap (E_o) were investigated at room temperature. This was done by an analysis of transmittance (T) and reflection (R) spectra in the fundamental absorption region. It was found that the magnitude of E_o decreases with increasing Ge content. The obtained results were interpreted in terms of the change of cohesive energy (C.E) as a function of Ge content. The cohesive energy was estimated by employing the chemical bond approach. Hysteresis I-V characteristic curves for compositions C1 and C2, at 300 nm thickness indicate that, composition C1 may be used as read-write material and C2 as read-rewrite material.

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TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC03 (12)

02:30 : 03:10

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PHY - 20

LY

DR. MOHAMED SAEID

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ULTRASONIC NON-LINEAR DEMODULATION PHENOMENON IN AIR

Dr. Mohamed .T Saeid

ABSTRACT

This work is related to acoustic in free-field measurement of sound absorption in porous materials, such as cellular plastic foams, glass-wool or recycled felt materials. The emphasis is given towards fine metrology of absorption in view of potential industrial applications. It enables to measure absorption acoustical data down to 100Hz due to the exploitation of the non-linear ultrasonic demodulation phenomenon in air.

Physics and its applications

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TUE : 23-03-2010 HALL[POSTER] POSTER - SECO3 (13) 02:30 : 03:10

286

PHY - 21 EG PROF. KAMILIA SEDEEK kamiliasedeek@gawab.com

PHYSICAL CHARACTERIZATION OF AMORPHOUS GESE₂ FILMS

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ABSTRACT

AC conductivity, photodarkening and electron spin resonance measurements are carried out on amorphous GeSe₂ films. The AC conductivity is measured as a function of frequency and temperature. The AC conduction mechanism of the studied films is interpreted via single electron transfer between the C1-[C3⁺] and CO centers. The photodarkening is induced with He-Ne laser and observed as transmission and reflection changes through 1.02 μm thick film. Both reversible and irreversible processes are detected with these measurements. The reversible process is induced by defects located in energy at the band edge. The presence of these defects is confirmed by the blue shift of the band edge and the restoration of the initial optical gap value by annealing. On the other hand, the irreversible process results from defects situated in energy into the band tails. These defects cause a considerable additional absorption below the band edge and a remarkable decrease in the refractive index. Electron spin resonance experiments are carried out for the as-deposited, irradiated and annealed film, Free spin centers with concentration $1.013 \times 10^{15} \text{ cm}^{-3}$ are detected at $g = 2.0064$ for the as-deposited film, These centers are assumed to be intrinsic since their density slightly decreases by laser irradiation. The defects associated with the photodarkening effect are suggested to originate from topological changes in bond length. Bond angle and/or bond configuration.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (14) 02:30 : 03:10

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PHY - 22 EG DR. SAMIA NEGM samiadourgham@yahoo.com

THERMAL EXPANSION OF SODIUM METAPHOSPHATE SEALING GLASS AS BEING AFFECTED BY CROSSLINKING

Prof. A.M. Nassar , Prof. Sh. N. Radwan , Prof. M. M. El Oker , E. N. El Kholy

ABSTRACT

The wide need for sealing glass to different metal devices generated a need for sealing glass. Phosphate glasses are attractive as glass-metal seals due to their low melting temperature, low viscosity, and prepare thermal expansion. In the present work the effect of MO (Cu, ZnO and CdO) on the thermal expansion of the system $(50-X)Na_2O-50P_2O_5-xMO$, where $x=0, 5, 10, \dots, 25\%$ have been studied. The thermal expansion coefficient have been determined theoretically (Th) according to Makshima-Makemzi model (M-M) and experimentally measured (Exp.). The thermal expansion coefficient of the three groups are found to decrease as Na₂O is replaced by MO, which attributed to the crosslinking of the system arising in more compacted system. For the dilatometric curves both the characteristic temperature, glass transition temperature T_g and glass softening temperature T_d are determined and found to composition dependant due to the crosslinking.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (15) 02:30 : 03:10

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PHY - 23 EG DR. SAMIA NEGM samiadourgham@yahoo.com

ELECTRICAL AND OPTICAL PROPERTIES OF SOME TELLURITE GLASSES

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ABSTRACT

Five samples was prepared with the molar formula $[79.9 \text{ TeO}_2 + 0.1 \text{ Sm}_2\text{O}_3 + (20 - x) \text{ Na}_2\text{O} + x \text{ K}_2\text{O}]$ where $x = 6, 8, 10, 12$ and 16 mol%. The mixed alkali effect was studied for the present glass system using density, IR Spectra, DTA, DC conductivity, AC measurements [AC conductivity and dielectric constant] and the optical properties. X-Ray diffraction shows that all the present samples are in the glassy state. The electrical parameters such as the real (ϵ') and imaginary (ϵ'') dielectric constant and the loss factor ($\tan \delta$) were extract from these experiments and shows the mixed alkali effect. The optical measurement shows that allowed indirect transition occurs at the fundamental absorption edge. The band tail width of localized state was calculated. The optical energy gap have a minimum value at the alkali ratio $Y \sim 0.55$ and shows the mixed alkali effect as the activation energy do.

Physics and its applications

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286	PHY - 24	EG	PROF. NADIA MOHSEN	adel_khedr@yahoo.com

EFFECT OF ANNEALING ON THE ELECTRICAL AND OPTICAL PROPERTIES OF CU₅Ga₃₃TE₆₂ THIN FILM

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ABSTRACT

Thin film of Cu₅Ga₃₃Te₆₂ system has been prepared by using thermal evaporation technique with 45 nm thickness. The electrical conductivity assessment has been carried out on this film in the temperature range of 300 - 425 K. The film has been annealed at 323,348,373,398,423 and 453 K under vacuum for 3h. The temperature dependence of the electrical conductivity for all annealing temperatures has been recorded and discussed. The results were analyzed in order to establish the activation energy of each state. With the increase in the annealing temperature the film showed phase transition to the crystalline state. The optical properties of Cu₅Ga₃₃Te₆₂ system have been studied as a function of annealing temperature. The results showed that the optical transitions in the wavelength range (200-1100) nm are direct transitions where the values of E_g are decreased with increasing annealing temperature, i.e. the absorption edge shifted toward a higher wavelength or a lower energy. The optical constants k, n, ϵ_r and E_∞ of the film at different temperatures are influenced by the heat treatment.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (17) 02:30 : 03:10

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PHY - 25 EG DR. SAMIA NEGM samiadourgham@yahoo.com

DYNAMICAL MOMENT OF INERTIA, ALIGNMENT AND $\Delta I = 2$ ENERGY STAGGERING PROPERTIES IN ODD-MASS GOLD NUCLEI

M. Allam

ABSTRACT

The dynamical moment of inertia, alignment and Routhian of the negative sig- Nature deformed rotational bands in odd-mass gold nuclei $181; 183; 185\text{Au}$ have been Deduced from the excitation energies and the spins of the observed levels as a function of the rotational frequency. In framework of cranked shell model the calculation involves the subtraction of the angular momentum and energy of the collective rotations. Suitable moment of inertia references have been chosen. The $\Delta I = 2$ energy staggering or the $\Delta I = 4$ bifurcation is also investigated by using the finite difference approximation to the fourth derivative of the transition energies which include five consecutive transition energies.

Physics and its applications

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (18) 02:30 : 03:10

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PHY - 26 EG DR. TAMER EL-SAYED tamer_mmahmoud@hotmail.com

ABNORMALITIES IN VISUAL EVOKED POTENTIALS ASSOCIATED WITH CHRONIC ALCOHOL USES AND ABSTINENCE

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ABSTRACT

The present study aimed to evaluate the effect of alcohol consumption and abstinence on central nervous system. In order to study such effect, a pattern visual evoked potential (VEP) analysis on chronic alcoholic rats was performed. Twenty rats were injected intraperitoneal with ethyl alcohol (1.5 g/Kg) for six weeks. The rats showed abnormal VEP component results. In order to test the effect of abstinence period on N3 latency values, alcohol treated rats were divided in to two subgroups. Group I consisted of ten rats which had been abstinent for three weeks, and Group II consisted of ten rats which had been abstinent for four weeks. The mean N3 latency of Group I and Group II was 218 and 220 ms respectively; and when compared to normal controls the difference was statistically significant. Abnormal VEP in chronic alcohol treated rats suggests that they may be useful in the detection of early changes and in following up the progress of patients with such disorder.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (19) 02:30 : 03:10

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PHY - 27 EG DR. AMANY OMAR amany.omar73@yahoo.com

IR, DENSITY AND DTA STUDIES THE EFFECT OF REPLACING PB3O4 BY CUO IN PSEUDO-BINARY LI2B4O7-PB3O4 GLASS SYSTEM

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ABSTRACT

Effect of replacement Pb3O4 by CuO on structure and properties of pseudo-binary [75%] Li2B4O7-[25-x%]Pb3O4 glass system, where X=0,5,10,15,20 and 25% molCuO,have been investigated. IR spectra of the prepared glasses show that CuO goes into the network and play also a role as a glass modifier. The addition CuO decrease the formation of tetrahedral groups [BO4] and increasing the triangle one [BO3], led to increase the borate non bridging oxygen [NBO]. The observed increase in Tg with CuO reflect increase in bond strength, also the glass forming ability and stability decrease with increasing CuO reflects the reduction of the network rigidity and loosening of glassy structure. The density and molar volume was discussed in terms of the structural modifications that take place in glass matrix. The distance between Cu-Cu atoms and the Polaron radius have been carried for all samples.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (20) 02:30 : 03:10

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PHY - 28 EG DR. AHMED ELDIB ahmedeldeeb2003@yahoo.com

COMPUTER PROGRAM DESIGNED FOR RADIOTHERAPY DOSE CALCULATION.

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ABSTRACT

A graphical user interface program was designed to perform dose calculation of shaped beams. Mantle field is an example of shaped fields which is usually encountered in treatment of Hodgkin disease. The designed program allows dose calculation to be performed on personal computer rather than using the commercial treatment planning work stations. The program code was developed based on sector integration algorithm. The X-ray image of the patient is first displayed on screen and then the tumor is contoured. This process digitizes and stores the contour into an array of coordinate points. The outline of the tumor is then subdivided into a series of sectors. Tables of scatter contribution of different field sizes are stored in a table that was linked to the code. The program calculates the length of each sector. Then the code obtains the scatter contribution of each sector by utilizing the stored tables. The average scatter contribution of the whole shaped field is then computed and the total dose is determined. Several shaped beams have been Calculated by this program and compared to an existing commercial treatment planning system. The designed code showed good agreement with the commercial system and to measurement done in phantom.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (21) 02:30 : 03:10

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PHY - 33 EG MR. ALHOSEIN ABD ELNAEIM alhosein2009@yahoo.com

PHOTOELECTRICAL PROPERTIES OF $\text{In}_x(\text{Se}_{75}\text{Te}_{25})_{100-x}$ ($0 \leq x \leq 10$ AT.%) THIN FILMS

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ABSTRACT

Abstract This work studied the electrical and photoelectrical properties of $\text{In}_x(\text{Se}_{75}\text{Te}_{25})_{100-x}$ ($0 \leq x \leq 10$ at.%) amorphous chalcogenide films. The composition dependence of the steady state photocurrent at room temperature shows that, the photoconductivity increases while the photosensitivity decreases with the increase of In content. A study of photoconductivity of $\text{In}_x(\text{Se}_{75}\text{Te}_{25})_{100-x}$ at different levels of light intensity showed that, the photoconductivity increases exponentially with the increase of light intensity. Furthermore, the Photocurrent (I_{ph}) related to the light intensity (G) through the well known power law ($I_{ph} = Gr$), where the exponent r for $\text{In}_x(\text{Se}_{75}\text{Te}_{25})_{100-x}$ films has been found nearly 0.5 suggesting bimolecular recombination. The transient photoconductivity measurements show that, the lifetime of the carrier decreases with increasing the light intensity. This decrease suggests that the photoconductivity mechanism in our films was controlled by the transition trapping processes. The increase of In content leads to shifting of the photocurrent spectra to the lower energies (long wavelengths) i.e. a monotonic decrease in the band gap furthermore, a monotonic decrease of the free carrier life time of $\text{In}_x(\text{Se}_{75}\text{Te}_{25})_{100-x}$ thin films. The chemical-bond approach successfully applied to interpret the obtained results.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (22)

02:30 : 03:10

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PHY - 36

EG

ASSOC.PROF. MOHAMED EL-SAADAWY elsaadawy2000@yahoo.com

MAGNETIC AND ELECTRICAL PROPERTIES OF $\text{CO}(2-X)\text{MN}(X)$ W-TYPE HEXAGONAL FERRITES

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ABSTRACT

Polycrystalline samples of W-type hexagonal ferrite (Me-W, where Me = Co and Mn) have been prepared by the usual ceramic technique. Low temperature magnetic properties, curie temperatures, the potential barrier and d.c. resistivity of $\text{Co}_{2-x}\text{Mn}_x\text{BaFe}_{16}\text{O}_{27}$ hexagonal ferrites were studied as a function of Co concentrations. The results show that, saturation magnetization and Curie temperature (T_c) of the samples decrease with increase of Mn^{2+} ion substitution. This behavior can be explained on the basis that the value of the magnetic moment, μ , of Mn^{2+} ion is higher than that of Co^{2+} ion. The results of the electrical resistivity and potential barrier of the samples are attributed to the hopping conduction mechanism of electrons. The increase of the dielectric constant and the d.c. conductivity with rising temperature was explained by decreasing in the potential barrier . This effect helped the jumping electrons and holes at the B sites for orientation in the a.c. field direction leading to increase of dielectric polarization

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TUE : 23-03-2010	HALL[POSTER]	POSTER - SEC03 (23)	02:30 : 03:10
PHY - 37	EG	DR. MONA ALLAM	drmonaallam@hotmail.com

286

NATURE OF TRANSITION ENERGY STAGGERING PHENOMENON IN THE SUPER DEFORMED NUCLEAR ROTATIONAL BANDS

M.H.Ghoniem , M.Allam , Eman Saber

ABSTRACT

The influence of the finite differences approximations to higher order derivatives on the staggering properties in the nuclear super deformed (SD) rotational bands is studied. Four SD bands is proposed that may represent favorable cases for observation of the $\Delta I = 2$ staggering, namely: 149Gd (SD-1) and 194Hg (SD-1, SD-2, SD-3). The spin of the band head has been extracted by using an approach based on the Harris extension of the cranked model. For each band we represented the dynamical moment of inertia by a power series expansion in even powers of rotational frequency. Simulated search program was written to determine the expansion coefficients. To see the variations in the transition energies, we performed staggering parameter analysis based on subtracting from experimental energies a two-parameter collective rotational reference. The feature of the $\Delta I = 2$ staggering depends on the multipoint formulae used. For one-point formula, we noticed a regular oscillations in yrast SD band in 149Gd, while irregular kinks in SD bands in 194Hg. The two-point formula, provided us with information about the dynamical moment of inertia $J(2)$, the $J(2)$ decreases with increasing spins for A~150 and increases for A~190 mass regions. The three-point formula produces less numbers of oscillations than the four or five-point formulae. The five-point formula which contains five consecutive transition energies shows a $\Delta I = 2$ staggering. That is, the staggering effect is most sensitive and pronounced for the highest derivative.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (24) 02:30 : 03:10

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PHY - 39 EG DR. MOHAMMED EMAM mo.mo.emam@gmail.com

EARLY RECOGNITION OF LUNG'S AIR SACS WALL COLLAPSING

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Surgical Centre of Marie-Lannelongue Hospital, Le Plessis-Robinson, France.

ABSTRACT

The paper discusses the possibility of applying a non-linear analysis approach on air density distribution within lung airways tree at any level of branching . Computed Tomography (CT) source images of the lung are subjected to two phases of treatment in order to produce a fractal coefficient of the air density distribution. In the first phase, raw pixel values from source images, corresponding to all possible air densities, are processed by a software tool, developed in order to, construct a product image. This is done through Cascading Elimination of Unwanted Elements (CEUE): a preprocessing analysis step of the source image. It identifies values of air density within the airways tree, while eliminating all non-air-density values. Then, during the second phase, in an iterative manner, a process of Resolution Diminution Iterations (RDI) takes place. Every resolution reduction produces a new resultant histogram. A resultant histogram is composed of a number of peaks, each of which corresponding to a cluster of air densities. A curve is plotted for each resolution reduction versus the number of peaks counted at this particular resolution. It permits the calculation of the fractal dimension from the regression slope of log-log power law plot.

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TUE : 23-03-2010	HALL[POSTER]	POSTER - SEC03 (25)	02:30 : 03:10
PHY - 40	EG	DR. MOHAMMED EMAM	mo.mo.emam@gmail.com

286

CHARACTERIZATION OF LUNG'S EMPHYSEMA DISTRIBUTION: NUMERICAL ASSESSMENT OF DISEASE DEVELOPMENT

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ABSTRACT

Chronic Obstructive Pulmonary Disease (COPD) refers to a group of lung diseases that block airflow and make it increasingly difficult for you to breathe. Emphysema and chronic bronchitis are the two main conditions that make up COPD, but COPD can also refer to damage caused by chronic asthmatic bronchitis. Pulmonary emphysema is defined as a lung disease characterized by "abnormal enlargement of the air spaces distal to the terminal, non-respiratory bronchiole, accompanied by destructive changes of the alveolar walls". These lung parenchymal changes are pathognomonic for emphysema. Chronic bronchitis is a form of bronchitis characterized by excess production of sputum leading to a chronic cough and obstruction of air flow. In all cases, damage to your airways eventually interferes with the exchange of oxygen and carbon dioxide in your lungs. Habitual techniques of emphysema's diagnosis are based on indirect features, such as clinical examination; Pulmonary Function Tests (PFT) and subjective visual evaluation of CT scans. These tests are of limited value in assessing mild to moderate emphysema.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (26) 02:30 : 03:10

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PHY - 49 EG DR. AZZA NADY nady_azza@yahoo.com

ELECTRICAL AND MORPHOLOGICAL CHANGES OF ERYTHROCYTES OF JAUNDICED NEONATES FOLLOWED BY DIELECTRIC SPECTROSCOPY

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Lecturer

ABSTRACT

Neonatal jaundice, an extremely common occurrence among neonates in the first week of life, can represent a benign physiological process or be the harbinger of serious illness with associated severe neurotoxicity. In the present study, a group of hundred infants (84 patients, from various clinical subpopulations + 16 controls) were included. The morphological changes of RBG's membrane of jaundiced neonates and G-6-PD (glucose-6-phosphate dehydrogenase) deficient ones as well as that for neonates with Crigler Najjar (CN1) syndrome were evaluated. The quantification of the morphological shape changes revealed that G-6-PD deficient neonates had a significant increase in echinocytes as well as in the morphological index ($p < 0.01$), when compared with the data from healthy neonates or G-6-PD non-deficient ones. The dielectric properties of neonatal erythrocytes have been studied in the frequency range 20 Hz to 100 KHz. Results showed that a superposition of two Cole-Cole relaxation processes yielded an excellent fit. The change in the dielectric parameters for erythrocyte samples reflect changes occurring in blood due to neonatal hyperbilirubinemia and G-6-PD deficient. Thus the combined application of dielectric spectroscopy and scanning electron microscope can be used as an efficient manner for monitoring abnormalities in blood due to these pathological cases.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (1) 03:20 : 04:00

286

PHY - 43 EG DR. MOUKHTAR HASSAN moukhtar_hassan@yahoo.com

OPTICAL BEHAVIOR OF ND DOPED BOROCROMATE GLASSY SYSTEM

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ABSTRACT

Glassy system of composition $74 \text{ B}_2\text{O}_3-(25-x)\text{Li}_2\text{O}-x\text{Cr}_2\text{O}_3-\text{Nd}_2\text{O}_3$, Where $x=0, 0.1, 0.2, 0.3, 0.4, 0.5$ mol.%. Has been prepared by conventional melt quenching technique the density has been estimated and the molar volume was calculated. The obtained data reveal that, both density and molar volume are almost composition independent. Optical absorption spectra were recorded and the optical gap energy and the band tail width have been obtained. It was observed that, the band gap decreases with increasing Cr_2O_3 content, while as the band tail width follow opposite trend.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (2) 03:20 : 04:00

286

PHY - 46 EG ASSOC.PROF. SALAH EL-BADRY salehsalah40@yahoo.com

INFLUENCE OF PROCESSING PARAMETERS ON THE MAGNETIC PROPERTIES OF MN-ZN FERRITES

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ABSTRACT

Pure MnO₂, ZnO and Fe₂O₃ were used to prepare a Mn-Zn Ferrite sample of the nominal composition Mn_{0.64}Zn_{0.29}Fe_{2.07}O₄. The mixed oxides were milled for several times up to 40 hrs, using three-dimensional ball-milling machine. The powders of as-mixed, milled for 20 hrs, and milled for 40 hrs were examined by X-ray diffraction and Mossbauer Effect (ME) spectroscopy to assess any changes as a result of milling. The investigated powders were further mixed with PVA, granulated, cold pressed and sintered at different temperatures (1000, 1300 and 1400 °C) for 2 hrs and were then investigated also by XRD and ME. The magnetic properties of the investigated samples before and after sintering were characterized using VSM (at a field of 15 k Oe) and ME at room temperature. When the powder oxides were milled for 20 hrs, detectable diffusion reaction was observed where the centers of all XRD peaks of Fe₂O₃ and MnO₂ shifted to higher 2θ angles, suggesting that Zn⁺² cations had diffused through Fe⁺³ and/or Mn⁺⁴ lattices. Breadth of XRD peaks is also observed due to the refinement of the powders by milling. On the other hand, milling for 40 hrs resulted in the formation of spinal phase of (Zn, Fe), but MnO₂ was disappeared probably due to the formation of amorphous structure. Sintering at 1000, 1300, and 1400 °C resulted in the formation of different spinal (Mn-Zn) ferrites. It can be concluded that, the best conditions for obtaining a soft manganese zinc ferrite (single phase) are the milling of the powder oxides for 40 hrs and the sintering at 1300°C for two hrs.

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TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC04 (3)

03:20 : 04:00

286

PHY - 47

EG

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ELASTIC SCATTERING ANALYSIS OF ^{11}Be AND ^6He HALO NUCLEI FROM THE PROTON USING JLM EFFECTIVE NN INTERACTION

M Tammam , Atef Ismail , Z. M. M. Mahmoud

ABSTRACT

The present work is devoted to study the elastic scattering ^{11}Be and ^6He halo nuclei from the proton. The ^{11}Be is considered as a core (^{10}Be) surrounded by one halo neutron with separation energy $\epsilon_{1n}=0.5$ MeV, where ^6He is consists of a central part (^4He) with halo of two neutrons with a separation energy $\epsilon_{2n}=0.978$ MeV. The single folding model approach (SF) is used to reproduce the optical potential (OP) where many different forms of the nuclear density distributions for ^{11}Be and ^6He halo nuclei are used to be folded with the energy-and density dependent JLM effective NN interaction, The calculated OP then is used to calculate the differential cross sections for the studied reactions. Comparison with the experimental results is made.

Physics and its applications

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TUE : 23-03-2010

HALL[POSTER]

POSTER - SEC04 (4)

03:20 : 04:00

286

PHY - 48

EG

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ME SPECTRA AND ELECTRICAL TRANSPORT PROPERTIES OF PHOSPHATE GLASSES CONTAINING DIFFERENT TMI,S

s.m.salem

ABSTRACT

The change in the physical and structural properties as a function of the atomic number of the transition metal ions (TMI,s) of some sodium phosphate glasses have been studied. The ME analysis showed that iron ions appeared in two different oxidation states, namely, Fe³⁺ and Fe²⁺. Moreover, Fe³⁺ ions increases as the atomic number of the TMI,s increase. The ac conductivity showed gradual decrease as the atomic number of TMI,s increased. On the other hand, the activation energy exhibits a linear increase as the atomic number increased.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (5) 03:20 : 04:00

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PHY - 11 EG DR. SAMIA NEGM samiadourgham@yahoo.com

CORROSION, MECHANICAL AND RADIATION SHIELD PROPERTIES OF BISMUTH-LEAD ALLOYS FOR COOLED FAST NUCLEAR REACTOR

S. S. NEGM , Dr. A. A. EI-ZAMARAWY , Prof. M. M. EL-BAHAY , Prof. A. A. BAHGAT

ABSTRACT

Melting point, specific heat, internal friction, elastic modules and corrosion of Bi₅₀Pb_{50-x}Cd_x where x= 2, 4, 6, 8 and 10 rapidly solidify alloys have been studied. The near surface materials have been characterized by microhardness together with the wetting characteristics on CuZn30 substrate as a function of time. A collimated beam of γ rays emitted from Eu-152 source has been used as a source of gamma rays to calculate linear attenuation coefficient of γ ray in these Bi alloys.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (6) 03:20 : 04:00

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PHY - 50 EG ASSOC.PROF. SAYED SALEM sayedmsalem1@yahoo.com

EFFECT OF Mn^{2+} IONS ON THE AC ELECTRICAL PROPERTIES OF SOME IRON DOPED PHOSPHATE GLASSES

ABSTRACT

Oxide glasses doped with transition metal ions become now of high interest because of their variant applications in both science and technology. However, some iron doped phosphate glasses were prepared according the following molecular formula: $(65-x)P_2O_5 \cdot 20 Na_2O \cdot 15Fe_2O_3 \cdot xMnO_2$, Where $x= 0, 2.5, 5, 7.5, 10, 12.5, 15$. A constant acceleration ME spectrometer attached with 20 mCi ^{57}Co radioactive source was used to characterize the state of iron in these glasses at room temperature . The ac electrical transport properties were also measured up to 320 oC. It was found that the ac conductivity increased as the Mn^{2+} cations increased gradually, while the electrical activation energy decreased. All the obtained results were analyzed on the bases of the introduced transition metal ions.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (7)

03:20 : 04:00

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PHY - 51 EG PROF. AHMED GAMAL EL DEEN MOSTAFA draahmedgamal@yahoo.com

CHARACTERIZATION OF HYDROXYAPATITE DOPED WITH FE (III)

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ABSTRACT

Nowadays, calcium hydroxyapatite (HAP) appeared of high interest, since it represents the compatible inorganic component of the natural bones and it can directly bond to bone in vivo. It can be need widely used as coating material on bone implants due to its good osteoconductivity and osteoinductivity. Ions doped HAP have been used as catalyst or absorbents since the ion exchange method has introduced new properties in HAP which may applied to different applications However, in this article, Fe(III) doped hydroxyapatite (FeHAP) was prepared by wet chemical method. By comparison with pure HAP, the colour of FeHAP changed from white to brown. The intensity of the colour increased with the increases of iron content. XRD patterns showed that all samples were single phased HAP while the FTIR spectra revealed that all samples possesses the characteristic phosphate and hydroxyl adsorption bands of HAP. Mossbauer spectroscopy (ME) showed the paramagnetic characteristic of FeHAP particles. It appeared also that iron ions occupy two different sits octa-and tetra-hedral states .

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (8)

03:20 : 04:00

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PHY - 52

EG

PROF. AHMED GAMAL EL DEEN MOSTAFA draahmedgamal@yahoo.com

STRUCTURAL AND PHYSICAL PROPERTIES OF THE NANO-CRYSTALLINE AL-SUBSTITUTED CR-CU FERRITE

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ABSTRACT

Nanoparticles of the $\text{CuAl}_x\text{Cr}_{0.8-x}\text{Fe}_{1.2}\text{O}_4$ system (where $x = 0.0, 0.2, 0.4, 0.6, \text{ and } 0.8$) were prepared by the chemical co-precipitation method. The structure of the samples was characterized by using, X-ray diffraction, VSM, Infrared and Mössbauer patterns and particle size distributions. The results indicated the ultrafine nature of the particles, where the crystallite size ranged from 16 to 31 nm and the average particle size from 13 to 26 nm. The lattice parameters were dependent on the substitution factor x , where the oxygen parameter u was higher than the standard value 0.375 and independent on x . In addition to six absorption bands, a triple band attributed to the retained water in the samples were observed in the infrared spectra. The absorption bands indicated the existence of Fe Ions in the sample lattices. The Mössbauer and VSM patterns indicated the presence of small magnetic field in the samples, where the saturation magnetization, coercivity, hyperfine interaction parameters, cation distributions and magnetization were dependent on x .

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TUE : 23-03-2010 HALL[POSTER] POSTER - SECO4 (9) 03:20 : 04:00

286

PHY - 54 EG DR. SHAABAN SALEM shaabansalem@gmail.com

THERMAL CHARACTERISTICS, FT-IR SPECTRA, ELECTRICAL CONDUCTIVITY AND DIELECTRIC PROPERTIES OF LI₂O-GeO₂-ZnO-Bi₂O₃-Fe₂O₃ GLASSES

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ABSTRACT

(10Li₂O-20GeO₂-30ZnO-(40-x)Bi₂O₃-xFe₂O₃ where x = 0.0, 3, 6 and 9 mol%) glasses were prepared. A number of studies, viz. density, differential thermal analysis, FT-IR spectra, DC and AC conductivities and dielectric properties (constant ϵ' , loss $\tan \delta$, AC conductivity, σ_{ac} , over a wide range of frequency and temperature), were carried out as a function of iron ions concentration. The analysis of the results indicate that, the density and molar volume decrease with increasing iron content which may be due to some structural changes of the glass matrix. The glass transition temperature T_g and the onset of crystallization temperature T_x increase with the variation of concentration of Fe₂O₃ referred to the growth in the network connectivity in this concentration range, while glass-forming ability parameter T decrease with increase Fe₂O₃ content, indicating an increase in the concentration of iron ions that take part in the network-modifying positions. The FT-IR spectra evidenced that the main structural units are BiO₃ and BiO₆. With increasing iron content, FeO₄ structural units can be observed but the presence of FeO₆ structural units cannot be included. The temperature dependence of DC and AC conductivities at different frequencies was analyzed using Mott's small polaron hopping model and the high temperature activation energies have been estimated and discussed. The dielectric constant and dielectric loss increased with increasing temperature and Fe₂O₃ content.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (10) 03:20 : 04:00

286

PHY - 55 EG DR. SHAABAN SALEM shaabansalem@gmail.com

STUDIES ON THE INFLUENCE OF CUO ON DC AND AC CONDUCTIVITY AND DIELECTRIC PROPERTIES OF LI₂O–PBO –B₂O₃–SB₂O₅ GLASSES

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ABSTRACT

15Li₂O–45B₂O₃–30PbO–(10- x)Sb₂O₅– xCuO (where x = 0, 2.5, 5 and 7.5 mol%) glasses, were prepared. X-ray diffraction (XRD) confirms the amorphous nature of these glasses. It was observed that, the density (d) decreases gradually with the increase of copper oxide content in such glasses. This may be due to the effect of the polarizing power strength (which is a measure of ratio of the cation valance to its diameter). The dc conductivity decreases while the activation energy increases with the increase of CuO content, and it appeared to be electronic and ionic depends strongly upon the average distance, R, between copper ions. Analysis of the electrical properties has been made in the light of small polaron hopping model. The parameters obtained from the fits of the experimental data to this model are reasonable and consistent with the glass composition. The conduction mechanism is attributed to non-adiabatic hopping of small polaron. Dielectric properties (constant ϵ , loss $\tan \delta$, ac conductivity, σ_{ac} , over a range of frequency and temperature and frequency exponent s) of these glasses have been studied. The ac conductivity results suggests that the correlated barrier hopping (CBH) is dominant in ac conductivity.

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TUE : 23-03-2010

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03:20 : 04:00

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PHY - 56

EG

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INVESTIGATION OF DC AND AC CONDUCTIVITY AND DIELECTRIC PROPERTIES OF BI₂O₃–GEO₂– PBO–MOO₃ GLASSES

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ABSTRACT

Glasses having compositions 40Bi₂O₃–20GeO₂–(40-x)PbO–xMoO₃ (where x = 3, 6, 9, 12 and 15 mol%) were prepared by normal melt quenching technique. The density (d) decreases gradually with the increase of the MoO₃ content in such glasses. This may be due to the lower molecular weight MoO₃ is substituted by a higher molecular weight PbO. The dc conductivity decreases while the activation energy increases with the increase of the MoO₃ content. The dc conductivity in the present glasses is electronic depends strongly upon the average distance, R, between the Mo ions. Analysis of the electrical properties has been made in the light of small polaron hopping model. The parameters obtained from the fits of the experimental data to this model are reasonable and consistent with glass composition. The conduction is attributed to non-adiabatic hopping of small polaron. Dielectric properties (constant ϵ , loss $\tan \delta$, ac conductivity, σ_{ac} , over a range of frequency 0.12-100KHz and temperature 325-600K and frequency exponent s) of these glasses have been studied. The ac conductivity results suggest that the correlated barrier hopping (CBH) is dominant in ac conductivity.

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TUE : 23-03-2010

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03:20 : 04:00

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PHY - 58

EG

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STRUCTURAL AND DIELECTRIC PROPERTIES OF LI₂O-ZNO-BAO-B₂O₃-CUO GLASSES

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ABSTRACT

DTA, AC conductivities, dielectric properties (constant ϵ' , loss $\tan \delta$, AC conductivity, σ_{ac} , over a wide range of frequency and temperature), and FT-IR absorption measurements have been performed for (15Li₂O-30ZnO-10BaO-(45-x)B₂O₃-xCuO where x = 3, 6, 9, 12 and 15mol%) glass system. The mode in which the addition of the copper ions influences the structure of Li₂O-ZnO-BaO-B₂O₃ glass matrix was analyzed. The analysis of the results indicate that, the density increase with increasing copper content, glass transition temperature T_g and the onset of crystallization temperature T_x increase with the variation of concentration of CuO referred to the growth in the network connectivity in this concentration range, while glass-forming ability parameter T decrease with increase CuO content. The FT-IR spectra showed the presence of some bands that are assigned to vibrations of B-O bonds from BO₃ and BO₄ units. The data obtained by these measurements reveal the structural changes in the Li₂O-ZnO-BaO-B₂O₃ glass matrix by controlled CuO. Dielectric properties (constant ϵ' , loss $\tan \delta$, ac conductivity, σ_{ac} , over a range of frequency and temperature) of these glasses have been studied. The dielectric constant, ac conductivity and dielectric loss increased with increasing temperature and CuO content.

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TUE : 23-03-2010 HALL[POSTER] POSTER - SEC04 (13) 03:20 : 04:00

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PHY - 41 EG PROF. SALAH HASHEM SALAH drsalah46azhar@hotmail.com

BASALT ROCK AS TEMPERATURE REDUCER IN CEMENT MANUFACTURE

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ABSTRACT

Cement clinker raw mixture was prepared according to the composition: 85 wt% limestone + 12 wt% basalt rock + 3 wt% Fe₂O₃. The mixture was divided into five portions. Each portion was put in a platinum crucible and introduced into a furnace at temperature 1250, 1300, 1350, 1400 and 1450 °C respectively. The produced clinkers were ground and measured using X-ray diffraction, Mössbauer spectroscopy and chemical analysis for the free lime content determination in order to estimate the quality of the produced clinker. The data exhibited that the 1300 °C is quite enough to produce good Portland cement clinker not 1450 °C. This result means that using basalt rock in cement industry saves about 150 °C when it replaces clay in cement manufacture which is economically good.

