International Publications Awards

Cairo University

Vol. 5 Issue 2

October 2011

Preface,

We are pleased to introduce vol. 5(2) of the international publications of Cairo University. It is a further step and distinct contribution, reflecting the scientific ability of staff members, which conforms to international quality standards.

The purpose of issuing these publications is mainly to introduce this work to the academic community, demonstrate the different research abilities of Cairo University researchers, and encourage them to increase the quality and quantity of their research.

We would like to assure you that the administration will spare no effort to support and reinforce these goals.

We congratulate all colleagues who were granted the awards for their international publications of the year 2010 and wish them all the best for their future endeavors.

Lastly, the top 50 eminent authors of Cairo University were tabulated in front of this issue. Their ranking was extracted from both Scopus and Thomson data-bases according to their number of published articles, number of citations and h-index.

We are also pleased to inform you that this policy will continue to be in effect for the years to come.

Prof. Hussein M. Khaled

Vice - President for post-graduate studies and research
Cairo university

Prof. Hossam Kamel

President
Cairo university

Table of Contents

(1)
Basic
Sciences Sector

1-1 Faculty of Science

1-2 Faculty of Agriculture

1-3 Faculty of Veterinary Medicine

1-01. Faculty of Science

1-1-01. ***Dept. of Astronomy***

01. Monitoring of Urbanization Growth and its Effects on Climatic Changes Over Greater Cairo, Egypt Using Satellite Images

S. M. Robaa and Y. Y. Hafez

The International Journal of Meteorology, (35) 348: 111-122 (2010)

The present work investigates the effect of urbanization growth on the local climatic changes over Greater Cairo Region, GCR, using satellite images through the period (1965-2005). The NCEP/ NCAR reanalysis monthly mean data for meteorological elements (Air temperature, $T_{1000,}$ $T_{850,}$ T_{700} and T_{500} at the levels of 1000, 850, 700 and 500 mb respectively, atmospheric pressure at mean sea level, MSLP, geopotential height at level of 500 mb, $GH_{500,}$ relative humidity, RH %, meridonal wind, MW, zonal wind, ZW, perceptible rate, PR, and the outgoing long wave radiation, OLR) over GCR are used in the same period. Tiros and Landsat satellites images for GCR are also used every ten years through the study period. The results revealed that, if the rates of population growth and human activities in GCR continued, the whole GCR (1400 km2) will be transformed completely to an urbanized region by coming of year 2040. The anomalies methodology and correlation coefficient technique are used to clarify the climatic changes over GCR. The results revealed that there are significant correlation coefficients between the urbanization growth over GCR and the anomalies of the meteorological elements through the period of study. Among the main findings of this study is the highest effects of urbanization on the mean sea level pressure, surface temperature and outlong wave radiation with correlation coefficient values 0.96, 0.91 and 0.90 respectively. It could be concluded that, the urbanization growth caused an extreme local climate change over GCR.

Keywords: Urbanization; Climate change; Satellite images; Greater cairo region; Urban cairo; Egypt.

1-1-02 ***Dept. of Botany***

02. Isolation and Molecular Characterization of Malathion-degrading Bacterial Strains from Waste Water in Egypt

Zeinat K. Mohamed, Mohamed A. Ahmed, Nashwa A. Fetyan and Sherif M. Elnagdy

Journal of Advanced Research, (1): 145-149 (2010) IF: 3.00

Efficiencies of local bacterial isolates in malathion degradation were investigated. Five bacterial isolates obtained from agricultural waste water were selected due to their ability to grow in minimal salt media, supplied with 250 ppm malathion as sole source of carbon and phosphorus. The purified bacterial isolates (MOS-1, MOS-2, MOS-3, MOS-4 and MOS-5) were characterised and identified using a combination of cellular profile (SDS-PAGE), genetic make up profile (RAPDPCR), and morphological and biochemical characteristics. Four bacterial isolates (MOS-l, MOS-2, MOS-3 and MOS-4) with identical genetic characteristics were identified as Enterobacter aero genes, whereas isolate MOS-5 was identified as *Bacillus thuringiensis*. The degradation rate of malathion in liquid culture was estimated during 15 days of incubation for the isolate MOS-5 of *B. thuringiensis*. Slightly more than 50% of the initial malathion was decomposed within 3 days. The malathion concentration decreased to almost 17% in the inoculated medium after 10 days incubation, while more than 91% of the initial malathion was degraded after 15 days.

Keywords: Degradation; *Enlerobacter aerogenes; Bacillus thuringiensis*; Malathion; Characterisation.

03. Size-class Structure and Growth Traits of Anastatica Hierochuntica L. Populations as Rainfall Indicators in Aridlands

Ahmad K. Hegazy and Hanan F. Kabiel

Journal of Advanced Research, 1: 331–340 (2010)

IF: 3.000

Field data verified by green house experiment were used to evaluate the response of Anastatica hierochuntica L. to the amount of rainfall. Field study of the populations was carried out in the runnel and depression microhabitats of gravel and sand sites. Four water treatments, equivalent to 100, 200, 500 and 1000 mm rainfall, were used to simulate different levels of water availability. Under 500 and 1000 mm rainfall, the size-class structure of A. hierochuntica populations consists of a high proportion of large size-class individuals, while a higher proportion of small size-class individuals was obtained under 100 and 200 mm rainfall. The dry skeletons of A. hierochuntica can be used as a ‘‘rain gauge’’ to predict the amount of rain or water received. The dominance of small size-classes (from <1 to 8 cm3) gives a prediction of less than 200 mm rainfall received. Intermediate size-classes (8–64 cm3) characterize habitats with 200–500 mm rainfall, while habitats with >500 mm rainfall produce large size-classes (>64 cm3). Small size-class individuals produced under low amounts of rainfall allocated up to 60% of their phytomass to the reproductive organs. Allocation to reproductive organs decreased with the increase in the amount of rainfall, while allocation to the stem increased in large size-class individuals produced under the highest amount of rainfall (1000 mm) reaching 54%. Increased allocation to stem in large-sized individuals favours the hygrochastic seed dispersal role in the plant. The root/shoot ratio decreased with the increase of the individual size class, i.e. under high rainfall treatments. Higher values of relative growth rate, net assimilation rate and leaf area index were obtained under high water treatments. Conversely, less expanded leaves, i.e. lower specific leaf area, were manifested in the lowest water treatments.

Keywords: Rain gauge; Resource allocation; Relative growth rate; Net assimilation rate; Specific leaf area; Leaf area index..

04. Functional Traits and Life History Diversity of the North Africa Endemic *Ebenus Pinnata* Aiton

A. K. Hegazy, H. F. Kabiel, L. Boulos and O. S. Sharashy

Flora, 205: 666-673 (2010) IF: 1.439

Ebenus pinnata Aiton occurs in few localities along the Mediterranean coast of North Africa from Libya to Morocco. In Libya this species grows in few places of the northwestern coastal mountain escarpment, where it is rarely recorded. The study site was located one in Msallata National Park area, Libya, at an altitude of 200–300 m. Three growth types were recognized in *E. pinnata*: ephemeral (E), modular (M), and coppiced (C) life-forms (functional types). The intra-population variations in the plant's functional types are interpreted as a plasticity mechanism for survival and existence under the given soil texture and micronutrient heterogeneity. Vegetative and reproductive traits of the three functional types of the species were investigated and the population demography, phenology, life table and fecundity schedule analyzed. Diversity in life cycle duration was observed with a broader phenological spectrum observed in C followed by M and E. Tradeoffs between plant size, life span and population intrinsic rate of increase per capita are documented. Ephemeral and modular types exhibited a semelparous or r-selected life history, while the coppiced type showed an iteroparous or k-selected strategy. The lowest seed weight, germination and seedling emergence percentages were obtained for the E functional type; this demographic disadvantage was buffered, however, by a significantly lower seed predation. Moreover, a lower mortality rate in the germinable seeds–juvenile transition phase may be crucial for establishment of the E population from seeds. As a consequence, the population structure and life table analysis indicate that the E population is the most productive compared to the M and C populations. It has the highest density of individuals, attains the highest number of adults within the population and the highest values of adult survivorship (l_x), reproductive rate (R_o), and population growth rate (r) in the shortest generation time (T). The species persists in dry months as seeds in the case of ephemeral and modular types, and as vegetative stock in the coppiced type.

Keywords: Demography; Phenology; Life table; Fecundity schedule.