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WED : 24-03-2010 HALL[A] ORAL - SEC16 (2) 09:30 : 09:45

286

PHY - 10 EG PROF. KAMILIA SEDEEK kamiliasedeek@gawab.com

MAGNETIC, ELECTRICAL AND OPTICAL PROPERTIES OF THE DILUTED MAGNETIC SEMICONDUCTORS $\text{InTe}_{1-x}(\text{Se}_{1-x})\text{Fe}_x(\text{Co}_x)$

Prof. K. El-Sayed , Prof. K. Sedeek , Prof. Z.K. Heiba , Dr. H.H. Hantour

ABSTRACT

The binary InSe and InTe were detected as diamagnetic materials. Transformation of the diamagnetic to the ferromagnetic character as the 3d elements (Fe,Co) were incorporated was confirmed. High Curie temperatures of 783K and 870K were detected respectively for $\text{InTe}_{0.9}\text{Fe}_{0.1}$ and $\text{InSe}_{0.9}\text{Fe}_{0.1}$. A property that allowed these III-VI systems to be used in spintronic devices operated at the ambient temperatures. The $\text{InTe}_{0.9}(\text{Se}_{0.9})\text{Co}_{0.1}$ systems indicates that more than one magnetic transition takes place with two different Neel temperatures. The data obtained from DC conductivity for InTe system argue hopping conduction between or inside the impurity bands situated in the forbidden gap. The formation of the second phase in addition to the presence of the stacking faults and the strained lattice may enhance impurity conduction. At $298 \leq T \leq 413$, the measured conductivity (σ) increases with temperature. Over this range, the $\text{InTe}_{0.9}\text{Fe}_{0.1}$ has a ferromagnetic phase of high spin ordered electrons. At $T > 413\text{K}$, σ decreases since the ordered spin electrons started to decrease due to the randomness of ions as approaching the blocking temperature (TB). For InSe system, Correlation with the ferromagnetic and antiferromagnetic character of $\text{InSe}_{0.9}\text{Fe}_{0.1}$ and $\text{InSe}_{0.9}\text{Co}_{0.1}$ was considered in discussing the conductivity data. The data obtained from optical properties indicate that the systems under study have optical band gap (E_g) values smaller than other published data. The presence of band tails was attributed to intrinsic defects such as grain boundaries vacancies, stacking faults.

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WED : 24-03-2010

HALL[A]

ORAL - SEC16 (3)

09:45 : 10:00

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PHY - 13

EG

PROF. ELBIALY SHAISHA

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STRUCTURE, ELECTRICAL AND THERMAL PROPERTIES OF SOME HEAVY METAL OXIDE GLASSES FREE AND DOPED WITH YB₂O₃ AND ER₂O₃ RARE EARTH

, Mahmoud El-Hady

ABSTRACT

In the present work a glass system of mole composition [50 B₂O₃ +30Bi₂O₃ +20K₂O] and [50 B₂O₃ +30Bi₂O₃ +18K₂O + (2-x) Yb₂O₃+xEr₂O₃], where x=0, 0.5, 1, 1.5 and 2 mol% have been prepared using conventional quenching technique. The starting used materials of high purity (99.995%) were mixed together and melted in porcelain crucibles at 1000 oC in an electrically-heated furnace in the air atmosphere. The glassy nature of the samples was checked by XRD and DTA. The density of the glassy samples were measured by Archimedes method with carbon tetrachloride as an immersion medium. The results of density measurements showed an increase of its values with adding Er₂O₃ up to 1mol% and then decreased. DTA parameters (T_g, T₀, T_p, Δ T) were calculated. The doping of Er₂O₃ and Yb₂O₃ are significantly affecting the thermal properties of the glass. The temperature dependence of the DC conductivity was measured by means of two- probe method and the results showed two mechanisms of conduction and activation energies have been determined in the high temperature range. The conductivity was found to decrease and the activation energy increase with increasing Er₂O₃ content up to 1 mol%. The results were discussed in terms of the theories of the charge carriers and conduction mechanisms.

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WED : 24-03-2010 HALL[A] ORAL - SEC16 (4) 10:00 : 10:15

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PHY - 16 EG PROF. IBRAHIM SHALTOUT mizo_elbially@hotmail.com

ER³⁺ AND YB³⁺ DOPING EFFECTS ON THE OPTICAL AND STRUCTURAL PROPERTIES OF [B₂O₃ - Bi₂O₃ -K₂O] GLASSES

I.Shaltout , E..E.Shaisha

ABSTRACT

Er³⁺ and Yb³⁺ doping effects on the optical and structural properties of [B₂O₃ - Bi₂O₃ -K₂O] glasses I.Shaltout M.M.El Hady and E..E.Shaisha Department of Physics, Faculty of Science, Al Azhar University, Nasr City 11884,Cairo, Egypt Absorption and reflection spectra as well as IR spectra of glass system of the composition [50 B₂O₃ +30Bi₂O₃ +20K₂O] and [50 B₂O₃ +30Bi₂O₃ +18K₂O % + (2-x) Yb₂O₃+xEr₂O₃], mol%, where x=0, 0.5, 1, 1.5 and 2 mol% , have been measured and discussed in the present work. Optical band gap E_{opt} was found between 1.9 and 2.9 eV and band tails width Er were found in the range 0.16 to 0.95eV. Indirect allowed transitions have been adopted as the absorption mechanism and E_{opt} was strongly increasing with the increase of Er₂O₃ content up to 1mol% and then decreases. Er was found maximum and E_{opt} was minimum for the sample singly doped with 2 mol% of Yb₂O₃ (free of Er₂O₃). Absorption processes of the rare earth ions, Er³⁺ and Yb³⁺ , have been observed at ~ 487,523, 550, 652, 799, and 977 nm and were assigned to the Er³⁺ ions 4F_{7/2}, 2H_{11/2}, 4S_{3/2}, 4F_{9/2}, 4I_{9/2}, 4I_{11/2} transitions from the 4I_{15/2} ground state, respectively, and to Yb³⁺ ions 2F_{7/2}→2F_{5/2} transitions as well. Assignments of the IR spectra have been discussed with the help of Gaussian deconvolution. Theoretical calculations results showed the presence of BO₃³⁻, B₂O₅⁴⁻, B₃O₇⁵⁻, B₃O₆³⁻ species, the structural units of the planer configuration of B₂O₅⁴⁻, cyclic B₃O₆³⁻ and BO₃ triangles. The structural units of cyclic B₃O₆³⁻ anions and the composition dependence showed significant effe

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WED : 24-03-2010 HALL[A] ORAL - SEC16 (5) 10:15 : 10:30

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PHY - 53 EG PROF. AHMED MAHOUD ahmed_youseef@yahoo.com

PLASMA ARC DISCHARGE AS A NEW METAL WORKING METHOD

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ABSTRACT

The represented work is devoted for description of the basic parameters affecting the production of plasma arc discharges .the application of arc plasmatron characteristic features are presented, and accordingly different constructions are documented. The new and developed classification of different constructions of plasma arc discharges are introduced. The represented work explain the capability of using a develop construction of such plasmatron as anew metal working method

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WED : 24-03-2010 HALL[A] ORAL - SEC16 (6) 10:30 : 10:45

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PHY - 29 EG DR. AHMED ELDIB ahmedeldeeb2003@yahoo.com

MONTE CARLO AND DOSIMETRIC MEASUREMENT OF MODULATED ELECTRON RADIOTHERAPY

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Fox Chase Cancer center -USA

ABSTRACT

Modulated electron radiation therapy (MERT) utilizes multiple beams of different energies which are intensity modulated to deliver optimized dose distribution. This technique is a promising modality and could be an aid for a big majority of patients either to treat or improve their quality of life. In the present work, the investigation of the feasibility of a prototype electron multi-leaf collimator (eMLC) for MERT was performed. Thus the general characteristics of the prototype and its adequacy for fixed-beam therapy were studied. In order to insure the accuracy of dose calculation, accurate modeling of detailed geometry of the eMLC in addition to other components in the accelerator treatment head was done. The eMLC was accurately simulated by Monte Carlo approach. Dose calculation for the inverse planning system was also verified. An inhouse Monte Carlo based treatment planning system was used to generate MERT treatment plans. The plans were optimized based on 3D computerized tomography images. The obtained results showed that the prototype eMLC mounted on the treatment head can provide adequate beam collimation for the MERT. The good agreement of measurement and simulation results indicated that Monte Carlo simulation is capable of accurately modeling the electron beam delivered by the eMLC.

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WED : 24-03-2010 HALL[A] ORAL - SEC21 (2) 11:30 : 11:45

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PHY - 30 EG DR. FATMA MAHROUS fatma.mahrous@gmail.com

ELECTRONIC STATES AND SPECTROSCOPIC PROPERTIES OF TIN (II) MOLECULES

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ABSTRACT

Electronic structure and spectroscopy of Tin (II) molecules, SnX_2 , $\text{X} = \text{F}, \text{Cl}, \text{Br}, \text{I}$ have been investigated by performing Hartree-Fock, Coupled-Cluster (CC), Density Functional Theory (DFT), Many-Body Perturbation Theory (MP2) and Configuration-Interaction (CI) methods. In this article, Potential Energy Curves (PECs) of the ground state of each molecule, the total energies, dipole moments, and Electric Field Gradient (EFG) are computed using GAMESS (General Atomic and Molecular Electronic Structure Systems) code. We investigated the influence of relativity on the total energies, dipole moments, and electric field gradient of SnX_2 molecules. Moreover, excited states of multiplicity ($S = 1, 3$) and their dipole moments and lifetimes are also calculated.

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WED : 24-03-2010 HALL[A] ORAL - SEC21 (3) 11:45 : 12:00

286

PHY - 34 EG DR. KAMAL ALY kamalaly2001@gmail.com

OPTICAL BAND GAP AND REFRACTIVE INDEX DISPERSION PARAMETERS OF IN-SE-TE AMORPHOUS FILMS

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ABSTRACT

Amorphous $\text{In}_x\text{Se}_{75}\text{Te}_{25-x}$ thin films with ($0 \leq x \leq 10$ at. %) were deposited onto glass substrates by using thermal evaporation method. The transmission spectra $T(\lambda)$ of the films at normal incidence were measured in the wavelength range 400-2500 nm. A straightforward analysis proposed by Swanepoel, based on the use of the maxima and minima of the interference fringes has been used to drive the film thickness, d , the complex index of refraction, n , and the extinction coefficient, k . The dispersion of the refractive index is discussed in terms of the single-oscillator Wemple and DiDomenico model (WDD). Increasing In content is found to affect the refractive index and the extinction coefficient of the $\text{In}_x\text{Se}_{75}\text{Te}_{25-x}$ films. With increasing In content the optical band gap decreases while the refractive index increases. The optical absorption is due to allowed non-direct transition. The chemical bond approach has been applied successfully to interpret the increase of the optical gap with increasing In content.

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WED : 24-03-2010 HALL[A] ORAL - SEC21 (4) 12:00 : 12:15

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PHY - 35 EG PROF. OSAMA MOHAMED HEMEDA omhemeda@yahoo.co.uk

EFFECT OF TRANSITION IONS SUBSTITUTION ON THE PHYSICAL PROPERTIES OF DY₃ FE₅O₁₂ GARNET FERRITE

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ABSTRACT

Polycrystalline garnet ferrites Dy₃-xNi_xFe₅O₁₂ where (x=0.0, 0.1, 0.2, 0.3, 0.4, and 0.5) have been prepared by the standard ceramic technique and their crystalline structure were identified by X-ray diffraction and IR spectroscopy. The differential thermal analysis (DTA) reveals two peaks. It is observed that an endothermic peak between 587 and 498 K for all samples which is due to the magnetic phase change from ferrimagnetic to paramagnetic state. The exothermic peak at about 700K may be attributed to the crystallization of Dy₃-xNi_xFe₅O₁₂ with garnet structure. DC electrical resistivity, thermoelectric power, charge carrier concentration and charge carrier mobility have been studied at different temperatures: It was found that the DC electrical conductivity increases linearly with increasing temperature ensuring the semiconducting nature of samples. The values of the thermoelectric power were negative for samples of 0.0 < x < 0.4 indicating that the majority of the charge carrier are electrons in these samples while it were positive for sample of x = 0.5 at room temperature, and negative at high temperature. Using the values of the DC electrical conductivity and thermoelectric power, the values of the charge carrier concentration and the charge carrier mobility were calculated. Finally thermal properties have been studied.

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ORAL - SEC21 (5)

12:15 : 12:30

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PHY - 38

EG

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POSITRON ANNIHILATION LIFETIME SPECTROSCOPY AND TRANSPORT PROPERTIES OF NANO-POROUS RF AEROGEL COMPOSITE WITH NANO PARTICLES OF COFE₂O₄

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ABSTRACT

Series of resorcinol formaldehyde (RF) aerogel samples were prepared by sol-gel method at different concentration of Na₂CO₃ as catalyst (0.02%wt, 0.025%wt, 0.03%wt, and 0.04%wt). Another series of RF aerogel composite with nano particles of cobalt ferrite, CoFe₂O₄ were prepared by sol-gel and precipitation method respectively. Size of the nano pores were determined by Positron Annihilation Lifetime Spectroscopy (PALS). DC conductivity, σ_{DC} , was measured by two probe method, while AC conductivity, σ_{AC} , dielectric constant ϵ' , and loss tangent $\tan\delta$ were measured at room temperature in the frequency range 50-5MHz using RLC bridge. Two types of pore size were determined for each sample the first R1 ranges from 0.19 to 0.25 nm, and the second R2 ranges from 0.32 to 0.45 nm. For pure RF aerogel ϵ' decreases with increasing frequency and increases with increase of CoFe₂O₄ nano particle concentration.

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WED : 24-03-2010

HALL[A]

ORAL - SEC21 (6)

12:30 : 12:45

286

PHY - 44

EG

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STUDY OF THE NATURE OF RADIATION EMITTED FROM MOBILE PHONE

M.W.Eissa

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ABSTRACT

The emitted radiation from the mobile phone cells were measured using low background gamma spectroscopic system(multichannel analyzer attached to hyper pure germanium crystal) The mobile phone radiations at different states (sending and receiving calls, and also without calling i.e. during only)were studied using different line of network systems (Mobinil,Vodafone and Etsalat). The radiation from different mobile type were measured during ring using Vodafone line. The results prove that the mobile phones emit electro magnetic radiation in the form of bands These bands have energies range from(66.6-2250KeV) i.e.the emitted radiation has energies within the range of X-ray and ionising radiation energies. The energies and the intensity of these radiation depend on (network,type of mobile,receive ring ,send ringand receive call or send call).These study demonstrate the hazards resulting from mobile phone use.

Physics and its applications

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WED : 24-03-2010 HALL[A] ORAL - SEC21 (7) 12:45 : 01:00

286

PHY - 57 EG PROF. AHMED MAHOUD ahmed_youseef@yahoo.com

ON THE STUDY OF PLASMA DISTURBATIVE INSTABILITY ON TOKAMAK

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ABSTRACT

Some experiments were carried out under ohmic heating condition to investigate temporal and radial distributions in Tokamak plasma during disruption of plasma column. The experiment was performed in hydrogen plasma with magnetic field of 19 KG, plasma current of 39 KA and voltage of 8 V. The plasma parameters have been measured and studied as a function of Z_{eff} , energy and life time. The analyses are based on the assumption that an electric field is induced, at the time of reconnection of field lines, which accelerates charged particles and cause the appearance of tails on the distribution function of plasma components.

Physics and its applications

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WED : 24-03-2010 HALL[A] ORAL - SEC21 (8) 01:00 : 01:15

286

PHY - 32 EG MR. KARAM ADLY karam_adly2002@yahoo.com

EFFECTS OF UV-IRRADIATION ON MECHANICAL AND ELECTRICAL PROPERTIES OF POLY (VINYL ACETATE) / POLY (METHYL METHACRYALATE) (PVAC/PMMA) BLENDS.

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ABSTRACT

Poly (vinyl acetate) (PVAc) – Poly (methyl methacryalate) (PMMA) blends of different composition have been prepared by solution casting technique. The miscibility of the blends was studied using Differential Scanning Calorimetry (DSC). The permittivity (ϵ') and dielectric loss (ϵ'') have been measured at room temperature over the frequency range (104Hz–106MHz). The effect of blend ratio on ac conductivity has been investigated. It was found that both ϵ' and ϵ'' decrease with the increase of frequency and increasing with temperature. The effect of blend ratio and UV-irradiation on the mechanical properties such as tensile strength, elongation at break, yield point, Strain hardening, stress-strain behavior and hardness has been investigated.

Physics and its applications

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WED : 24-03-2010

HALL[A]

ORAL - SEC21 (9)

01:15 : 01:30

286

PHY - 45

EG

DR. MAHMOUD TAMMAM

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CONTRIBUTION OF ROPER RESONANCE TO THE STRUCTURE FUNCTIONS FOR D (E, $\pi^0 e'$)NP REACTION

Mahmoud Tammam

ABSTRACT

The well known spectator model is used to study the contribution of P11(1440) (Roper) resonance to the structure functions for the neutral pion electroproduction from the deuteron. The amplitude for the elementary reaction $\gamma^* N \rightarrow \pi N$ is taken from MAID2003 model. The effect of the final state interaction for the subsystem NN and πN are included. Two values for the four momentum transferred Q^2 are used. A significant effect of the Roper resonance on the structure functions is found.

Chemistry and its applications

Chemistry and its applications

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TUE : 23-03-2010 HALL[B] ORAL - SEC02 (2) 09:30 : 09:45

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CHEM - 35 EG DR. ABEER ELSHERBINY abeer.elsherbiny@yahoo.de

CATALYTIC ACTIVITY OF AZO DYE BASED ON NEW METAL-ORGANIC FRAMEWORK COMPOUNDS

Dr. Abeer Salah Eldeen Elsherbiny , Prof. Dr. Safaa El-Din Ataiw , Dr. Ahmed Badreldin

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Professor of Physical and Inorganic Chemistry, Faculty of Science, Tanta University

Lecturer of Inorganic Chemistry, Faculty of Science, Tanta University

ABSTRACT

Reactions of $\text{Ph}_3\text{SnCl}/\text{K}[\text{Cu}(\text{CN})_2]$ with the bipodal nitrogen bases (L); pyrazine (pyz), methylpyrazine (mepyz), 4,4'-bipyridine (bpy), trans-1,2-bis(4-pyridyl)ethene (tbpe) and 1,2-bis(4-pyridyl)ethane (bpe) afford the new metal-organic frameworks (MOFs) of the general composition $[\text{Ph}_3\text{SnCu}(\text{CN})_2\text{L}]$, 1-5. The products were characterized by elemental analysis, X-ray powder diffraction, thermogravimetric analysis and IR, mass, NMR, UV-visible, and emission spectra. These compounds are strong fluorescent in the solid state. These metal-organic frameworks were found to have catalytic activity for the degradation of azo dyes. The kinetics of oxidative degradation of Metanil Yellow (as example for azo dye) with H_2O_2 in the presence of product 4 (as a catalyst) has been investigated. The rate of degradation enhanced with increasing the H_2O_2 , catalyst concentration and temperature. It was decreased with the increase the initial dye concentration.

Chemistry and its applications

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TUE : 23-03-2010 HALL[B] ORAL - SEC02 (3) 09:45 : 10:00

286

CHEM - 41 LY PROF. MOHAMED EL-HAMOULY profelhamouly@yahoo.com

SOME CHEMICAL CHARACTERATION OF TUBROUK CITY (LIBYA) COAST SEDIMENT

Hamad M. I. Hasan

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ABSTRACT

The concentrations of organic matter , total phosphorus and some heavy metals (Fe, Zn, Co, Cd, Pb, and Mn) for some sediment samples collected from different areas on Tobrouk city (Libya) coast were determined . The concentration of heavy metals are within the ranges of : (753.27 – 2354.52), (7.5 – 87.32), (5 – 12), (0.06 – 0.91), (36.04 – 133.65) and (0.291 – 9.74 my/g) for Fe, Zn, Co, Cd, Pb, and Mn respectively , while the contents of total phosphorus (Tp) and organic matter were fluctuated in the ranges of (4.65 – 13.95 mg/kg), and (2.08 – 4.78%), respectively . The data obtained that , the high levels of studied parameters were found at areas which received different types of pollutants .

Chemistry and its applications

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TUE : 23-03-2010 HALL[B] ORAL - SEC02 (4) 10:00 : 10:15

286

CHEM - 42 LY PROF. MOHAMED EL-HAMOULY profelhamouly@yahoo.com

BIOCHEMICAL INVESTIGATION OF REDUCING POWER OF SOME PLANTS RELATIVE TO ASCORBIC AND/OR TANNIC ACIDS

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Mahmoud M.A.El-Hamouly

Dept.of Pharmacognosy, Faculties of Pharmacy, Al-Azhar , Nasr City,Cairo, Egypt

Omar Al-Mukhtar, Libya, Universities

ABSTRACT

Plants everywhere produce various metabolites, start from glucose. A lot of those metabolites have anti-oxidant activities, which face a lot of researches worldwide due to their biological importance. Ascorbic acid, is known as a natural anti-oxidant standard. Also, Phenolics including tanninic acid have strong reducing power, through proton donation. The relative reducing power of some plants relative to Ascorbic and tannic acids were tested. Also, total phenolic contents of plant samples under investigation, were determined. Some plants collected from Libya were investigated including: Rosemary (leaves and flowers from Al-Baidaa and Musrata, December samples), Artemisia herba alba overground herb and roots, Arbutus pavari (leaves, fruits and flowers), Urtica dioica(leaves, stems, roots, flowers and/or fruits), Myoporum acuminatum(leaves, December), Olea europoea var.oleaster(leaves and fruits of cultivated and four wild samples, October), Pinus species(leaves, December), Punica granatum fruit rend, and many others.

Chemistry and its applications

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TUE : 23-03-2010 HALL[B] ORAL - SEC02 (5) 10:15 : 10:30

286

CHEM - 47 LY PROF. MOHAMED EL-HAMOULY profelhamouly@yahoo.com

DIRECT ALCOHOLIC EXTRACTS OF SOME PLANT DRUGS AND THEIR ANTIMICROBIAL ACTIVITIES

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Departments of Chemistry

Microbiology

Internal Medicine

ABSTRACT

Direct alcoholic extracts of some plants including *Artemisia herba alba* L. herb and its volatile oil, *Urtica dioica* leaves, *Urtica urens* leaves cultivated olive leaves, two plants of wild olive leaves collected from two different areas, *Myoporum acuminatum* R.Br. leaves, green tea leaves and Lepton black tea leaves was done. Antimicrobial activities of their direct alcoholic extracts were done and showed that *Artemisia herba alba* herb and oil, green and black tea are the most antifungal activity. Most of the plants showed antimicrobial activities.

Chemistry and its applications

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TUE : 23-03-2010

HALL[B]

ORAL - SEC07 (2)

11:00 : 11:15

286

CHEM - 4

EG

PROF. MOSTAFA EMARA

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KINETICS OF THE DEGRADATION OF HYDROQUINONE (HQ) UNDER WIDE PHOTO –CATALYTIC CONDITIONS

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Faculty of Science, Al-Azhar University, Cairo, Egypt

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ABSTRACT

It is assumed that the Kinetics of the degradation of HQ under all photo –catalytic conditions ; namely in presence of uv ,uv &H₂O₂ , uv& Fe₂, Fenton , photo- Fenton condition and other modified catalytic conditions ; that OH radicals are involved in the process . Based on this fact and first order or pseudo first order kinetics a rate equation was derived which relates the concentrations involved to the time of the degradation. All experimental data fitted to this equation and apparent rate constant k_{obs} was obtained. The effect of the various experimental conditions on the k_{obs} was studied and reported. When k_{obs} was plotted against concentration species [HQ], [H₂O₂], [Fe₂t] or their mixtures, the obtained results indicated that k_{obs} decreased As [HQ] increased from 50 ppm to 300 ppm . However, it was found that k_{obs} increased as the concentrations of [H₂O₂], [Fe 2+] or their mixtures respectively increased then remained constant at higher concentrations. On the other hand, it was found that k_{obs} decreased as the pH of aqueous 300 ppm HQ increased with time of degradation process (0-300) minutes. All the above obtained results and the different observed behaviors observed were explained within the already suggested processes and also through possible specific pathways depending on each specific photo catalytic condition .It can also safely be said that there is no specific one single mechanism or pathway by which degradation process of HQ can be proposed as common for all conditions under investigation.

Chemistry and its applications

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TUE : 23-03-2010 HALL[B] ORAL - SEC07 (3) 11:15 : 11:30

286

CHEM - 21 EG PROF. MOHSEN EL-SABBAH mmbel_sabbah@hotmail.com

CORROSION OF AL-ELECTRODE IN BUFFER SOLUTIONS IN ABSENCE AND IN PRESENCE OF ANTHRAQUINONE AND AZO DYES

M. M. B. El-Sabbah , M. S. Aboul-Fetauh , A. M. Nagiub , H. F. Y. Khalil

Chemistry Department, Faculty of Science Al-Azhar University

ABSTRACT

Corrosion of Al-Electrode in universal buffer solutions in absence and in presence of anthraquinone and azo dyes has been investigated by using open circuit potential, and potentiodynamic techniques. For the dyes tested in the present study, the order of decrease the rate of oxide film thickening follows the following order of the used dyes; Azo dyes > anthraquinone dye. All of the dyes are found to act predominantly on cathodic sites and are partially effective on anodic sites. According to the theoretical prediction anthraquinone and azo dyes can exist in different forms in pH ranges of (2.4-12.4).

Chemistry and its applications

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TUE : 23-03-2010 HALL[B] ORAL - SEC07 (4) 11:30 : 11:45

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CHEM - 57 EG PROF. HASSAN ABD EL BARY hussanab12@yahoo.com

TREATMENT OF AQUEOUS SOLUTION CONTAMINATED WITH AZO DYE USING HYDROGEN PEROXIDE AND IRON POWDER IN PRESENCE OF UV LIGHT

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ABSTRACT

Homogeneous and heterogeneous photocatalysis are methods aim at the destruction of organic pollutants in wastewater at ambient temperature and pressure. Presence of pollutants such as azo dyes in wastewater is of particular environmental concern since they can originate toxic by-products in the environment . In this study different treatment methods such as H₂O₂/UV, Fenton (Fe+n/H₂O₂) and photo-Fenton (Fe+n/H₂O₂/UV) treatments, have been used to investigate the removal of the Mordant red 7 (MR7) azo dye from aqueous solution. In photo-Fenton treatment, iron (Fe) powder was used as a cheap source of Fe²⁺ ions. Complete decolorization of MR7 using H₂O₂/UV process, under optimum conditions, required only a period of time less than 60 min. It was found that different parameters such as initial dye concentrations, H₂O₂ concentration and pH were mainly affecting the photodegradation process. In addition, presence of different inorganic salts such as chloride ion led to large decrease in the degradation percent of MR 7. In the same time, nitrate and carbonate ions slightly decrease the degradation rate. In comparison, the photo-Fenton treatment, using Fe powder as a source of Fe²⁺ ions, was more efficient in the decolorization of MR7. It was found that complete decolorization of MR 7 obtained in about 30 min. Furthermore, mineralization of MR 7 was investigated using chemical oxygen demand (COD) experiment. The results indicated that, 66.7% of the MR 7dye was mineralized using H₂O₂/UV process while in a 3.0 h photoperiod. While the same photoperiod (3.0 h) results in 100% mineralization using photo-Fenton treatment.

Chemistry and its applications

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TUE : 23-03-2010 HALL[B] ORAL - SEC07 (5) 11:45 : 12:00

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CHEM - 58 EG ASSOC.PROF. ABD EL-LATIF MOHAMMED zeinab_chemist@yahoo.com

EVALUATION AND APPLICATION OF SURFACTANTS SYNTHESIZED FROM ASPHALT COMPONENTS

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ABSTRACT

The synthesis, characterization, surface activity and potential applications of ethoxylated surfactants derived from bitumen components (maltenes) are presented. The new tensoactive compounds were synthesized by the sulfonation of a starting material (maltene), then the prepared maltene sulfonic acid reacted with hexadecylamine giving a sulfonamide product which undergoes an alkali-catalyzed ethoxylation reaction at (135-150°C, 20-60 psi). Several surfactants were formed with different ethylene oxide units (from 10 up to 40) and the products were characterized by molecular weight determinations, elemental analysis, FTI.R. and ¹HNMR. Surface tension, as a function of concentration of the surfactants in the aqueous media, was measured at 25°C using the drop volume tensiometer. From these measurements, the critical micelle concentration (CMC), the maximum surface excess concentration (Γ_{max}), Minimum area per molecule (A_{min}), effectiveness of surface reduction and the efficiency (Pc20) were calculated. The prepared surfactants were applied as stabilizing agents for bitumen emulsion. Storage stability, (Saybolt Furol) viscosity, settlement water content difference and specific gravity of bitumen emulsion were measured. The results indicated that M-40 (Sulfonamide maltene ethoxylated with 40 unit ethylene oxides) gives a maximum stability.

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TUE : 23-03-2010

HALL[B]

ORAL - SEC07 (6)

12:00 : 12:15

286

CHEM - 61

EG

MR. HOSSAM ARAM

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STABILITY INDICATING HPLC METHOD FOR THE DETERMINATION OF MELOXICAM, PIROXICAM AND LORNOXICAM IN BULK AND COMMERCIAL FORMULATIONS

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Master Student, Faculty of Science, Al-Azhar University, Cairo, Egypt

ABSTRACT

A simple and sensitive precise and cost effective high performance liquid chromatography method using UV detection (HPLC-UV) for the determination of meloxicam, piroxicam and lornoxicam in bulk and commercial formulations was developed and validated using tenoxicam as internal standard.

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (1) 03:00 : 03:25

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CHEM - 1 EG DR. HAMADA MOHAMED hamada19982000@hotmail.com

PREPARATION AND CHARACTERISATION OF INK FORMULATIONS BASED ON SOD.ALGINATE AND NATROSOL AS THICKENERS FOR JET PRINTING ON NYLON CARPET

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Department of Colour and Polymer Chemistry, School of Chemistry, University of Leeds, Leeds LS2 9JT, UK

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Textile Research Division, National Research Centre, Dokki, Cairo, Egypt

ABSTRACT

To prepare and characterise various ink formulations for inkjet printing on nylon 66 carpet. Various ink formulations were prepared using CI Acid Red 57, synthetic thickeners (Natrosol 2%gel, Sod.Alginat3%gel), ethylene glycol, diethylene glycol, isopropanol with auxiliaries. The inks were characterised for their rheological, wetting and storage stability properties. The inks were jetted using a Printos P16 drop-on-demand jet print-head onto nylon 66 carpet materials. The printed images were characterised using an ImageXpert system. It was found that the inks containing the synthetic thickeners at the optimum ratio gave good printing and image properties, such as optical density, drop size, and depth of penetration into the substrate at pH 4-5. The optimised ink formulation was found to have good storage stability. And The study focused on ink formulations based on CI Acid Red 57. Ink formulations based on other colorants could also be studied in order to assess the applicability of the ink formulation system found for other colorants.

Chemistry and its applications

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MON : 22-03-2010

HALL[POSTER]

POSTER - SEC01 (2)

03:00 : 03:25

286

CHEM - 3

LY

DR. ISMAIL TABAN

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EVALUATION SOME CATIONIC SURFACTANTS PREPARED FROM OLIVE OIL HAVING ANTIBACTERIAL ACTIVITY

Ismail Muftah Taban , Ali Gemeay

ABSTRACT

The present work is concerned with the preparation, characterization, and evaluation of some cationic surfactants having surface and biological activities. The starting materials used were the fatty acids differing in alkyl chains lengths were procured from two different sources; the first one was the commercially available fatty acids (Aldrich), the second source was the fatty acids obtained from hydrolysis of locally available olive oil. The cationic surfactant compounds with different head groups such as, pyridinium chloride, trimethylammonium chloride, and triethanolammonium chloride were prepared. The surfactants were characterized by spectral (FT-IR and ¹H NMR) and physicochemical properties (surface tension, critical micelles concentration, Kraft point, cloud point, foaming height, wetting power, and emulsification power). Biodegradability and antimicrobial activity were studied for the synthesized cationic surfactants. The biodegradability study of synthesized surfactants showed that they are acceptable cationic surfactants for the environment. All of the synthesized surfactants inhibited the growth of gram negative and gram positive bacteria as well as fungi.

Chemistry and its applications

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MON : 22-03-2010 HALL [POSTER] POSTER - SEC01 (3) 03:00 : 03:25

286

CHEM - 2 EG DR. AHMED GAHLAN gahlan2000@yahoo.com

METAL COMPLEXES AND SQUARE WAVE CATHODIC STRIPPING VOLTAMMETRIC DETERMINATION OF LISINOPRIL IN DOSAGE FORMS AND BIOLOGICAL FLUIDS.

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Chemistry Department, Faculty of Science, Al-Azhar University, Assiut branch, 71524- Assiut, Egypt.

ABSTRACT

Six metal ions viz; Iron(III), Aluminum(III), Chromium(III), Lanthanum(III), Yttrium(III) and Thorium(IV) were selected to elucidate the interaction of these metal ions with lisinopril using potentiometric method. The protonation constant of the ligand and stability constants of complexes formed have been tabulated at ionic strength $I = 0.1M NaNO_3$ in aqueous solutions at $25^\circ C \pm 0.1$. Complexes of 1: 1, 1:2 and /or 1: 3 metal to ligand ratios are formed depending on the nature of the ligand or metal ions. The order of stability constants of the binary complexes was examined. The voltammetric behavior of lisinopril was studied using square wave cathodic stripping voltammetric method at carbon paste electrode (CPE) in pharmaceutical dosage forms (Zestril® tablet) and in biological fluids (spiked and real urine sample) from healthy volunteers has been developed and evaluated. Different parameters such as medium, pH, accumulation potential, scan rate, accumulation time and ionic strength were tested to optimum condition to optimize the conditions for the determination of Lisinopril. The adsorbed form is reduced irreversible at optimal conditions viz; 0.08 M Britton-Robinson buffers (pH = 9.00). Linear concentration ranges from 3.53 – 44.17 ng/mL at accumulation times 15, 30 and 2.64 - 44.17 ng/ mL at 60 s respectively, can be determined successfully. The standard addition method was used to determine Lisinopril in pure solutions, tablets and in biological fluids with satisfactory results .The data obtained are compared with standard official method

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (4) 03:00 : 03:25

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CHEM - 5 EG ASSOC.PROF. AISHA HASSAN helali_aisha@yahoo.com

UTILITY OF \square TETRALONE IN SYNTHESIS OF BENZIMIDAZOLES, BENZOTRIAZOLE, INDOLE DERIVATIVES AND FUSED TRICYCLIC RING SYSTEMS WITH BIOLOGICAL INTEREST

Aisha Yousif Hassan

ABSTRACT

It was of interest to prepare new benzimidazoles 6,7 and the structurally related benzotriazole 5 carrying in the 1-position of tetrahydronaphthalene. Indole derivative 9 was obtained by Fisher – indole cyclization on the phenylhydrazone derivative 8. Dihydro-phenanthrene derivatives 11,12a,b, 13a,b, 14, 15, dihydroisochromene derivatives 16a,b, 17, dihydroisothiachromene derivative 18 and dihydrobenzoisoquinoline derivatives 19a,b were synthesized by reacting 1-dicyanomethylene-1,2,3,4-tetrahydronaphthalene 10 with active halo-compound, active nitriles, arylidene activated nitrile, aldehydes, carbon disulfide and isothiocyanate derivatives. Further evaluation of the cytotoxicity of compounds in vitro toward EAC and HPG2 tumor cells. The structure activity relationship of the compound is also discussed.

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (5) 03:00 : 03:25

286

CHEM - 6 LY DR. ABDULKAREEM HAMID kareemhamid@yahoo.com

SYNTHESIS OF ISOLUOTONINE IN TWO STEPS FORM SYNTHESIZED PYRROLOQUINOLINES

Abdulkareem Hamid

Department of Chemistry, Faculty of Science, University of Al Gabal Al Gardie, Gharian, Libya;

ABSTRACT

we have developed numerous methods including of particular: 1°- the transformation of azacyclic vicinal diols into corresponding tetramic acids according to an original pinacolic `type' transposition in acidic media, and 2°- the synthesis of polysubstituted 2, 3 pyrroloquinolines from corresponding hydrazones in one step by cleavage of N-N linkage and total reduction⁴ of the C=O function in the same time using SnCl₂/AcOH combination. Also, we showed clearly that one of the two carbonyls of the imide function is reduced completely before the cyclocondensation⁵ between the amine function, generated in situ, and the carbonyl of lactam derived from imide.

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (6) 03:35 : 04:00

286

CHEM - 33 EG PROF. MOHAMMAD GHAMRY mohfikelh@yahoo.com

IMPROVEMENT OF CHROME TAN EXHAUSTION AND FIXATION IN TANNING PROCESSES

M.F. El-Hadi , M.S. Metwally , M.S. Abou-El Fetouh , N.H. El-Sayed Khamis , El-Shahat
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National Research Center

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ABSTRACT

Leather is a unique material unmatched in properties by synthetics. Leather making is an environmentally challenged process. Tanning is the key process that renders stability to the skin matrix against microbial degradation, heat, sweat etc. Chromium III has been used widely in tanning for the excellent properties that it renders to the leather along with simplicity of operations. This paper concerned with improvement of chrome tan exhaustion and fixation in tanning processes and studies of some physicochemical properties. The best results obtained in the study are: Chrome fixation 93% and the shrinkage temp. = 120 °C. The chrome concentration 16 g /l for a tanning time 24 hours. Seven temp. are used 25, 27.5, 30, 32, 35, 40 and 45 °C, by using shaking rate 150 rpm with 16 g/l chrome and the initial pH= 8.5 in case of tanning with modification. The tanning time is 8 hours. Chrome tan exhaustion and fixation as well as shrinkage temperature are increased by increasing of chrome concentration due to the increase in the rate of chrome penetration in the hide.

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (7) 03:00 : 03:25

286

CHEM - 7 EG DR. SAYED ABD ELHAMED sayedabdelhamed@yahoo.com

DIMETHYLFORMAMIDE DIMETHYL ACETAL AS A BUILDING BLOCK IN THE SYNTHESIS OF POLYSUBSTITUTED AZINES

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ABSTRACT

Reaction of N,N-dimethylformamide dimethyl acetal (DMFDMA) with malononitrile dimer **8** (1:1) mole afforded **9** while, this reaction when carried out in (2:1) mole to give amidine **11** which can be used for the preparation of pyrimidine **13**, amidine **14** and pyridine **19** when reacted with 4-nitroaniline, 4-methylaniline and alkoxide respectively. Malononitrile dimer reacted with diazonium chloride to give pyridazine **21**, which can be reacted with DMFDMA, AcOH/HCl and cyanoacetamide to give pyridazine **22**, **23** and pyrido[4,3-c]pyridazine **24** respectively. The latter reacted with DMFDMA to afford tricyclic compound **25**.

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (8) 03:00 : 03:25

286

CHEM - 9 EG ASSOC.PROF. GAMEEL MOHAMED elhag1970@yahoo.com

SYNTHETIC APPROACHES TOWARDS 2-(4-OXO-4,5-DIHYDRO-THIAZOL-2-YL) ACETAMIDE

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ABSTRACT

2-(4-Oxo-4,5-dihydro-thiazol-2-yl) acetamide compound (1), was condensed with aromatic aldehydes either (1:1 molar ratio) or (1:2 molar ratio), and gave the newly 4,5-dihydro- 4-oxo-thiazole derivatives (2a-d), and (3a-c), respectively. Compounds (4a-d) were obtained via cyclocondensation of compound (1), malononitrile, and aromatic aldehydes (1:1:2 molar ratios). Cyclization of compound (2a) with α -substituted cinnamionitriles (6a-d), and (10a-c) yielded the newly thiazolo [3,2-a] pyridine derivatives (9a-d), and (13a-c), respectively.

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CHEM - 10 EG PROF. FATMA KAMAL dr.fatma.hafez@hotmail.com

THE EFFECT OF RHODAMINE B DYE ON THE DISTRIBUTION COEFFICIENT OF SOME METAL IONS ON DOWEX S. B. R. ANION EXCHANGE RESIN

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ABSTRACT

This work aims to study the effect of Rhodamine B dye on the distribution coefficient K_d of some metal ions via Ni(II), Co(II), Cu(II) and Cr(III) on anion exchanger; Dowex S. B. R (in the nitrate form). The effect of the volume ratio of metal to dye ion, initial pH, HNO₃ concentration and the percentage of ethanol and acetone solvent volume on the K_d – values were investigated to show the importance of such media as a complexing agent. The K_d – values of the metal ions in the presence of the dye were found to increase with increasing the dye percentage according to the following order; Co(II) > Ni(II) > Cu(II) > Cr(III) due to the mobility of these ions inside the resin particle. The distribution coefficient measurement in the presence of RhB dye at fixed concentration was controlled by the acidity, initial pH value and the dielectric constant of the media.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (10) 03:00 : 03:25

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CHEM - 11 EG PROF. ABDEL ALEEM ABOUL MAGD dr.aleem@hotmail.com

A COMPARISON OF HYDROLYSIS OF N-BUTYL ACETATE USING HETEROGENEOUS VERSUS HOMOGENEOUS ACID CATALYSIS AT THE BOILING POINT OF ESTER IN BINARY WATER-DIOXANE SYSTEM

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Faculty of Education, Chemistry Department, Hail Univ. K.S.A

ABSTRACT

In this work, ion exchange resins are efficient catalysts at some extent for the acid hydrolysis of n-butylacetate. The influence of different parameters such as; the amount of catalyst (H^+ -ion), initial reactant molar ratio and reaction temperature had been investigated. Additionally a comparable the hydrolysis of n-butyl acetate in presence of HCl as a homogeneous catalyst has also been investigated. It was found that the heterogeneous catalysts at the boiling point over 100oC have no significant advance over homogeneous catalyst of ester used. The reaction rate date are correlated with a kinetic model based on pseudo-first order homogeneous type, a kinetic equation for describing the reaction catalyzed by cation exchange resin is developed. It was found that the efficiency of the resin (q) was less than unity at 127oC of reaction point of the used ester, and larger than unity at a moderate temperature and decreased with rise of temperature.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (11) 03:00 : 03:25

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CHEM - 12 EG ASSOC.PROF. ZEINAB EL-SHAFIEY z.elshafiey@yahoo.com

SYNTHESIS, SPECTROSCOPIC CHARACTERIZATION, THERMAL INVESTIGATION AND ANTIMICROBIAL ACTIVITY OF S, O AND N-DONOR HETEROCYCLIC LIGANDS AND THEIR CO(II), CD(II), HG(II), FE(III) AND UO₂(II) METAL COMPLEXES.

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ABSTRACT

Condensation of succinic anhydride with 4-aminoantipyrine; 2-aminothiophenol and 2-aminopyridine yields the polydentate ligands 2,5-N,N-bis (dimethyl-1-phenyl-4-pyrazoline-5-one) furanidine; 2,5-N,N-bis (pyridine) furanidine and 2,5-N,N-bis (2-thiophenol) furanidine (L1 – L3), respectively. Co(II) Cd(II), Hg(II), Fe(III) and UO₂(II) complexes with these ligands have been prepared. They are characterized using analytical data, IR, ¹H-NMR, UV-visible, mass spectroscopy, magnetic susceptibility, thermal analysis and molar conductance measurements. Bonding of the ligands with the metal ions is deduced from IR spectra and the presence of the mononuclear complexes are inferred from the mass spectra study. An octahedral structure is proposed for the prepared metal complexes and some ligand field parameters (Dq, B, and Δ) in addition to LFSE were calculated. The thermal study of metal complexes is evaluated. All synthesized compounds were screened for their antimicrobial activity against; staphylococcus aureus; Escherichia coli, Bacillus subtilis and pseudomonas aeruginosa (bacteria) and Aspergillus Fumigates, penicillium italicum and candida albicans (Fungi). The biological evaluation study showed that the synthesized compounds have broad-spectrum activities and some complexes were found to be comparable with the standards; chloramphenicol and Terbinafin. These results were compared with eleven type of known antibiotics.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (12) 03:00 : 03:25

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CHEM - 13 EG ASSOC.PROF. AZZA AHMED azzazza40@yahoo.com

UTILIZATION OF FINE LOW CARBON FERROCHROME

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ABSTRACT

Gas phase nitriding of solid low carbon ferrochrome was investigated. A three level surface response design (Box-Bahnken) was used to study the effects of reaction time, nitriding temperature and pressure of nitrogen gas on the nitrogen content of the nitrided ferrochrome. The generated response surface model showed that the most affected factor in the nitriding process is the temperature also it showed that the temperature has positive effect on increasing the nitrogen content of the alloy while the pressure has negative or positive effect depending on the nitriding time and temperature. The nitrided ferrochrome was characterized using XRD and EDX. XRD showed that $(Cr,Fe)N_{1-x}$, Cr_2N and CrN were formed. The microstructure was also studied using scanning electron microscope. The analysis of the results indicated that the diffusion reaction can be considered as the rate determining step of the solid state nitriding reaction.

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03:00 : 03:25

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CHEM - 14

EG

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KINETIC STUDY OF ADSORPTION ACID DYEING ON COTTON WITH CETYL TRIMETHYL AMMONIUM BROMIDE

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ABSTRACT

Adsorption kinetics study of two Acid dyeing C.I. Acid red 198, C.I. Acid red 199 on cotton in absence and presence of cationic surfactant cetyl trimethyl ammonium bromide "CTAB" were carried out at pH 3.0, L:R 0.5 : 50 and an initial dye concentration 1.0×10^{-4} mole dm^{-3} . Pseudo first and second order kinetic models were used to examine the adsorption kinetic data. It was found that the adsorption kinetic of two acid dyeing in absence and presence cationic surfactant with pH control was found to follow the pseudo second order kinetic model with an activation energy of C.I Acid Red 198 55.80, 57.65 and 40.04 kJ/mol but on C.I. Acid Red 99 44.28, 48.40 and 16.51kJ/mol. The effect of cationic surfactant on dyeability of cotton fabric with two acid dyes have also been studied at three different temperatures (45, 60, 90°C). It was observed that the aggregation of surfactant and anionic dyes takes place at surfactant concentrations far below the critical micelle concentration of the individual surfactant

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (14) 03:00 : 03:25

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CHEM - 15 EG ASSOC.PROF. AZA GAMAL azzaa@windowslive.com

SOLVENT ASSISTED DYEING OF ACRYLICS WITH BASIC DYES

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ABSTRACT

Acrylic has an additional problem of difficult dye penetration due to its relatively compact physical structure. Addition of benzyl alcohol may modify the structure of fabrics causing an increase in the dye ability. Using the three basic dyes (C.I. Basic Red 12, C.I. Basic Orange 21, and C.I. Basic Violet10) , the rate of dye uptakes was studied in absence and presence of the above additive at different time intervals and temperatures (80,90,95 oC). The obtained results indicate that the dye uptake increases under the different conditions mentioned. The highest dye exhaustion was obtained using 2%(V/V) benzyl alcohol/water mixture this was attributed to the increase in the accessibility of the acrylic fabrics in presence of benzyl alcohol. The rate of dyeing is closely related to the diffusion behavior of dyes. The dyeing rate increases with increasing diffusion coefficient of the dye. The calculated activation energy in presence of solvent gave another evidence for this conclusion. It is observed that optimum limit of benzyl alcohol concentration varies from dye to dye and is closely related to its molecular size.. The obtained results indicate that benzyl alcohol gave a maximum increase in dye uptake, even at a low concentration.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (15) 03:00 : 03:25

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CHEM - 16 EG DR. MOHAMED ABDELBASET mohamedabd_elbaset@hotmail.com

COBALT AND NICKEL COMPLEXES OF 2-(ARYLMETHYLENEACETYL) BENZIMIDAZOLE: SYNTHESSES, CHARACTERIZATION AND ANTIBACTERIAL ACTIVITY STUDIES

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ABSTRACT

A series of cobalt(II) and Nickel (II) complexes with 2-(Arylmethyleneacetyl)benzimidazole(L1-L4) have been synthesized. These complexes were characterized using various physico-chemical techniques like elemental analyses, UV-Vis, IR, thermal analyses and X-ray diffraction. Also the complexes of Co(II) and Ni(II) with 2-(Arylmethyleneacetyl)benzimidazole in solution were studied by spectrophotometric methods which used for the determination of formation constants and the stoichiometries. The stoichiometry of the complexes is established 1:1 and /or 1:2 (M : L) by Jobs and molar ratio methods. The composition and stability constants of the complexes were determined. The antibacterial activity of these complexes against Gram positive and Gram negative has also been studied.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (16) 03:00 : 03:25

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CHEM - 17 EG PROF. AMAL AHMED profdramalelroby@yahoo.com

PITTING CORROSION BEHAVIOR OF STAINLESS STEEL ELECTRODES IN CHLORIDE SOLUTIONS

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ABSTRACT

The pitting corrosion behavior of two stainless steel electrodes in different solutions of NaCl, was investigated using potentiodynamic cyclic anodic polarization (PCAP) and surface morphology techniques. The electrochemical behavior in 3.5% NaCl with and without different concentrations of, 3-amino-1, 2, 4 triazole (AT) , 4-amino-5-mercapto-1, 2, 4 triazole (AMT) and Na₂S₂O₃ -(50 to 200ppm.) was studied. As the concentration of sodium chloride increased, the (PCAP) curves indicated the presence of pitting or crevice corrosion breakdown potential which sustained the increase of anodic current density. The plots of pitting potential (E_{pit.}), or protection potential (E_p) versus log [Cl⁻] at 25oC, for the two stainless steel electrodes were linearly decreased with the increase of the logarithm of chloride concentration. Also the increase of scan rate increases the localized pitting corrosion. The additions of sodium thiosulphate to 3.5% NaCl enhance pitting corrosion as compared with that found in pure sodium chloride solution. On the contrary, increasing concentration of (AT) and (AMT) in NaCl solution was found to greatly enhance IE%. The adsorptive behavior of the investigated inhibitors on the steel surface followed Langmiur-type isotherm. These results indicated the suitability of the use of the investigated (AT) and (AMT) as inhibitors. Electrode type (I) has a greater tendency for pitting than electrode type (II) due to the percentage of nickel in electrode type (I) is half that of electrode type (II).

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CHEM - 18	EG	DR. NIRMIN MARZOUK	enasmattia@yahoo.com

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NEW BENZIMIDAZOLE DERIVATIVES AND THEIR COMPLEXES WITH URANIUM AND THORIUM

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ABSTRACT

Novel series of Schiff bases 1- (1H-benzo [d] imidazol-2-yl) –N- substituted methylene) methane amine were obtained from condensation of (1H-benzo[d] imidazol-2-yl) methane amine with aldehydes or ketone except with salicylaldehyde afforded (2,3-dihydro-1H- benzo [d] imidazo [1,5-a] imidazo-5-yl) phenol. Furthermore; (1H-benzo [d] imidazol-2-yl) methanethiol reacted with chloroacetyl chloride and 2-((chloromethyl)-1H-benzo[d] imidazole yielded (((1H-benzo [d] imidazol-2-yl)methyl 2-((1H-benzo[d] imidazol-2-yl) methylthio) ethanethioate and bis[(1H-benzo [d] imidezol-2-yl)methyl] sulfane respectively. In addition, interaction of benzimidazole methanethiol with acrylonitrile afforded 3-((1H-benzo[d] imidezol-2-yl) methylthio) propane nitrile which condensed with salicylaldehyde yielded 3-(((1H-benzo[d] imidezol-2-yl) methylthio) methyl)-2-H-chromen-2-imine dihydrochloride. Also; reaction of benzimidazole methanethiol with chloroacetic acid yielded 2- ((1H-benzo[d] imidazol-2-yl) methylthio) acetic acid dihydrochloride which cyclized by treatment with acetic anhydride to produce 1H-2-thia-4a,g-diaza-fluoren-4-one. The synthesized compounds coordinated to uranyl nitrate or thorium nitrate to form complexes

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CHEM - 19

EG

PROF. JEHANE MICKY

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NOVEL SYNTHESIS OF INDENO [1',2' :4,5] THEINO [2,3-D] PYRIMIDINE DERIVATIVES

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ABSTRACT

Indeno [1',2' :4,5] theino [2,3-d] pyrimidin- 4(3H) thione is used as precursor for the synthesis of a series of 4-S-substituted indeno [1',2' :4,5] theino [2,3-d] pyrimidine derivatives. Oxidation of S-ethyl gives the corresponding sulphone. The base hydrolysis of ester with sodium hydroxide and ammonium hydroxide forms the acid and the amide derivative respectively, but its reaction with hydrazine hydrate produces the acid hydrazide which react with carbon disulfide to yield 4- sulfonly methyl-[1,3,4] oxadiazole when treated with acrylonitrile affords cyano ethyl derivatives. Moreover, the reaction of acid hydrazide with phenyl isothiocyanate forms the thiosemicarbazide which cyclized in sodium hydroxide to produce 1-N-phenyl [1,3,4] triazol. In addition; 4-S-ethylcyano indeno [1',2' :4,5] theino [2,3-d] pyrimidine reacted with salicylaldehyde and 2- methyl-5- methoxy -6-fornyl-7-hydroxy benzopyran-4-one in the presence of piperidine furnished 2-imino benzpyran and 2- iminobezodipyran derivatives respectively. The antimicrobial activity of some of prepared compounds was discussed and some of them were found to be active.

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CHEM - 20

EG

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SYNTHESIS, ANTIBACTERIAL AND ANTICANCER STUDIES FOR NEW THIENO-, PYRAZOLOPYRIDINE AND AZAFLUORENE DERIVATIVES.

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ABSTRACT

Reaction of thiocyanacetamide with 3,4,5-trimethoxybenzaldehyde gave the corresponding 2-cyano-3-(3,4,5-trimethoxyphenyl)-thioacrylamide 1. Reaction of 1 with ethyl acetoacetate gave the pyridine derivative 2. Cyclization of 2 with hydrazine hydrate gave the pyrazolopyridine derivative 3. Diazotization of 3 gave the diazenyl derivative 4. The latter compound 4 was reacted with malononitrile, acetylacetone and ethyl acetoacetate to give pentoazafluorene derivatives 5-7, respectively. Moreover, the cyclocondensation of compound 2 with ethylchloroacetate, bromoacetophenone, chloroacetamide and chloroacetonitrile gave the thienopyridine derivatives 8, 11, 12 and 15. Reaction of 12 with formic acid and acetic anhydride gave the thiatriazafluorene derivatives 13 and 14, respectively. Some of the new compounds showed antimicrobial and antifungal activities. Compound 11 have good anticancer activity for liver, breast and colon cancers.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (20) 03:00 : 03:25

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CHEM - 22 EG PROF. RABAB ABOU SHAHBA mmbel-sabbah@hotmail.com

EFFECT OF SOME ADDITIVES ON THE CORROSION OF TIN IN ACIDIC MEDIA

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ABSTRACT

The behaviour of tin electrode in citric, oxalic, maleic and malic acids was studied at room temperature by potentiodynamic measurement. The various electrochemical parameters were calculated. In addition, the metallographic structure of tin surface electrode was examined for some solutions using scanning electron microscope (SEM). The anodic E/I curves were characterized by active - passive transition state. The anodic active region was due to the formation of soluble Sn(II) species. The passivity of tin anode was related to the hydrolysis of Sn(IV) and precipitation of Sn(OH)₄ film on the anode surface. The addition of different percentages of sucrose, sodium citrate and potassium oxalate to (1 M) of all organic acids used inhibited the anodic dissolution of tin electrode and enhanced the attainment of passivity. While the addition of sodium chloride accelerated the corrosion of tin and delayed the establishment of passivation. In citric, maleic and malic acids, inhibition was of mixed type and occurred by adsorption of SnL complex molecules following the Temkin isotherm. In case of oxalic acid the inhibition was found to be predominantly anodic occurring by adsorption of SnL₂ complex and following the Langmuir isotherm....

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CHEM - 23 EG PROF. FARAG ABDELHAI faragabdelhai@yahoo.com

ANTIMICROBIAL ACTIVITY OF SOME MODIFIED POLYESTERAMIDE RESINS FOR SURFACE COATINGS

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ABSTRACT

Various polyesteramide compositions are prepared by solvent technique containing a stoichiometric amount of N,N,dihydroxyethyl-2-thiophenamide (HETA) as preservative against microbiological attack. Mechanism of action of (HETA) against Bacillus subtilis ATCC 7972, Staphylococcus Aureus NCTC 7447, Escherichia Coli NCTC 10416, Pseudomonas aeruginosa ATCC 10145, Candida Albicans Imru 3669, and Aspergillus Niger ATCC 6275 are discussed and the studies showed promising results as biocidal coatings. preparation of polyesteramid resins via solvent process by using a new technique is another aspect taken into consideration.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (22)

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CHEM - 24

EG

ASSOC.PROF. SAMIA EL-HOSIENY ABO-FARHA samiaelhosieny@yahoo.com

ANION EXCHANGE BEHAVIOR OF SOME ELEMENTS IN ACETIC ACID-HYDROCHLORIC ACID MEDIA

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ABSTRACT

The heavy metals contamination of soil and water has stimulated the search for soft technologies to remove these pollutants. The objective of this study is to develop a rapid and quantitative sequential separation methods of Cd(II), Zn(II), Mn(II) and Ni(II) with a strong base anion exchange resin prolite A-400 in both chloride form-RCI and acetate form-RAC. The adsorbabilities of metal ions have been studied in the presence of different acetic acid concentrations. The K_d data of metal ions were the following selectivity sequence: Cd(II) > Zn(II) > Mn(II) > Ni(II). The adsorbabilities of metal ions were slightly higher over the whole molarity range of acetic acid (0–18 M) for RCI-resin form than RAC-resin form. The addition of HCl acid to acetic acid medium markedly enhanced the sorption of many heavy metal ions on purolite A-400. Several binary separations of metal ions were achieved on the basis of their K_d values. Furthermore Langmuir and Freundlich isotherme, have been described.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (23) 03:00 : 03:25

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CHEM - 25 EG PROF. NAGWA BADAWY dr.naguaa@hotmail.com

THE EFFECT OF CHELATING AGENT ON THE SEPARATION OF SOME METAL IONS FROM BINARY MIXTURE SOLUTION BY CATION-EXCHANGE RESIN

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Dh.D researcher

ABSTRACT

The need to clean-up heavy metal contaminated environment can not be over emphasized. This paper has been studied the distribution coefficients of Ce(IV), Al(III), Fe(III), Bi(III), Ca(II), Ba (II) and Pb(II) on cation exchange resin Purolite C100 in the presence of some chelating agent at 25°C. Sodium nitrate, citric acid and ethylene diamine tetraacetic acid (EDTA) were tested as eluants. The relative efficiency of the eluants has been discussed in terms of their elution constants. A rapid ion-exchange method was proposed for the separation of lead cations. The method has depended on the selective complexing of metal ions by a chelating agent as achieved by control of pH. Several binary separations of metal ions have been achieved on the basis of their k_d values.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (24) 03:00 : 03:25

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CHEM - 26 EG PROF. RABIE FARAG rabiesaad2004@yahoo.com

CONFIRMATORY METHOD FOR DETECTION 11-NOR- Δ^9 - TETRAHYDROCANNABINOL-9-CARBOXYLIC ACID IN URINE SAMPLES USING GAS CHROMATOGRAPHY–MASS SPECTROMETRY (GC/MS)

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drugs and toxicology expert, Medico-Legal Organization, Cairo, Egypt

ABSTRACT

Gas chromatography mass spectrometry (GC/MS) analysis of 11-Nor- Δ^9 -tetrahydrocannabinol-9-carboxylic acid (THC-COOH), the major metabolite of tetrahydrocannabinol in biological samples is reported, the THC metabolite obtained by alkaline hydrolysis from urine samples were extracted using mixture of solvents followed by trimethylsilylation. The derivatized extract was submitted to GC/MS analysis of EI-SIM mode. Different factors were studied as pH, temperature, time to establish the best conditions for the determination. The calibration curves of THC-COOH derivatized in urine samples were linear in the concentration range from 10 to 150 ng/ml. the proposed method is able to detect the major metabolite of cannabis derivatives at very low level (10 ng/ml) with high specificity so these analytical procedure can be used as confirmatory method in drug testing of cannabis use.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (25) 03:00 : 03:25

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CHEM - 27 EG ASSOC.PROF. ABDALLA KHEDR abkhedr2001@yahoo.com

2-(2-HYDROXYNAPH-1-YLAZO)-PYRIDINE AS NEW CHROMOGENIC REAGENT FOR SIMULTANEOUS SPECTROPHOTOMETRIC DETERMINATION OF SOME TRACE METAL IONS IN REAL SAMPLES

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ABSTRACT

A new, simple and rapid spectrophotometric method for simultaneous determination of Mn(II), Fe(II), Co(II), Ni(II), Cu(II) and Zn(II) using 2-(2-hydroxynaph-1-ylazo)-pyridine (HL) is established. The proposed method is based on the formation of stable colored 1:1 and 1:2 (M:L) complexes between HL and the mentioned metal ions in universal buffer solutions. The optimum conditions (pH, time, temperature, reagent concentration, sequence of addition and solvent ratio as well as foreign ions) for chelates formation are studied. The spectrophotometric analytical characteristic (suitable wavelengths, absorption maxima, molar absorptivities, linearity ranges, Ringbom ranges, stability constants and free energy changes) of the formed complexes are determined. The investigated method was applied to simultaneous determination of some trace metal ions in real samples with satisfactory results. Some solid HL-complexes are prepared and subjected to different analytical and spectral techniques in order to investigate the mode of bonding between HL and the metal ions under interest.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (26) 03:00 : 03:25

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CHEM - 28 EG DR. AHMED BADR EL-DIN ahmedbadreldin@hotmail.com

STRUCTURAL INFLUENCE OF THE LIGAND GEOMETRY ON CONSTRUCTION OF COORDINATION POLYMERS FORMED FROM SILVER(I) CHLORIDE RIBBONS AND BIPODAL NITROGEN DONOR LIGANDS

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ABSTRACT

Assembly of the ternary adducts from silver nitrate, KCl and bipodal nitrogen donor ligands; 4,4'-bipyridine(bpy), trans-1,2-bis(4-pyridyl)ethylene(tbpe) or 1,2-bis(4-pyridyl)ethane(bpe), at room temperature affords new coordination polymers (CPs), [(AgCl)₂.bpy]; 1, [(AgCl)₂.tbpe]; 2 and [(AgCl)₃.(bpe)₂]; 3. X-ray single crystal analysis revealed that the networks of CPs 1-3 are composed of different types of infinite 1D-ribbon of ladder, 1, and staircase, 2 and 3, structures formed from fused minicycle {Ag₂(μ₃-Cl)₂} motifs which are connected by the nitrogen donor ligands forming 2D-layers. Supramolecular interactions such as hydrogen-bonding, argentophilic interaction and π-π stacking play a prominent role in the assembly of these coordination polymers. The products were characterized also by IR spectra and electronic absorption spectra. CPs 1-3 display strong fluorescence in the solid state at room temperature.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC01 (27) 03:00 : 03:25

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CHEM - 64 EG DR. MOHAMED SAAD m.mohyeldin@mucsat.sci.eg

A NOVEL GRAFTED CELLOPHANE MEMBRANE FOR PROTON EXCHANGE MEMBRANE FUEL CELL (PEMFC) APPLICATIONS

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ABSTRACT

Modified cellophane membranes for direct oxidation methanol fuel cells (DMFC) have been prepared through three steps. The first step was introducing of epoxy groups to its chemical structure through grafting process with PGMA. Factors affecting the grafting process have been studied. The second step was converting the introduced epoxy groups to amine group. The third and last step addition of phosphoric acid ($-PO_3H$) groups in the amino side chains of the grafted membranes significantly contributed to enhancing ion exchange capacity (IEC). The verification of the grafting, amination and phosphorization steps has been performed through characterization of the obtained membranes using FTIR, TGA, and SEM. The mechanical properties of cellophane modified membranes increased the thickness of the grafted membranes increases with increasing of the grafting percentage and the thermal stability is increasing. The methanol permeability of modified membranes is lower than that of cellophane membrane and it is decrease with increasing the grafted polymer content. The efficiency factor for all modified membranes is higher than that of ungrafted cellophane with maximum value at 74%grafting percentage. This make the modified cellophane is more attractive in application of direct methanol fuel cells.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (1) 03:35 : 04:00

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CHEM - 29 EG DR. AHMED ABDELHAMED a.khames@yahoo.com

OXO ANILIDES IN HETEROCYCLIC SYNTHESIS: NOVEL SYNTHESIS OF POLYFUNCTIONALLY SUBSTITUTED PYRIDINE AND CONDENSED PYRIDINES

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ABSTRACT

Acetoacetanilide 1 was condensed with N,N-dimethylformamide-dimethylacetal (DMF-DMA) in refluxing xylene to yield the pyridone 2. Compound 2 was reacted with malononitrile to yield the isoquinoline derivative 3. Reactions of 2 with a mixture of malononitrile and elemental sulfur afford 4. Condensation of compound 2 with aromatic aldehydes afford the acryloyl derivatives 5. Also, compound 2 reacted readily with arylidenemalononitrile to afford the expected addition product 6. Furthermore, treatment of pyridone 2 with hydrazine hydrate in oil bath without solvent gave the pyrazolo[3,4-b]pyridine 7 and with phenylhydrazine afforded the hydrazone derivative 8. When, the pyridone 2 was reacted with equimolar amount with (DMF-DMA) afforded the enaminone 9 as major product and its isomer 10 in minor product.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (2) 03:35 : 04:00

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CHEM - 30 EG DR. AHMED ELHENAWY elhenawysci@gmail.com

DESIGN, SYNTHESIS OF NEW PEPTIDE DERIVATIVES AND EVALUATED DNA BINDING ACTIVITY, ANTICANCER, ANTIMICROBIAL AND DOCKING STUDIES TOWARDS CARBONIC ANHYDRASE ISOZYMES.

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Chemistry Department, Faculty of Science, Al-Azhar University, Nasr City, Cairo-Egypt. abstract

Chemistry Department, Faculty of Science, Al-Azhar University, Nasr City, Cairo-Egypt. abstract

Chemistry Department, Faculty of Science, Al-Azhar University, Nasr City, Cairo-Egypt. abstract

ABSTRACT

Sulfonamides possess many types of biological activities and have recently been reported to show substantial antitumor activity in vitro and/or in vivo. There are a variety of mechanisms for the anticancer activity and the most prominent of these is through the inhibition of carbonic anhydrase isozymes. The present work reports the synthesis of some novel peptide sulfadiazine derivatives. The design of the structures of these compounds complies with the general pharmacophore of the sulfonamide compounds that act as carbonic anhydrase (CA) inhibitors; this may play a role in their anticancer activity. All the newly synthesized compounds were evaluated for DNA binding activity, and antimicrobial activity. Some selected compounds were evaluated for anticancer activity against breast cancer cell line (MCF7) in vitro. virtual screening using molecular docking studies of the synthesized compounds were performed. Some synthesized compounds showed high antimicrobial activity. Also, the molecular docking results and anticancer screening indicate that some synthesized compounds most suitable inhibitor against (CA) inhibitors compared to a reference drug.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (3) 03:35 : 04:00

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CHEM - 31 EG PROF. IBRAHIUM SABBAAH ibrahiumsabbah8@hotmail.com

PREPARATION AND EVALUATION OF SOME MODIFIED POLYESTERAMIDE RESINS FOR ORGANIC COATINGS

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ABSTRACT

Various polyesteramide resins were prepared, in which a stoichiometric amount of hydroxyethyl linseed fatty acid amides (HELA) are replaced by N,N-dihydroxyethyl 2-furanamide (HEFA). Such modified compositions showed to have biological activity towards microorganisms.

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MON : 22-03-2010

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03:35 : 04:00

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CHEM - 32

EG

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MACRORETICULAR EXCHANGERS FROM CORNCOBS M-CRESOL FORMALDEHYDE RESINS

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ABSTRACT

The paper is concerned with a simple method for preparing macroreticular exchangers from polycondensation of Egyptian corncobs with m-cresol and paraformaldehyde as a crosslinking agent. Reaction conditions for the preparation are presented and properties are compared with resin not containing corncobs. The synthesized resins are stable in water, mineral acids (1M), organic solvents and to thermal treatment. The resins, having a cation exchange capacity up to 2.41 meq g⁻¹ of dry resin, are being introduced as new catalysts in the hydrolysis of methyl acetate. The efficiency of the cationic exchangers (q) is calculated for resins with various percentages of corncobs and activation parameters have been evaluated.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (5) 03:35 : 04:00

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CHEM - 34 SA DR. ABDULLAH AL-SEHEMI agmasq@gmail.com

GEOMETRY AND BARRIERS TO ROTATION ABOUT N-N BONDS IN 3-ACYLAMINOQUINAZOLI-4(3H)-ONE DERIVATIVES: EXPERIMENTALLY AND QUANTUM CHEMICAL STUDY

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ABSTRACT

Synthesis of N-N-monoacylaminoquinazolinone (MAQ) were prepared by the microwave irradiation, which can be synthesis accomplished in three steps. First step a mixture of acid chloride with methyl anthranilate. The yields are very good to excellent. Second step a mixture of anthranilate with hydrazine and using the microwave irradiation without solvent gave 3-aminoquinazolinone (Q-NH₂). MAQ's were obtained by N-acylation of Q-NH₂ with acid chloride. Compared with the Solvent Refluxing Method, the microwave radiation technique had a better yield and a shorter reaction time. Four rotamers of 3-acylaminoquinazoli-4(3H)-one, R1–R4, were studied theoretically at CBS-QB3, B3LYP/6-31G(d,p) and HF/6-31G(d,p). Optimized geometrical parameters of all the four conformers were computed and compared with the available X-ray results. The geometry of B3LYP/6-31G(d,p) method shows the best agreement with the experimental results. Thermodynamic parameters for the four rotamers were calculated at the above levels in the gas phase. Rotamer R1 is the most stable rotamer in all cases as also known from experimental data. Natural charges and electric dipole moment were computed at different levels.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (6) 03:35 : 04:00

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CHEM - 36 EG DR. YUSIF EL-SAYED youssif.bahnassi@science.tanta.edu.eg

SPECTROSCOPIC, THERMAL AND BIOLOGICAL STUDIES OF 1-[(5-MERCAPTO-[1,3,4]THIADIAZOL-2-YLIMINO)-METHYL]-NAPHTHALEN-2-OL AND ITS CO(II) AND CU(II) COMPLEXES.