05. Caulimoviral Sequences in *Dahlia Variabilis* in Egypt

A. M. Abdel-Salam, M. M. Al Khazindar, S. G. Eid and H.R. Pappu

African Journal of Biotechnology, 9 (41): 6835-6839 (2010)
IF: 0.565

The presence of Dahlia mosaic virus D10 (DMV-D10) was confirmed for the first time in dahlia (*Dahlia variabilis*) in Egypt. DMV-D10 was recently described as a caulimovirus that exists in all plant parts as an endogenous pararetroviral sequences (EPRV). DMV-D10 was confirmed by amplification of the ORF1 (encoding for the movement protein) using species specific primers (D10F1/R1). The expected size (900 bp) was amplified from 36 samples with no evidence of infection with either DMV or DCMV. The same dahlia plants were tested for the presence of CMV, INSV, TSV, and TSWV and they were all negative. Sequence comparisons of the Egyptian DMV-D10 ORF1, GenBank accession HM007162، amplified from these samples revealed that the amplicon had the highest sequence identity (96%) with that of DMV-D10 (isolated from US dahlia cultivars). Cluster dendogram based on the amino acid sequences of movement protein of all known caulimoviruses placed D10-US (isolated from US dahlia cultivars), D10 –NZ (isolated from New Zealand dahlia cultivars), D10-DC (isolated from D. coccinea) and D10-Egypt (isolated from Egyptian dahlia cultivars) in one clade.

Keywords: *Dahlia variabilis*; Endogenous pararetroviral sequence; DMV-D10.

06. *Streptomyces Nigellus* as A Biocontrol Agent of Tomato Damping-Off Disease Caused by *Pythium Ultimum*

Selim M. Helmy, Kamel Zeinat, Saad A. Mahmoud, Saad Moataza, Morsi Nagwa and Hasabo Amany

Electronic Journal of Polish Agricultural Universities (EJPAU), 13 (4): (2010)

A collection of about 15 strains of *Streptomyces* belonging to different spp. were screened for their ability to grow on fragmented *Pythium ultimum* mycelia and to produce metabolites that inhibit the growth of this plant pathogenic fungi. Some factors affecting level of growth and fungal cell wall lytic enzymes formation by the most active *Streptomyces* strains were carried out. On the other hand, *Streptomyces nigellus* NRC10 showed a strong in-vitro antagonism against *P. ultimum* in plate assay by producing antifungal metabolites. Furthermore, plant growth chamber study was also carried out to test suppression of damping off disease by the selected strain. The results showed that percentage of diseased tomato plant was greatly reduced in *P.ultimum* infested soil when treated with this strain.

Keywords: Biocontrol; Damping-off; *Pythium ultimum*; *Streptomyces nigellus*.

07. Influence of Copper and Cobalt Stress on Membrane Fluidity of Stachybotrys Chartarum

Mohamed A. Hefnawy, Mohamed I. Ali and Salah Abdul-Ghany

Canadian Journal of Pure and Applied Sciences, 4 (1): 1003-1009 (2010)

The growth of *S. chartarum* markedly decreased with elevated concentrations of Cu and Co in the growth medium. Total lipids and proteins in isolated plasma membrane were increased at 400mg Cu or Col-1 and decreased above this concentration while, carbohydrates markedly increased with elevated concentrations of both metals. The total amount of detected phospholipids in the membranes was decreased at 800mg l-1 of both metal ions. However, Phosphatidyl ethanolamine and phosphatidyl glycerol showed an increase at this concentration. Moreover, most of the detected fatty acids (C16:0, C16:1, C18:1 and C18:2) in the plasma membrane were increased with elevated concentrations of both metals to approximately 1.5-2 fold higher than in the control except C16:1 at 800mg Cu l-1 highly increased to 24.9 times higher than in the control. Whereas, C16:0 was the only fatty acid which decreased at 800mg Col-1. The unsaturation index of fatty acids at 400mg l-1 exhibited a slight decrease while, at this concentration the fluorescence polarization value of DPH

in the plasma membranes markedly increased. On the other hand, at 800mgl-1 the unsaturation index was increased while, fluorescence polarization value of DPH markedly decreased. This refers that the membrane at 400mgl-1 might be less fluid and at 800mgl-1 more fluid and cannot able to control the entry of toxic metals.

Keywords: *S. chartarum*; Lipid composition; Membrane fluidity; Copper and cobalt stress.

1-1-03 ***Dept. of Chemistry***

08. Strong-field Photoionization of O_2 at Intermediate Light Intensity

Tomasz Kłoda, Akitaka Matsuda, Hans O. Karlsson, Mohamed Elshakre, Per Linusson, John H. D. Eland, Raimund Feifel and Tony Hansson

Physical Review A82, (2010) IF: 2.866

We investigated by electron spectroscopy the strong-field multiphoton ionization of O_2 molecules with ultrashort laser pulses in the intensity range between the multiphoton and tunneling regimes. The ionization proceeds by at least three different mechanisms, in addition to the eight- and nine-photon nonresonant pathways. Transient multiphoton resonances with vibrational Rydberg levels give rise to direct Freeman-type peaks with sublaser linewidth and spin-orbit splitting. Some resonance levels actually become populated and yield extremely narrow lines because of postpulse vibrational autoionization. When the lowest photon order resonance channel for the Rydberg states is closed, a third contribution becomes dominant with a main peak at 0.4 eV that shares its main properties with the recently discovered universal low-energy structure in the electron spectra of atoms and molecules [C. I. Blaga et al., Nat. Phys. **5**, 335 (2009); W. Quan et al., Phys. Rev. Lett. **103**, 093001 (2009)]. The variation of the Freeman resonance spectrum with the laser peak intensity is well correlated with the vibronic Franck-Condon factors for the overlap of the intermediate Rydberg state with the O_2 ground state. Accordingly, the Freeman peaks could be unambiguously assigned to individual vibronic multiphoton resonances, and the disappearance of the Freeman resonances at a certain laser intensity could be explained. The population of the autoionizing Rydberg states could be assigned similarly to such vibronic resonances.

Keywords: Femtosecond laser; Intense laser field; photoelectron-Photoion coincidence detection; Oxygen; Freeman resonances.

09. Computational and Experimental Evidence for the First Direct Spectroscopic Detection of the Pyrylogen Neutral Redox Partner

Tamer T. El-Idreesy and Edward L. Clennan

Journal Photochemical and Photobiological Sciences, (9): 796-800 (2010) IF: 2.708

The first synthesis of the two-electron reduction product of a pyrylogen is reported. The magnitude of the experimentally determined disproportionation constant for a pyrylogen radical cation was used to advantage in order to provide compelling evidence for formation of this reduction product. Computational studies were used to provide verification of these results and to provide additional insight into the pyrylogen redox system.

Keywords: PET reactions; Pyrylogens.

10. A New Free and Immobilized Pyrylogen Electron Transfer Sensitizer

Tamer T. El-Idreesy and Edward L. Clennan

Journal Tetrahedron Letters, (51): 1249-1251 (2010) IF: 2.660

The synthesis, photophysical, and electrochemical characterization of *N*-allyl-2,6-diphenyl- 4,4'-pyrylogen bis tetrafluoroborate is reported. The pyrylogen is reduced under dissolving metal reduction conditions with formation of the radical cation. In addition, it can be copolymerized with styrene and divinylbenzene to generate a polymer bound reagent that facilitates its separation from photochemically induced electron-transfer reaction mixtures.

Keywords: Electron transfer sensitizer; Free pyrylogen; Immobilized pyrylogen.

11. A Molecular Orbital Treatment of Piroxicam and its M2+-complexes: the Change of the Drug Configuration in a Time of Bond

Rafie H. Abu-Eittah and Wael A. Zordok

Journal of Molecular Structure: THEOCHEM, (951): 14-20 (2010) IF: 1.288

Piroxicam is a non-steroidal anti-inflammatory and anti-arthritic drug. The global structure of piroxicam molecule H2PIR (4-hydroxy-2-methyl-N-2-pyridyl-2H-benzothiazine-3carboxamide 1,1-dioxide) is behind the remarkable biological activity of the drug. The equilibrium geometry of the molecule is investigated by DFT calculations at the B3LYP/6-31G** level of the theory. The pronounced steric effects existing within the molecule create a non-planar structure with a dihedral angle _32.7_ between the two units of molecule: substituted pyridine residue and benzothiazine ring. This steric hindrance makes the molecule quite labile and major changes occur in the configuration of the molecule when in presence of metal ions. B3LYP/6-31G** calculations on piroxicam and its metal-ion complexes [M(H2PIR)2]2+, M = Ni(II), Cu(II) and Zn(II), showed that the geometry of the drug in the free state differs significantly from that in the metal complex. In the time of metal ion–drug bond formation the drug switches-on from the closed structure equilibrium geometry) to the open one.