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ABSTRACT

The electronic absorption spectrum of 1-[(5-mercapto-[1,3,4]thiadiazol-2-ylimino)-methyl]-naphthalen-2-ol (H₂L) is studied in organic solvents of different polarity as well as in universal buffer solutions of varying pH values at room temperature; the pK_a values are calculated. The effect of Co(II) and Cu(II) ions on the electronic absorption spectrum of the free ligand is also assigned and the stability constants of the complexes are calculated. The stoichiometry of the metal complexes is determined spectrophotometrically. Co(II) and Cu(II) complexes with the thiadiazol Schiff base have been synthesized and characterized on the basis of elemental analyses, molar conductance, magnetic susceptibility measurements, IR, electronic as well as ESR spectral studies. The thermal decomposition of the metal complexes is studied by TGA and DTA techniques. The thermo-kinetic parameters; activation energy, pre-exponential factor and entropy of activation are estimated. The antimicrobial activity of ligand and some of its complexes have been studied.

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MON : 22-03-2010 HALL[POSTER] POSTER - SECO2 (7) 03:35 : 04:00

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CHEM - 37 EG DR. ALAA EL-DEEN ALI MOHAMED dralaae@yahoo.com

SYNTHESIS, STRUCTURE AND THERMAL STUDIES OF SOME URIC ACID COMPLEXES

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ABSTRACT

Eighteen uric acid complexes of different transition elements were prepared and identified by Ir, Uv-Vis. spectroscopy and elemental analysis. The structures of the complexes were of different geometries. The interaction between Fe³⁺ ion and uric acid was studied spectrophotometrically in solution. The copper complexes were studied by ESR spectroscopy. The thermal behavior of the complexes was studied by DTG, DTA and DSC techniques. The mechanism of the thermal decomposition steps was suggested. The kinetic parameters were calculated.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (8) 03:35 : 04:00

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CHEM - 38 EG PROF. FARAG ABDELHAI faragabdelhai@yahoo.com

PREPARATION AND CHARACTERIZATION NEW WATER SOLUBLE RESINS FOR SURFACE COATING

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ABSTRACT

Waterborne coatings can be divided into the general classes, water-soluble or water-dispersible (colloidal dispersion and emulsions). The main object of the present investigation is to prepare new modified water-soluble polyesteramide resins, which combine the usefulness properties of both polyester and polyamide. The modification is brought about through the partial replacement of phthalic anhydride by methylene disalicylic acid.,MDSA, (I) or m- phenylene dioxydiacetic acid,PDODA, (II) in various conventional resin formulations which expected to, improved the film performance and durability.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (9) 03:35 : 04:00

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CHEM - 39 EG MR. KHAMIES SHAABAN khamies1078@gmail.com

EFFECT OF MOO₃ ADDITION ON THE CRYSTALLIZATION BEHAVIOR OF AL₂O₃- LI₂O-B₂O₃ GLASS

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ABSTRACT

The effect of MoO₃ addition on the crystallization characteristics of 2Al₂O₃-30Li₂O-68B₂O₃ glass (where xMoO₃= 0, 10, 20 and 40 wt%) has been investigated. The compositional dependence of the glass transition (T_g) and crystallization (T_c) temperatures was determined by differential thermal analysis (DTA). It was found that both of the T_g and T_c decrease with increasing MoO₃ content. The amorphous nature of the as-quenched glass and crystallinity of the produced glass-ceramics were confirmed by X-ray powder diffraction (XRD) analysis. Glass-ceramics embedded with diomignite (lithium diborate, Li₂B₄O₇) were produced from all investigated glasses by heat-treating the as-quenched glasses at the appropriate temperatures obtained from the DTA traces. Addition of MoO₃ to the glass composition, at 10% MoO₃, causes the formation of lithium molybdenum oxide (Li₄MoO₅) crystalline phase in addition to the diomignite phase. Increasing MoO₃ content to 20% causes a phase transformation of lithium molybdenum oxide from the (Li₄MoO₅) to the (Li₂MoO₄) phase, and the formation of another lithium borate (Li₄B₂O₅) phase in addition to the diomignite. Further increase of MoO₃ content to 40% results in another phase transformation to the lithium aluminum molybdenum oxide [LiAl(MoO₄)₂], and, in this case, the molybdenum content was excess enough to crystallize the molybdiate (MoO₃) itself. Scanning electron microscopy (SEM) was used to characterize the morphology and microstructure of the formed solid solution phases.

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CHEM - 40

EG

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A NEW PRINTING METHOD FOR COLORATION THE ACRYLIC FABRIC

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ABSTRACT

A new method for printing polyacrylic fabric with special disperses dye containing free amino groups in their chemical structure is described in detail. The fore functional groups converted into ammonium cations ($+NH_3$) having positive charges during steaming the prints in slightly acid medium at saturated steam which confer on the dye affinity for acrylic fibers that have anionic sites under the ambient steaming conditions. The formation of ionic link between positive and negative charges of the dye and the substrate respectively improves the fastness properties as well as dye uptake compared to the origin (unionized) disperse dye.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (11) 03:35 : 04:00

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CHEM - 43 EG DR. MAHMOUD TAHER mahmoudtaher@hotmail.com

EFFECT OF WATER TREATMENT OF CEMENT KILN DUST ON THE PROPERTIES OF ORDINARY PORTLAND CEMENT

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ABSTRACT

The influence of addition of cement kiln dust (CKD) which produced from plants kilns during the production of Portland cement with or without curing on the properties of ordinary Portland cement (OPC) was investigated in this study. CKD was added to OPC in different proportions by weight 5%, 10%, 15%, 20% and 25% with or without curing. The CKD were cured at different methods: the 1st method by immersing CKD in tap water at 25oC for 24 hours with continuous stirring, the 2nd method by immersing CKD in hot tap water (90oC) for 24 hours with continuous stirring and the 3rd without curing of CKD. The specimens will be prepared by mixing OPC with dry CKD at different proportions with water to get the pastes and then mould in cylinder moulds. After setting of the pastes, the hydraulic properties of different mixes were studied by measuring bulk density, porosity, and compressive strength while the kinetic of hydration were studied by measuring the free lime and chemically combined water contents after curing in water at different ages 3, 7, 28 and 90 days. The change in morphology and microstructure were studied using scanning electron microscopic (SEM). The results of this investigation indicated that partial substitution of OPC with 5% cured CKD in water at 25oC and 10% cured CKD in water at 90oC improved the physicochemical properties of OPC.

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MON : 22-03-2010 HALL[POSTER] POSTER - SECO2 (12) 03:35 : 04:00

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CHEM - 44 EG ASSOC.PROF. HASSAN OMAR hassanomar61@gmail.com

SYNTHESIS OF SOME HETEROCYCLIC DERIVATIVES OF L-VALINE AS ANTIMICROBIAL AGENTS

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ABSTRACT

N-(4-Acetylbenzenesulphonyl)-L-valine (II) was prepared by the reaction of p-acetophenonesulphonyl chloride (I) with L-valine in sodium hydroxide solution. Reaction of L-valine (II) with aromatic aldehydes afforded the corresponding chalcones (V-VII). The latter chalcone (VII) was further brominated and treated with piperidine or morpholine to form the corresponding 2,3-dipiperidinyl-or morpholinyl derivatives (IX-X). The substituted chalcones, on condensation with hydrazine hydrate, phenyl-hydrazine in acetic acid or ethanol provided the desired pyrazolines (XI-XIII) and (XIV-XVIII). Also, the reaction with hydroxylamine hydrochloride furnished isoxazoles (XIX-XXI). The same chalcones made to react with malononitrile in presence of piperidine and ethylcyanoacetate and ammonium acetate gave cyanopyran and pyridine derivatives respectively (XXII and XXIII). The structure of these derivatives was confirmed by elemental analyses, IR, NMR and MS spectral studies. Some of the synthesized compounds have been screened for their antimicrobial activity against various strains of bacteria and fungi.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (13) 03:35 : 04:00

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CHEM - 45 EG ASSOC.PROF. FATMA ABDEL-SALAM prof_drfatma@yahoo.com

SYNTHESIS, ANTIMICROBIAL ACTIVITY AND MICELLIZATION OF GEMINI ANIONIC SURFACTANTS IN A PURE STATE AS WELL AS MIXED WITH A CONVENTIONAL NONIONIC SURFACTANT

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ABSTRACT

New gemini anionic surfactants were prepared from sodium salts of monoalkyl sulfosuccinate esters of ethylene glycol having variably long tails (C12, C16, C18) and dichloroethane. The chemical structures of the prepared surfactants were confirmed using different spectroscopic techniques. The surface tension values of the synthesized surfactants were measured at 25 °C individually or mixing at different molar fractions with ethoxylated alkylphenol. In all cases, mixed micellar aggregates were formed and critical micellar concentrations of binary mixtures containing different mole fractions of the surfactants were measured. The micellization processes of the individual and mixed surfactants were investigated. The effect of different alkyl chains of gemini anionic surfactants on properties of binary systems and molar ratio in the mixed aggregates were deduced. The critical micelle concentration of mixed surfactants shifted to lower values compared to those of the single surfactants. Effectiveness values increased with decreases in the mole fraction of gemini anionic surfactants. The negative values of interaction parameter (b) increased with increases in the chain length of anionic surfactants. The activity coefficient (f_1 , f_2) and total minimum surface area of mixed solution were calculated. Also, the gemini anionic surfactants prepared have moderate antimicrobial activity towards bacteria and not active towards fungi.

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MON : 22-03-2010 HALL[POSTER] POSTER - SECO2 (14) 03:35 : 04:00

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CHEM - 46 EG PROF. ALI MOSTAFA alimelbraky@hotmail.com

SYNTHESIS OF ZEOLITE ZSM-5 FROM RICE HUSK, ENCAPSULATED COPPER (BOA) COMPLEX

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ABSTRACT

Cu-BOA complexes [where (BOA=2[benzo[b]oxazole]acetonitrile)] encapsulated in the cavities of zeolite ZSM-5 [where ZSM-5 is synthesized from silica is extracted from rice husk] . samples obtained by synthesizing the complexes in situ in the cavities of the zeolite by the zeolite synthesis method [ZSM] . The composition and structure of this new catalyst have been identified. The prepared zeolites have been characterized by elemental analysis, powder X-ray diffraction (XRD). Fourier transforms infrared spectroscopy (FT-IR). Ultra violet visible spectroscopy (UV-VIS) . Thermal analysis (DTGA), surface area measurements and nitrogen adsorption (surface texture) . The data is showed the crystallinity by (XRD) is closed to been each other the crystallinity by (FT-IR) and (surface texture). The surface area showed it was observed that the lower of pore volume and surface area indicates the presence of Cu-complex with in the cavities in the zeolite and not on the external surface area. The rate decomposition H₂O₂ over these encapsulated with the rates of oxidation of benzene to phenol.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (15) 03:35 : 04:00

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CHEM - 48 EG PROF. TAREK MOSTAFA elhenawy_sci@hotmail.com

SYNTHESIS OF SOME NEW THIOPHENE DERIVATIVES

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ABSTRACT

Several thiophene-2-acetylamino acid (9-12) were prepared by coupling of thiophene-2-acetyl chloride (8) with the appropriate amino acids in sodium hydroxide-benzene medium. Thiophene-2-acetyldipeptide methyl esters (13-30) were prepared by coupling of thiophene-2-acetylamino acid (9-12) with amino acid methyl ester hydrochlorides (1-7) via carbodiimide technique in THF / (C₂H₅)₃N medium. The compounds (13-30) were converted into related dipeptide (31-48) by NaOH. Thiophene-2-acetyldipeptide hydrazides (49-66) were easily prepared by the treatment of the corresponding dipeptide methyl esters (13-30) with alcoholic hydrazine hydrate. All the synthesized compounds (19-150) were against different types of microorganisms, and some of them were found to possess antimicrobial activities.

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MON : 22-03-2010 HALL[POSTER] POSTER - SECO2 (16) 03:35 : 04:00

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CHEM - 49 EG PROF. HASSAN SHEHATA hassan_shehata222@hotmail.com

EVALUATION OF SOME LABORATORY PREPARED CATIONIC SURFACTANTS AS CORROSION INHIBITORS AND BIOCIDES

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ABSTRACT

In this study some laboratory prepared cationic surfactants were evaluated as multifunctional compounds (corrosion inhibitors and biocides). The prepared materials were decyl, dodecyl, hexadecyl and octadecyl triethylammonium bromide. The inhibitors concentrations ranged from 0 up to 40×10^{-4} M in 0.5 M H₂SO₄ and the solution temperatures are ranged from 25 up to 55 oC. the results indicated that the biocidal activity of the tested surfactants increased towards gram positive, gram negative bacteria and fungi, so these compounds could be used as bacteriostatic and bactericides. It was found also that its efficiency increased with increasing the hydrophobic part. The corrosion inhibition measurements of these surfactants showed that they had higher tendency towards protection of mild steel against acidic environments. The thermodynamic parameters of adsorption; i.e. standard free energy ΔG_o , enthalpy ΔH_o , and entropy ΔS_o were calculated. The results obtained from surface measurements, biological activity and polarization technique qualified the synthesized cationic surfactants to be applicable as multifunctional compounds.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (17) 03:35 : 04:00

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CHEM - 50 EG PROF. ALI HASSAN alimhassanuk@yahoo.co.uk

SYNTHESES, SPECTRAL STUDIES, ELECTRON SPIN RESONANCE (ESR) AND THERMAL STUDIES OF COPPER(II) COMPLEXES CONTAINING NS AND ONS DONOR SCHIFF BASES.

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ABSTRACT

Syntheses and spectroscopic studies of Cu(II) complexes with tridentate and bidentate Schiff base ligands of [N-(2-mercaptophenyl)salicylideneimine] H2LI, [N-(2-mercaptophenyl)naphthylideneimine] H2LII, [N-(2-mercaptophenyl)furan-2-carboxylideneimine] H2LIII and [N-(2-mercaptophenyl)cinnamylideneimine] HLIV are described. The ligands and their complexes were characterized by elemental analysis, magnetic moment, conductance, UV-Visible, FTIR, Ms, ¹H-NMR, ESR spectra and thermal analysis (TG and DTG) techniques. The conductance data reveal that all the metal chelates are non-electrolytes. IR spectra of the complexes with the ligands H2LI and H2LII show that the ligands behave as bivalent anion with tridentate ONS donors derived from the phenolic oxygen, azomethine nitrogen and phenolic sulfur, while the H2LIII and HLIV ligands behave as bidentate NS donors derived from azomethine nitrogen and phenolic sulfur. From magnetic and ESR spectra results, it is concluded that the geometrical structures of these complexes are octahedral and tetrahedral. The kinetic thermodynamic parameters such as: E^* , ΔH^* , ΔS^* and ΔG^* were determined for each thermal degradation stage of TG curves of the Cu(II) complexes using Horowitz–Metzger methods.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (18) 03:35 : 04:00

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CHEM - 51 EG PROF. ALI HASSAN alimhassanuk@yahoo.co.uk

PREPARATION AND CHARACTERIZATION OF FORSTERITE AND STUDYING OF AL₂O₃ ON ITS PROPERTIES AND BIOCOMPATIBILITY

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Mekky

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Prof. of Chemistry of Advanced Ceramic Materials and Nanotechnology, NRC

Prof. of Inorganic Chemistry Faculty of Science-Al-Azhar University

ABSTRACT

Forsterite (Mg₂SiO₄) ceramics were prepared by sintering the Mg₂SiO₄ green compacts at 1350 –1550°C and the sintering behavior and mechanical properties were examined. 3, 5, and 10 wt. % Al₂O₃ were added with during the preparation to this additives, study their effect on the densification process and phase composition of the prepared materials. Alumina reacts with equimolar MgO from forsterite to form MgAl₂O₄ spinel on sintering at 1000°C /3h. The aim of this work was preparation, characterization and bioactivity evaluation of forsterite also. Forsterite powder was synthesized by the sol–gel process. Bioactivity evaluation was preformed by immersing the sintered bodies of forsterite in the simulated body fluid (SBF) and apatite formation on the surface of the immersed sintered bodies was investigated. Results showed the particle size the samples forsterite was 100-375nm. During immersion in SBF, The pure forsterite sample exhibited higher amount of apatite layer on its surface.

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (19) 03:35 : 04:00

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CHEM - 52 EG PROF. ALI HASSAN alimhassanuk@yahoo.co.uk

PREPARATION AND EFFECTS OF TEMPERATURE ON NANOCRYSTALLINE ITO PARTICLES SYNTHESIZED BY CO-PRECIPITATION WITH DIFFERENT SnO_2 CONTENT

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ABSTRACT

Indium tin oxide (ITO) nanopowders of different compositions (In: Sn = 90:10, 70:30 and 50:50) were prepared by heat treatment (300–950°C) of mixed hydroxides of In(III) and Sn (IV). The hydroxides were obtained by the reaction of aq. NH_3 with mixed aq. solutions of $\text{In}(\text{NO}_3)_3$ and SnCl_4 . Two kinds of nanocrystalline indium tin oxide (ITO) powders with different crystal structures (rhombohedral and cubic) were prepared and examined. During sintering the rhombohedral ITO was transformed to cubic around 950 °C. The lattice parameter was calculated from XRD analysis is 10.104 Å and the particle size range is 19.9 - 23.1 nm.

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (20) 03:35 : 04:00

286

CHEM - 53 SA DR. ABDULLAH AL-SEHEMI agsehemi@kku.edu.sa

SYNTHESIS, BIOLOGICAL EVALUATION AND MOLECULAR MODELING STUDY OF SOME NOVEL 4(3H)-QUINAZOLINONE DERIVATIVES AS ANTI-INFLAMMATORY AND ANTITUMOR AGENTS

Abdullah G. Al-Sehemi , Ali S. Al-Shahri

King Khalid University

King Khalid University

ABSTRACT

The synthesis of some new 4(3H)-quinazolinone derivatives and their biological evaluation as antitumor agents are investigated. These three quinazolinone analogs (5, 7, 10) could be considered as useful templates for future development to obtain more potent antitumor agents. Docking study into some of these compound (see bellow) has been made for derivatives of highest anti-inflammatory activity. Conformational analysis of the most active molecules using molecular modeling and QSAR techniques enabled the understanding of the pharmacophoric requirements for quinzolinone derivatives as antitumor agents.

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (21) 03:35 : 04:00

286

CHEM - 54 EG MR. AHMED SOLIMAN ahmed_ali.soliman@hotmail.com

TREATMENT OF MICROBIAL INDUCED CORROSION OCCURED BY SULFATE REDUCING BACTERIA (SRB) IN CARBON-STEEL HEATERS OF THE NATURAL GAS PRESSURE REDUCTION STATIONS OF EGYPTIAN NATURAL GAS COMPANY (GASCO) BY USING ALDEHYDIC COMPOUNDS.

Ahmed Soliman

ABSTRACT

Many of GASCO's (Egyptian natural gas company) carbon steel heaters in the pressure reduction stations were corroded and some of them become out of service for maintenance although the input water quality was suitable and corrosion inhibitors were added periodically. By observation we found an indicating signs for the presence of the sulfate reducing bacteria (SRB) as a microbial induced corrosion (MIC). Some of these signs were: 1. Black sludge appeared in the water. 2. Black stones and red rust was found in the heater body. 3. H₂S odor (rotten egg odor). 4. Pitting corrosion was observed. 5. Decrease in the PH value of the water. the heaters work at the atmospheric pressure and temperature range 60 to 80 degree centigrade. By taking samples from the rust layer and making chemical analysis in both GASCO chemical labs and micro analytical center at Cairo University, the analysis results show the presence of iron sulfides which constitute the main rust product form SRB activity. Therefore, GASCO prepared an environmentally friendly multifunction corrosion inhibitor (GASCO 1) and biocide with dose of 100 ppm which consists of: 1. Oxygen scavenger compounds. 2. Amine compounds to form a protective film on metal surface as a passive layer. 3. Aldehydic compounds as a biocide. 4. Weak acids as scale inhibitors. (GASCO 1) was accepted from faculty of science Ain Shams University as an environmentally friendly corrosion inhibitor and now it is added periodically every 3 months to protect the heaters.

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (22) 03:35 : 04:00

286

CHEM - 55 EG DR. MAGDA SAMATY mag-samaty@hotmail.com

EVALUATING THE REDUCING PROPERTIES OF SOME ANTIHYPERTENSIVE AND ANTIBACTERIAL DRUGS, THROUGH THEIR REACTION WITH IRON (III) IONS.

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ABSTRACT

In this work the susceptibility of some antihypertensive and antibacterial drugs to oxidation were evaluated and compared through the application of a spectrophotometric method. Irbesartan (IRB), valsartan (VAL) and lisinopril (LSP) were selected as an example of antihypertensives, while two antibacterial drugs namely, cefixime (CFX) and cefprozil (CFP) were investigated. The applied method was based on the reaction of the cited drugs with iron (III) ions as an oxidizing agent. The resulted iron (II) ions reacted with o-phenanthroline forming the well-known highly stable orange-red colored chelate complex which exhibits an absorption maximum at 510nm. Different conditions were thoroughly studied and optimized. The reducing properties of the selected drugs were compared to each other (under the applied experimental conditions) and results show that these drugs act as reducing agents in the following order; CFX \approx CFP > IRB \approx LSP > VAL. The method was applied in a trial to investigate the stability of these drugs in air and results showed that cefixime and irbesartan are very labile to autoxidation. The method was also applied for the quantitation of the cited drugs in their pure powdered forms and in pharmaceutical preparations. The relative standard deviations (RSD) were less than 2%, the accuracy and precision were investigated and satisfactory results were obtained.

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (23) 03:35 : 04:00

286

CHEM - 56 EG PROF. MOHAMED MOUSTAFA mmostafa53@hotmail.com

PREPARATION AND CHARACTERIZATION NEW WATER SOLUBLE RESINS FOR SURFACE COATING

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Senior lecture of applied chemistry

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professor of organic chemistry

ABSTRACT

Waterborne coatings can be divided into the general classes, water-soluble or water-dispersible (colloidal dispersion and emulsions). The main object of the present investigation is to prepare new modified water-soluble polyesteramide resins, which combine the usefulness properties of both polyester and polyamide. The modification is brought about through the partial replacement of phthalic anhydride by methylene disalicylic acid (MDSA), in various conventional resin formulations which expected to improved the film performance and chemical mechanical characteristics .

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (24) 03:35 : 04:00

286

CHEM - 8 EG PROF. ZEINAB ABD EL-WAHAB zhabdelwahab@yahoo.com

MIXED LIGAND COMPLEXES OF NICKEL (II) AND CERIUM (III) IONS WITH 4-(3-METHOXY-4-HYDROXYBENZYLIDENEAMINO) -1,3 DIMETHYL -2,6 PYRIMIDINE -DIONE AND SOME NITROGEN / OXYGEN DONOR LIGANDS

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ABSTRACT

Mononuclear mixed ligand complexes of Ni (II) and Ce (III) with 4-(3-methoxy-4-hydroxybenzylideneamino)-1,3dimethyl-2,6pyrimidine-dione, 2-aminopyridine and 8-hydroxyquinoline have been prepared. The elemental analysis, molar conductance, spectral (IR, mass and solid reflectance), magnetic moment measurements and thermal study were utilized to investigate the coordination behavior of these complexes. From the investigation data, all metal complexes have metal-to-ligand ratios of 1:1:1 and the mode of bonding are consistent with N- and O-donation suggesting monomeric octahedral and square planar structures. The thermal behavior of these complexes was investigated and the thermal decomposition pathways have been postulated showing that the final product is metal or metal oxide. Antibacterial and antifungal properties of the metal complexes have also been examined against *Staphylococcus aureus* (ATCC 25923), *Streptococcus pyogenes* (ATCC 19615), *Pseudomonas fluorescens* (S 97), *Pseudomonas phaseolicola* (GSPB 2828), *Fusarium oxysporum* and *Aspergillus fumigatus*. The highest antimicrobial activity was observed for the Ce (III) complex; $[\text{CeL}(\text{8-Oqu})(\text{NO}_3)_2] \cdot 1\frac{1}{2}\text{H}_2\text{O}$ compared to the other mixed ligand complexes.

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (25)

03:35 : 04:00

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CHEM - 60

EG

ASSOC.PROF. SAMEH ABOUL-FOTOUH saboulfotouh@hotmail.com

CONVERSION OF METHANOL ON CUO/H-MOR AND CUO/H-ZSM-5 CATALYSTS

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Chemistry Department, Faculty of Education, Ain-Shams University

ABSTRACT

This work is directed principally to maximize dimethylether (DME) production due to its industrial importance as a future diesel fuel. The high acidity and small pore opening of zeolites has a marked influence on the conversion of methanol and formation of DME. Catalysts containing 6%CuO supported on both zeolites give highest activities for DME production. However, the 6% CuO/ HMOR is more selective for DME production, while the 6%CuO/HZSM-5 is more selective for olefins (ethylene + propylene) formation. The higher acid site strength of CuO/HMOR is the principal factor for DME formation whereas olefins production is more activated on CuO/HZSM-5 due to its narrower pore volume.

Chemistry and its applications

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MON : 22-03-2010 HALL[POSTER] POSTER - SEC02 (26)

03:35 : 04:00

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CHEM - 62

EG

ASSOC.PROF. MOHAMED A. SALEM masalem@science.tanta.edu.eg

PHOTODEGRADATION OF THREE FOOD DYES WITH FERRIOXALATE/H₂O₂/UV IN AQUEOUS SOLUTION

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ABSTRACT

Dyes are extensively used in textile, drugs, cosmetics, and food industries. They represent one of the largest groups of pollutants in wastewater produced from these industries due to the dyeing and finishing operations. The wastewater discharged in rivers or public sewage plants are highly colored and contaminated. The colored effluents upset the biological activity in aquatic life, owing to stopping the reoxygenation capacity of the receiving revisers and cut-off sunlight. In the present work the ferrioxalate/H₂O₂/UV-366nm system was tested as an advanced oxidation process (AOP) for the degradation of food dyes allura red, ponceau 4R and carmosine in aqueous solution. The degradation process was monitored spectrophotometrically at room temperature. The concentration of dye, ferrioxalate, and hydrogen peroxide played a significant effect for the degradation rate. The rate increased with the increase in ferrioxalate concentration, but decreased at high concentration of both the dye and H₂O₂. An inhibition in the rate was also observed by the addition of chloride or sulfate ions. The maximum rate was obtained at pH 3.5. The activation parameters revealed an entropy controlled reaction. The current reaction system can therefore be considered a promising model for solving some of the environmental problems that face these industries.

Geological Sciences

Geology

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TUE : 23-03-2010 HALL[D] ORAL - SECO4 (1) 09:00 : 09:30

286

GEO - 1 EG PROF. MOHAMED HASSAAN AWAD mhawad2002@hotmail.com

CLASSIFICATION AND ORIGIN OF THE CHAT

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ABSTRACT

Geology

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TUE : 23-03-2010 HALL[D] ORAL - SEC04 (2) 09:30 : 09:45

286

GEO - 3 EG DR. OSAMA ABDALLA creodontosama@yahoo.com

PALEOGENE HYRACOIDS FAUNA OF JEBEL QATRANI, FAYIUM, EGYPT

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Egyptian Mineral Resources Authority, Cairo, Egypt. creodontosama@yahoo.com

Carnegie Museum of Natural History, USA. lamannam@carnegiemnh.org

Egyptian Mineral Resources Authority

ABSTRACT

Jebel Qatrani Formation of northern Egypt has produced Afro-Arabia's primary record of Paleogene Mammal, including Hyracoids. The fossils described here come from a series of quarries within the upper and lower sequences of Jebel Qatrani Formation.

Geology

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TUE : 23-03-2010 HALL[D] ORAL - SEC04 (3) 09:45 : 10:00

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GEO - 6 EG MR. ABUOL FETOUH ABD EL-KARIEM nakhil7madina@yahoo.com

PETROLOGICAL AND PETROCHEMICAL STUDIES OF WADI SEIH GRANITES, SOUTHWESTERN SINAI, EGYPT

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Geology Department, Faculty of Science, Suez Canal University, Ismailia, Egypt

Academy of Scientific Research and Technology , Cairo, Egypt

ABSTRACT

The granitoids of Wadi Seih area are classified into older and younger granites according to their field relationship and composition. The older granites are represented by granodiorite, quartz monzodiorite and tonalite and have more than one textural forms such as myrmekitic and poikilitic textures which reflects variations in crystallization conditions. They were subjected to low grade metamorphism as indicated by the alteration of hornblende and biotite to chlorite. They have most of the mineralogical features of the I-type granites. The younger granites are mainly represented by syenogranite which has hypidiomorphic equigranular and abundant of microperthitic textures. They have most of the mineralogical features of the A-type granites. It is composed mainly of K-feldspar, plagioclase, quartz and biotite. Zircon, allanite and opaques are accessories. They are considered as subsolvus granite and have two separate feldspars. They contain biotite together with muscovite which may suggest the derivation of this granite from peraluminous magma. The presence of micrographic and granophyric textures indicate the shallow emplacement of this granite. Based on their geochemical investigations, the studied older granitoids exhibit many features of the I-type granitoids and belong to the volcanic-arc granites. They have high Na₂O content (3.67% average), and possess metaluminous character and have high Sr concentration (530 ppm, average). The enrichment in the LIL elements depletion in HFS elements and low HFS/LIL ratios, indicate a mantle derived magma with some crustal involvement in a subduction related environment. They were emplaced at deep level at more than 30 Km. The studied younger granitoids data points belong to the within-plate granitoids. The significant enrichment of Rb and Th compared to Nb indicates crustal involvement in the magma generation. They were emplaced at shallow level between 20-30 Km

Geology

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TUE : 23-03-2010 HALL[D] ORAL - SEC04 (4) 10:00 : 10:15

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GEO - 7 EG DR. EL-SAWY KAMAL elsawy_k_elsawy@yahoo.com

GEOENVIRONMENTAL STUDIES BY USING REMOTE SENSING DATA ON LAKE MANZALA – EGYPT.

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ABSTRACT

Lake Manzala is located in the northeastern part of the Nile Delta. Its northern border is a narrow sandy fringe which separates the lake from the Mediterranean Sea. It is bordered by the Suez Canal from the east, Damietta Branch of the Nile from the west and cultivated lands from the south. The study area lies between latitudes $31^{\circ} 00'$ and $31^{\circ} 30'N$ and longitudes $31^{\circ} 45'$ and $32^{\circ} 20'E$. It is a gained to the Mediterranean Sea by narrow channels (Ashtum Al Gamil, Ashtum Al-Boghdadi and Ashtum Al-Dieba). The authors are going to explain the reason of decreasing size of the lake area by using the remote sensing techniques. The satellite images are use in this search for making the change detection are TM 1984 and ETM+ 2000. The search improved that there are several factors affecting the environmental manor such as continuity of degradation and deposition, the accumulation of vegetation remnants, the blowing of sand, natural and man produced desiccation, the closing of some irrigation channels, and the construction of levees.

Geology

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TUE : 23-03-2010

HALL[D]

ORAL - SEC04 (5)

10:15 : 10:30

286

GEO - 8

EG

DR. ABLA RAGAB

abla.ragab@gmail.com

CHEMICAL AND RADIOACTIVITY CHARACTERIZATION OF MINERALIZED PEGMATITE FROM ABU RUSHEID AREA, SOUTH EASTERN DESERT, EGYPT

Dr.Abla Ragab

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ABSTRACT

The mineralized pegmatite in Abu-Rushied area was analyzed geochemically by the inductively coupled plasma-mass spectrometry (ICP-MS) to determinate the content of the major, trace elements and the rare earth elements. The mineralized pegmatite is trending NNW-SSE with dip of about 10-30° due WSW. It is emplaced parallel to foliation and banding of the cataclastic country rocks. The studied pegmatite shows a zonal distribution from the barren core to mineralized wall-zone in the metals; Nb, Ta, Zr, Hf, Th, U, Y and Ga. This pegmatite can be classified as rare metals enriched pegmatite with the geochemical signature; Rb, Li, Nb > Ta, Th, U, Zr, Ga, Y and F and can be correlated with the mixed (LCT + NYF) family displaying NYF > LCT characteristics. This pegmatite contains rare metals-bearing minerals such as zircon, rutile, columbite-tantalite, samarskite and other REE and Th minerals. Secondary uranium minerals have also been encountered. Cassiterite, chlorite, deep violet fluorite, calcite, goethite, hematite, pyrite, magnetite, zinnwaldite, phlogobite, and amazonite are the main accessory minerals. The mineral composition supports the NYF nature of this pegmatite. The studied pegmatite is highly differentiated within plate, NYF-type and characterized by high FeO/MgO ratio with high concentration of Nb, Y, Zr, Th, U, REE (except Eu), and Ga. It was derived from F-enriched proterozoic crustal source depleted in Cs, B and P. It is peraluminous and highly fractionated postorogenic A-type, emplaced within plate environment and had been affected by hydrothermal alteration. The pegmatite displays clear M-type tetrad effect with increasing isovalents ratio; Nb/Zr, Y/Ho accompanied with an increase in the content of SiO₂ and Rb/Sr ratio. The ratio of the isovalents Zr/Hf does not follow the role. The pegmatite has a prominent negative Eu anomaly and excessively low K/Rb ratio. The radioactivity of the studied pegmatite is related to both uranium and thorium occurring in zircon, allanite, xenotime, monazite, thorite, uranothorite, thorianite, samarskite, columbite, fluorite and autonite. The potential anomalous radioactivity in the pegmatite of Abu Rushied is attributed to both magmatic and hydrothermal processes.

Geology

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TUE : 23-03-2010 HALL[D] ORAL - SEC09 (1) 10:30 : 11:00

286

GEO - 2 EG PROF. MOHAMED HASSAAN AWAD mhawad2002@hotmail.com

REVIEW OF THE EOCENE SEQUENCE IN EGYPT

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ABSTRACT

Geology

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TUE : 23-03-2010 HALL[D] ORAL - SEC09 (2) 11:00 : 11:15

286

GEO - 9 EG DR. THARWAT ABDELHAFEEZ tharwat_geophysics@yahoo.com

EVALUATION OF THE SHALLOW BED ROCK ALONG THE QUATTAMIYA_SUKHNA HIGHWAY,CAIRO_SUEZ AREA, EGYPT

HASSAN EL KADI , THARWAT H.ABDELHAFEEZ , AHMED KOTB , HOZAYEN A. HOZAYEN ,
SAID A. HABEB

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Geology Department, Al-Azhar University, Cairo, Egyp

Geology Department, Al-Azhar University, Cairo, Egyp

Engineering, Civil Engineering Department, Cairo University

Engineering, Civil Engineering Department, Cairo University

Orascom Company

ABSTRACT

Several geophysical investigations were carried out at Quattamyia - Sukhna highway, which is passing through the study area to estimate the effectiveness of these geophysical methods for assisting in site characterization. The prevailed subsurface structures such as fractures, faults, voids, cavities and other shallow features are affecting the Eocene limestone bedrock of the study area. These systems include ground penetrating radar, and electrical resistivity imaging. The objective techniques of this study is to determine which method or methods can be best used to understand the subsurface geologic framework of a site under various conditions. Of particular interest is the identification of the best geophysical system, with regards to instrumentation, field procedures, analysis and illustration of output data for identifying and mapping materials that would be appropriate for transportation construction projects

Geology

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TUE : 23-03-2010 HALL[D] ORAL - SEC09 (3) 11:15 : 11:30

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GEO - 10 JO DR. HASSAN HASSAN tharwatgeophysics@yahoo.com

GEOCHEMISTRY, MINERALOGY AND ORIGIN OF CRETACEOUS CHERT, AREA WALA, CENTRAL JORDAN

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Dept. of Geology, Al Azhar Univ. Cairo, Egypt

ABSTRACT

The Upper Cretaceous cherts in central Jordan are widely distributed on western margin of Arabian Plate. The characteristic structures of these cherts are bedded, concretion and brecciated structure. The studied cherts are very simple in chemical composition with contents of siliceous minerals exceeding 80wt.% and those of other mineral species being very low. The total content of trace elements is considerably variable, and most trace elements are low. Petrologic and geochemical evidence suggest a hydrothermal origin of the studied chert. The product of hydrothermal processes and the submarine hydrothermal are the main source of the silica forming these cherts.

Geology

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TUE : 23-03-2010 HALL[D] ORAL - SEC09 (4) 11:30 : 11:45

286

GEO - 11 JO DR. HASSAN HASSAN tharwatgeophysics@yahoo.com

CAVES IN THE DESERTS OF SAUDI ARABIA

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Geology Dept. King Abdel Aziz University, Saudi Arabia

Geological Survey, Saudi Arabia

ABSTRACT

The caves of Saudi Arabia are a natural resource, In 2000, Saudi of mapping and studying already-known limestone caves and Geological Survey initiated Subproject 4.1.1.2.1 Reconnaissance of underground cavities (caves) in Phanerozoic rocks with the objectives reconnoitring the Kingdom to discover new karst area which might host caves. In 2001, SGS researchers discovered that the kingdom's 89,000 square kilometre of lava fields also contain caves, Studies revealed that the limestone cav are important for their past and present role in recharging the country aquifers, The volcanic caves proved to host so many rare secondary minerals that a Saudi lava tube is now included among the ten mineralogical most important lava caves in the world. It must, however, be stated that caves are more than a geological resource for the country. Saudi Arabia's caves were found to contain bones, artefacts and living creatures of interest to Paleontologists, biologists and archeologists . Cave formations and sediments were found to contain important information for climatologists on the past weather patterns of the Arabian peninsula and the process of desertification. A study on Show Caves demonstrated that Cave Tourism could be profitably carried out in the kingdom. Finally, the importance of knowing the size and location of caves cannot be ignored. While the usefulness of this previously unsuspected resource, was found to be wide and varied.

Geology

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TUE : 23-03-2010

HALL[D]

ORAL - SEC09 (5)

11:45 : 12:00

286

GEO - 12

EG

MR. AHMED ALMOAZAMY

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PETROLOGY, GEOCHEMISTRY AND ORIGIN OF FELSIC DYKE SWARMS IN NE AQABA COMPLEX-JORDAN

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Al-Azhar University, Faculty of Science, Geology Department, Egypt

ABSTRACT

The present work deals with the geologic setting, petrographical and geochemical study of the Late-Precambrian magmatic rocks especially the felsic dyke swarms of northeast Aqaba complex in South Jordan. Northeast Aqaba complex represents one of the most significant regions in the South Jordan basement. The basement rocks in the studied region are composed of schists, gneisses, migmatites, metagabbros, diorite and granite. It is invaded by post-orogenic dyke swarms. The post-orogenic dyke swarms have been recognized as felsic dykes of dacite, rhyodacite and rhyolite composition. They are composed mostly of plagioclase, K-feldspar, quartz, hornblende with minor zircon and apatite as accessory and chlorite as secondary minerals. Chemically, these felsic dykes are enriched in potassium and are of peraluminous nature and enriched in compatible elements especially in the large ion lithophile elements viz; K, Rb and Ba. They are formed by partial melting of crustal rocks. The felsic dykes can be related to an intercontinental setting that was accompanied by a chemical evolution of the extensional movements which are already known from other area in northeast portion of the Arabian-Nubian Shield.

Geology

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TUE : 23-03-2010

HALL[D]

ORAL - SEC09 (6)

12:00 : 12:15

286

GEO - 13

EG

DR. ABLA RAGAB

wedadthurwat@gmail.com

RARE EARTH ELEMENTS CHEMISTRY IN MICA-LAMPROPHYRE DYKE IN SIKAIT, SOUTH EASTERN DESERT, EGYPT

IBRAHIM, M.A , RAGAB, A.A

Nuclear Material Authority

Nuclear Material Authority

ABSTRACT

Sikait lamprophyres are emplaced mainly in NW-SE and NE-SW trends cutting porphyritic monzogranite and metamorphosed sandstones (MSS). These lamprophyres are altered, show porphyritic and poikilitic texture with olivine, clinopyroxene, clinoamphibole phenocrysts in groundmass of clinopyroxene, clinoamphibole, opaque and lithium micas. The alteration products are represented by clinoamphibole (tremolite-actinolite, uralite and hornblende), carbonate, epidote, chlorite, iddingsite, clay minerals, limonite and serpentine. Major, trace elements and rare earth elements were determined by ICP-MS. Petrochemistry, these lamprophyres can be classified as alkaline lamprophyre and its source magma rich in LREE and LILE. Silica contents range from 41.65% to 50.88%. The samples have $Na_2O > K_2O$. The studied lamprophyre dykes are enriched in LILE, LREE and elevated HFSE contents but strongly depleted in compatible elements such as Cr and Ni relative to primitive mantle. Lithium mica in lamprophyres consequence of an enriched mantle source. Sikait lamprophyres have moderate Zr/Hf (35.6-52.8) and Nb/Ta (20.5-22.5) ratio. Most of these features are attributed to the origin of these dykes from metasomatised mantle affected by subduction-related fluid. These lamprophyres are compositionally similar to Salu Lamprophyres, eastern China. Sikait Lamprophyre samples have high LREE (320-419 ppm) relative to HREE (20-33ppm) with ratios (LREE/HREE = 11.6-18.7) with no Eu anomaly ($Eu/Eu^* = 0.9 \pm 1.04$) The common presence of positive Ce anomaly ($Ce/Ce^* = 1.04$) in lamprophyre samples suggests the oxidizing condition under which the REE's were precipitating due to the common occurrence of apatite. The result magma had not contamination with continental crust. The magma produced from metasomatised mantle affected by subduction-related fluid.

Geology

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TUE : 23-03-2010 HALL[D] ORAL - SEC09 (7) 12:15 : 12:30

286

GEO - 14 EG DR. ABLA RAGAB wedadthurwat@gmail.com

GEOCHEMISTRY AND RADIOACTIVITY OF MINERALIZED PEGMATITE FROM ABU RUSHEID AREA, SOUTH EASTERN DESERT, EGYPT

RAGAB A,A.

NUCLEAR MATERIAL AUTHORITY

ABSTRACT

The mineralized pegmatite in Abu-Rusheid area was analyzed geochemically by the inductively coupled plasma-mass spectrometry (ICP-MS) to determinate the content of the major, trace elements and the rare earth elements. The mineralized pegmatite is trending NNW-SSE with dip of about 10-30° due WSW. It is emplaced parallel to foliation and banding of the cataclastic country rocks. The studied pegmatite shows a zonal distribution from the barren core to mineralized wall-zone in the metals; Nb, Ta, Zr, Hf, Th, U, Y and Ga. This pegmatite can be classified as rare metals enriched pegmatite with the geochemical signature; Rb, Li, Nb > Ta, Th, U, Zr, Ga, Y and F and can be correlated with the mixed (LCT + NYF) family displaying NYF > LCT characteristics. This pegmatite contains rare metals-bearing minerals such as zircon, rutile, columbite-tantalite, samarskite and other REE and Th minerals. Secondary uranium minerals have also been encountered. Cassiterite, chlorite, deep violet fluorite, calcite, goethite, hematite, pyrite, magnetite, zinnwaldite, phlogobite, and amazonite are the main accessory minerals. The mineral composition supports the NYF nature of this pegmatite. The studied pegmatite is highly differentiated within plate, NYF-type and characterized by high FeO/MgO ratio with high concentration of Nb, Y, Zr, Th, U, REE (except Eu), and Ga. It was derived from F-enriched proterozoic crustal source depleted in Cs, B and P. It is peraluminous and highly fractionated postorogenic A-type, emplaced within plate environment and had been affected by hydrothermal alteration. The pegmatite displays clear M-type tetrad effect with increasing isovalents ratio; Nb/Zr, Y/Ho accompanied with an increase in the content of SiO₂ and Rb/Sr ratio. The ratio of the isovalents Zr/Hf does not follow the role. The pegmatite has a prominent negative Eu anomaly and excessively low K/Rb ratio. The radioactivity of the studied pegmatite is related to a) uranium mineral (autonite), b) thorium minerals (thorite, thorianite and uranothorite) and c) accessories minerals (zircon, allanite, xenotime, monazite, fluorite, columbite and samarskite). The potential anomalous radioactivity in the pegmatite of Abu Rusheid is attributed to both magmatic and hydrothermal processes.

Geology

202

WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (1) 01:00 : 01:25

286

GEO - 4 EG MR. AHMED ALMOAZAMY almoasamy@yahoo.com

GEOLOGY AND GEOCHEMISTRY OF WADI AL OBEIYID AND AIN DALLA AREA, FARAFRA OASIS, WESTERN DESERT, EGYPT

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Mineral Resources Authority

Dean of Faculty of Science- Al Azhar University

ABSTRACT

The present work is concerned principally with studying of the stratigraphy, geochemistry and depositional environments of the rock units at the study area which located at the Western Desert, to the northwest of Farafra Oasis, between longitude 27°00' 00" - 28°00' 00" E and latitude 27°00' 00" - 27°30' 00" N. The exposed rock units at the study area can be classified into seven stratigraphic rock units arranged from oldest to youngest as: El Hefhuf Formation, Khoman Chalk which change laterally in some places into argillaceous facies of Dakhla Shale. Tarawan Formation, Esna Shale, Ain Dalla Formation and Farafra Limestone. Geochemical study based on the chemical analysis of the rock sequence helped in interpreting the behavior and abundance of the major and trace element and its mutual relationship. The measured major constituents are SiO₂, Al₂O₃, FeO, CaO, MgO, Na₂O, K₂O and LOI., while the measured trace constituents are; V, Cr, Co, Ni, Zn, Mn, Sr and Ti. The result of study of the lithology, microfacies association and faunal content of the different formations indicated that: The lower part of the El Hefhuf Formation deposited in a shallow marine to coastal marine environment with floods or other accidental causes of fluctuation in supply that are seasonally controlled while the upper part deposited in swampy tropical period of deposition. The Lower part of the Khoman Chalk deposited in an open marine environment while the upper part deposited in a shallow marine environment. The Tarawan Chalk deposited in a shallow marine environment. The lower part of the Esna Shale deposited in a pelagic environment, whereas the upper part has a different litho and microfacies suggesting a shallow agitated outer shelf environment. The argillaceous limestone part of the Ain Dalla Formation deposited in a shallow water outer shelf environment, while the chalky limestone part deposited in a warm shallow subtidal environment. The Farafra Limestone were deposited in a shallow subtidal environment.

Geology

203

WED : 24-03-2010

HALL[POSTER]

POSTER - SEC05 (2)

01:00 : 01:25

286

GEO - 5

EG

PROF. AHMED KOTB

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DRAWBACKS OF THE LATENESS OF THE ROLE OF GEOLOGY AND GEOPHYSICS IN THE CONSTRUCTION OF NEW CITIES

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ABSTRACT

Nowadays the Egyptian governmental approach toward geological and geophysical role before constructing new cities had been changed. This new policy is a good opportunity and challenge for geological departments in Egypt. Previous policy of lateness of the role of geology and geophysics in the construction of new cities causes some drawbacks such that happened in El Obour city. El Obour is a newly constructed city in the desert located 25 km from Cairo. The city covers almost 200 km² and is characterized by significant variations in topography and geology. These variations play an important role in drainage of sewage and irrigation water from the elevated part of the city at 173 m to the mainly sandy dune bed rock in the lower region at 30 m elevation. In these lower parts, problems arise because of water logging and groundwater mounding. Geophysical techniques, in particular resistivity soundings, have been applied to analyze the subsurface conditions in the study area. One hundred and six vertical electrical soundings have been conducted with a Schlumberger configuration to analyze the type and extend of the ground layers. GIS packages were used as an interface to derive a set of vector and raster maps that show the subsurface characteristics. Low electrical resistivity values of 5 to 15 Ωm are identified as corresponding to clay, clayey silt or clayey sand layers that impede infiltration and restrict ground water drainage. Some of these fan shaped clay layers might reflect old delta branches of earlier geologic times. The distribution of the clayey layers clearly coincides with the areas facing water logging problems. The closer these clay layers are situated near the surface and the larger their thickness the more water logging is observed. Hence, the distribution of these clay layers can be a key factor to design dewatering strategies. Additionally, groundwater flow can be modeled using the obtained resistivity and lithologic maps to estimate hydraulic conductivities and derive aquifer and aquitard properties. In combination with hydrologic data, this will enable to quantify soil water infiltration and groundwater seepage and to design drainage systems. More studies concerning geology, geography, hydrogeology and other related fields are recommended before constructing such new cities.

Geology

204

WED : 24-03-2010	HALL[POSTER]	POSTER - SEC05 (22)	01:00 : 10:25
GEO - 15	EG	DR. AHMED SAAD	dr_saad_en@yahoo.com

286

CHARACTERIZATION AND UTILIZATION OF THE UPPER CRETACEOUS – LOWER EOCENE OF QUSEIR AREA EASTERN DESERT, EGYPT

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ABSTRACT

The present paper is a comparative study of the physical, mineralogical and mechanical properties of the rocks which belong to the Upper Cretaceous – Lower Eocene succession of Quseir area. Stratigraphically the area consists of seven formations from base to top : Nubia Sandstone, Quseir Variegated Shale, Duwi Formation, Dakhla Shale, Tarawan Chalk, Esna Shale and Thebes Formation. From the petrographic analysis 1-Duwi Formation is composed of , Quartz Arenite, Dolomite, Phosphatic biomicrite, Sandy Phosphorite, Phosphorite. 2 -Thebes Formation consists of Biomicrite microfacies associations: The X-Ray diffraction analyses of Duwi Formation indicate that it composed completely of Quartz and Thebes Formation composed of calcite with trace of quartz and dolomite. The mechanical properties of studied samples indicated of : -In Duwi Formation the pore space of sandstone is filling by glauconite which made hard rock. The limestone of Thebes Formations are poor because the limestone is pure or filled by argillaceous materials, but in the upper layer of Thebes Formation, the limestone has chert bands which made hard rock.

Biology

(Botany, Zoology and Microbiology)

Botany

205

TUE : 23-03-2010 HALL[C] ORAL - SEC13 (1) 01:00 : 01:15

286

BOT - 1 LY DR. KHALIFA MOHAMED melanos2005s2020@yahoo.com

GENES EXPRESSION IN EPIDERMIS AS WELL AS IN LEAVES OF ARABIDOPSIS UNDER COLD STRESS. KHALIFA SULEIMAN MOHAMED ¹ AND ROGER.S PEARCE ²
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Khalifa Suleiman Mohamed , Roger.S Pearce

University of Al-Jabal Elgharbi Libya

University of Newcastle upon Tyne United Kingdom.

ABSTRACT

The epidermis has an important role in plant physiology. How does it acclimate to cold? In this work, I compared gene expression in the epidermis and whole leaf of Arabidopsis in the cold. all the genes were expressed in epidermis as well as leaves, but the levels were mostly higher in leaves than epidermis in the cold. The level of CBF1 was more highly expressed in epidermis at time 0 and 2 h, but in the leaves was expressed by 2 h in the cold. However, CBF3 was earlier expressed in epidermis but was later in leaves in the cold but, the level of COR15a was more highly expressed in leaves than in epidermis. There were similarities and differences in the responses of leaves and epidermis. The pattern of CBF1 and CBF3 expression was different in different tissues and at different times in the cold. Epidermis as well as leaf expressed nearly all genes tested in this work.

Botany

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TUE : 23-03-2010

HALL[C]

ORAL - SEC13 (2)

01:15 : 01:30

286

BOT - 3

EG

ASSOC.PROF. WAEL KASEM

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SEED COAT MORPHOLOGY AND CYTOLOGICAL STUDIES IN SOME TAXA OF THE
GENUS CHENOPODIUM L. (CHENOPODIACEAE) KASEM, W. T, EL-KHOLY, M. A,
A. FARGHAL, GAAFAR. A. S.

Kasem, W. T , El-Kholy, M. A , A. Farghal , Gaafar. A. S

ABSTRACT

Taxonomical studies using seed coat scanning and cytological data on fifteen taxa belonging to 9 species of the genus *Chenopodium*, L. namely *C. album*, *C. ambrosioides*, *C. amranticolor*, *C. bonus-henricus*, *C. ficifolium*, *C. glaucum*, *C. murale*, *C. quinoa* and *C. strictum* have been studied. Seed surface of the genus *Chenopodium* was investigated by Scanning Electron Microscopy (SEM). In addition cytological data such as chromosome count and nucleic acid techniques have been compared. Data of seed coat morphology and cytological data were analyzed by STATISCA program package using the UPGMA clustering method. The obtained results showed that the studied taxa have been classified into different distinct taxonomical levels.

Botany

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TUE : 23-03-2010

HALL[C]

ORAL - SEC13 (3)

01:30 : 01:45

286

BOT - 6

SA

DR. YAHYA MASRAHI

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ENHANCED WATER ECONOMY AND CAM IN THE DESERT STEM SUCCULENT CARALLUMA ACUTANGULA IN SOUTHWESTERN SAUDI ARABIA

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Jazan University

King Saud University

ABSTRACT

The desert stem succulent *Caralluma acutangula* (Decne.) N.E.Br. has enhanced water economy due to anatomical and biochemical features that enable it to tolerate harsh conditions prevailing in its native habitat. Juvenile seedlings have high surface : volume ratio (S/V ratio) and exhibit the C3 pathway of photosynthesis. These seedlings adopt the C3 pathway in order to benefit from favorable conditions and water available during the short wet season for fast growth and establishment. Mature plants, on the other hand, have a very low S/V ratio of 0.5, a very high ratio of chlorenchyma area : total surface area (AChI/A ratio) of 256, and exhibit crassulacean acid metabolism (CAM) pathway of photosynthesis in order to tolerate the hot and dry conditions prevailing during the long dry season. Mature plants also have a low stomatal frequency and a cortex containing collapsible hydrenchyma that provides constant flux of water to the chlorenchyma during the dry season. Marked diurnal changes of cell sap titratable acidity together with concomitant changes of cell sap osmotic potential in mature plants revealed the presence of CAM. However, lower oscillations of these parameters observed during the long dry season denoted induction of CAM cycling.

Botany

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TUE : 23-03-2010 HALL[C] ORAL - SEC13 (4) 01:45 : 02:00

286

BOT - 10 EG MS. FATMA HAMADA alzahraa.albatool@gmail.com

PHYTOCHEMICAL, MACRO AND MICRO-MORPHOLOGICAL ASPECTS OF NATURALIZED EXOTIC SOLANUM DIPHILLUM L.

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South Valley University, Faculty of Science, Botany Department, Aswan, Egypt.

ABSTRACT

Solanum L. is the largest genus in the family Solanaceae and one of the most species-rich genera of the flowering plants. Generally, members of Solanaceae are of great economic importance. Various parts of many species belonging to the genus Solanum are widely used medicinally throughout the world and considered an extremely important source of drug therapy. In the current study several saponins were isolated from 80% methanol fraction of various parts of Solanum diphyllum L., their structure were elucidated by advanced spectroscopy methods such as 1D and 2D spectroscopy. Its biological activity was tested. The morphological and anatomical features of Solanum diphyllum were investigated. The present study is considered as an important study on this species.

Botany

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TUE : 23-03-2010 HALL[C] ORAL - SEC13 (5) 02:00 : 02:15

286

BOT - 11 EG MS. FATMA HAMADA alzahraa.albatool@gmail.com

ECOLOGICAL FACTORS AFFECTING SOLANUM DIPHYLLUM L. SEED GERMINATION, A PROMISING MEDICINAL PLANT.

Mohamed G. Sheded , Fatma A. Hamada , Arafa I. Hamed , Abdel-samea M. Shaheen

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ABSTRACT

The use of herbal medicine can play a key role in healing most of the serious diseases. In vitro study of crude extract effect of different parts of Solanum diphyllum upon three different cancer cell lines showed a comparable decrease in the cell survival fraction. The current study aims to know the most appropriate conditions that can increase Solanum diphyllum germination rate. Seed germination requirements of this plant were studied. The effect of different temperature degrees on germination rate of Solanum diphyllum was investigated and the response to drought and salinity stresses which was directly related to the treatments' concentration as detected.

Botany

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WED : 24-03-2010

HALL[POSTER]

POSTER - SEC05 (7)

01:00 : 01:25

286

BOT - 2

IQ

DR. HANA AL-SALEH

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THE EFFECT OF MICROWAVES ON THE GROWTH OF BLACK SEED NIGELLA SATIVA L. SEEDLINGS AND INITIATION OF CALLUS FROM IT

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ABSTRACT

The research included the effect of microwaves on *Nigella sativa* seedling ,which grown on the culture media for germination of seeds and seedling growth. This was done by exposure of seeds to microwaves for different periods, the results showed that the germination percent of seeds exposed to microwaves for (100) minutes, was nearly that of the seeds in the control treatment ,it reached to 90%,94% respectively ,this was after 7days from culture. Germination percent in the other treatments ranged between 68%-88%,also the mean of seedlings length which grown from seeds exposed to microwaves for 20 and 120 minutes reached 2.5 and 2.4 cm respectively ,and so it is closely to 2.6 cm for the control treatment. On the other hand, the results cleared that the stem explants of seedlings containing a node , exposed to microwaves, varied by their response for callus initiation, that is after 20 days from culture. The explants in the control treatment showed good (+++) response ,while in the other treatments where explants exposed to microwaves showed less (++) response than the control .except that exposed for (100)minutes ,the response was similar to that of the control. The fresh weight of callus grown for 45 days from stem explants exposed to microwaves for 20 and40 minutes were 2.0 and 2.1 g respectively compared with 2.3 g for the control. In spite that the maximum fresh weight of callus gained in this study which was 6.8 g after 70 days growth from explants exposed for 80 minutes to microwaves ,but it is still less than 8.5 g for the control.

Botany

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (8) 01:00:01:25

286

BOT - 5 EG ASSOC.PROF. ABD EL-MONEM SHARAF sharaf@yahoo.com

ROLE OF GIBBERELIC ACID IN ABOLISHING THE DETRIMENTAL EFFECTS OF CD AND PB ON BROAD BEAN AND LUPIN PLANTS.

Abd El-Monem M. Sharaf , Ibrahim I , Mahmoud

ABSTRACT

This work describes the changes in photosynthetic pigments, soluble carbohydrates, proteins and activities of certain enzymes of both broad bean and lupin plants in response to heavy metals (Cd or Pb), gibberellic acid (GA3) and their interactions. Significant reduction in contents of chlorophylls, soluble carbohydrates, soluble proteins were recorded in tested plants due to the treatment with either Cd or Pb. All applied treatments greatly affected the activities of amylases, proteases, catalases and peroxidases in both broad bean and lupin plants. Generally, it could be concluded that GA3 have (to some extent) a beneficial regulatory role in plants grown under both Cd and Pb polluted conditions.

Botany

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (9) 01:00 : 01:25

286

BOT - 7 EG MS. MARWA AWAD marwaziad2005@yahoo.com

FLAVONOIDS AND PHENOLIC CONSTITUENTS OF MORICANDIA SPECIES IN EGYPT

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Desert research center

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Desert research center

ABSTRACT

The chromatographic investigation of the flavonoid and phenolic acid in Moricandia species growing in Egypt (namely M. sinaica and M. nitens were collected from Wadi Feiran Saint Catherine, south Sinai and Agiba, 20 km west of Marsa-Matruh respectively), result in identification of 10 compounds (Isorhmentin , Isorhmentin -3-O-glucoside, Quercetin , kampfferol, Rutin , gallic acid, kaempferol 3-O- β -rutinoside-7-O- β -D glucopyronoside, Isorhamnetin 3-O- β -rutinoside -7-O- β -D glucopyronoside ,kaempferol- 3-O- β -glucoside and quercetin 3-O- β - glucoside). The phenolic compounds were separated, purified by using Sephadex LH-20 and Silica gel columns and identified using Rf-values, UV and ¹H-NMR spectral analysis.

Botany

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (10) 01:00 : 01:25

286

BOT - 8 EG MS. MARWA AWAD marwaziad2005@yahoo.com

CHEMICAL COMPOSITION OF MORICANDIA SPECIES IN EGYPT.

Nady A. E.Ghanem , Inas Abd El-Moatti Mohammed , Samira Kamal Tahoon , Marwa
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Desert research center

Faculty of Science-Al-Azhar University

Desert research center

ABSTRACT

Mineral composition of Moricandia species (*M.sinaica* and *M. nitens*) were studied its observed that, the highest percentage of summation of minerals determined and inorganic matter (ash content) were recorded at autumn where the lowest were recorded at summer , Crude fibre was 42.11% at autumn and 54.3 % at summer, total carbohydrates were 4.8 % and 5.0 % , total protein was 39.3 % and 26.25 % , total lipids were 2.69 % and 1.25 % , total flavonoids was 1.4 % and 0.7 % , total saponins was 10.9 % and 1.73 % at winter for *M. sinaica* and *M. nitens* respectively and the total tannins higher during the autumn (2.1 %) in *M. sinaica* and (2.9 %) at summer in *M. nitens* . The most abundant amino acid was proline and the lowest was methionine, the major fatty acid was palmitic acid and the β -sitosterol is the highest amount of hydrocarbons and sterols

Botany

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (11) 01:00 : 01:25

286

BOT - 9 EG ASSOC.PROF. EL-KHOLY MOHAMED al_gaafar_2006@yahoo.com

TAXONOMIC STUDIES USING POLLEN GRAIN CHARACTERS AND ELCTROPHORETIC TECHNIQUES OF SOME TAXA OF GENUS CHENOPODIUM (CHENOPODIACEAE)

El-Kholy, M. A , Kasem, W. T , Farghal, I. , Gaafar. A. S

ABSTRACT

Taxonomical studies using Palynological and electrophoretic characters on fifteen taxa belonging to 9 species of the genus *Chenopodium* namely *C. album*, *C. ambrosioides*, *C. amranticolor*, *C. bonus-henricus*, *C.ficifolium*, *C. glaucum*, *C. murale*, *C. quinoa*, *C. strictum* have been studied. Pollen grain characters were carried out using light microscope (LM) and Scanning Electron Microscopy (SEM), also, electrophoretic pattern of seed protein profiles and esterase isozymes have been compared using sodium dodecyl sulfate polyacrylamide gel electrophoresis techniques. The data of pollen grain morphology and electrophoretic characters were analyzed by STATISCA program package using the UPGMA clustering method illustrated two distinct taxonomic levels.

Botany

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WED : 24-03-2010

HALL[POSTER]

POSTER - SEC05 (12)

01:00 : 01:25

286

BOT - 12

EG

PROF. ENAYAT DESOUKY

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BIODEGRADATION OF FORMULATED GLYPHOSATE AS NITROGEN AND PHOSPHORUS SOURCES BY ASPERGILLUS USTUS AND PENICILLIUM CITRINUM

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Botany Department, Faculty of Science, Al-Azhar University

ABSTRACT

Biodegradation of the glyphosate herbicide by the fungi *Aspergillus ustus* and *Penicillium citrinum* was determined in a complete and in phosphorus- or nitrogen-free Dox's media. The fungi were previously isolated from soil and treated with herbicide at 500 µg/g soil. The results indicated that glyphosate concentration from 50 µg/ml up to 200 µg/ml in a complete Czapek's-Dox medium enhanced the growth of the two isolated fungi. However, the growth of both fungal strains was reduced by adding 250-300 µg/ml glyphosate to the production media. Both fungal strains were grown well on phosphorus- or nitrogen-free medium amended with different concentrations of glyphosate herbicide compared to the herbicide-free medium. However the fungal strains were able to grow moderately on phosphorus-free medium than on nitrogen-free medium. This indicated that *A. ustus* and *P.citrinum* could utilize glyphosate as sources of phosphorus or nitrogen. Additionally, total proteins and phosphorus determination in mycelial biomass of both strains confirmed this criteria. Increasing the concentration of glyphosate in both phosphorus- and nitrogen-free media was accomplished with increasing total proteins in mycelial biomass of the two strains. However, the proteins content in case of *A. ustus* was more than that in case of *P.citrinum*. Also, the increase of the herbicide concentration in phosphorus-free medium resulted in an increase of the phosphorus content in mycelial biomass of both fungi. However the phosphorus content in case of *A. ustus* was more than that in case of *P. citrinum*. Alkaline phosphatase activity was increased in case of both strains the two isolates by increasing the concentration of glyphosate up to 200 µg/ml. The enzyme activity was higher in an *A.ustus* than *P. citrinum*. The glyphosate residues in both complete or uncompleted Czapek's-Dox broth media were determined. It was found that the herbicide consumption was higher in nitrogen-free medium than that in phosphorus-free one. Also the consumption was higher in the case of *A. ustus* than *P. citrinum*. The results showed that the two strains had higher potential to biodegrade glyphosate in phosphorus-free medium, but less degradation was found in nitrogen-free medium.

Botany

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (13) 01:00 : 01:25

286

BOT - 13 EG PROF. ENAYAT DESOUKY heba200080@yahoo.com

SUGARCANE BAGASSE WASTE AS SUBSTRATE FOR α -AMYLASE PRODUCTION BY BACILLUS SUBTILLIUS J110 UNDER SOLID STATE FERMENTATION CONDITIONS

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Fermentation biotechnology and applied microbiology, Al-Azhar University

ABSTRACT

Bacillus subtilis j110 (27B2) was selected as the most potent amylolytic bacteria which allowed to grow on enviro-agroindustrial waste (sugarcane bagasse) under solid state fermentation (SSF) conditions. Parameters which controlling on α -amylase production were studied, where the best substrate concentration was at 2.5g/flask, pH: 8, for 48h incubation period, at 35°C, lactose was the best carbon source, ammonium chloride was the best nitrogen source, valine was found to gave higher enzyme productivity on solid bagasse waste among all other tested amino acids in this study, Ascorbic acid amended at concentration (50ppm) was the best inducer for α -amylase production, ferric chloride at (50ppm) induces amylase production. The optimum bottle capacity for amylase production by *B.subtilis* j110 was found to be 1000 ml. α -amylase was purified using sephadex G-200 gel filtration column chromatography technique. Amino acid analysis indicate that proline represented the highest value i.e. 1390.83 μ g/mL. The molecular weight of enzyme was 97.400 kDa where SDS-PAGE of enzyme contains three bands with different molecular weight. Properties of purified α -amylase was studied where the maximum activity of amylase enzyme was obtained at 40°C, thermostability of purified enzyme was at (40-45)°C, pH:9, optimum pH stability was at 10 when incubated for 2h with substrate concentration of (0.1-0.2%).

Botany

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (14)

01:00 : 01:25

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BOT - 14

EG

ASSOC.PROF. ABD EL-MONIUM SHARAF

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GROWTH, YIELD AND SOME PHYSIOLOGICAL ASPECTS OF SOYBEAN PLANTS IN RESPONSE TO FOLIAR TREATMENT WITH BENZYLADENINE AND PHOSPHON-D

Ibrahim I. Farghal , Abd El-Monem M. Sharaf , Mohamed A. A.

ABSTRACT

The present study was carried out to investigate the effects of different foliar treatments with either benzyladenine (BA) or phosphon – D on growth, yield and certain metabolic responses of soybean plants. Most of the growth parameters including length's of shoots and roots, fresh and dry weights of shoots and roots were, generally, increased in response to treatment with BA. The most effective concentration was 100 ppm. Plants treated with 200 ppm or 400 ppm of phosphon – D resulted in, mostly, significant increase in plant biomass (fresh and dry weight of shoots and roots). However, application of high concentration of phosphon-D (800 ppm) tended to decrease the fresh and dry weights of both shoots and roots of the treated plants. The lower concentration of BA (50 ppm) was the more effective in increasing the number of pods/plant, number of seeds per plant and the weight of 100 seeds. On the other side, only ,weight of 100 seeds was increased due to the treatment with the medium dose of phosphon – D, while the number of pods/ plant as well as the number of seeds/plant were tended to decreased in response to other applied concentrations of phosphon – D. Application of BA and/or phosphon-D , at all concentrations , resulted in, generally, significant increases in the contents of chlorophyll a, b and total chlorophyll content (a + b) of soybean plants. Treatment with 100 ppm BA, mostly increased mono- & disugars of yielded seeds and most of analysed parts, while polysugars tended to decrease. The same trend was observed with 200 ppm BA. Contents of di & polysaccharides significantly increased in the yielded seeds in response to the medinm and higher doses of phosphon-D (400 & 800 ppm). While the lower dose (200 ppm) insignificantly affect the contents of di & polysaccharides in all other analyzed parts

Zoology

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TUE : 23-03-2010 HALL[C] ORAL - SEC13 (6) 02:15 : 02:30

286

ZOOL - 1 EG DR. AMAL EL-REFAIY amshabana2008@yahoo.com

HISTOLOGICAL STUDY ON THE EFFECTS OF FOOD ADDITIVES (SODIUM SACCHARIN) ON THE LIVER AND KIDNEY OF ALBINO MICE

Amal I. El-Refaiy , Osama A. Sharaf El Dean , Rabea A. Mouse

Tanta, Egypt.