Keywords: Piroxicam; Piroxicam molecular orbital; Piroxicam structure.

12. Electrochemical Behaviour of 304L Stainless Steel in High Saline and Sulphate Solutions Containing Alga Dunaliella Salina and β-carotene

F. El-Taib Heakal, M.M. Hefny and A.M. Abd El-Tawab

Journal of Alloys and Compounds, (491): 636–642 (2010)
IF: 2.135

Type 304L stainless steel alloy is a main constructional material in many factories for the production of several salts from the hyper saline water. In this water, such that of Lake Quaroun in Fayioum, Egypt, the sole surviving micro-organism is almost the unicellular alga Dunaliella Salina which secretes relatively massive amount of β-carotene. The present investigation deals with the role of this alga as well as its secreted β-carotene on the corrosion and passivation behaviour of the 304L steel alloy in hyper saline water and sulphate solutions. The tested β-carotene was extracted from a culture alga solution. Standard biochemical, chemical and electrochemical methods were applied. The results reveal that this compound does not affect the mechanism of the corrosion process but merely decrease its rate by making a physical barrier, indicating that β-carotene acts as an adsorption inhibitor. Various electrochemical measurements were used including open circuit potential, potentiodynamic polarization and electrochemical impedance spectroscopy (EIS). Analysis of the EIS results based on the dispersion formula approach, allowed estimation of the electrical parameters of the proposed equivalent circuit used to simulate the alloy/passive film/solution system. From the increase of the surface film resistance, the degree of surface coverage has been calculated as a function of the added β-carotene concentration, hence specifying the appropriate adsorption isotherm. The data were found to obey the Temkin adsorption equation.

Keywords: EIS; Corrosion; 304L Stainless steel; Alga Dunaliella; β-Carotene.

1-1-04 *Dept. of Entomology*

13. Effects of Combining Beauveria Bassiana and Nosema Pyrausta on the Mortality of Ostrina Nubilalis

Khaled M. Abdel Rahman, Marek Barta and Ľudovít Cagáň

Central European Journal of Biology, 5 (4): 472–480 (2010) IF: 0.915

We tested the combined effect of the fungus *Beauveria bassiana* and the microsporidium *Nosema pyrausta* on the European corn borer larvae, *Ostrinia nubilalis*, in the laboratory. The first instar of *O. nubilalis* larvae was the most sensitive to the B. bassiana infection followed by the fifth, second, third, and fourth instar (LC_{50s} were 4.91, 6.67, 7.13, 9.15, and 6.51 x 10^5 conidia/ml for the first to fifth instars, respectively). Mortality of each instar increases positively with concentration of conidia. When *B. bassiana* and *N. pyrausta* were used in combination, mortality increased significantly in all instars. Relative to the B. bassiana treatment alone, the B. bassiana + N. pyrausta treatment decreased the LC_{50s} by 42.16%, 37.63%, 21.60%, 27.11%, and 33.95% for the first to fifth instars, respectively. The combined effects of the two pathogens were mostly additive. However, at the two highest concentrations the pathogens interacted synergistically in the first and second instar. Individuals that survived the *B. bassiana* and *B. bassiana* + *N. pyrausta* treatments and developed into adults had significantly shorter lifespans and females oviposited fewer eggs than non-exposed insects. The effects on the longevity and the egg production were most pronounced at high concentration of *B. bassiana* conidia.

Keywords: *Beauveria bassiana; Nosema pyrausta; Ostrinia nubilalis*; Mortality; Lifespan; Reproductive performance.

14. DNA Damage in Hemocytes of Schistocerca Gregaria (Orthoptera: Acrididae) Exposed to Contaminated Food with Cadmium and Lead

Hesham A.Yousef, Amira Afify, Hany M. Hassan and Afaf Abdel Meguid

Natural Science, 2 (4): 292-297 (2010)

We measured in a comet assay the damage of DNA in the hemocytes of various stages of the grasshopper Schistocerca gregaria after exposing them to various doses of Cd and Pb in the food. The mechanisms of Cd and Pb toxicity for grasshopper are discussed. The accumulation of heavy metals and stage of the insect may play important roles in causing the DNA damage. S. gregaria may be considered a valuable bio-indicator for evaluation the genotoxicity of environmental pollutants.

Keywords: Comet Assay; Heavy Metals (Cd, Pb); DNA Damage; *Schistocerca gregaria*.

15. Effects of Azadirachtin on Embryological Development of the Desert Locust Schistocerca Gregaria Forskål (Orthoptera: Acrididae)

Ghazawy, N. A., Awad, H. H. and Abdel Rahman, K. M

Journal of Orthoptera Research, 19: 327–332 (2010)

Azadirachtin prolonged the incubation period and reduced hatchability of desert locust eggs. Many embryos suffered morphological deformation of the compound eyes and legs and incomplete development of abdominal segments. Histologically, the brain was poorly developed, this being reflected in the compound eyes, neurosecretory cells and entire ventral nerve cord. The embryonic cuticle was insufficiently deposited. The electrophoretic mobilities of the egg proteins after the addition of 200 ppm of azadirachtin were characterized by SDS-PAGE analysis and revealed the appearance of new protein bands and the disappearance of others. We conclude that after suitable field trials, the use of azadirachtin may be a viable alternative to chemical insecticides for control of grasshoppers in Egypt.

Keywords: Grasshoppers; Azadirachtin; Deformation; Histogenesis.

16. Ichneumonidae from Suez Canal Region Egypt (Hymenoptera, Ichneumonoidea)

N.S. Gadallah, R.S.Ahmed, A.H. El-Heneidy and S.M. Mahmoud

Linzer boil. Beitr, 42 (2): 1293-1310 (2010)

A simple key for 43 ichneumonid species belonging to 29 genera and 11 subfamilies collected and recorded from the Suez Canal region is given. Faunistic data for each species is given. Seven species are recorded for the first time in Egypt. These are: *Anomalon kozlovi*(Kokujev) (Anomalinae), *Diadegma fenestrale* (Holmgren), *D. maculata* (Gravenhorst) (Campopleginae), *Mesostenus grammicus* Gravenhorst (Cryptinae), *Syrphipholus bizonarius* (Gravenhorst) (Diplazontinae), *Barichneumon bilunulatus* (Gravenhorst) and *Ctenichneumon repentinus* (Gravenhorst) (Ichneumoninae).

Keywords: Ichneumonidae; Hymenoptera; Suez Canal; Egypt.

17. A Checklist of some Recorded Insects in Misurata, Libya

Walid Fathy Mohamed and El-Sayed Hassan Shaurub

Journal of King Saud University, (22): 61-65 (2010)

Insect fauna of Libya is poorly studied. The insect fauna recorded from Misurata, northwestern Libya is represented by 16 orders, 59 families and 77 genera all are arranged alphabetically. The verification and corrections will be available in a detailed work revising different insect orders and families of Libya. This work is considered the first checklist of insects in Libya at all.

Keywords: Insects; Misurata; Libya.

1-1-05 ***Dept. of Geology***

18. Groundwater Investigation in Awlad Salameh, Southern Sohag, Upper Egypt

Aiman Abdel latif and Mohamed El Kashouty

Earth Sciences Research Journal, 14 (1): 62-74 (2010)
IF: 8.00

The groundwater was the only water resources in the reclaiming area in Awlad Salameh village in the western side of Nile valley in Sohag governorate, Egypt. The soil was salinized and decrease the income per capita due to the increase in water salinity. Fifty groundwater samples was analyzed for major ions, besides the hydrogeological data. The groundwater salinity increased in the northwestern, northern, and northeastern part, attributed to geological, hydrogeological, and anthropogenic sources. The structural pattern enhance the downward, lateral and upward intrusion of saline Eocene limestone and Nubian sandstone aquifers. The salinity decreased in areas of wadis deposits, which characterized by high infiltration of rainfall through gravelly and cobbly sediments. The K concentration is mainly caused by aquitard diffusion rather than anthropogenic. The saturation index approach and statistical analyses were determined and discussed with respect to the geomedia and anthropogenic source. The groundwater is unsuitable for drinking and irrigation purposes due to increase in total dissolved solids.

Keywords: Awlad Salameh; Groundwater; Soil salinization; Hydrogeochemical processes.