Egypt

Egypt

ABSTRACT

The present study is an investigation of histological effect of sodium saccharin on liver and kidney of male albino mice. The animals were divided into five groups (one control and four treated groups), the treated groups daily received sodium saccharin at doses 0.2%, 1.0%, 1.5% and 0.5% respectively. Each group was divided into two subgroups according to duration of administration, subgroup (a) for 5 days and subgroup (b) for 21 days. Histological changes of the liver were recorded as cytoplasm degeneration, congestion, dilation of central vein and necrosis of some areas. Also, the kidney showed high proliferation of glomerular tuft, swollen of renal tubules and rupture of some walls of bowman`s capsule. These changes were increased with high doses and long-time administration.

Zoology

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TUE : 23-03-2010 HALL[C] ORAL - SEC13 (7) 02:30 : 02:45

286

ZOOL - 2 EG DR. AMAL EL-REFAIY amshabana2008@yahoo.com

GENOTOXIC EFFECTS OF FOOD ADDITIVES (SODIUM SACCHARIN) ON ALBINO MICE

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Egypt

ABSTRACT

The purpose of this investigation was to evaluate the genotoxic effect of sodium saccharin (common food sweeteners) on the concentration of liver DNA and total protein of liver and serum by using Electrophoretic analysis. The animals were divided into five groups (one control and four treated groups), the treated groups daily received sodium saccharin at doses 0.2%, 1.0%, 1.5% and 0.5% respectively. Each group was divided into two subgroups according to duration of administration, subgroup (a) for 5 days and subgroup (b) for 21 days. The DNA concentrations were statistically increased in groups that taken 1.5% and 0.5% for 21 days. No damage of genomic DNA was recorded. The total protein of liver and serum was decreased and the electrophoretic pattern of protein showed decreasing of albumin and increasing of globulin concentrations.

Zoology

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (15) 01:00 : 01:25

286

ZOOL - 3 EG ASSOC.PROF. ADHAM SADIQ khaledbiochem@yahoo.com

EVALUATION OF IMMUNE RESPONSE IN CHILDREN INFECTED WITH ENTAMOEBIA HISTOLYTICA AFTER TREATING WITH METRONIDAZOLE

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ABSTRACT

This study was designed to evaluate the immune response in children infected by *E. histolytica* after treated by metronidazole. Immunological evaluation was performed by measurement of secreted cytokines (interleukin, IL-10 - tumor necrosis factor- α in blood of children, on the other hand *E. histolytica* cyst output in children stool was measured , and also measurement the NO level in peripheral blood of children . The present investigation is directed to study the therapeutic effect of different doses from metronidazole treatment for controlling of *E. histolytica* infection in children. The children infected with *E. histolytica* divided into three group according to the dose of metronidazole (Flagyl syrup). The 1st, second and third group were treated with a 30, 25 and 15 mg /kg per day for 7 days in 3 doses respectively. The results of the present study revealed a significant reduction in cyst count in stool of children were treated by metronidazole at dose 30mg /kg in comparison with control un treated . The data also revealed IL-10 and TNF-alpha were significantly increased as an immunological response for children treatment with metronidazole at dose 30 mg/kg body weight in comparison with children of dose 15 mg and untreated control group. Also the NO level revealed the significant decrease in children at dose 30 mg / kg in comparison with 25 and 15 mg/kg group.

Zoology

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (16) 01:00 : 01:25

286

ZOOL - 4 EG ASSOC.PROF. ADHAM SADIQ khaledbiochem@yahoo.com

IMMUNE INDUCTION BY A NATURAL PRODUCT AND PIPERAZINE CITRATE DRUG IN RATS INFECTED WITH ASCARIS LUMBERICOIDES

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ABSTRACT

Ascaris lumbricoides remains the most common intestinal nematode in the world. The cytokines are considered the arm of the adaptive immune system is mediated by T helper type 1, 2 cells (Th1 and Th2) and related cytokines, including interferon (IFN)- γ and tumor necrosis factor (TNF)- α , and has been reported to play a pivotal role in the control of many parasites. This study investigates the antihelmintic effect of natural product (Allicin garlic) extracts and also synthetic drugs (Piperazine Citrate). Our targeted to study the effect of natural and synthetic drugs on immune induction of infected rats by *Ascaris lumbricoides*. Ninety male rats *Rattus Rattus* were used. The rats were divided into 7 groups. The 1st group was control clean, and the second group was infected control. The groups (3, 4, 5, and 6) were treated by Allicin garlic extracts with i.m 8 times twice weekly at 0.1, 0.2, 0.3 and 0.4 mg/kg respectively. The Seventh group was received the Piperazine Citrate drug at dose 10 mg/kg body weight 8 times twice weekly. All groups were scarified after 30 days and investigated with the immunoresponse (cytokine) IL-10 and TNF – alpha, paralleled with measurements the ALT, AST, ALP, GGT and Malondialdehyde as an immune factor. The results of the current study revealed that the levels of IL-10 and TNF- alpha were increased significantly in groups treated with natural product (Allicin garlic). also our data revealed that the MDA level was decreased significantly in groups treated with natural product (Allicin garlic). On the other hand liver function ALT, AST, ALP and GGT were revealed the significant increased in groups treated by natural product (Allicin garlic) as well as Piperazine Citrate drug.

Zoology

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (17) 01:00 : 01:25

286

ZOOL - 5 EG ASSOC.PROF. MARIAM SHARAF mariam_sharaf2000@yahoo.com

EFFECTS OF DIETARY OXYTETRACYCLINE SUPPLEMENTATION ON HISTOPATHOLOGY IN LYMPHOID AND NON LYMPHOID ORGANS OF CYPRINUS CARPIO

Prof.Dr.Hekmat M. Tantawy , Dr. Mariam M. Sharaf , Prof.Dr.Ahmad F. Badran , Hend M.
Tag

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Assist.Prof.of fish biology, Dept. of Zoology, Faculty of Science, Suez Canal University

Prof.Dr.of fish disease, Faculty of Veterinary, Suez Canal University, Ismailia-Egypt

Assist.lecturer, Dept. of Zoology, Faculty of Science, Suez Canal University

ABSTRACT

A study was conducted to investigate the effect of long-term oxytetracycline (OTC) supplementation on histopathology of lymphoid and non lymphoid organs in *Cyprinus carpio* under lab conditions. Common carp were fed 2 dietary treatments for 12 weeks. The control treatment consisted of a standard commercial diet, and the OTC treatment consisted of the control diet supplemented with 100 mg/kg feed. Morphology of the spleen, pronephrous, trunk kidney, liver and gills was examined with light microscopy. Histopathological studies revealed lesions in spleen, pronephrous, kidney, liver and gills. Lesions in the spleen and haematopoietic tissue were prominent in fish fed pellets medicated with sub-therapeutic dose of OTC. Spleen revealed congestion, lymphatic infiltration and depletion of haematopoietic tissue. In pronephrous reduction in haematopiotic and lymphatic elements besides hydropic degeneration in interrenal tissue. Necrotic lesions accompanied by dilatation of sinusoids, fibrin deposition occurred in the liver. The kidney also had necrotic lesions in renal tubules, hemorrhage, dilatation of glomerular capillaries and depletion of renal space. Hyperplasia of chloride cells severe necrosis in epithelia cells of secondary lamellae, and congestion at the base of the secondary lamellae were in gill of fish treated with OTC. It is evident from the study that dietary oxytetracycline supplementation cause pathological changes in fish lymphoid and non lymphoid organs.

Zoology

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (18) 01:00 : 01:25

286

ZOOL - 6 EG DR. TAREK EL-SHEIKH tarek_elshekh2000@yahoo.com

MOSQUITO SPECIES DIVERSITY AND ABUNDANCE IN RELATION TO RICELAND AGROECOSYSTEM AND FILARIAL INFECTION IN KAFR EL-SHEIKH GOVERNORATE, EGYPT.

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Department of Zoology, Faculty of Science(girl), Al-Azhar University, Nasr City, Cairo, Egypt.

ABSTRACT

The present work studied the mosquitoes abundance, identification, distribution and densities in three villages (rural area) and one city (urban area) in Kafr El-Sheikh Governorate namely; Kebreet, Minyat Al-Ashraaf, El Salmia and Fowa city, respectively during the rice cultivation season in relation to filaria from June to Oct. 2009. A total of 11381 mosquitoes larvae belonging to four genera and 8 species were collected. Of which 3525 (31.0%) in Minyat Al-Ashraaf followed by 3339 (29.3%) in Kebreet, 3331 (29.3%) in El Salmia villages compared with 1186 (10.4%) in Fowa city. The five most common species collected during this study were *Culex pipiens* (38.3%), *Cx. antennatus* (28.2%), *Cx. univittatus* (15.8%), *Anopheles pharoensis* (10.4%), and *An. coustani* (3.2%). The mosquito species diversity (H) and evenness (EH) in the (rice cultivated areas) Minyat Al-Ashraf, Kebreet and El-Salmia villages (H = 1.286, EH = 0.829; H = 1.227, EH = 0.742; H = 1.110, EH = 0.882; respectively) were much higher than in the Fowa city (non rice cultivated area) (H = 0.718, EH = 0.608). On the other hand, the highest diversity and density of adult mosquitoes species obtained from Minyat Al-Ashraaf were 5 species and (32.8%), followed by Kebreet 5 species and (30.6%) , El-Salmia 4 species and (26.9%), respectively compared with 3 species and (9.8%) in Fowa city. *C. pipiens* adults were the predominant species, in all filarial indicator areas (68.1, 53.4, 45.8 and 20.8 mosquitoes/room) in Minyat Al-Ashraaf, Kebreet, El-Salmia villages and Fowa city, respectively. *C. pipiens* was the only species to carry infective larvae as well as other stages, while *C. antennatus* carried immature stages only (not infective). Filarial larvae in *C. pipiens* and *C. antennatus* were found only in Minyat Al-Ashraaf and Kebreet villages. It is inferred from the data that different levels of habitat with regard to rice cultivation have different effects on mosquito diversity and abundance. Also, our study revealed that filarial vectors *C. pipiens* and *C. antennatus* had a wide distribution and high relative density especially in irrigated rice regions and hence its role in disease transmission in Kafr El-Sheikh region needs further investigation .

Zoology

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (19) 01:00 : 01:25

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ZOOL - 7 EG ASSOC.PROF. ZEINAB HANAFY zainabhanafy@gmail.com

GINGER EXTRACT (ZINGIBER OFFICINALE) HAS ANTI-CANCER AND ANTI-MUTAGENIC EFFECTS ON MALE MICE

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ABSTRACT

Ginger (*Zingiber officinale* Roscoe, Zingiberaceae) is a commonly used medicinal herb throughout the world. Ginger (*Zingiber officinale* Rosc) is a natural dietary component with antioxidant and anticarcinogenic properties. Although some studies have demonstrated its antitumour activities on cancer cells in vitro and in vivo. In the present study, we investigated the influence of Ginger extract on the mice inoculated with Ehrlich ascites. Cytogenetical studies and micronucleus test in somatic cells and DAN fragmentation assay in liver cells was determined in the presence or absence of ginger. The study was performed on four groups of male mice, i.e. control group, Ginger group, animal received oral daily ginger only (100 mg /Kg body wt.). Third group, mice were inoculated intraperitoneally (i.p.) with 2×10^6 Ehrlich ascites cells. Fourth group, animal received oral daily ginger (100 mg /Kg body wt.) on day two after inoculation the animals Ehrlich ascites cells. The result revealed that the chromosome aberration assay in bone marrow cells and micronuclei cells pointed out a significant difference between the mice inoculated with Ehrlich ascites and mice received ginger after inoculated with Ehrlich ascites. There was also a significant increase DNA fragmentation in mice inoculated with Ehrlich ascites. When ginger was used after inoculated with Ehrlich ascites cells the percentage of DNA fragmentation was significant decrease. The ginger extract may have a chemotherapeutic effect in the treatment of cancer. The use of dietary agents such as ginger may have potential in the treatment and prevention of cancer.

Zoology

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (20) 01:00 : 01:25

286

ZOOL - 8 EG ASSOC.PROF. NEHAL MOUSTAFA nehal.61@hotmail.com

EFFECT OF CHOLESTEROL - METHIONINE ON THE TESTIS OF RATS

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ABSTRACT

Methionine is essential for maintaining proper growth and development in mammals. Also, cholesterol enriched diets significantly increase cholesterol level in body tissues. The present study investigated effects Of dietary methionine and cholesterol diet on histological and some histochemical changes in rat testes. Sixty growing rats(5 weeks old) were divided into six groups.: group(1)control; groups(2-6)rats were fed normal diet supplemented with cholesterol (2%); 0.5% methionine; 2% methionine;2% cholesterol and 0.5% methionine,and 2% cholesterol and 2% methionine respectively. The rats were scarified after four months to isolate the testes and epididymis. high cholesterol diet showed disturbance in gametogenesis and epididymis structure; total protein content; carbohydrates and collagen fibers. low doses of methionine improve spermatogenesis and other histochemical factors. But the high doses of methionine in diet causes toxic changes in the testes and epididymis.

Zoology

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (21) 01:00 : 01:25

286

ZOOL - 9 EG ASSOC.PROF. MARIAM SHARAF mariam_sharaf2000@yahoo.com

HISTOLOGICAL EXAMINATION OF GONADAL DEVELOPMENT OF THE EGYPTIAN SOLE *SOLEA AEGYPTIACA* (CHABANAUD, 1927) COLLECTED FROM PORT SAID, MEDITERRANEAN SEA, EGYPT

Mohmoud E. Mohallal , Mariam M. Sharaf , Ashraf I. Ahmed , Hebatullah A. Laban Assoc
lecturer-Zoology Department -Suez Canal University

Prof Dr of histology and histochemistry -Zoology Department - Suez Canal University

Assoc Prof of fish biology -Zoology Department -Suez Canal University

Assoc Prof of fish biology- Marine Science Department- Suez Canal University

ABSTRACT

Histological examination of *Solea aegyptiaca* gonads were studied Monthly from October 2004 to September 2005. The maturity stages of females were classified into 5 stages: immature, maturing, spawning, post- spawning and resting – recovering . The process of oogenesis was divided into 11 stages. The morphological maturation of males was not detected due to the small size of the testes and there were no clear external morphological changes appeared during this study on its shape. Spermatogenesis was classified into 4 stages. Depending on the germ cell types and their relative abundance, maturity stages of males were classified into four stages as the following: pre- spawning, spawning, post- spawning and resting. Four ovotestis specimens were detected, they consist of two lobes, one of them is a normal immature ovary, while the other is abnormal testis.

Microbiology and Genetic Engineering

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TUE : 23-03-2010

HALL[C]

ORAL - SEC03 (1)

09:00 : 09:15

286

MICR - 13

EG

ASSOC.PROF. ATEF IBRAHIM

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MOLECULAR CLONING, SEQUENCE ANALYSIS AND EXPRESSION OF SPORULATION – ENCODING GENE (SPO A) FROM BACILLUS SUBTILIS SADATA- 73

ATEF MOHAMED IBRAHIM

ABSTRACT

The bacterium, *Bacillus subtilis* subsp. *sadata* strain 73 was isolated from sadat city farmers soil and characterized according to Bergy's manual of determinative bacteriology, and 16s rDNA gene was also sequenced. A genomic library was constructed in lambda ZAP XR vector. 16s rDNA gene was cloned, sequenced and submitted in the GenBank under accession number EU047759. *Bacillus subtilis sadata 73* is a Gram positive and catalase and can hydrolyse carboxymethyl cellulose (CMC), locst bean gum (LBG), starch, and other forms of polysaccharides. I cloned also one of the most important gene, sporulation encoding gene from *Bacillus subtilis sadata 73* in two steps, A clone has about 1Kb fragment was chosen from the genomic library of *B.subtilis sadata-73*. The sequence of this fragment contain truncated an open reading frame (ORF) of a sporulation responsible gene of *Bacillus subtilis*. Using PCR technique I got the complete ORF of *spoA* gene. The sequence has 1374 bp, encoding 458 amino acids submitted in the Genbank under accession number EU056818. The deduced molecular mass is about 50206.48 Da and isoelectric point (PI 5.51). The sequence of *Spo A* of *Bacillus subtilis sadata 73* has 99% similarity with *Bacillus subtilis* subsp. *Subtilis* strain 168 *murD* gene (Z99111), and 86% with *Bacillus amyloliquefaciens* FZB42 gene *murD* (5461796).

Microbiology and Genetic Engineering

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TUE : 23-03-2010

HALL[C]

ORAL - SEC03 (2)

09:15 : 09:30

286

MICR - 6

IQ

DR. AYMAN FATHE

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ATRIAL STUDY ON THE OCCURRENCE OF AVIAN INFLUENZA VIRUS TYPE A INFECTION IN CHICKENS WITH HIGH-MORTALITY OUT BREAKS

Ayman M.J. Fathe , Russen Ali H. Salh

ABSTRACT

This study was conducted to determine the prevalence of Avian Influenza virus infection in Broiler and layer's flocks suffering from respiratory and digestive infections reduction egg production as well as mortality rate more than 20% in Ninawa proviance flocks during the period from 1th June to 1th October 2008 using rapid test kit for detection of Avian Influenza antigen. The results of this test were negative for all examined samples of both broiler and layers, Indirect. ELISA test was also used for detection of antibodies against Avian Influenza virus type A. The results were positive at percentage of 86% in broiler chicken flocks but was negative for all layers samples.

Microbiology and Genetic Engineering

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TUE : 23-03-2010 HALL[C] ORAL - SEC03 (3) 09:30 : 09:45

286

MICR - 5 JO PROF. HADEEL AL- HADITHI hadeelalhadithi@yahoo.com

INCIDENCE OF SHEWANELLA PUTREFACIENS IN CLINICAL SPECIMENS AND ENVIRONMENTAL SAMPLES. BIOFILM FORMATION AND ERADICATION

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Dep. of Biology/ College of Science/University of Basrah / Iraq.

Faculty of Medicin/ University of Thi-Qar/Iraq

ABSTRACT

S. putrefaciens is a facultatively anaerobic, nonmotile, gram-negative, nonfermentative bacterium its natural habitat in several environments serve as potential reservoirs for human infection. The aim of the study is to determine incidence of *Shewanella putrefaciens* in clinical specimens and environmental samples, to examine antibiotic susceptibility isolated *S. putrefaciens*, to study capability of those isolates for biofilm formation and the use of antimicrobial agents to eradicate biofilm . A total of 320 samples were collected from clinical (n=173) and environment(n=147) sources; Cultured on McConkey's and blood agar. Biochemical tests were performed to identify Salmon pink, mucoid colonies and confirmed using API System. Isolates were tested for their ability for biofilm formation and for susceptibility against 8 antibiotics. Eleven isolates of *S. putrefaciens* were detected: Five from clinical samples(Four from ear infection and one from wounds) and six from environmental sources(Two from hospital beds, two from hospital floor, one from each water and sewage). Ciprofloxacin was the only antibiotic all isolates were sensitive to. Eradication of formed biofilm was performed using different conc. Of Ciprofloxacin (after determining MIC), Saptan and Povidone – Iodine

Microbiology and Genetic Engineering

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TUE : 23-03-2010

HALL[C]

ORAL - SEC03 (4)

09:45 : 10:00

286

MICR - 7

SY

PROF. ISAAM KASSEM

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UTILIZATION OF FRESH WATER SNALES AS ECOLOGICAL INDICATORS

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ABSTRACT

This study was conducted during 1999 at ten hydro stations in Damascus, with the aim of identifying the species of water snails and the reaction between the snail distribution and ecological factors. Six species of Gastropoda, three of which belonging to Prosobranchia and the remainders belonging to Pulmonata were identified. The concentrations of O₂, CO₂, NO₃⁻, NH₄⁺ and SO₄⁻ were also determined. The Analysis of principal compounds was imposed upon the results which revealed some association between the presence of certain species and the ecological factors. The abundance of *Physa acuta* species was indicative of organic pollutants while some others, namely *Melanopsis Proemorsa*, *Theodoxus Jordani* *Phialansis* were signs of pollutant free water stations.

Microbiology and Genetic Engineering

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TUE : 23-03-2010 HALL[C] ORAL - SEC03 (5) 10:00 : 10:15

286

MICR - 3 IQ PROF. BASIMA ABED-ALHA basimaaa138@yahoo.com

PREVALEANCE OF ANTI-HCV ANTIBODIES AMONG THALASSEMIC PATIENTS IN MOSUL CITY

Basima A. Abdoulla , Mohamad D. AL-Mamary

Professor

ABSTRACT

The study included (200) Thalassemic patients, 120(80%) males and 80(40%)females, at age (2-30) years, the average age (16) years and (100) blood donors, at age (20-50) years, The average age (35) years, as control goroup. using ELISA HCV 3.0 to detect anti-HCV in serum of Thalassemic patients and bood donors, The result shows (17%) positive, (76%) negative, (7%) equivocal in serum of Thalassemic patients but it shows in serum of blood donors (1%)positive, (98%) negative, (1%) equivocal, The result shows significant differncce ($P \leq 0.05$) between prevaleance of anti-HCV antibodies in Thalassemic patients and blood donors, confenmatory Tests by Recombenant Immunoblot version 3.0 (RIBA) shows (17%) positive, (79%) negative and (3.5%) equivocal in serum of thalassemic patients but show (2%) positive, (98%) negative in serum of blood donors.

Microbiology and Genetic Engineering

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TUE : 23-03-2010 HALL[C] ORAL - SEC03 (6) 10:15 : 10:30

286

MICR - 4 IQ PROF. BASIMA ABED-ALHA basimaaa138@yahoo.com

PREVALENCE OF SYSTEMIC ERYTHEMATOSUS LUPUS AMONG WOMEN IN NINAVAH GOVERNMENT

Basima A. Abdoulla , Mahmod Fathel hadad

ABSTRACT

The study included (200) patients females, at age (15 - 45) years. The average age (30) years, Suspected affected by autoimmune disease depending in clinical symptoms observed by specialist physicians in Ibn Sina, AL-Batol and AL-Salam hospital in Mosul, The symptoms included (50%) arthritis, (20%) recurrent abortion, (10%) interterm death, Deep rein thrombosis (10%), (5%) renal disorder, (5%) skin disease and (50) females as control group at age (15 - 40) years, the average age (27.5) years. The patients visited Inb Sina, AL-Batol, AL-Salam hospital in Mosul, The period from August 2004 at February 2007. We depending in clinical symptoms observed by specialist physians and results of immunological tests show, 15 (7.5%) females had lupus after complete four criteria from eleventh of criteria according American Rheumatism Association for diagnosis Lupus. The percent positively of immunological in lupus patients show, ANA (100%), ds DNA (100%) ACL (85%), AMA-M2 (0%) comparison with the percent positive immunological tests in control group show (0%). It was conclusion the high significant differences in ($P \leq 0.05$) between the positively of immunological tests between lupus patients and control group.

Microbiology and Genetic Engineering

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TUE : 23-03-2010 HALL[C] ORAL - SEC08 (1) 10:30 : 10:45

286

MICR - 1 IQ DR. AYMAN FATHE ayman_m_vet@yahoo.com

ISOLATION AND IDENTIFICATION OF STAPHYLOCOCCUS AUREUS FROM MEAT OF POULTRY SLAUGHTERHOUSES AND THERE WORKERS IN NINEVEH PROVINCE

Ayman M. J. fathe

ABSTRACT

This study includes isolation and identification of *Staphylococcus aureus* from animals and human during the period from november 2008 till march 2009 .384 samples were collected from poultry slaughterhouses from which meat samples were taken from breast and thigh besides, swaps were taken from the skin of the carcasses of the same birds' parts. 72 human samples were collected from the same slaughterhouses workers. The diagnosed strains by means of biochemical and differential tests were found to be isolations no. for 138 (35.93%) positive for *Staph. aureus* in samples from birds and workers. 29.5% for *Staph. aureus* isolated from chicken meat and 63.8% isolated from worker noses .The selective cultural media used was prepared in the lab, included Baird – Parker agar and Vogel and Johnson Agar. The definitive diagnostic kit of API Staph used for the confirmation of *Staph. aureus* and determination of biotype. It was found there was similarity of the biotype of some strains from both sources of workers and slaughtered chickens. The enterotoxin was extracted from the staph. Colonies and identified the types of toxins (A, B, C, D) by ELISA. and identified the colonies that produced more than one type of enterotoxins which were 32 samples (34.7%).MRSA(Methicillin Resistant *Staphylococcus Aureus*) diagnosed by using Slide MRSA Detection kit. 23.53 %strains isolated from poultry meat and 55.55% isolated from workers were Methicillin resisted. Antibiotic sensitive test done by using Mueller-Hinton agar and all the isolations were found to be sensitive to antibiotics (cefotrixon ,vancomycin and cefalothin) while it was resisted to some other antibiotics (oxytetracycline, gentamycin, penicillin and chloromphenicol).

Microbiology and Genetic Engineering

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TUE : 23-03-2010

HALL[C]

ORAL - SEC08 (2)

10:45 : 11:00

286

MICR - 12

EG

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ANTICANCER ACTIVITY FROM EXTRACTION OF EGYPTIAN MARINE ALGA, ULVA RIGIDA

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ABSTRACT

The chemical and biological diversity of the marine environment is immeasurable and therefore is an extraordinary resource for the discovery of new anticancer drug. Marine algae are rich sources of new, biologically active compounds. Seaweeds have traditionally been used as food, but have also been used as folk medicine, particularly by coastal peoples. Recently, much attention has been paid to the antitumor activity of seaweed. Thus, we have screened the extracts of some Egyptian marine algae for their anticancer activity against Ehrlich Ascites Carcinoma (EAC) cell line. This paper highlights the anticancer activity of petroleum ether, chloroform and methanol extracts of marine algae *Ulva rigida*, *Enteromorpha clathrata*, *Jania adherans*, *Corallina elongate* in-vitro against Ehrlich Ascites Carcinoma (EAC) cell line. The results indicate that chloroform and methanol extracts of *Ulva rigida* has more activity than other extracts, of different algae in vitro. So methanol and chloroform extracts of *Ulva rigida* were tested in vivo and the results denote that maximal reductions of tumor volume (84.2 ± 7.1 and 77.8 ± 13.4) were observed when solid tumor-bearing mice were treated with methanol extracts 60 and 80 $\mu\text{g/ml}$, respectively. The maximal inhibitory action on the level of lipid peroxidation (64.8 ± 4.5 and 69.6 ± 13.3 at methanol 80,100 $\mu\text{g/ml}$ respectively). Treatment with *Ulva rigida* extracts leads to remarkable increases in of SOD and catalase activities that associated with reduction in tumor volume revealing their antitumor activity, (65.0 ± 5.7 and 69.0 ± 4.7 respectively) and catalase levels (8.1 ± 0.3 and 8.3 ± 0.6 respectively) at the same concentrations.

Microbiology and Genetic Engineering

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TUE : 23-03-2010 HALL[C] ORAL - SEC08 (3) 11:00 : 11:15

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HOSPITAL- AND COMMUNITY- ACQUIRED METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS IN BENI-SUEF CITY, EGYPT.

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Beni-Suef University, Egypt

ABSTRACT

All strains proved to be *Staphylococcus aureus* in this study were examined for methicillin resistance by disk diffusion methods. The results revealed the presence of 109 methicillin-resistant *St. aureus* (MRSA) isolates, 49 intermediate sensitive isolates and 64 sensitive isolates. *St. aureus* isolates were subcultured on oxacillin resistance screening agar base (ORSAB) medium, and the results revealed that 98 resistant isolate can grow on ORSAB medium and 124 sensitive isolates cannot grow. Polymerase chain reaction (PCR) is considered as the gold standard method to detect MRSA isolates by detecting the presence of *mecA* gene. It was observed that there are 91 isolates carrying *mecA* gene and 18 isolate not carry the gene. The overall numbers of MRSA isolates were 91, distributed as 13 MRSA isolates from food samples and 78 MRSA isolates from clinical samples. Clinical MRSA strains were isolated from a total of 324 clinical samples, while the other 246 samples revealed 83 methicillin sensitive *St. aureus* strains, 86 coagulase negative staphylococci isolates and 87 sterile samples not contain staphylococci. The highest percentage of MRSA isolates were recovered from pus samples (33.33%) and the lowest from urine (12.96%). The highest level of MRSA incidence occurs more frequently at the age between 20 and 40 years and between 40 and 60 years. Regarding gender, the incidence level is nearly equal in both genders. Thirty seven isolates of *St. aureus* and 23 isolates of coagulase negative Staphylococci are isolated from 110 milk and milk products, only 5 isolates of them are proved to be MRSA. Twenty four isolates of *St. aureus* and 27 isolates of coagulase negative staphylococci are isolated from 100 fast food samples, only 8 isolates of them are proved to be MRSA. According to the biochemical tests used for identification of *St. aureus*, 8 atypical MRSA (5 are coagulase negative and 3 are DNase negative) were obtained, all are from the clinical samples and 83 typical MRSA from food and clinical samples. Antibiotic susceptibility test was done using disk diffusion method. Isolates that are resistant to more than 3 antibiotics are considered as multi-resistant isolate there are 8 multi-resistant isolates, all are clinical samples. The vancomycin resistance was detected by disk diffusion method and agar diffusion method, all isolates were vancomycin-sensitive isolates and there is no evidence for vancomycin-resistant or intermediate-sensitive isolates.

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TUE : 23-03-2010

HALL[C]

ORAL - SEC08 (4)

11:15 : 11:30

286

MICR - 19

LY

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CONDITIONING OF CRUDE OIL DEGRADATION BY BACTERIA ISOLATED FROM SARIR REFINERY WASTEWATER - LIBYA.

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ABSTRACT

Forty isolates of hydrocarbons degrading bacteria were isolated from the wastewater system of Sarir Refinery. The growth of bacterial isolates was decreased with increasing of crude oil concentrations. At 50% (v/v) oil concentration, only four isolates showed very good growth. Five different hydrocarbons (kerosene, gasoline, benzene, toluene and xylene) were tested for substrate specificity as a sole carbon source. Some isolates were able to grow on the different substrates tested with varying performances. Results showed that most isolates were able to grow on kerosene, However, only two isolates (B3 and SI1) were able to grow on gasoline. Isolate S6 was able to grow in benzene, toluene and xylene. The obtained results indicated that four bacteria isolates (D2, S3, SI1 and SI2) which has plasmid DNA, were the most efficient bacteria as they were able to grow in different selective media with crude oil up to 50% (v/v) concentration. Four bacterial isolates were identified as *Cellulosimicrobium cellulans*, *Brevibacterium liquefaciens*, *Brevibacterium mcbrellneri* and *Enterococcus saccharolyticus* respectively.

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TUE : 23-03-2010 HALL[C] ORAL - SEC08 (5) 11:30 : 11:45

286

MICR - 10 EG DR. MAHMOUD ELAASSER mmelaasser@hotmail.com

EVALUATION OF THE BIOLOGICAL ACTIVITY OF NEW COMPOUND ISOLATED FROM ASPERGILLUS CANDIDUS

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ABSTRACT

Purpose: In our ongoing search for bioactive compounds from fungi, the purpose of this study is to evaluate the antimicrobial, antiviral, antioxidative and antitumor activities of certain compound isolated from *Aspergillus candidus*. **Methods:** To test antibacterial, anti-yeast and antifungal activity, the filtrate obtained by culturing *Aspergillus candidus* on malt extract broth for two weeks was screened by using agar well diffusion method. The extract was also evaluated for its antioxidative activity using DPPH radical scavenging capacity assay. The active ingredient was purified to yield white crystalline compound and identified using UV, FTIR, ¹HNMR and EI-MS analyses. The cytotoxic and antitumor effects of the compound on Vero and HEp2 cells, respectively, were assayed using 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide [MTT]. MTT was also used to evaluate the antiviral activity against herpes simplex virus type 2. The 50% cytotoxic concentration (CC50) and the 50% inhibitory concentration (EC50) were calculated by linear regression analysis. The active compound was identified as dihydroxymethyl pyranone. The compound had high antifungal activity against dermatophytes as well as other opportunistic fungi tested. The compound had antitumor activities against cancerous cells. Neither all dilutions examined showed a significant cytotoxicity to normal cells. Compared to α -tocopherol, the isolated compound exhibited high antioxidative activity for the radical scavenging activity and superoxide. The compound showed some antiherpetic activity with acceptable therapeutic indexes. **Conclusion:** The study illustrates the biological activities of a pyranone derivative isolated from *Aspergillus candidus*, and is therefore, a potential drug and a good candidate further studies and development.

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238	TUE : 23-03-2010	HALL[C]	ORAL - SEC08 (6)	11:45	:	12:00
286	MICR - 2	IQ	PROF. BASIMA ABED-ALHA	basimaaa138@yahoo.com		

IDENTIFICATION OF STAPHYLOCOCCUS SCIURI AND BRUCELLA MELITENSIS ISOLATED FROM CASES OF BACTEREMIA AND ENDOCARDITIS AND KIDNEY FAILURE AND MECHANISM OF RESISTANCE

Basima Ahmed Abdulla , Fattma Abodi Ali Mohammed Al-Khazli

ABSTRACT

This study involved the isolation and identification of *Staphylococcus sciuri* and *Brucella melitensis* suspected to be infected with Bacteremia, endocarditis and kidney failures cases in Al-Salaam, Al-Khansah, Abn-Atheer, Ibn Sena, Al-Zahravi hospitals of Mosul city. The study started from Feb. (2004) till Feb. (2005). A total of (202) blood samples were collected from both sexes. The bacteria were diagnosed using biochemical and physiological tests. The results recovered (16) isolates of *Staph. sciuri* and (7) isolates of *Br. melitensis*. According to aims proposed some essentials tests were carried out as a screening tests for the virulence as DNase, lecithinase, lipase, protease, alkaline phosphatase and haemolysin. The results showed the ability of all strains of *Staph. sciuri* to produce alkaline phosphatase, while only (25%) of them were capable of producing DNase and haemolysin and inability of *Br. melitensis* to produce any of these enzymes. The pathogenicity of the bacteria also were evaluated by screening their ability of adhesion urinary tracts epithelial cells using immunofluorescence microscopy and by applying statistical analysis, highest adherence rates were recorded for *Staph. sciuri* isolated from kidney failure in contrast to strains isolated from endocarditis. Also the study showed the capability of *Br. melitensis* isolated from endocarditis and kidney failure cases to produce a slime as complementary pathogenicity factors. After applying haemagglutination test two isolates able to be agglutinated with human, sheep, rabbit and horse red blood corpuscles. The study also detected antigen of *Br. melitensis* using ELISA technique. As concern antibiotics sensitivity test a variable rate between strain were observed, the most effective antibiotics against *Staph. sciuri* were Cefepime, Ciprofloxacin followed by Ofloxacin, Streptomycin, while for *Br. melitensis* the most effective antibiotics were Cefepime, Gentamicin, Streptomycin. Although of MIC difference *Staph. sciuri* showed that high MIC observed toward antibiotics as it reached (512) µg/ml for amoxicillin, ampicillin for some strains of *staph. sciuri*. On other hand, *Br. melitensis* showed MIC between (0.5-32) mg/ml towards most antibiotics, also the results showed that the strains possess predominant resistance differences against (6-24) antibiotics for *Staph. sciuri* and between (11-22) antibiotics against *Br. melitensis*. As regard the mechanism responsible for antibiotic resistance a Beta Lactamase (BLs) production screening the ability of *Staph. sciuri* to produce it also by applying iodometric method, the results showed that (62.5%) of *Staph. sciuri* produce BLs, (60%) of them produce it through few seconds, also (50%) of *Staph. sciuri* was produced Extend Spectrum Beta lactamase (ESBLs) after using electrophoresis technique using Polyacrylamide gel with sodium dodecyl sulfate (SDS – PAGE) for BLs extracted from the (5) strains produced it and it revealed (1-3) bands with m.wt. between (20-26) KDa. For investigating the genetic factors responsible for antibiotics resistance for *Staph. sciuri* transformation experiments were carried out with standard strains *Escherichia coli* JM83 using DNA plasmid purified from (5) strains of *Staph. sciuri* for the location of the antibiotic resistant genes. It was found that these genes are located on plasmid DNA molecules and these results were supported by electrophoresis of DNA purified from plasmid transformed colonies of laboratory strains of *E. coli* JM83, a single band of plasmid DNA on agarose gel appeared to have between (1-4) bands according to the types of the strains. On the other hand, one strain couldn't give any band which may indicate the occurrence of gene code for antibiotic resistance may be carried by the chromosome too. To support the genetic result the chemical materials and physical factors were used to eliminate the antibiotic resistance of bacteria isolates a chemical was used SDS which appear to have high effectiveness in curing the plasmid DNA, for the most antibiotics have a cure rate between (30-100)% followed by the dye acridine orange between (20-80)% then ethidium bromide between (24-60)% finally temperature was raised to 44°C, the cure rate between (30-70)%.

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WED : 24-03-2010

HALL[POSTER]

POSTER - SEC06 (1)

01:35 : 02:00

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MICR - 8

LY

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IMMUNOSTIMULATORY PROPERTIES AND ANTITUMOR ACTIVITIES OF GLUCANS: A SHORT REVIEW

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ABSTRACT

In the last few decades, the biological activities of glucans have become object of increasing attention in biochemistry and medicine. The β -glucans have a long scientific history. The first interest in the immunomodulatory properties of polysaccharides raised after 1940's when Pillemer described a crude yeast cell wall preparation: the Zymosan (1). He reported that this material was able to stimulate nonspecific immunity. It was unknown at that time which component of this preparation activated the immune response. Later on, in the 60's, Di Luzio conducted additional research discovering that the active immune-activating compound within the components of Zymosan was a β -glucan (2). Since then, many studies have been performed on the glucans devoted to clarify their immunomodulating activities and possible effects as immunostimulating antitumor therapeutics (3, 4, 5, 6, 7). The recent advances in understanding host immune responses to infectious diseases and cancer, have renewed the interest also toward the development of immunitherapeutic approaches. Consequently, researches are newly involved in studies to identify compounds that can modulate the biologic response of immune cells, and enhance the hosts ability to resist diseases. Polysaccharides, including the glucans, since a long time have been believed biologically active (8, 9). Certain polymers, such as (1-3), (1-6)- β -glucans, were recently shown to act as potent immunomodulating agents (8, 10). The main source of antitumor polysaccharides appears to be related to fungal cell walls which consist either of polysaccharides such as chitin, cellulose, (1-3), (1-6)- β -glucans and (1-3)- α -glucans or polysaccharide-protein complexes (11). This short review will focus on glucans that can act as immunotherapeutics.

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WED : 24-03-2010

HALL[POSTER]

POSTER - SEC06 (2)

01:35 : 02:00

286

MICR - 9

EG

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BIOLOGICAL AND PHYSICAL EVALUATION OF ASPERGILLUS CHEVALIERI GROWTH AND THEIR TELEOMORPH

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ABSTRACT

Aspergillus chevalieri and *Eurotium chevalieri* were used in this study, the optimum incubation temperature was 30°C and pH was 6 for both two fungal species. *Eurotium chevalieri* was more affected by different pH than *Aspergillus chevalieri*. Cleistothecia production by *Eurotium chevalieri* increased with increasing glycerol and sucrose concentration. The free amino acids, α amino adipic acid, α amino butyric acid and cystathionine were detected in *Aspergillus chevalieri* only, while methionine was detected in *Eurotium chevalieri* only. proline, ornithine, lysine and arginine. were detected in higher concentration in *Eurotium chevalieri*. than *Aspergillus chevalieri*. *Aspergillus chevalieri* produced 15 extra- and 6 intra-cellular volatile metabolites, while *Eurotium chevalieri* produced 9 extra- and 15 intra-cellular volatile metabolites, all those metabolites of both fungal species were different except one metabolite 2,3-dihydroxy- 6- methyl-4- H- pyran 4-one was detected in the two fungal species.

Microbiology and Genetic Engineering

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WED : 24-03-2010

HALL[POSTER]

POSTER - SEC06 (3)

01:35 : 02:00

286

MICR - 11

EG

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ANTIBACTERIAL AROMATIC METABOLITES FROM A SEVERAL SPECIES OF VERTICILLIUM FUNGUS

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the regional center for mycology and biotechnology- Al-Azhar University, Cairo-

ABSTRACT

Two new sulfur-containing phenolic compounds, 1,4-di [(3-methylaminobenzene),[1-(prop-3-yl aminobenzene)] propyl] benzene (1) and 2[1-[1-propyl phenolyl] aceto- phenolyl] , 1-[1-(1-butyl phenolyl) acetophenolyl] diacetophenone (2), were isolated from the extra metabolites of two species of Verticillium fungus by antibacterial assay against five gram positive and five gram negative bacteria.. Compounds 1–2 showed great ability to use as antibacterial agents. Their structures were elucidated after fractionated by column chromatography and identified by IR, NMR and MS/GS spectroscopic analysis.

Microbiology and Genetic Engineering

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WED : 24-03-2010

HALL[POSTER]

POSTER - SEC06 (4)

01:35 : 02:05

286

MICR - 14

EG

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PURIFICATION AND SOME PROPERTIES OF THERMOALKALO-STABLE LIPASE(S) FROM THERMOALKALOPHILIC BACILLUS BREVIS-B2

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^{1,4} Botany and Microbiology Dept., Faculty of Science (Girls)-Al-Azhar Univ., Cairo, Egypt.

^{3,5} Nuclear Research Center, Atomic Energy Authority, Egypt.

ABSTRACT

Thermoalkalo-stable lipase(s) isolated from cell free filtrate of thermo-alkalophilic *B. brevis* B2 was purified 21.8 fold. Maximum enzyme activity was obtained at 80°C. After 1 h incubation at 70°C and 80°C the remaining activities were 95% and 98% respectively, showing the high thermostability of lipase(s) activity. Optimum pH was at 9.5. The remaining activities were 86%, 90%, 80% and 86% after 1 h incubation at pH 9, 9.5, 10 and 10.5 respectively indicating the alkalo-stability of lipase(s) activity. The catalytic activity of the enzyme was found to be stimulated by Ca²⁺ and inhibited by Hg²⁺, Zn²⁺, Cu²⁺ and Cd²⁺. Exposure of the enzyme to chlorine caused complete inactivation within few minutes. Addition of some surfactant, oxidizing agents and commercial reagents revealed an increase in the activity of the enzyme.

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC06 (5) 01:35 : 02:00

286

MICR - 15 EG PROF. HESHAM MAHDY mahdyhesham@hotmail.com

EXTRACTION AND CHARACTERIZATION OF BIOSURFACTANT PRODUCED BY SOME CANDIDA STRAINS

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ABSTRACT

The present study dealt with screening, extraction and characterization of biosurfactant produced from some Candida strains. Three Candida strains out of 25 were selected for their promising ability to produce biosurfactant. These strains were Candida famata No. 11, C. albicans No. 13 and C. albicans No. 25. Biosurfactant was extracted by 4 different solvents in acidic, neutral and alkaline conditions. The most convenient solvent for extraction process; ethyl acetate was suitable organic solvent for extraction process. Candida albicans No. 13 was found to be the most potent organism among all Candida strains in production of biosurfactant. Characterization of this biosurfactant spectroscopically via UV, IR, HPLC and GC/Mass confirmed the presence of hexyl tetrahydrocannabinol-dibenzopyran (C₂₂H₃₂O₂), hydroxylamine butoxyamine (C₄H₁₁NO) and naphthalene dimethyl-N-octyl (C₂₀H₃₂). Biosurfactant showed some applicable aspects such as defoamer, dispersion agent for oil and wetting agent of immiscible surfaces with water.

Microbiology and Genetic Engineering

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WED : 24-03-2010

HALL[POSTER]

POSTER - SECO6 (6)

01:35 : 02:00

286

MICR - 16

EG

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BIOLOGICAL ACTIVITY OF FUNGAL SECONDARY METABOLITES

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ABSTRACT

Aspergillus chevalieri and *Eurotium chevalieri* produced antimicrobial and antinsectal metabolites, also the extra cellular secondary metabolites of the two fungal species reduced the *Zea mays* grains germination, However *Aspergillus chevalier* secondary metabolites were more affective. Vegetative and reproductive structures of *Aspergillus terreus*, *Penicillium* sp, *Alternaria alternata* and *Candida albicans* were affected by secondary metabolites of *Aspergillus chevalieri* and *Eurotium chevalieri*. Secondary metabolites of *Eurotium chevalieri*, pachybasin islandicin and skyrin were detected at all studied incubation periods, while m-hydroxy benzoic acid was detected at 5 days only. m-Hydroxy benzoic acid was detected in culture medium of *Aspergillus chevalieri* at 0.99, 0.86 and 0.79 water activity while kojic acid was detected at 0.86 water activity only. Fumarprotocetraric acid was detected in culture medium of *Eurotium chevalieri* at all different water activity. B- nitropropionic acid produced by *Aspergillus chevalieri* in the presence of NaSe, CuSo4 and AgNo3. unidentified compounds (unknown 2 & 9), orsellinic acid etaconitin and xanthocillin, were produced by *Eurotium cheralieri* in the presence CuSO4 and AgNO3 respectively. Epoxysuccinic acid was produced by the two fungal species, in the presence succinic acid, while, miriquidic acid, itaconic acid and identified compound (unknow 1) were produced by the two fungal species. in the presence of aconitic acid. Mycophenolic acid was produced by *Aspergillus chevalieri* in the presence of ornithine.

Microbiology and Genetic Engineering

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC06 (7) 01:35 : 02:00

286

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BIOLOGICAL ACTIVITY OF FUNGAL SECONDARY METABOLITES

H.H. El- Sheikh , A.A. Razak , Abd El- Ghany T. M.

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ABSTRACT

Aspergillus chevalieri and *Eurotium chevalieri* produced antimicrobial and antinsectal metabolites, also the extra cellular secondary metabolites of the two fungal species reduced the *Zea mays* grains germination, However *Aspergillus chevalier* secondary metabolites were more affective. Vegetative and reproductive structures of *Aspergillus terreus*, *Penicillium* sp, *Alternaria alternata* and *Candida albicans* were affected by secondary metabolites of *Aspergillus chevalieri* and *Eurotium chevalieri*. Secondary metabolites of *Eurotium chevalieri*, pachybasin islandicin and skyrin were detected at all studied incubation periods, while m-hydroxy benzoic acid was detected at 5 days only. m-Hydroxy benzoic acid was detected in culture medium of *Aspergillus chevalieri* at 0.99, 0.86 and 0.79 water activity while kojic acid was detected at 0.86 water activity only. Fumarprotocetraric acid was detected in culture medium of *Eurotium chevalieri* at all different water activity. B- nitropropionic acid produced by *Aspergillus chevalieri* in the presence of NaSe, CuSo4 and AgNo3. unidentified compounds (unknown 2 & 9), orsellinic acid etaconitin and xanthocillin, were produced by *Eurotium cheralieri* in the presence CuSO4 and AgNO3 respectively. Epoxysuccinic acid was produced by the two fungal species, in the presence succinic acid, while, miriquidic acid, itaconic acid and identified compound (unknow 1) were produced by the two fungal species. in the presence of aconitic acid. Mycophenolic acid was produced by *Aspergillus chevalieri* in the presence of ornithine.

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC06 (8) 01:35 : 02:00

286

MICR - 20 EG MS. EMAN ABDEL RAHMAN em_micro81@yahoo.com

OPTIMIZATION OF CERTAIN NUTRITIONAL & CULTURAL CONDITIONS FOR ANTIMICROBIAL AGENT PRODUCTION BY MOST POTENT ACTINOMYCETE ISOLATE.

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ABSTRACT

One hundred and thirty actinomycete isolates were picked up from 12 soil samples collected from different localities in Egypt. All isolates were screened for their potentiality to produce bioactive compounds by using well cut diffusion technique against the following pathogens : Staphylococcus aureus, Bacillus subtilis, Pseudomonas aeruginosa, Klepsiella pneumonia and Candida albicans as indicator strains. Well cut diffusion technique was performed using nutrient agar as aculture medium. The present study design was applied to optimize the fermentation conditions and maximize the antimicrobial agent productivity. The optimized medium was formulated as follows: (g/l): Soluble starch ,10.0; K₂HPO₄ (anhydrous), 1.0; MgSO₄. 7 H₂O, 1.0; NaCl, 1.0; (NH₄)₂ SO₄,2.0; CaCO₃ 2H₂O, 2.0; Trace salt solution, 1.0 ml; Agar, 20,adjusted at pH 7 and inoculum sizes were standarized at 4discs for each 50ml medium, this medium gives inhibition zone of 30 mm when incubated a t 30°C for 96 h.

Microbiology and Genetic Engineering

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WED : 24-03-2010

HALL[POSTER]

POSTER - SEC06 (9)

01:35 : 02:00

286

MICR - 21

EG

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PURIFICATION AND SOME PROPERTIES OF THERMOALKALO-STABLE LIPASE(S) FROM THERMOALKALOPHILIC BACILLUS BREVIS-B2

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ABSTRACT

Thermoalkalo-stable lipase(s) isolated from cell free filtrate of thermo-alkalophilic *B. brevis* B2 was purified 21.8 fold. Maximum enzyme activity was obtained at 80°C. After 1 h incubation at 70°C and 80°C the remaining activities were 95% and 98% respectively, showing the high thermostability of lipase(s) activity. Optimum pH was at 9.5. The remaining activities were 86%, 90%, 80% and 86% after 1 h incubation at pH 9, 9.5, 10 and 10.5 respectively indicating the alkalo-stability of lipase(s) activity. The catalytic activity of the enzyme was found to be stimulated by Ca²⁺ and inhibited by Hg²⁺, Zn²⁺, Cu²⁺ and Cd²⁺. Exposure of the enzyme to chlorine caused complete inactivation within few minutes. Addition of some surfactant, oxidizing agents and commercial reagents revealed an increase in lipolytic activity.

Microbiology and Genetic Engineering

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC06 (10)

01:35 : 02:00

286

MICR - 22

EG

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IN VITRO EFFICACY OF CLOVE [*SYZYGIUM AROMATICUM* (L.) MERR. & PERR. (MYRTACEAE)] EXTRACT AS ANTIBACTERIAL AND ANTIFUNGAL AGENT

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ABSTRACT

This study was conducted to evaluate the potential of clove, *Syzygium aromaticum*, extracts to inhibit the growth of some different common bacterial and fungal genera. Different solvent extracts of *Syzygium aromaticum* were tested for antibacterial and antifungal activities. In this study, *B. subtilis*, *S. aureus*, *E. coli*, *P. aeruginosa*, *C. albicans*, *A. flavus* and *A. niger* were used as test organisms. The previous extracts showed antimicrobial activity against all tested Gram positive, Gram negative, and fungal organisms at varying degrees. It was also found that Gram positive bacteria and filamentous fungi are highly and more sensitive than their counterparts Gram negative and unicellular fungi. The best extract showed activity was the alcoholic extract (70 % ethanol). Bioautographic detection confirmed presence of homogenous band against bacteria and fungi. The active compound(s) were analyzed using GC-MS and IR spectroscopy and suggest presence of high content of Eugenol. MICs, MBCs, and MFCs of the active compound(s) were determined against bacteria and fungi and ranged from 15.60-500 ppm. To clarify the mode of action of the active compound(s) on filamentous fungi, *A. niger* photomicroscopy was used to assess the effect on the fungus cell integrity exerted by the *S. aromaticum* extract.

Microbiology and Genetic Engineering

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC06 (11)

01:35 : 02:00

286

MICR - 23

EG

MS. NARGUESS HOSSAM EL DIN MAREI

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GENE DELIVERY TO PLANT CELL

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Sayed , Laila Ashraf abd el samad

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ABSTRACT

Gene transfer (GT) or gene delivery is the process of introducing foreign DNA into host cells. Gene transfer can be horizontal, vertical or normal. Most gene transfer work in plants relies on the ability to produce whole plants (regeneration) from either a single cell or a group of cells. There is a number of genetic transformation methods developed for the production of transgenic plants. Generally, the methods can be divided into two categories, viral and non-viral. The methods can be either physical (protoplast fusion, direct transfer of gene and microinjection) or chemical (electroporation, gene gun). This is followed by the transgenic analysis concerns the selection of transgenic cells and the analysis of the delivered gene(s). The current investigation will describe gene delivery techniques and the widely applied methods currently used in Egypt.

Microbiology and Genetic Engineering

250

WED : 24-03-2010

HALL[POSTER]

POSTER - SEC06 (12)

01:35 : 02:00

286

MICR - 24

EG

MR. ESLAM MOHAMED

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DESIGNER BABIES

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cairo university, cairo, egypt.

ABSTRACT

This is a review article about designer babies. "Designer Babies" is a journalistic term for what is in scientific definition a hybridization between a group of advanced technologies that allows screening embryos for genetic disorders and selecting the healthy ones also, it allows choosing certain characteristics in the baby to be such as eye color, hair type or even its gender. A designed baby zygote must be produced outside the cell by means of extra cellular or in vitro fertilization (IVF) .The ovum is fertilized by a single spermatozoon by the mean on (ICSI) and allowed to grow, then a cell is removed from the 4-blastomere stage and a second technique screens embryos for a genetic diseases, this is called Pre-implantation Genetic Diagnosis (PGD).These techniques allow doctors and parents to reduce the chance that a child will be born with a genetic disorder. The next step will be germline therapy (GLT) which is performed in order to correct or modify faulty genes. Finally the selected healthy embryo(s) is implanted back into the mother's womb where it develops into a fully grown embryo till the time of birth.

Microbiology and Genetic Engineering

251

WED : 24-03-2010 HALL[POSTER] POSTER - SEC06 (13) 01:35 : 02:00

286

MICR - 25 EG MR. HAZEM HASSAN matrix_hazem2000@yahoo.com

THE PROMISE OF STEM CELLS FOR HUMANITY

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ABSTRACT

For centuries, scientists have known that certain animals can regenerate missing parts of their bodies. Humans actually share this ability with animals like the starfish and the newt. Although we can't replace a missing leg or a finger, our bodies are constantly regenerating blood, skin, and other tissues. The identity of the powerful cells that allow us to regenerate some tissues was first revealed when experiments with bone marrow in the 1950s established the existence of stem cells in our bodies and led to the development of bone marrow transplantation, a therapy now widely used in medicine. Stem cells give us the chance for treatment of huge number of diseases so, through our dealing with stem cells we have to be guided with main lines as what are the stem cells, the types of stem cells and the advantages of each type and how we can use each one of them, also we have to know how we can work or deal with these cells, diseases that can be treated with stem cells and how it can be done. But dealing with this kind of cells is very complex process, so we have to know its ethical and moral values.

Microbiology and Genetic Engineering

252

WED : 24-03-2010 HALL[POSTER] POSTER - SEC06 (14) 01:35 : 02:00

286

MICR - 26 EG MR. MAHMOUD ABDEL WAHAB actinohallo@yahoo.com

ENVIRONMENTAL STUDIES ON SOME HALOPHILIC STRAINS ISOLATED FROM TOSHKA AREA AND ENHANCEMENT OF THEIR CHARACTERS BY USING GAMMA IRRADIATION

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ABSTRACT

The present study is tending to throw light on the importance of some new area and study of microbial diversity of this area and isolation of microbial strains resistance to environmental stresses of this area and its application on environmental field such as removal of some toxic heavy metals and using the ability of these isolates to tolerate high concentrations of salinity and high temperature on agriculture field. Total count of colony forming unit of isolates bacteria. Isolation and characterization of bacterial strains resistance to high concentration of salinity and high temperature. In this search we study tolerance of bacterial isolates to cadmium chloride, mercuric chloride and lead acetate, the results revealed that, some strain could tolerate up to 400 ppm of lead acetate and up to 15 ppm of cadmium chloride and up to 2 ppm of mercuric chloride. Determination of D 10 values of bacterial isolates. D 10 value of the eight bacterial isolates (Haloferax mediterranei M1, Natronobacterium pharaonis M2, Haloarcula mansmortui M3, Halococcus saccharolyticus M4, Haloferax denitrificans M5, Haloarcula hispanica M6, Haloarcula vallismartii M7 and Haloferax volcanii M8) were (1.8 , 1.8, 1.4, 1.6, 1.1 , 1.8, 1.9 and 1.0 k Gry) respectively. And study the effect of Gamma irradiation on the tolerance to NaCl and temperature, from search noticed that some strain enhanced their tolerance with irradiation as example, Haloferax mediterranei M1 could tolerated 18% NaCl at 37 OC and at 4,6 and 15 k Gry enhanced its tolerance to be 20 % NaCl at 37 OC. While other could failed for tolerance as example, Haloarcula vallismartii M7 could tolerated 18% NaCl at 37 OC and failed with different doses of Gamma irradiation at 0.5,1,2, 6, 10 and 15 k Gry for tolerance of 18 % NaCl at 37 OC and 50 OC and could tolerate 18 % at dose 4 k Gray at 37 OC. In this study the protein fractionation pattern of SDS-PAGE electrophoresis of eight bacterial strains as compared with protein marker showing variation in banding pattern which reflect difference between characterized isolates.

Microbiology and Genetic Engineering

253

WED : 24-03-2010 HALL[POSTER] POSTER - SEC06 (15) 01:35 : 02:00

286

MICR - 27 EG DR. MAHMOUD ABDEL WAHAB actinohallo@yahoo.com

ENVIRONMENTAL STUDIES ON SOME HALOPHILIC STRAINS ISOLATED FROM TOSHKA AREA AND ENHANCEMENT OF THEIR CHARACTERS BY USING GAMMA IRRADIATION

Zahira S. Tawfik , Bakry M. Haroun , Mahmoud A.W. Mahmoud

National center for Radiation Research and Technology (NCRRT)

Facility of Science - Azhar University

ABSTRACT

The present study is tending to throw light on the importance of some new area and study of microbial diversity of this area and isolation of microbial strains resistance to environmental stresses of this area and its application on environmental field such as removal of some toxic heavy metals and using the ability of these isolates to tolerate high concentrations of salinity and high temperature on agriculture field. Total count of colony forming unit of isolates bacteria. Isolation and characterization of bacterial strains resistance to high concentration of salinity and high temperature. In this search we study tolerance of bacterial isolates to cadmium chloride, mercuric chloride and lead acetate, the results revealed that, some strain could tolerate up to 400 ppm of lead acetate and up to 15 ppm of cadmium chloride and up to 2 ppm of mercuric chloride. Determination of D 10 values of bacterial isolates. D 10 value of the eight bacterial isolates (Haloferax mediterraneus M1, Natronobacterium pharaonis M2, Haloarcula mansueti M3, Halococcus saccharolyticus M4, Haloferax denitrificans M5, Haloarcula hispanica M6, Haloarcula vallismortis M7 and Haloferax volcanii M8) were (1.8 , 1.8, 1.4, 1.6, 1.1 , 1.8, 1.9 and 1.0 k Gry) respectively. And study the effect of Gamma irradiation on the tolerance to NaCl and temperature, from search noticed that some strain enhanced their tolerance with irradiation as example, Haloferax mediterraneus M1 could tolerate 18% NaCl at 37 OC and at 4,6 and 15 k Gry enhanced its tolerance to be 20 % NaCl at 37 OC. While other could failed for tolerance as example, Haloarcula vallismortis M7 could tolerate 18% NaCl at 37 OC and failed with different doses of Gamma irradiation at 0.5,1,2, 6, 10 and 15 k Gry for tolerance of 18 % NaCl at 37 OC and 50 OC and could tolerate 18 % at dose 4 k Gray at 37 OC. In this study the protein fractionation pattern of SDS-PAGE electrophoresis of eight bacterial strains as compared with protein marker showing variation in banding pattern which reflect difference between characterized isolates.

Astronomy and Meteorology

Astronomy and Meteorology

254

TUE : 23-03-2010

HALL[B]

ORAL - SEC12 (2)

01:30 : 01:45

286

AST - 1

EG

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CLIMATIC FEATURES OF THE LONG-WAVE RADIATION COMPONENTS OVER EGYPT AND ITS VARIABILITY DURING 1997 AND 1998

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Department of Astronomy and Meteorology, Faculty of Science, Al Azhar

Egyptian Meteorological Authority, Cairo Egypt.

ABSTRACT

The climatic features of the long-wave radiation components over Egypt are discussed by using monthly mean NCEP/NCAR reanalysis data during the period 1979 to 2006 of these components. Anomalies of these components for individual two years 1997 and 1998 also are discussed over Egypt. From the annual trends of downward long-wave radiation it is found that decreasing in the slope larger in Cairo than Aswan due to decreasing of cloud cover with time over Cairo. While the trends of upward long-wave radiation at surface increasing with time and the rate of increasing for Aswan is more than for Cairo due to larger increasing of temperature at the surface of Aswan than Cairo. The trends of upward long-wave radiation at top of atmosphere increased with time over Cairo larger than Aswan. This means that the amount of convective clouds is decreased over Cairo with time. While the trend of net long-wave radiation at surface increases with time over Aswan larger than Cairo because of increasing of temperature at Aswan larger than Cairo.

Astronomy and Meteorology

255

TUE : 23-03-2010

HALL[B]

ORAL - SEC12 (3)

01:45 : 02:00

286

AST - 6

EG

MR. KAMAL GAFAR

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AGROCLIMATIC SUITABILITY FOR WHEAT IN EGYPT

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Agr. Res. Center/ AI Ain/ UAE. Formerly, Met. Authority/ Cairo

Met. Authority/ Cairo

Faculty of science/ ALAZHAR University/ Cairo

Faculty of science/ ALAZHAR University/ Cairo

ABSTRACT

Wheat is the 1st food crop for Egyptians. Climate plays an important role in crop production. Climate is the only uncontrollable resource, which varies in space and time, and accordingly crop yield. Thus, optimizing wheat yield requires appropriate climatic use. The aim of this study is to specify when and where to cultivate wheat in Egypt for optimal yield, considering the other agricultural treatments and practices are optimum. For this purpose, we used the climatic data of temperature and actual sunshine duration on 11 apart meteorological stations scanning most Egypt for 24 years through the period 1973-1997. Also, results of 5 experiments for wheat of different cultivars in different regions carried out by agricultural researchers are used, where; planting and harvesting dates and yield of these experiments have been collected. Using the prevailed climate through growth cycles of the 5 experiments, climatic requirements of wheat Egyptian cultivars have been defined, and a relation for estimating yield has been derived. Then, matching to climates of the 11 stations is made for deducing the available climatic growing period and planting and harvesting period of wheat in different regions. The growth cycles and yields have been calculated for three planting appointments: at beginning, middle and end of the planting period in each region. Then, the most suitable time and place for cultivating wheat in Egypt have been specified. We found that climatic growth period decreases southward and ranges between 240 days in Tanta and 182 days in Souhag. The first chance for planting is in 3 October in Tanta and the final chance for harvest is in 1 June in Damanhour. Planting period is widest (83 days) in Giza and begin in the onset of October, and is narrower southward, till be narrowest (7 days) in Luxor and begin in the onset of November. Wheat yield is optimum when planting is through the 1st three weeks in November in north Egypt till Baharia, through the 1st two weeks in November in Elminya till Souhag, and through the 1st one week in November in Souhag to southward. Finally, all Egypt can be cultivated with wheat, but the time chance is wider northward.

Astronomy and Meteorology

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TUE : 23-03-2010 HALL[B] ORAL - SEC12 (4) 02:00 : 02:15

286

AST - 2 EG PROF. FATHY EL-HUSSAINY fathyelhusiny@yahoo.com

ESTIMATING OF DOWNWARD LONG-WAVE RADIATION OVER EGYPT

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Egyptian Meteorological Authority, Cairo Egypt.

ABSTRACT

The correlation coefficient between daily downward long-wave radiation and daily Temperature, humidity and amount of cloud is discussed during the period from 1995 to 1998 over Cairo and Aswan. A higher correlation is found with temperature over Cairo than Aswan, while the inverse is noticed with water vapor pressure. Statistical model (Instat) is used to drive a multiple regression for the downward long-wave radiation on temperature, water vapor pressure and cloud amounts. The analysis of variance by three methods is applied to develop empirical equations to evaluate the downward long-wave radiation according to the previous atmospheric parameters. In the first method Brunt equation that depends on Temperature and water vapor pressure is used with the same coefficients but with a large mean error over Cairo (11.1%) and Aswan (23.5%). This equation is improved to meet our local conditions with decreasing in average error to be 6.9% for Cairo and 8.11% for Aswan. In the second method the cloud fraction is added with the other two parameters. It is found that the average errors are decreased to be 4.85 % for Cairo and 4.92 % for Aswan. In the final method cloudy days are separated from clear sky days over Cairo and Aswan. The errors are improved over Aswan than Cairo to be 3.7 %, 3.4 % for Aswan and 4.28 %, 4.27 % for Cairo respectively

Astronomy and Meteorology

257

TUE : 23-03-2010 HALL[B] ORAL - SEC12 (5) 02:15 : 02:30

286

AST - 3 EG ASSOC.PROF. MOSTAFA IBRAHIM mo_mo_ib@hotmail.com

A METHOD FOR FORECASTING NILE RIVER FLOOD

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Meteorological Authority, Former Head of Research Institute, Cairo Egypt

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ABSTRACT

The Nile River is the main source of Egypt fresh water for both agriculture and human use. The large annual variability of Nile River discharge requires studies to understand reasons for this changeability. For economic and agriculture planning it is crucial to be able to forecast the discharge. Although Aswan High Dam reduces significantly the risk of severe shortage of fresh water due to low Nile River discharge, on the scale of few years, still the prediction of Nile River discharge is a crucial issue. Statistical downscaling approach for predicting Nile River discharge reaching Aswan is developed. The approach depends on correlation between the distribution of global large scale fields for some Meteorological variables and the discharge at Aswan (1960-2000). In this work the discharge for the month of September is predicted using August mean Meteorological data. Linear multi-correlation regression equation is obtained. The relative error of Nile River discharge at Aswan as estimated from the multi-linear regression equation, for the period 1960 to 2000, is less than 1%. The multi-regression linear equation is used to forecast the Nile River discharge at Aswan on September using August Meteorological data for the period 2001 to 2009. Yearly trends are rightly forecasted, in the sense that it clarifies high and low discharge years. Relative errors of the forecasted discharge reach <30% (<10%) for low (normal and high) discharge years.

Astronomy and Meteorology

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TUE : 23-03-2010

HALL[B]

ORAL - SEC12 (6)

02:30 : 02:45

286

AST - 4

EG

DR. GAMAL EL AFANDI

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ASSESSMENT OF TWO CROP MODELS IN GROWTH AND PRODUCTIVITY OF WHEAT IN EGYPT

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Egyptian Meteorological Authority

ABSTRACT

Two agricultural experiments for different wheat cultivars were done at Bany Sweef district and El Mansura governorate in Egypt for the same varieties, namely, Giza 168, Sakha 61 and Giza 164 during the year of 2000. Two crop models, CERES-Wheat and FAO 1978, were used in this study to evaluate its performance to predict wheat productivity along two different geographical locations characterized by different weather features. These comparisons were held between the predicted and measured physiological maturity date, grain yield and biomass at harvest in the previous locations. The results revealed that both CERES-Wheat and FAO 1978 models can be used to predict the previous wheat parameters in different locations in Egypt. However, the CERES-Wheat model gave better predictions for the mentioned parameters than FAO 1978 along the two experiments. Hence the CERES-Wheat model provides a better prediction for different crop parameters for all wheat varieties. In addition, it can be used to design different agricultural strategies in Egypt. On the other hand, the FAO 1978 model could be improved through further experimental studies to give better productivity predictions.

Astronomy and Meteorology

259

TUE : 23-03-2010 HALL[B] ORAL - SEC12 (7) 02:45 : 03:00

286

AST - 9 EG PROF. MOHAMMED ISMAIL mohamedrassem@yahoo.com

COSMOLOGICAL MODEL WITH ULTRARELATIVISTIC IDEAL GAS USING GRAVITATIONAL AND THERMO-MECHANICAL HAMILTONIAN FORMULATION.

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Assistant Prof. Cairo Univ.

Prof. Cairo Univ.

Prof. Al-Azhar Univ.

Assistant Prof Elmenia Univ.

ABSTRACT

A brief review of the Hamiltonian theory of self gravitating perfect fluid, which has been established by Kijowski et al (1990), has been discussed in this work. The formulation of the spherically symmetric cosmological problem has been derived. The most general 3-dimensional metric in the case of spherically symmetric space-time has been considered. In addition, the parameters which govern the dynamics have been fixed. The dynamical equations have been derived. The problem of homogeneous Universe has been considered for the Ultrarelativistic ideal gas. The dynamical equations have been derived. Three analytical solutions have been obtained.

Astronomy and Meteorology

260

TUE : 23-03-2010 HALL[B] ORAL - SEC12 (8) 03:00 : 03:15

286

AST - 19 EG PROF. SHAHINAZ YOUSEF habibat_arrahman@yahoo.com

NEW CONCEPTS IN COSMOLOGY

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ABSTRACT

We present new concepts in cosmology. In the very beginning, matter and anti matter were created from extremely energetic light. They were separated at the very beginning and double cosmoses were created . One is composed of very condensed ,extremely hot matter and the other is composed of very condensed ,extremely hot anti matter. Inflation then occurred and the two cosmoses were smoothed geometrically. In our cosmos after inflations small bubbles were created with relatively rarified density from the very high density bulk of the cosmos. The total volumes of such rarified density is of the order of 4-6%. In such rarified bubbles the light velocity is larger than the escape velocity. It is these bubbles that formed the visible universe. On the other hand, the bulk of matter remained at extremely high density rendering the velocity of light less than the escape velocity. This bulk formed the dark matter. We also propose that the velocity of light was extremely high in the beginning but fall exponentially ever since till it reached the present measured velocity of light.