19. Upper CenomanianeTuronian (Upper Cretaceous) ammonoids from the western Wadi Araba, Eastern Desert, Egypt"

Emad Nagm, Markus Wilmsen, Mohamed F. Aly and Abdel-Galil Hewaidy

Cretaceous Research, (31): 473-499 (2010) IF: 1.221

The Cenomanian-Turonian (CeT) successions (Galala and Maghra el Hadida formations) exposed on the footwalls of the slopes of the Galala plateaus in the Wadi Araba area in the northern part of the Eastern Desert, Egypt yielded a fairly rich and moderately to well preserved ammonoid fauna. In total, 24 taxa have been identified, 17 of which are systematically described herein. Four genera (Thomelites, Euomphaloceras, Wrightoceras, Eubostrychoceras) and four species (Euomphaloceras septemseriatum, Vascoceras pioti, Fagesia cf. peroni, Wrightoceras munieri) are recorded for the first time from Egypt. In addition, the taxonomy of ammonoids previously reported from these successions has been re-evaluated. The ammonoid fauna came from Upper Cenomanian as well as Lower and Upper Turonian (pars) strata; the Middle Turonian strata are barren of ammonoids. The presence of lower Upper Cenomanian ammonoids in the Galala Formation and mid-/upper Upper Cenomanian ammonoids in the lower part of the Maghra el Hadida Formation shows that the formational boundary between both units does not coincide with the CeT boundary as often reported in the literature. The palaeobiogeographic affinities of the taxa recorded classify the ammonoid assemblage as part of the (southern) Tethyan Vascoceratid Province during the early Late Cretaceous.

Keywords: Lower upper cretaceous; Ammonoids; Systematic palaeontology; Palaeobiogeography; Egypt.

20. Biostratigraphy of the Upper Cenomanian-Turonian (lower Upper Cretaceous) successions of the western Wadi Araba, Eastern Desert, Egypt

Emad Nagm, Markus Wilmsen, Mohamed F. Aly and Abdel-Galil Hewaidy

Newsletters on Stratigraphy, 44 (1): 17–35 (2010) IF: 1.100

An ammonite zonation is proposed for the Upper Cenomanian – Turonian Galala and Maghra El Hadida formations exposed on the footwall slopes of the northern and southern Galala

plateaus in the western Wadi Araba (north Eastern Desert, Egypt). Three zones were recognized in the Upper Cenomanian, from base to top, the *Neolobites vibrayeanus*, *Metoicoceras geslinianum*, and *Vascoceras cauvini* total range zones. The Lower.

Turonian likewise contains three zones, characterized by the taxon ranges of *Vascoceras proprium*, representatives of the genus *Choffaticeras*, and *Wrightoceras munieri*, respectively. The Middle Turonian is barren of ammonites. In the lower Upper Turonian, the *Coilopoceras requienianum* Zone was recognized. These biozones can be correlated, with considerable precision, to the NW European standard zonation and are compared to other Tethyan biostratigraphical frameworks. The occurrences of a few palaeobiogeographically widespread taxa such as *Metoicoceras geslinianum*, *Choffaticeras* spp., and *Wrightoceras munieri* as well as two inoceramid bivalve species of the genus *Mytiloides* allow calibrating the regional biostratigraphy. Furthermore, more precise correlations to NW Europe are now possible.

Keywords: Upper Cretaceous; Cenomanian – Turonian; Egypt; Ammonite biostratigraphy; Inoceramids; Correlation.

21. Stratigraphy, Facies Architecture, and Palaeoenvironment of Neoproterozoic Volcanics and Volcaniclastic Deposits in Fatira Area, Central Eastern Desert, Egypt

Ezz El Din Abdel Hakim Khalaf

Journal of African Earth Sciences, (58): 405-426 (2010)
IF: 0.875

Fatira area in the Central Eastern Desert, Egypt, is a composite terrane consisting of Neoproterozoic volcanic and sediments laid down in submarine to subaerial environment, intruded by voluminous old to young granitic rocks. The various lithofacies of the study area can be grouped in three distinct lithostratigraphic sequences, which are described here in stratigraphic order, from base to top as the Fatira El Beida, Fatira El Zarqa and Gabal Fatira sequences. Each depositional sequence, is intimately related to volcanic activity separated by time intervals of volcanic inactivity, such as marked hiatuses, reworked volcaniclasts, and or turbidite sedimentation.

Four submarine facies groups have been recognized within the oldest, folded eruption sequence of Fatira El Beida. The southern part of the study area is occupied by sheet lava (SL), pillow lavas (PL), pillow breccias (PB), and overlying Bouma turbiditic volcaniclastites (VC). The four facies groups of Fatira El Beida sequence occur in a predictable upward-deepening succession, essentially from base to top, an SL–PL–PB–VC stacking pattern. The coeval tholeiitic mafic and felsic volcaniclastic rocks of this sequence indicate an extensional back-arc tectonic setting. The El Beida depositional sequence appears to fit a submarine-fan and slope-apron environment in an intra-arc site.

The Fatira El Zarqa sequence involves a large volume of subaerial calc-alkaline intermediate to felsic volcanics and an unconformably overlying siliciclastic succession comprising clast-supported conglomerates (Gm), massive sandstone sheet floods (Sm) and mudstones (FI), together with a lateritic argillite paleosol (P) top formed in an alluvial-fan system. The youngest rock of Gabal Fatira sequence comprises anorogenic trachydacites and rhyolites with locally emergent domes associated with autobrecciation and sill-dyke rock swarms that could be interpreted as feeders and subvolcanic intrusions.

Unconformity and lithofacies assemblages define seven events and three unconformity-bounded tectonic stages that record uplift-subsidence cycles in the study area. A proximal–distal relationship has been established within the depositional products, based on the relative dominance of erosional and depositional features.

Keywords: Volcanic lithofacies associations; Subaqueous vs. subaerial eruption; Geotectonic setting; Neoproterozoic; Fatira area; CED; Egypt Neoproterozoic.

22. The Provenance and Tectonic Setting of the Neoproterozoic Um Hassa Greywacke Member, Wadi Hammamat Area, Egypt: Evidence from Petrography and Geochemistry

Yasser Abd El-Rahman, Ali Polat, Brian Fryer, Yildrim Dilek, Mohamed El-Sharkawy and Shawki Sakran

Journal of African Earth Sciences, (58): 185-196 (2010)
IF: 0.875

We present new petrographic and major and trace element data for the Um Hassa Greywacke Member, the upper rock unit of the Hammamat Group, Wadi Hammamat area. The Neoproterozoic Hammamat sedimentary rocks are immature molasse-type rocks that were deposited at the end of the Pan-African Orogeny in the Eastern Desert of Egypt. The Um Hassa Greywacke Member is bedded, weakly deformed and lying conformably on the polymectic conglomerate of the Um Had Member. The Um Hassa greywackes are poorly sorted and composed mainly of quartz, lithic fragments, and feldspar grains with an average modal composition QFL=53:17:30. Quartz is mostly monocrystalline, feldspars are mainly plagioclase and lithic fragments are predominantly of intermediate to felsic volcanic rocks. The Um Hassa greywackes are characterized by low chemical index of alteration (46-65) and SiO_2/Al_2O_3 (4.6-6.1) that indicate limited chemical weathering of the source rocks and deposition close to the source area.

Both point-counting modal analyses and geochemical data suggest that the Um Hassa greywackes were derived from mixed sources. In terms of provenance, continental arc volcanic rocks and oceanic island arc-ophiolitic sources are the main contributors to the sediments of the Um Hassa greywackes. These rocks are exposed as Dokhan-type continental arc volcanic rocks and accreted oceanic arc-ophiolitic mélange respectively. Considering the geodynamic evolution of the Central Eastern Desert, the Um Hassa greywackes in the Wadi Hammamat area were deposited in retroarc foreland basin behind the Dokhan continental arc developed over a west-dipping subduction zone.

Keywords: Hammamat group; Retroarc foreland basin; Molasse sediments; Egypt.