Astronomy and Meteorology

261

TUE : 23-03-2010 HALL[POSTER] POSTER - SEC03 (26) 02:30 : 03:10

286

AST - 5 EG DR. MOHAMED EID mm_eid2000@yahoo.com

FACTORS CONTROLLING CLIMATE DESERTIFICATION OVER NORTH AFRICA

M. M. Eid , Mohamed Magdy Mohamed Abdel-Wahab , Fathy Mohamed EI-Hussainy ,
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Faculty of Science, Cairo University

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ABSTRACT

Desertification is a form of land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities. Desertification is not only limited to extreme arid areas such as North Africa and greater desert. The net result of such land degradation is significant disturbance of ecosystems with loss of biological and economical productivity. The present work demonstrates the major factors controlling the aridity index at the target area of study. The results of the analysis derived here show the potential for desertification at small scales clearly delineating the castal sandy soil region. The major conclusions extracted from this work indicate a good estimate to aridity variables and provide quantitative assessment of Normalized Difference Vegetation Index (NDVI) and aridity index.

Astronomy and Meteorology

262

WED : 24-03-2010 HALL[B] ORAL - SEC17 (2) 09:30 : 09:45

286

AST - 10 EG PROF. MOHAMED NADER ISMAIL mnader_is@yahoo.com

PERTURBATIONS DUE TO THIRD BODY ON RETROGRADE ORBITS

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ABSTRACT

A semi- analytical study of perturbations on retrograde orbits caused by a third, are presented. A circular orbit of a spacecraft is considered. The validity of the results would be under some conditions, these conditions are illustrated. The obtained results are presented.

Astronomy and Meteorology

263

WED : 24-03-2010

HALL[B]

ORAL - SEC17 (3)

09:45 : 10:00

286

AST - 7

EG

MR. KAMAL GAFAR

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المقننات المائية لنخيل التمر بمنطقة العين

كمال جعفر

مركز الأبحاث الزراعية/ العين/ أبوظبي

ABSTRACT

النخلة هي أهم وأوسع شجرة انتشارا بدولة الإمارات، وتقنين ربيها خطوة مهمة في طريق ترشيد استهلاك المياه. والاحتياجات المائية وجدولة الري لأي محصول مرتبطة بمناخ المنطقة، لذلك استعملنا بيانات محطة الأرصاد الجوية الزراعية بالعين لفترة 18 سنة من 1988 إلى 2005. وقدرت خصائص النخلة المطلوبة بقياس نصف قطر المسقط الأخضر لأعمار وأصناف مختلفة، حيث حسبت المساحة الناتجة و حجم تربة الجذور الفعالة. وقدر احتياج غسيل التربة من الأملاح المتوقع تركزها بـ 0.15 من نتحها بالجو كقيمة عظمى. كما تم قياس سعة حفظ التربة لمياه الري. وطريقة الري السائدة بمنطقة العين هي استخدام الفقاعات (بايلر)، وكفاءتها حوالي 90%. بلغ الاحتياج السنوي من المياه للنخلة البالغة 69.8 م³، يتبخر منه نسبة 0.85 في الجو بدون رجعة والباقي يستخدم لغسيل التربة من الأملاح المتوقع تركزها. وهذا الاحتياج السنوي تستهلك النخلة منه 34.3 م³ صيفا و 11.9 م³ شتاء و 24.7 م³ خلال الاعتدالين. بلغت كمية مياه الري الواحدة لفترة الري للنخلة البالغة : 1770 لتر في التربة الرملية الناعمة تروى كل 6 أيام صيفا وكل 16 يوم شتاء وكل 8 يوم خلال الاعتدالين، 1377 لتر في التربة الرملية المتوسطة القوام تروى كل 4 أيام صيفا وكل 13 يوم شتاء وكل 6 أيام خلال الاعتدالين، 983 لتر في التربة الرملية الخشنة تروى كل 3 أيام صيفا وكل 9 يوم شتاء وكل 4 أيام خلال الاعتدالين. وقد لوحظ أن طاقة الجو محدد أساسي لاحتياجات النخلة من المياه يليها طبيعة النخلة واحتياج غسيل التربة. واحتياج النخلة يختلف باختلاف المناخ وعمر النخلة وملوحة مياه الري، ولا يتأثر بقوام التربة. وكمية الري الواحدة تتأثر باختلاف عمر النخلة وقوام التربة وكفاءة طريقة الري، ولا تتأثر بالمناخ. أما فترة الري فإنها تتأثر بالمناخ وعمر النخلة وقوام التربة.

Astronomy and Meteorology

264

WED : 24-03-2010 HALL[B] ORAL - SEC17 (4) 10:00 : 10:15

286

AST - 11 EG DR. ABD EL-RAHMAN LASHEEN a_m_lasheen@yahoo.com

GLOBAL DISTRIBUTION OF STATIC STABILITY

A. M. Lasheen , M. M. Ibrahim

ABSTRACT

Global distribution of static stability parameter in the form $\Gamma_d - \gamma = T/\theta \partial\theta/\partial Z$ for the atmospheric layers between 1000 -10 hPa is investigated. We used physical and dynamical monthly average data for the period 1980-1995. In tropics remarkably low static stability in the upper troposphere and high static stability in the lower stratosphere are clear. Cloud overshooting convection in tropics is suggested to explain these features. Low level high static stability prevails on the tropical west coasts of the continents and along the equator in the upwelling zones. Descending branches of Hadley and Walker cells besides coastal and equatorial upwelling are among candidates to explain this low level high static stability. Lower middle latitude tropopause and higher polar latitude tropopause are clear in the cold season of both hemispheres. Thermal wind equation is used to explain these phenomena.

Astronomy and Meteorology

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WED : 24-03-2010

HALL[B]

ORAL - SEC17 (5)

10:15 : 10:30

286

AST - 8

EG

MR. ALAA MAHMOUD

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SHORT RANGE FORECAST OF NILE FLOOD

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Al-Azhar University, Cairo, Egypt

Cairo University, Cairo, Egypt

ABSTRACT

Natural variability in the annual flow of the Nile River has been studied. There is a southwesterly wind anomaly in wet years. Active strong monsoon conditions correspond to an enhanced west-east pressure gradient near the equator and, therefore, to abnormally strong westerly winds, advecting moisture from the Congo Basin to Ethiopia, Uganda and western Kenya. The tropical easterly jet moves westward over Eritrea, and Ethiopia in wet years. Correlation analysis is used to determine the relationship between the Nile River flow and precipitation. In this paper, several sources of information are combined, rainfall over Ethiopia and the history of river flow in the Nile, in order to obtain accurate forecasts of the Nile flood at Aswan. Over a 100-year period the correlation between observed and simulated annual flows was 0.924, although fairly large errors occurred in individual years.

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WED : 24-03-2010 HALL[B] ORAL - SEC22 (1) 10:30 : 10:45

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AST - 18 EG PROF. SHAHINAZ YOUSEF habibat_arrahman@yahoo.com

OBSERVATIONS OF TOTAL SOLAR ECLIPSES FROM THE BORDER OF THE
TOTALITY ZONE CASE STUDY: 1- THE 1ST OF APRIL TOTAL SOLAR ECLIPSE
OBSERVED BY THE PROPHET IBRAHEEM PEACE BE UPON HIM FROM BABEL. 2-
THE 29TH OF MARCH 2006 OBSERVED FROM EGYPT

Prof. Shahinaz Yousef

Astronomy& Meteorology Dept., Faculty of Science- Cairo University, Cairo Egypt

ABSTRACT

On the border of the totality zone, the sky is not dark enough to observe the solar corona. Thus all one could see at the very edge of the totality zone are the Baily's beads. An excellent example of such observation of total solar eclipse from the border of the totality zone is the 1st of April total solar eclipse observed by the prophet Ibraheem peace be upon him from Babel. People interested in such observation because of the capability of estimating the diameter of the moon from such observation. A task that could be addressed in the present paper. Another point is the capacity of estimation the date of Building the Holy Kabaa based on determination of the eclipse date and the age of the prophets Ibraheem and Ismael at the time of building. It is thus estimated that the date of building the holy Kabaa is between 2367 and 2372 and Allah knows best. An expedition to observe the 29th of March total solar eclipse from the border of the totality zone from two nearby sites was made. The expedition team consisted of my self, Dr. Aly Barakat of the geological Museum, Engineer Mohammed Osama Abd El Monhem and Mr. Ahmed Osama Abd El Monem. Another expedition to observe the 1st of August 2008 total solar eclipse from Northern Siberia consisted of My self and Mr. Ahmed Osama Abd El Monem. The Prophet Mohammed peace be upon him is also reported to observe a total solar eclipse. According to Espenek, Mr. Eclipse, special eclipses, this was an annual eclipse on the 27th of January 632 AD. According to some eye witness, the stars were apparent; this means that darkness prevailed during the eclipse indicating that it was a total eclipse and not an annular one. However, annular eclipses can turn into total ones at some locations during their paths.

Astronomy and Meteorology

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WED : 24-03-2010 HALL[B] ORAL - SEC22 (2) 10:45 : 11:00

286

AST - 20 EG DR. HAYMAN METWALLY zmhayman@yahoo.com

UTILIZATION OF THE OPTICALLY VISIBLE OPEN CLUSTERS CATALOGUE OF THE YEAR 2007 FOR THE DETERMINATION OF THE MILKY - WAY PLANE

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ABSTRACT

In this paper ,the equatorial coordinates of the galactic pole for the epoch 2000.0 was computed using the most recent data of the optically visible open clusters catalog of the year 2007 .As a result, the inclination of the Milky way plane to the celestial equator and the right ascension of its ascending node at the same epoch. are also computed.

Astronomy and Meteorology

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WED : 24-03-2010 HALL[B] ORAL - SEC22 (3) 11:00 : 11:15

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AST - 14 EG PROF. MOHAMED BEHEARY mmbeheary2007@yahoo.com

THE SOLAR PHOTOSPHERIC ABUNDANCE OF SILICON

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ABSTRACT

Based on a new solar photospheric temperature model, a recent value of solar abundance of silicon is derived. We used our measuring values of equivalent widths of 41 spectral lines with experimental atomic data of these lines. The new value of abundance ($A_{Si} = 7.51 \pm 0.06$) is perfectly agrees with meteoritic value.

Astronomy and Meteorology

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WED : 24-03-2010 HALL[B] ORAL - SEC22 (4) 11:15 : 11:30

286

AST - 21 EG ASSOC.PROF. INAL HASSAN inalds_hassan@yahoo.com

NEUTRAL HYDROGEN IN HIGH DENSITY GALAXIES GROUPS

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Astro. and Meteo. Dept., Faculty of Science, Al-Azhar University
Astro. and Meteo. Dept., Faculty of Science, Al-Azhar University

ABSTRACT

High-resolution 21cm VLA observations for some Hickson Compact Group (HCG) have been analyzed and compared with X-ray observation and optical bands (SDSS images). HI is a high deficiency in these denser regions of a galaxies group's environment. It has been clearly remarked in this galaxy groups compared with the mean upper limit in HI mass of galaxies $\sim 3.8 \times 10^9$ solar mass. We suggested that at least a third of the groups appear compact on the sky, are possibly in an advanced stage of evolution and some of these groups are poor in HI content. The HI gas deficiency can be explained by the removal due to the tidal interactions, ram pressure stripping and the star formation process. HI in HCG 54 and reported that the HCG 54 has active in star formation and tidal interaction and merger, this merger is probably in a very advanced state. Some galaxies in HCG 37 are radio source. The mass of ionized gas in the galaxies member of the groups are in the range of $6.0 \times 10^4 M_{\odot}$ to $3.0 \times 10^3 M_{\odot}$

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WED : 24-03-2010 HALL[B] ORAL - SEC22 (5)

11:30 : 11:45

286

AST - 15 EG MR. ABDELRAZEK MOHAMMED KASEM SHALTOUT abdo_shaltout@yahoo.com

STATISTICAL EQUILIBRIUM OF SILICON IN THE SOLAR ATMOSPHERE

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ABSTRACT

The departure coefficients with 75 energy levels and 51 neutral line transitions of silicon are calculated. With the Vernazza et al. (VAL, 1981) solar photospheric temperature model, non-LTE effects are found to be quite small in the solar atmosphere.

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WED : 24-03-2010

HALL[B]

ORAL - SEC22 (6)

11:45 : 12:00

286

AST - 16

EG

DR. KHALED EDRIS

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ASTROMETRIC STUDIES OF THE NGC 3680 OPEN CLUSTER

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Theoretical Physics Division, National Research Center

Department of Astronomy and Meteorology, Faculty of Science, Al-Azhar University

ABSTRACT

In this study the dynamical parameters of the open cluster NGC 3680 are studied. The membership probability is calculated taken into account the proper motion of each individual star in and around the cluster. The obtained results are compared with previous work.

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WED : 24-03-2010

HALL[B]

ORAL - SEC22 (7)

12:00 : 12:15

286

AST - 17

EG

DR. KHALED MEGAHEH

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ION CHEMISTRY OF GRAVITATIONAL SETTLED SAHARA DUST OVER THE NILE DELTA IN EGYPT

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Egyptian Meteorological Authority, Kobri Elkoba, Cairo, Egypt.

ABSTRACT

Mineral dust particles are considered the most important types of aerosols in the atmosphere which can be lifted to high altitudes and transported thousands of kilometres across the seas and the oceans. It can mix with polluted air masses during transport and become coated with soluble chemical substances. Thereby, it changes their properties to influence on the mean radiative forcing and the precipitation formation. For this purpose, we have collected airborne Saharan dust by gravitational settling on a clean surface during two sand storms over Egypt on 18 Feb and 19 Mar 2003. Another sample of mineral particles was taken from a 1.5 m deep hole 70 km northeast of Cairo city. The samples will be compared with Asian dust from the Takla Makan desert and commercial Arizona test dust. Possible source regions of airborne mineral dust particles were determined by using the air mass back-trajectories model and the results were compared with the aerosol index data from the satellite instruments. The interactions of mineral dust samples with air pollutants during transport are investigated by determining the water-soluble ion content. It was found that the airborne Saharan dust samples had accumulated soluble coatings during transport by interaction with air pollutants.

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WED : 24-03-2010 HALL[B] ORAL - SEC22 (8) 12:15 : 12:30

286

AST - 13 EG ASSOC.PROF. MOSTAFA IBRAHIM mo_mo_ib@hotmail.com

TROPICAL AND EXTRA TROPICAL DISTURBANCES INTERACTION OVER NORTH AFRICA

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former Chairman of the Egyptian Meteorological Authority, Cairo, Egypt

ABSTRACT

The geographical location of Egypt makes it subject to interaction between tropical and extra tropical air masses that occurs in cold season (mid autumn to late spring). In this work a synoptic situation that occurs on April 2005 is studied. It is found that the formation of a high pressure over west Europe (blocking situation) is a necessary condition for strong interaction. This blocking facilitate the invasion of mid latitude disturbances toward North Africa from both north-west and northerly directions. Invasion of cold air over West Africa create strong temperature gradient leading to thermal wind that drives water vapor northward, in the middle troposphere, from ITCZ. As a result of the stagnant blocking of the case study the mean meteorological variables for the period 15 to 25 April 2005 is significantly deviated from the monthly mean. On 20 April 2005, one day before maximum activity over Egypt, the cloud band emanating from ITCZ was west of Egypt. A squall (like) line that is developed within a day east of the cloud band moves and strike Cairo as well as many cites in Egypt. Finally the two cloud bands are combined and moves eastward. It is shown that baroclinic instability characterize the travelling wave over North Africa. Also convergence and static instability identify the area of cloud bands.

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WED : 24-03-2010 HALL[B] ORAL - SEC22 (9) 12:30 : 12:45

286

AST - 12 EG DR. ABD EL-RAHMAN LASHEEN a_m_lasheen@yahoo.com

A COMPARATIVE STUDY OF EXTREME DROUGHT AND FLOOD CASES OF NILE RIVER.

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Meteorologist

Dr.

ABSTRACT

The natural discharge at Aswan in 1984(drought year) is less than half of that for 1998(flood year). In August 1984 the ITCZ was shifted southward to 16°N while in August 1998 it was shifted northward to 17° N over Tana Lake area. The mean precipitation in August 1984 has a maximum value equal 8mm /day at 8°N-36°E and 11.5°N-37°E. In August 1998 the maximum precipitation value is 18mm/day at 12°N-37°E. The North Atlantic Oscillation (NAO) index has a maximum value with respect to Southern Oscillation Index (SOI) for the summer of 1984. NAO index in summer 1998 has a lower value than the SOI. The Vertical motion in August 1998 over Tana Lake area greatly exceeds that of 1984. The circulation of the southern hemisphere in August 1984 was much weaker than that of 1998. The circulation of the northern hemisphere in January 1984 was much stronger than that of 1998. One can conclude that the role of both SOI and NAO should be taken in consideration collectively.

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TUE : 23-03-2010 HALL[D] ORAL - SEC14 (3) 02:00 : 02:15

286

DEQ - 8 EG DR. NAZEK FARYED nazakfaryed@yahoo.com

ASSESSMENT OF WATER QUALITY OF ALEXANDRIA SEA WATER COAST.

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Chemistry department, faculty of Science, Ain Shams University, Cairo, Egypt.

Chemistry department, faculty of Science, Ain Shams University, Cairo, Egypt.

ABSTRACT

Sea water samples were collected along Alexandria sea waters and shores in the area extended from Abu-Quir Gulf up to El-Agamy and Sidi Kirear Covering 65 kms along the sea shores. the objective from this study in monitoring the contamination with ship discharges and other pollutants due to industrial, agricultural, navigational, and recreational activities is the area under investigation. The physical parameters of waters such as pH, Salinity, conductivity, alkalinity, turbidity, viscosity, density, salinity, Cl⁻, SO₄⁻, PO₄⁻, NO₃⁻, T.S.S, T.D.S, COD, BOD were studied. Seasonal qualitative and quantitative studies have been made on the contamination of waters including origin and accumulation in relation to different activities and the effect of these pollutants on biota. Special emphasis has been made on the assessment of the sources of pollution recreational and touristic areas. This has been achieved by field and laboratory studies. Detailed studies and interpretation of the obtained results will be presented and discussed.

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TUE : 23-03-2010

HALL[D]

ORAL - SEC14 (4)

02:15 : 02:30

286

DEQ - 9

PS

DR. KHALIL THABAYNEH

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DETERMINATION OF NATURAL RADIOACTIVITY CONCENTRATIONS AND DOSE ASSESSMENT IN NATURAL WATER RESOURCES FROM HEBRON PROVINCE, , PALESTINE

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Hebron University, Hebron(Alkhaleel), West Bank, Palestine

Al-Quds University, East Jerusalem, Abu-Dies,Palestine

Hebron University, Hebron(Alkhaleel), West Bank, Palestine

ABSTRACT

In this study, the conductivity , the activity concentrations and the associated dose rates of natural radionuclides ^{226}Ra , ^{232}Th , ^{234}Th and ^{40}K in 30 drinking spring and ground water samples collected from all over parts of Hebron province, West Bank, Palestine have been determined using high-resolution gamma ray spectrometry. The measured activity concentrations of ^{226}Ra , ^{232}Th , ^{234}Th , and ^{40}K ranged from $(1.62 \pm 0.20) \text{ Bq}^{-1}$ to $(9.11 \pm 0.60) \text{ Bq}^{-1}$, $(0.45 \pm 0.05) \text{ Bq}^{-1}$ to $(4.40 \pm 0.3) \text{ Bq}^{-1}$, $(0.44 \pm 0.2) \text{ Bq}^{-1}$ to $(2.06 \pm 0.6) \text{ Bq}^{-1}$, and $(1.57 \pm 0.06) \text{ Bq}^{-1}$ to $(15.60 \pm 0.2) \text{ Bq}^{-1}$, respectively. The annual equivalent effective doses of ^{226}Ra , ^{232}Th , and ^{40}K were assessed in the tissues and organs of the human body. The mean effective doses of 0.56 mSv y^{-1} for ^{226}Ra , 0.065 mSv y^{-1} for ^{232}Th and 0.04 mSv y^{-1} for ^{40}K were estimated for the ingestion of these waters by adults. The obtained results were found have been exceeded in all samples the word assigned values in general and are higher the limit of detection in some sampling sites reported in other countries. A reasonable correlation was found between ^{226}Ra , ^{232}Th concentrations and pH, although no general trend was observed with conductivity.

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WED : 24-03-2010

HALL[D]

ORAL - SEC19 (2)

09:30 : 09:45

286

DEQ - 19

EG

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حق الإنسان في عمارة خضراء

منى محمد أحمد كمال

رئيس الإدارة المركزية لنوعية الهواء والحماية من الضوضاء

ABSTRACT

العمارة الخضراء هي عملية تصميم المباني وتخطيط المدن بأسلوب يحافظ على الموارد الطبيعية للبيئة المحيطة ويساهم في ترشيد الطاقة وحسن استغلال الموارد الطبيعية والإستخدام الأمثل لمواد البناء والتشييد والتخطيط العمراني الجيد, مما يؤدي إلى تلبية احتياجات الأجيال الحالية دون إهدار حق الأجيال القادمة في الحياة الكريمة. تشمل العمارة الخضراء على العديد من المعايير و الخطط التي تحقق التكامل بين العنصر البشرى وبيئة المحيطة ضمن الإطار العام لظروف العصر لذا يشتمل هذا التخصص على العديد من فروع المعرفة (الهندسية – الزراعية – التنوع البيولوجى – الكيمياء – الجيولوجيا – الإقتصاد – المناخ – الفن). والعمارة الخضراء لها عائد اقتصادي يتلخص في : • انخفاض تكاليف الصيانة والإدارة والتشغيل • العائد من إعادة التدوير وخفض استهلاك المواد الأولية • انخفاض التكاليف نتيجة كفاءة استخدام الطاقة والمياه • حساب التكلفة المتكاملة على المدى الطويل • قيمة الفوائد التي تعود على (الصحة العامة – الإنتاجية – خفض التلوث – حماية الحياة البرية والبحرية - التغير المناخي) كما أن المباني الخضراء سوف تؤدي إلى خفض استهلاك المياه العذبة المستهلكة حاليا إلى السدس , وكمية الأخشاب إلى الربع ,ومواد البناء إلى الثلث بالإضافة إلى استخدام الطاقات المتجددة فهي فرصة جيدة لاستخدام مواردها بكفاءة عالية وخلق مباني صحية لتحسين صحة الإنسان وحماية البيئة وتوفير النفقات

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WED : 24-03-2010 HALL[D] ORAL - SEC19 (3) 09:45 : 10:00

286

DEQ - 10 BD MR. SM RASHEDUL CHOWDHURY rac.imsf@gmail.com

SEDIMENT QUALITY OFF BANGLADESH COAST IN THE BAY OF BENGAL

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ABSTRACT

The study was undertaken to assess some sediment quality parameters off Bangladesh coast in the Bay of Bengal. The surficial sediment samples were collected from eleven geographic locations during early monsoon period in March and April 2007 and analyzed as per standard methods. The recorded parameters were as temperature 20.18 ± 10.7 °C, salinity 5.07 ± 0.92 ‰, pH 6.62 ± 0.43 , organic carbon 1.83 ± 0.66 %, organic matter 3.14 ± 1.13 % and sediment texture as sand 87.01 ± 7.57 , silt 5.23 ± 1.99 and clay 8.57 ± 7.64 respectively. The mean concentration of mineral nutrients were as Ca 10.54 ± 2.50 µg /g, Mg 5.55 ± 1.42 µg /g, K 1.28 ± 0.37 µg /g, P 9.94 ± 2.56 mg /g, S 227.02 ± 35.53 mg /g, Cu 10.59 ± 7.47 mg /g, Fe 20.50 ± 7.42 mg /g, Mn 29.55 ± 7.91 mg /g and Zn 0.59 ± 0.17 mg /g respectively. Correlation coefficient showed that sediment parameters were interrelated in terms of their concentration. One-way Analysis of Variance (ANNOVA) test revealed that there were no significant differences in physico-chemical parameters and mineral nutrients distribution in sediment throughout the Bangladesh coast. There is no available report on sediment quality parameters off Bangladesh coast. So the findings of present study would be a baseline reference for study the geology and developing sediment quality index of the coastal oceanic zone of Bangladesh.

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HALL[D]

ORAL - SEC19 (5)

10:30 : 10:45

286

DEQ - 18

EG

DR. FAROUK MOHAMMED

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AMBIENT EGYPTIAN WATER QUALITY CRITERIA FOR PH

Prof. Dr. Mostafa M. Emara¹ , Prof. Dr. Roshdy A. Ali² , Dr.Farouk Mosleh Abdelaziz
Mohamed³

Prof. of Physical Chemistry Faculty of Science, Al-Azhar University

Prof. of Physical Chemistry Faculty of Science, Al-Azhar University

Head of Wastewater Lab. (NOPWASD)

ABSTRACT

This paper is one in a series which establishes ambient Egyptian water quality criteria. The criteria are safe conditions or levels of a variable, applicable province wide which are set to protect various water uses. This paper sets criteria for pH or the hydrogen ion concentration to protect drinking water, freshwater and marine aquatic life, wildlife, livestock, irrigation, and recreation. The criteria for aquatic life are similar to the Canadian water quality Guidelines, 1987 , except that we have added criteria for naturally acidic (pH less than 6.5) and alkaline waters (pH greater than 9.0), and the amount of pH change allowed within the pH range 6.5 to 9.0 may depend on the ambient carbon dioxide concentrations . Also, any pH change that would cause chemical species) e.g., metals , ammonia – nitrogen , etc.) to exceed their criteria or objectives would not be permitted . The recreation criteria are more liberal than the Canadian water quality Guidelines because we recognize that the pH of many interior recreational areas may have natural pH values greater than 9.0 there are no pH Guidelines for marine life, livestock water supply, or irrigation for which we have set criteria . A major use of the criteria is to set ambient water quality objectives . the objectives are the criteria modified or adopted to protect the most sensitive designated water use in a particular body of water . the objectives are used in the preparation of waste Management permits , orders or Approvals , which are the only documents to have legal standing . the objectives however , are not usually part of these documents .

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WED : 24-03-2010 HALL[D] ORAL - SEC19 (7) 11:00 : 11:15

286

DEQ - 12 EG DR. ABDEL HAMID EL FAKHARANY abdelSaad@yahoo.com

CATASTROPHIC MASS MOVEMENT OF ROCKS AND SOLUTIONS TO AVOID RISKS IN THE ABU AGGAG – ABU SBEIRA AREA, NORTHEAST ASWAN, EGYPT.

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Lecturer of Geology, Aswan Faculty of Science, South Valley University, Aswan.

ABSTRACT

Catastrophic mass movement of rocks and torrents are obvious natural hazards that recently affected the Abu Aggag–Abu Sbeira area, northeast of Aswan City. The present article aims to evaluate the potential catastrophic mass movement of rocks, delineate the risk zones, and suggest suitable solutions to avoid the potential natural risks. Two main rock units, Nubian sandstone and shale, constitute the sedimentary succession (up to 60m thickness in some places) forming a huge plateau at the eastern border of study area. Shale and claystone form the base of sedimentary succession with a thickness of 6-40m; Nubian Sandstone cliffs represent the cap rocks of succession, with a thickness of 4-20m. The western exposure of the plateau has an irregular concave slope, and slope angles range from 22° to 46° in the lower part of exposure and become steep (65°-86°) at the top in the sandstone cliffs. The drainage patterns are mainly coarse dendritic and discharge into the Nile River, passing through heavily populated zones. These populated zones are exposed to the torrents during rare rainfall events. Three sets of vertical joints (trending NNW, NNE & WNW) dissect the cap rocks and intersect with horizontal bedding planes to form separated cubes and cupolas masses. Potential catastrophic mass movement of rocks in the Abu Aggag–Abu Sbeira area is related to several reasons, including: existence of competent rocks (sandstones) overlying incompetent (shale and clay stone) rocks, dissection of the coherent cap rocks due to intersection of vertical joint sets and bedding planes, presence of exposures with steep slopes, rainfall and human activities (mining works, waste water, and irrigation). Based on dominance of either one or all of the mentioned reasons, three subareas (El Khalasab, El Shadeeda and Alaqaba) represent the main risk zones of rock mass movements and torrents in the area under consideration. Several solutions are suggested for avoiding the risks related to the potential catastrophic movement of the rocks and torrents. The fractured rock masses at the top of plateau should be released either mechanically or manually. All buildings occurring on the slope surface of exposure should be removed, and the population should not enter the delineated unsafe zone (with average width 50 m from the base of exposure). Buildings constructed in the inlets of wadis and through the water courses should be removed??.

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WED : 24-03-2010

HALL[D]

ORAL - SEC19 (8)

11:15 : 11:30

286

DEQ - 15

EG

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APPLYING QUALITY FUNCTION DEPLOYMENT (QFD) IN DESIGNING HIGHER EDUCATION COURSES

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Arab Academy for Science, Technology and Maritime Transport

Arab Academy for Science, Technology and Maritime Transport

ABSTRACT

Many aspects for the term "Quality" have been defined. The aspects included; performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality. When defining the quality of a higher education institute's graduate, the terms performance and perceived quality may apply. The performance of the graduate would be his ability to do the assigned work and the perceived quality would be the impression the graduate creates in the stakeholders minds. The concept of electronic village environment that is a fact in today's world puts a great burden on the higher education institutes due to the global competition. As suppliers; the educational institutes need to achieve customer satisfaction the same way as any other product delivered. Customers of the education process are not well defined and it is often difficult to monitor and control the quality of the process. For the scope of this paper we have identified two customers from the point of view of the education provider, one is internal and the other is external. The internal customer is the student who receives the educational services and the external customer is the employer who would employ the prospective graduate. In order for the educational institute to compete it has to provide the employers with the quality graduates they seek. A graduate is qualified when he can demonstrate that he acquires the knowledge needed to perform a job. usually, when the educational curricula of the institutes are designed, the voice of the external customer is not accounted for. This paper employs Quality Function Deployment (QFD) to design a curriculum course taking into account the employer prospective as an external customer.

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WED : 24-03-2010

HALL[D]

ORAL - SEC19 (9)

11:30 : 11:45

286

DEQ - 13

EG

DR. MOHAMED HASSAN

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THE EFFECT OF EXTERNAL DOMESTIC CUSTOMER VOICE ON THE DESIGN OF ACADEMIC CURRICULA

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Arab Academy for Science, Technology and Maritime Transport

Arab Academy for Science, Technology and Maritime Transport

ABSTRACT

Given a course content to be delivered in an academic institution in a certain society necessitates the design of a model for transforming the course contents into a modified form answering the expectations and aspirations of the intended local customer. This paper explains the methodology of analytical hierarchy process (AHP) in prioritizing the needs of the employers –as the external customers- to be used as input to the course design process. The output of the process was a list of ranked course contents to be covered, which satisfies the customers' needs.

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WED : 24-03-2010 HALL[POSTER] POSTER - SEC05 (3) 01:00 : 01:25

286

DEQ - 4 EG PROF. AMINA ELBAYAA amina.elbayaa@yahoo.com

EQUILIBRIUM SORPTION ISOTHERM AND EFFECT OF SODIUM PHOSPHATE ON SOME HEAVY METAL UPTAKE FROM WASTEWATER USING ION EXCHANGE RESIN

Fatma H. Kamal , A.A. El-Bayaa , N.A. Badawy , H.M. Khattab

Prof.Dr. in Al-Azhar University (Girls)

Prof.Dr. in Al-Azhar University (Girls)

Prof.Dr. in Al-Azhar University (Girls)

ABSTRACT

The mobilization of heavy metals in the environment due to industrial activities is of serious concern due to the toxicity of these metals in humans and other forms of life. In this study, the adsorption behavior of cation exchange resin Wofatit KPS MB with respect to Ni (II), Cd (II), and Pb (II) ions has been studied in order to consider its application to purity metal finishing wastewaters. The batch method has been employed, using metal concentrations in solution ranging from 2 to 30 mg/l. The percentage adsorption and distribution coefficients (K_d) were determined for the adsorption system as a function of sorbate concentration. Four sorption models (the Langmuir, Freundlich, Dubinin – Radushkevich and Flory-Huggins isotherm) will be used to assess the different isotherms and their ability to correlate experimental data. The sorption process was found to be mostly a physisorption process as seen from the apparent energy of adsorption which ranged from 15.976 KJ/mol to 21.759 KJ/mol. Also the effect of disodium hydrogen phosphate on distributions coefficient was studied by conducting batch experiments at varying concentration of $\text{Na}_2\text{H}(\text{PO}_4)_3$ solutions.

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ION EXCHANGE RECOVERY OF NICKEL (II) AND CADMIUM (II) FROM ACIDIC SOLUTION CONTAINING NEUTRAL LIGAND

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ABSTRACT

Ion exchange is widely used for the recovery and removal of metals ions. The H-form of Wofatit KPS MB synthetic ion exchange resins has been investigated for the removal of low concentration nickel(II) and cadmium (II) under different conditions . The effect of resin amount, contact time and pH of the solution was studied. The resin was used to recover each metal ion from acidic solution containing neutral ligand such as urea. Kinetic studies were conducted by a batch method .The initial sorption rate; pseudo-first-order and intraparticle diffusion rate constants were evaluated and discussed.

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THE INFLUENCE OF THIOURA ON LEAD RECOVERY FROM LOW CONCENTRATION WASTE SOLUTION USING CATION EXCHANGE RESIN

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ABSTRACT

In this study, the adsorption behaviour of cation exchange resins Wofatit KPS MB in hydrogen with respect to Pb(II) has been studied in aqueous and acidic solutions .The batch method has been employed, using initial metal ion concentrations in solution 20 mg/l. The effects of relevant parameters such adsorbent dose, contact time and solution pH on Pb(II) adsorption were examined. The distribution coefficients (Kd) were determined in presence of nitric acid and thiourea. The adsorption of lead ions follows first-order reversible kinetics and pseudo-first-order kinetics. The intraparticle diffusion of metal ion rate constants were evaluated and discussed.

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ENVIROMENTAL GEOCHEMICAL STUDIES ON THE DUST POLUTION IN ABU ZAABAL BASALT QUARRY, CAIRO, EGYPT.

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ABSTRACT

Abu Zaabal quarrying area lies about 50 Km to the northeast of Cairo, Egypt. Petrographically, the basaltic rocks and collected air-born dust are mainly formed of labradorite, augite, olivine, chlorite and opaques. They are generally free from quartz. The major elements investigations of the basaltic rock and dust revealed that; SiO₂ and alkalies increase in the dust, whereas MgO, Fe₂O₃, FeO, MnO, TiO₂ decrease in it rather than the rock. That indicates the slight precipitation of the heavy fraction from the air-born dust. The trace elements distribution in Abu Zaabal basaltic rock and dust are nearly comparable. The measurements of the respirable and total dust concentrations reveal that their values exceed the Threshold Limit Values (TLVs) in all quarrying sites and operations. Crushing sites are more polluted than the drilling sites. Size analysis of the crusher's sites dust reveals that both thoracic and respirable dust concentration exceed the TLVs. The medical questionnaires declared that; 1- Chest complaints are the most frequent, especially with the more exposed workers. 2- The obstructive and restrictive ventilatory defects are directly proportional to employment duration. 3- Chest complaints show gradual increase with the increase of smoking magnitude. The comparison of the trace elements content in the investigated dust and workers blood, shows that the trace elements concentration in blood depend mostly on other factors, such as dietary factors, rather than their concentration in the dust.