23. The Hydrochemical Characteristics and Evolution of Groundwater and Surface Water in the Western Part of the River Nile, El Minia District, Upper Egypt

Mohamed El Kashouty and Esam El Sayed

Arabian Journal of Geosciences, (2010)

A combination of major and trace elements have been used to characterize surface- and groundwater in El Minia district, Egypt. The main target of this research is to investigate the groundwater quality and hydrochemical evaluation. The situation is further complicated by contamination with lithogenic and anthropogenic (agricultural and sewage wastewaters) sources and low plan exploitation techniques. The investigated Pleistocene aquifer is composed of sand and gravel of different sizes, with some clay intercalation. The semi-confined condition was around the River Nile shifted to unconfine outside the floodplain. Fiftysix, 11, five, and two water samples were collected from the Pleistocene aquifer, River Nile, Ibrahimia canal, and Al Moheet drain, respectively. The collected water samples were analyzed for major and trace elements. The toxic metal concentrations of Al Moheet drain are higher than those in the River Nile and the Ibrahimia canal. Cr, Hg, As, and Cd concentrations in the River Nile and Ibrahimia canal are. fluctuated above and below the WHO drinking standards. Se concentration in River Nile and Ibrahimia canal is below WHO drinking and irrigation guidelines. Total dissolved solid content in groundwater is generally low, but it is increased due to the western part of the study area. The geographic position of the River Nile, Ibrahimia canal, and Al Moheet drain impact on the groundwater quality. The PHREEQC confirm the high mixing proportions from the River Nile into the groundwater and decline away from it. In addition to the thicknesses of the Pleistocene, aquifer and aquitard layer enhance the River Nile and agricultural wastewaters intrusion into the aquifer system. The toxic metal concentrations (Pb, Cd, Cr, PO_4, Se, Mn, As, Hg, Ni, Al, Fe, and SIO_2) in groundwater were increased mainly in the northwestern and southeastern part (far from the River Nile). It is attributed to anthropogenic, high vulnerabilityrate (unconfined), and partially to lithogenic. In most localities, the groundwater are unsuitable for drinking and irrigation purposes with respect to Se concentration, while they are unsuitable for dinking according Mn, As, and Hg contents. There are some Cd and Pb anomalies concentrations, which cause severe restriction if used in irrigation. The results suggested that significant changes are urgently needed in water use strategy to achieve sustainable development.

Keywords: Pleistocene aquifer; Major ions; Toxic metals; Pollution; Geomedia; Western River Nile; El Minia district.

24. Hydrogeophysical Investigation of Groundwater Potential in the El Bawiti, Northern Bahariya Oasis, Western Desert, Egypt

Mohamed El Kashouty, Aiman Abdel Aziz, Mamdouh Soliman and Hany Mesbah

Arabian Journal of Geosciences, (2010)

The future development of agriculture, industry, and civil activity planned to be in the Western Desert. This strategy need to the groundwater resource. Vertical electrical soundings (VES) and electromagnetic (TEM) measurements conducted in the El Bawiti, northern Bahariya Oasis. The measurements give detailed information about the geometry of the different hydrogeological layers in the aquifer system and depth to them. A total of 22 VES and TEM were carried out within El Bawiti area. Thirty-one sub soil samples were collected from eight sites to determine the chemical characteristics and address the effects of lithogenic source and anthropogenic activity on them. The geoelectrical measurements and borehole information indicate the presence of five geoelectrical units, from top to base; the surface cover, sand and shale, upper aquifer (Nubian sandstone), sand and shale, and lower aquifer (Nubian sandstone). Surface cover was equally distributed in thickness and composed of dry sand, gravel, and clay deposits. The regional resistivity of the upper aquifer increased in the southwestern part and decline in the northern, eastern, southern, and western parts. The decline in the resistivity reflects the high water yields and potentiality, as well as low salinity. The resistivity of the lower aquifer increased due the northwestern part and the southwestern part. The information collected during this research provides valuable data for estimating the fresh- to brackish-water resources and for development of a groundwater management plan. The integrated analyses carried out represent a significant and cost-effective method for delineating the main aquifer in this area. In turn, future well locations can be placed with more confidence than before, in accordance with the evaluation of the potentiality of the groundwater aquifers in the area. The electrical conductivity of the soil ranges from 302 to 8,490 μS/cm, increases in the western and central-northern parts. It is attributed to the location from the salt-affected soils (playa), the relatively lower elevation units (depressions) and the position in landscape in the Oasis. Sodium adsorption ratio ranges from 0.44 to 11 and the exchangeable sodium ratio ranges from 0.11 to 5. The estimated magnesium hazard fluctuated below 50%. The statistical analyses were accomplished in soil chemistry and discussed.

Keywords: Geophysical methods; Groundwater exploration; Soil salinity; Nubian sandstone; Agriculture.

25. Origin and Evolution of Post-collisional Volcanism: an Example from Neoproterozoic Dokhan Volcanics at Gabal Nugara Area, Northeastern Desert, Egypt

Ezz El Din Abdel Hakim Khalaf

Journal of Arabian Geosciences (in press), (58): 405–426 (2010)

Nugara volcanics are one of the northernmost outcrops of the Arabian–Nubian Shield. Two distinct volcanic successions are found in the Nugara basin: (1) old volcanic sequence composed of voluminous mediumto high-K calc-alkaline lavas and minor alkali basalt and (2) young volcanic sequence composed of subordinate tholeiitic mafic lavas. Their eruptions were

punctuated by occasional volcaniclastic deposits that generated fall, flow, or reworked suites compositionally identical to the lava flows. These volcanics are a part of a post-subduction and extensional-related magmatic event in Northeastern Desert of Egypt. The volcanic rocks of the Nugara basin are characterized by strong enrichment in LILE relative to HESF, high LILE/HFSE ratios, and depletions of Nb on MORB-normalized multi-element diagrams. The geochemical features of the volcanic rocks suggest that they experienced fractional crystallization, along with mixing processes. Crustal contributions to the magma sources may also have occurred during magmatic evolution. These processes have resulted in scattered major and trace element variations with respect to increasing silica contents. The model proposed for their origin involves contrasting ascent paths and differentiation histories through crustal columns with different thermal and density gradients. The geochemical features of the most mafic samples suggest that the volcanic rocks in the region were derived from a mainly lithospheric mantle source that had been heterogeneously metasomatized by previous subduction events during convergence between the East and West Gondwanaland. The volcanic activity in the region is best explained by the delamination of lithospheric mantle slices that were heterogeneously enriched by previous subduction-related processes.

Keywords: Gabal Nugara area; Dokhan volcanics; Geochemistry; Petrogenesis; Geodynamic implication.

26. The Hydrogeochemical Evolution and Modeling of the Quaternary Aquifer West of the River Nile, El Minia District

Mohamed El Kashouty

Arabian Journal of Geosciences, (2010)

Hydrochemical evaluation of surface and ground waters can be carried out using conventional and multivariate techniques. The main objective of this research is to investigate the water quality and determine the hydrogeochemical evolution and evaluation. The situation is further complicated by contamination with lithogenic and anthropogenic (agricultural and sewage wastewaters) sources and low plan exploitation techniques. The investigated aquifer is the Pleistocene, which composed of sand and gravel of different sizes, with some clay intercalation. The semi-confined condition was around the River Nile shifted to unconfined condition outside the floodplain. The groundwater flow is generally from south to north and diverts towards the eastern part, where large volume of groundwater is drained into the River Nile. Fifty-six, 11, five, and two water samples were collected from the Pleistocene aquifer, River Nile, Ibrahimia canal, and Al Moheet drain, respectively. The water was analyzed for major and trace elements. The prevailing hydrochemical processes are dissolution, mixing, and ion exchange. Four factors control the overall mineralization and water quality of the aquifer system. The factors from 1 to 4 are leaching of surface meteoric waters, agricultural activity (fertilizers and manures), lithogenic, and Fe–Mn oxyhydroxide phase, respectively. The dendrogram analysis reveals that four subclusters (A to D) match well with the geographic position of the River Nile. The major and trace element concentrations increase in subcluster D (far from River Nile) than those in subcluster A (beside River Nile). The saturation indices of calcite, dolomite, gypsum, and anhydrite were undersaturated, reflecting the dissolution condition in the aquifer system. The saturation index of CO_2 was super saturated and increases due the western part, indicating the input of CO_2 from different sources such as lithogenic, anthropogenic, and atmosphere. The TDS concentration is correlated well among SIO_2, Al, Se, Cr, As, and Ni and correlated moderately among Fe, Mn, Pb, Cd, and Hg, reflecting the point and non-point contamination sources. The study highlights the description capabilities of conventional and multivariate techniques as effective tools in groundwater quality evaluation.

Keywords: Pleistocene aquifer; Statistical analyses; PHREEQC model; El Minia.

1-1-06 ***Dept. of Mathematics***

27. On the Recursive Sequence $x_{n+1} = (\alpha - \beta x_{n-k}) / g(x_n, x_{n-1},...., x_{n-k+1})$

Alaa E. Hamza

Computers & Mathematics With Applications, (60): 2170-2177 (2010) IF: 1.192

This paper is devoted to investigating the asymptotic behavior of the recursive sequence

$$x_{n+1} = \frac{\alpha - \beta x_{n-k}}{g(x_n, x_{n-1},....., x_{n-k+1})}, \quad n = 0,1,....$$

Where

$\alpha \geq 0$ and $\beta > 0$ and g is continuous on R^k.

We show that under certain conditions this equation has a unique positive (negative) equilibrium point which is a global attractor with some basin $S \subseteq R^{k+1}$ Also we establish the oscillation of all solutions with initial conditions $\{x_{-i}\}_{i=0}^{k}$ such that $(x_0, x_{-1},....., x_{-k}) \in S.$ We apply these results to the recursive sequence

$$x_{n+1} = \frac{\alpha - \beta x_{n-k}}{\gamma + \sum_{i=0}^{k-1} (a_i x_{n-i} \pm b_i x_{n-i}^2)}, \quad n = 0,1,...$$

Where $\alpha, \gamma, a_i, b_i \geq 0, \quad i = 0,.....,k-1 \text{and } \beta > 0.$

Keywords: Difference equations; Stability; Attractivity.

1-1-07 ***Dept. of Physics***

28. Scaling Properties of Proton-nucleus Total Reaction Cross Sections

Badawy Abu-Ibrahim and Akihisa Kohama

Physical Review C, (2010) IF: 3.477

We study the scaling properties of proton-nucleus total reaction cross sections for *stable* nuclei and propose an approximate expression in proportion to

$Z^{2/3}\sigma_{pp}^{total}+N^{2/3}\sigma_{pn}^{total}$. Based on this expression, we can derive a relation that enables us to predict a total reaction cross section for any stable nucleus within 10% uncertainty at most, using the empirical value of the total reaction cross section of a given nucleus.

Keywords: Stable nucleii; Proton nucleuss total reaction cross sections.

29. Diode Laser Absorption Measurements at the H_α-transition in Laser Induced Plasmas on Different Targets

A. M. EL Sherbini, A. M. Aboulfotouh, S. H. Allam and Th. M. EL Sherbini

Spectrochimica Acta Part B, (65): 1041-1046 (2010) IF: 2.719

The diode laser atomic absorption spectroscopy (DLAAS) technique has been utilized to assess the degree of optical opacity of plasma at the wavelength of the H_α-line. The plasma is produced at atmospheric conditions by focusing a 6 ns Nd:YAG laser pulse at 1.064 μm on different solid target materials including aluminum, iron and titanium as major elements as well as flat pieces of plastic and wood characterized by a high content of hydrogen. The optical depth was investigated as a unction of delay times ranging from 0 to 5 μs, and at laser fluences ranging from 7 to 19 J/cm^2, all at a fixed gate time of 1 μs. The results show that the plasma associated with metallic targets is almost optically thin at the Hα-line over all fluences and at delay times ≥1 μs, but rather thick for hydrogen-rich targets (plastic and wood) over all delay times and fluences.

Keywords: LIBS; DLAAS; Optical depth; H_α-line; Delay time; Laser fluences.

30. Irreversibility Line of an Ag-doped Hg-based Superconductor

M. F. Mostafa, A. Hassen and H. P. Kunkel
Supercond. Sci. Technol., 23: 085010 (7pp) (2010) IF: 2.694

The effect of doping with Ag of the bulk superconducting $Hg_{0.3}La_{0.7}Ba_2Ca_3(Cu_{1-x}Ag_x)_4O_{10+\delta}$, $0.1 \le x \le 0.3$ phase (Hg-1234) is presented. The lattice parameter a = 3.824 Å remains constant, while parameter c was found to increase from c = 19.0225 Å(x = 0.0) to 19.08 Å(x = 0.3) with the addition of Ag. The variation of T_c versus the c-parameter exhibits a cupola-shaped behavior. The irreversibility line is thermallyactivated. The logarithmic plot of H_{irr} versus $(1- T_{irr}/T_c(0))$ shows a crossover temperature reflecting a transition from two- to three- dimensional behavior with increasing temperature. Fitting of the results to different models is discussed. Thermally activated de-pinning according to Matsushita's formula gives the best fit.

Keywords: High Tc superconductors; Irreversibility line.

31. Investigation of the Physico-chemical Properties of Nanometric NiLa Ferrite/ PST Matrix

M.A. Ahmed, S.F. Mansour and S.I. El-Dek

Solid State Ionics, (181): 1149–1155 (2010) IF: 2.162

Nickel ferrite $NiLa_yFe_{2-y}O_4$ ($0 \le y \le 0.05$) was synthesized using citrate precursor method. The structure, particle size, shape and the homogeneity of the resulting nanoparticles were studied by X-ray diffraction and transmission electron microscope (TEM). IR was used to study the composition characteristics of the as– synthesized sample. Magnetic susceptibity of the samples with different La content was studied at different temperatures and magnetic field intensities. Ac conductivity, dielectric constant and loss tangent of ferrite polymer composites prepared with different ratios of 10%, 30% and 50% in polystyrene (PST) matrix have been investigated in frequency range (10^2 -10^6 Hz) . The dc magnetic susceptibility of the ferrite/ PST matrix is also reported.

Keywords: Ni La nanoferrite; Citrate method; Magnetic susceptibility; Ferrite/PST matrix; Dielectric constant.

32. Bi-modal Improvement of the Physico-chemical Characteristics of PEG and MFe_2O_4 Subnanoferrite

M. A. Ahmed, N. Okasha, S. F. Mansour and S. I. El-dek

Journal of Alloys And Compounds, (496): 345–350 (2010) IF: 2.135

MFe_2O_4 (M=Mn^{2+}, Ni^{2+}, Co^{2+} and Cu^{2+}) ferrite powders were prepared by flash auto-combustion reaction. The structural identification of the samples was carried out using X-ray diffraction (XRD), transmission electron microscope (TEM), selected area electron diffraction (SAED) and IR spectra. The study established the formation of sub-nanosized particles especially for MFe_2O_4 (M= Ni, Co and Cu) ferrites. MFe_2O_4/PEG (polyethylene glycol) composites were prepared by cold uniaxial pressing. The magnetic properties were studied by carrying out the hysteresis of MFe2O4 and PEG/MFe_2O_4 composite at room temperature. The data showed that $MnFe_2O_4$ has the highest saturation magnetization while $CoFe_2O_4$ has the largest coercive field due to the high anisotropy of Co^{2+} ions. The ac electrical conductivity as well as the dielectric constant ε' and loss tangent tan δ were measured at different frequencies at room temperature. The highest conductivity is achieved for PEG/$NiFe_2O_4$ and the lowest value of tanδ is obtained for PEG/$MnFe_2O_4$ amongst all PEG/MFe_2O_4 nanocomposites.

Keywords: Spinel subnanoferrite/PEG composite; Flash combustion; Magnetic properties; Electrical properties.

33. Total Reaction Cross Sections of Light Neutron-Rich Nuclei in the Glauber Approximation

Akihisa Kohama, Badawy Abu-Ibrahim, Wataru Horiuchi, Shohei Iwasaki and Yasuyuki Suzuki

Modern Physics Letters A, 25 (21-23): 1963-1966 (2010) IF: 1.075

We report our recent numerical results of total reaction cross sections of light neutron-rich nuclei, such as carbons and oxygens, in the Glauber approximation to study the exotic structure of neutron-rich unstable nuclei.

Keywords: Nuclear reactions; Total reaction cross sections; Unstable nuclei.

34. Optical Properties of $Ti_{0.5}Li_{0.5}La_{0.1}Fe_{1.9}O_4$ ferrite thin film

H. M. Abdelmoneim

Physica B-Condensed Matter, (405): 1551–1557 (2010) IF: 1.056

High-purity oxide powders are processed together using the standard ceramics technique to form a ferrite material with the composition formula; $Ti_{0.5}Li_{0.5}La_{0.1}Fe_{1.9}O_4$. Thin films varying from 15 to 115 nm are produced by the thermal evaporation technique. The optical properties and optical constants of thin films of various thicknesses have been investigated by means of the transmittance and reflectance spectra. The type of optical transition responsible for optical absorption was in direct transitions. The refractive index and the extinction coefficient of the samples were determined in the visible range as a function of wavelength. The ratio of carrier concentration to electron effective mass (N/m*) and the residual dielectric constant (ε_∞) were calculated and their dependence on the film thickness was considered. The refractive index dispersion for the thinner film (15nm) is discussed in terms of the single oscillator model and the oscillator parameters were determined.

Keywords: Thin film; Optical parameters; Ferrite.

35. Lateral Electric Field Effects on Quantum Size Confinement in Cylindrical Quantum dot Under Parabolic Potential

S. A. Safwan, A. S. Asmaa, Nagwa El meshed, M. H. Hekmat, TH. M. El-Sherbini and S.H. Allam

Superlattices and Microstructures, (47): 606-614 (2010) IF: 0.910

Within the effective mass approximation, we investigated theoretically the ground-state energy of a single particle and the binding energy of the neutral donor impurity .D0/ affected by a lateral electric field in a parabolic quantum dot (QD). The results show that the electron and the hole ground-state energy and the band to band transition energies shift to lower values (red shift) by increasing the field intensity. The quantum Stark shift (QSS) for the electron increases rapidly in the quasi spherical QD (QSQD) by increasing the lateral field, whereas for the hole it increases monotony. In the cylindrical QDs (CQDs), we found that the QSS for electron and hole increase monotonically. The quantum size, lateral electric field and impurity position effect on the binding energy of neutral donor .D0/ is studied. Unexpected behavior of D0 in quantum well limit (QW), the binding energy of D0 is increasing (blue shift) with increasing QD radius R at the presence of a lateral electric field. It appears that for a fixed size of the QD, the off-center binding energy decreases when the impurity ion is displaced from the center to the QD borders, while it is shifted to lower energy with increasing the field.

Keywords: Semiconductor nanostructure; Quantum dot; Lateral electric field.

36. Dielectric and AC Conductivity of Potassium Perchlorate, $KCLO_4$

H. M. Abdelmoneim

Acta Physica Polonica A, (2010) IF: 0.433

The AC conductivity $\sigma(\omega)$ and the complex dielectric permittivity $\varepsilon^*(\omega)$ were studied as function of temperature 300 K < T < 600 K and at some selected frequencies (1–20 kHz) for polycrystalline sample of $KClO_4$. The differential thermal analysis (DTA) thermograph was also performed. The combined data support each other and indicate the existence of a structural phase transition at ≈ 575 K. Moreover, the temperature dependence of the ac conductivity behaves in accordance with Arrhenius relation, whereas the frequency dependent conductivity obeys the power law $\sigma(\omega) = A\omega^{s(T)}$. The behavior of s with temperature suggests that the hopping over the barrier model prevails. No evidence for the existence of a ferroelectric phase transition at the transition temperature.

Keywords: Dielectric constant; Ac conductivity; Phase transition.

37. Dielectric Properties of $Ti_xLi_{1-x}La_{0.1}Fe_{1.9}O_4$ ferrite thin films

H. M. Abdelmoneim

Indian Journal of Pure & Applied Physics, (48): 562-570 (2010) IF: 0.246

The variation of dielectric constant ε', the dielectric loss factor ε" and the *ac* conductivity σ_{ac} of mixed $Ti_xLi_{1-x}La_{0.1}Fe_{1.9}O_4$ (where x = 0.1, 0.3, 0.5, 0.7 and 0.9) ferrite thin films is studied as a function of both frequency and temperature. The variation of dielectric constant with different temperature in all films gives a broad peak. The peak maximum is almost fixed at 500K independent of lithium content. The ε'(f) and ε"(f) curves at different temperatures for all samples show a higher dispersion in the low frequency region. The conduction phenomenon is explained on the basis of a correlated barrier hopping (CBH) model. According to the CBH model the

maximum barrier height at infinite separation (U_M) is determined.

Keywords: Dielctric constant; Loss factor; *Ac* conductivity; CBH model.

38. The Multifragmentation of Heavy Ion Reaction into Different Deformed Nuclei

Ahmed Osman

Indian Journal of Theoretical Physics, 58 (1): 1-18 (2010)

Multifragmentation of carbon induced fission is considered following the statistical scission model. The fragment products in the exit channel are two different deformed nuclei as well as some nucleons and / or alpha particles. The angular distributions and variances of this multifragmentation process including two deformed heavy fragments have been numerically calculated. The present calculations show the strong dependence of these values on nuclear temperatures.The present theoretical calculations of the differential cross-sections are in good agreements with the experimental data for the carbon incident energy 84 A *Me*V. The obtained values of the present calculations using the statistical scission model are in good agreement with previous measurements and calculations.

Keywords: Fission reactions; Charged particle induced fission; Mulifragmentation; $^{12}C + {}^{197}Au$ reactions; Calculated angular distributions and variances.

39. Excitation and De-excitation rate coefficients for Cu II

A.I. Refaie, I. El Ghazali, S. H. Allam and Th. M. El Sherbini

International Review of Physics (Irephy), 4 (2): 95-99 (2010)

Electron impact excitation and de-excitation rate coefficients have been evaluated for 48 excited atomic states for Cu II ion at different plasma temperatures kT_e and the corresponding electron densities N_e resulting from our experimental measurements. These coefficients have been determined at different incident electron excitation temperatures in the range between (1.07 and 2.29) eV. The population densities have been also calculated at different values of kT_e and the corresponding electron densities in the range between (0.95 and 3.1) $\times 10^{16}$ cm^{-3}. The calculations have been performed by using the coupled rate simultaneous equations in which the monopole and the quadrupole transitions have been introduced in the calculations in addition to the dipole transitions.

Keywords: Rate coefficients; Population densities.

1-1-08 ***Dept. of Zoology***

40. miR-145-dependent Targeting of Junctional Adhesion Molecule A and Modulation of Fascin Expression are Associated with Reduced Breast Cancer Cell Motility and Invasiveness

M Gotte, C Mohr, C-Y Koo, C Stock, A-K Vaske, M Viola, SA Ibrahim, S Peddibhotla, YH-F Teng, J-Y Low, K Ebnet, L Kiesel and GW Yip

Oncogene, (29): 6569–6580 (2010) IF: 7.135

Micro RNAs are small non-coding RNAs, which regulate fundamental cellular and developmental processes at the transcriptional and translational level. In breast cancer miR-145 expression is downregulated compared with healthy control tissue. As several predicted targets of miR-145 potentially regulate cell motility, we aimed at investigating a potential role for miR-145 in breast cancer cell motility and invasiveness. Assisted by Affymetrix array technology, we demonstrate that overexpression of miR-145 in MDA-MB-231, MCF-7, MDA-MB-468 and SK-BR-3 breast cancer cells and in Ishikawa endometrial carcinoma cells leads to a downregulation of the cell–cell adhesion protein JAM-A and of the actin bundling protein fascin. Moreover, podocalyxin and Serpin E1 mRNA levels were downregulated, and gamma-actin, transgelin and MYL9 were upregulated upon miR-145 overexpression. These miR-145-dependent expression changes drastically decreased cancer cell motility, as revealed by time-lapse video microscopy, scratch wound closure assays and matrigel invasion assays. Immunofluorescence microscopy demonstrated restructuring of the actin cytoskeleton and a change in cell morphology by miR-145 overexpression, resulting in a more cortical actin distribution, and reduced actin stress fiber and filopodia formation. Nuclear rotation was observed in 10% of the pre-miR-145 transfected MDA-MB-231 cells, accompanied by a reduction of perinuclear actin. Luciferase activation assays confirmed direct miR-145-dependent regulation of the 30UTR of JAM-A, whereas siRNA-mediated knockdown of JAM-A expression resulted in decreased motility and invasiveness of MDA-MB-231 and MCF-7 breast cancer cells. Our data identify JAM-A and fascin as novel targets of miR-145, firmly establishing a role for miR-145 in modulating breast cancer cell motility. Our data provide a rationale for future miR-145-targeted approaches of antimetastatic cancer therapy.

Keywords: F11R; MicroRNA; Actin cytoskeleton; Metastasis; Nuclear rotation; Endometrial carcinoma.

41. Comparative Study of the Effects of Experimentally Induced Hypothyroidism and Hyperthyroidism in some Brain Regions in Albino Rats

A.M. El-bakry, A.W. El-Gareib and R.G. Ahmed

International Journal of Developmental Neuroscience, (28): 371–389 (2010) IF: 2.025

Thyroid hormones (THs) play a crucial role in the development and physiological functioning of different body organs especially the brain. Therefore, the objective of this study was to show the histopathological effects of the different thyroid states on some brain regions (cerebrum and cerebellum) and the skeletal features of their newborns during the postnatal development from the 1st to 3rd week. The female white albino rats were allocated into 3 groups as follows: the experimental hypothyroidism group is induced by 0.02% methimazole (MMI) (w/v) in drinking water, while the experimental hyperthyroidism group is performed by exogenous T4 [from 50 to 200µg/kg body weight intragastric administration beside adding 0.002% T4 (w/v) to the drinking water] from the gestation day 1 to lactation day 21 and control group which received tap water. As well, both maternal hypo- and hyperthyroidism caused some malformation and developmental defects in the cerebellar and cerebral cortex of their newborns along the duration of the experiment. These degenerative symptoms became more prominent and widely spread at the 3rd postnatal week. Concomitantly, there were some degeneration, deformation and severe growth retardation in neurons of these regions in both treated groups throughout the experimental period. Moreover, the skeletal features of these newborns were accelerated in hyperthyroid group while these maturations were delayed partially in hypothyroid ones during the examined periods. These alterations, on both treated groups, were age and dose dependent. Thus, further studies need to be done to emphasize this concept.

Keywords: Thyroid states; Development; Brain; Skeleton.

42. Effect of Treatmen with Antifibrotic Drugs in Combination with PZQ in Immunized *Schistosoma Mansoni* Infected Murine Model

Ibrahim Rabia, Faten Nagy, Eman Aly, Amina Mohamed, Faiza El Assal and Azza El Amir

Journal of American Science, 6: (5): 208-216 (2010)

The main problem in schistosomal hepatic morbidity is fibrosis and extensive scarring induced by living eggs. In this study, we tried to study the effect of treatment using antihelminthic drug (PZQ) and/or antifibrotic drugs (PTX and silymarin) in combination with immunization. The parasitological parameters, the dynamics of serum-specific immunoglobulins and splenic cytokines associated with changes in granuloma diameter were assessed. Naïve mice were immunized intravenously with 10 ug of SEA in three doses at 2 days intervals 6 weeks before infection. Animals were infected by tail immersion with 100 cercariae and divided into several groups. Three groups were treated with PZQ, PTX or silymarin administered alone. Another two groups were treated with PZQ combined with PTX or silymarin. All treated animals and respective controls were sacrificed 12 weeks post infection. Immunization did not affect worm reduction, but slight decrease in granuloma diameter, increase in immunoglobulins and cytokines were observed. Reduction in worm burden was associated with reduction in ova count and changes in oogram pattern which were mainly due to PZQ treatment. Increasing reduction in granuloma diameter, elevation of immunoglobulins and cytokines levels were observed in the groups treated with PZQ alone or combined with PTX or silymarin. In conclusion, in this study, treatment with PZQ complemented with immunization resulted in significant reduction of parasitological parameters and rise of specific Igs. Addition of antifibrotic drugs PTX or silymarin to PZQ, potentiated an antipathology effect which minimized and ameliorated liver librosis by inhibition of HSC activation and accentuation of the effect of suppressor Treg cells.

Keywords: *Schistosoma mansoni*; Praziquantel; Pentoxifyllin; Silymarin.

1-02. Faculty of Agriculture

1-2-01 *Dept. of Agricultural Engineering*

43. A Mechanistic Model of Nutritional Control of Protein Synthesis in Animal Tissue

Ehab R. El-Haroun, Dominique P. Bureau and John P. Cant

Journal of Theoretical Biology, (262): 361–369 (2010)
IF: 2.574

Regulation of mRNA translation has been held responsible for effects of diet, age, alcohol, hormones, hibernation, disease and hypoxia on protein synthesis in animal tissues. Dietary effects are due to concentrations of amino acids and insulin in circulation that affect activities of two key translational regulators, eukaryotic initiation factor 2 (F2) and eukaryotic initiation factor 4E binding protein 1 (Bp). To construct a platform for prediction of global protein synthesis to nutritional stimuli, a dynamic, mechanistic model of translational control in whole tissues was developed. The model was composed of a set of differential equations which describe the dynamics of 11 state variables: tRNA and acyl-tRNA for leucine (Leu), limiting (Laa) and other amino acids (Oaa), inactivated F2 with GDP (F2d), activated F2 with GTP (F2t), F4e, Bp and its complex with F4e (4eBp), available mRNA start codons (AUG), and active ribosomes (Arib). Material was assumed to flow from one variable to another according to mass-action kinetics or Michaelis–Menten form. Uncharged tRNA inhibit GTP exchange on eIF2, and free amino acids and insulin inhibit reversible sequestration of F4e by Bp. Initial conditions and parameters were set for a skeletal muscle fractional synthesis rate of 10%/d and ribosome transit time of 80 s. Between amino acid concentrations of 500 and 4000 10 3 nM, protein synthesis increased from 0.9 to 11.7%/d at 0 mU/Ml insulin, and from 5.0 to 12.8%/d at 30 mU/mL insulin. Predicted responses to graded levels of a deficient amino acid were asymptotic. A single parameter accomodated differences between tissues in insulin sensitivity. Seven parameters must be changed to simulate initiation and elongation rates in more active tissues such as liver, or in tissues of older mature animals. An increase in uncharged tRNA during insulin stimulation highlighted the physiological importance of coordinated regulation of amino acid supply by insulin. In conclusion, the regulation of F4e release from Bp by Ins and Leu, and of F2d recycling by uncharged tRNA can be tied together to describe a wide range of FSR values across tissues and physiological states.

Keywords: Translation efficiency; Amino acids; Insulin; Liver; Muscle.

44. A Software Program for Planning and Designing Biogas Plants

M. Samer

Transactions of the ASABE, 53 (4): 1277-1285 (2010)
IF: 0.889

To plan and design biogas plants, several calculations should be carried out; this requires time and effort, with the possibility of making mistakes. The objective of this study was to develop a tool to assist designers in planning and designing biogas plants by providing a new mathematical model and software program to save time and effort. A mathematical model was developed to plan and design biogas plants and their concrete structures. Subsequently, an electronic spark map (decision tree) was developed, and the mathematical model was integrated into the electronic spark map. Afterwards, C# (C˘Sharp) programming language was used to develop a software program by integrating the electronic spark map and the mathematical model, and making the user interface. The developed software is able to plan and design biogas plants, specify the dimensions of the different tanks (raw slurry tank, liquid organic matter tank, digester tank, secondary digester tank, and residue storage tank), and compute the required amounts of construction materials (iron rods, cement, sand, and gravel) required to build the designed structures. Furthermore, it calculates the capital investment and the fixed, variable, and total costs of the construction. Data from seven biogas plants were used to carry out the model validation and to evaluate the software program. The differences between actual and calculated values were determined, and the standard deviations were calculated. The coefficients of variation range between 3% and 7%. Furthermore, the calculated accuracy of the software program is 98%.

Keywords: Anaerobic digester; Biogas plant; Building material; Concrete construction; Mathematical modeling; Software program; Spark mapping.

1-2-02 ***Dept. of Dairy Science***

45. In Vitro Model for Assessment of the Health Benefits of some Microbial Strains

EL-Dieb, S. M., Abd Rabo, F. H. R., Badran, S. M, Abd El-Fattah, A. M. and Elshaghabee, F. M. F.

International Journal of Probiotics and Prebiotics, 5 (3): 157-164 (2010)

In Vitro Cholesterol reducing ability, β-galactosidase, antioxidant, antitumor and antibacterial activity of L. acidophilus La-5, L. casei - 01, L. helveticus Lh. B 02, B. bifidum Bb-12, K. lactis NRRL Y- 8279 and Sacch. cerevisiae DSMZ 70 449 were investigated. Results show i) all strains were able to reduce cholesterol and exhibit β- galactosidase and antitumor activities, ii) yeast strains and the viable forms (free and microencapsulated) of all microbial strains had higher cholesterol reducing ability and β-galactosidase activity than non-viable form, iii) the yeast strains had higher antioxidant activity than bacterial strains, and iv) Lactobacilli and Bifidobacterium strains exhibited antibacterial activity against spoilage and pathogenic bacteria.

Keywords: Antioxidant; Antitumor and Cholesterol removal.

46. Natural State Changes of Cows' and Buffaloes' Milk Proteins Induced by Microbial Transglutaminase

F.H.R. Abd-Rabo, S. M. El-Dieb, A.M. Abd-El-Fattah and S.S. Sakr

Journal of American Science, 6 (9): 612-620 (2010)

The percent incorporation of some amino acids in milk protein as a result of cross-linking by Microbial Transglutaminase (MTGase) was investigated. Effect of MTGase on electrophoretic patterns, microstructure, micellar hydration and sedimentable solids of milk proteins as well as the viscosity of whole and skim Cows' and Buffaloes' milk was also studied. Incubation of milk with MTGase at 40ºC for 1h prior to thermal inactivation (at 80ºC/2min) resulted in a complete incorporation of Glutamine and Argynine in skim Cows' milk protein and Glysine and Valine in skim Buffaloes' milk protein. That treatment also induced reductions in levels of monomeric caseins (αs_1-, β-, and κ-caseins) and an increase in the fractions of relatively low electrophoretic mobility. The effect of MTGase on the microstructure of treated samples was quite clear; the enzyme was capable of forming covalent linkages between protein molecules. The micellar hydration and viscosity of treated skim milk samples were markedly improved and were the highest between the samples makes it possible to produce different types of dairy products with low fat contents or a reduced content of non-fat solids.

Keywords: Microbial Transglutaminase; Cows' milk; Buffaloes' milk.

47. Recent Invasion by Bactrocera Zonata (Saunders) as a New Pest Competing with Ceratitis Capitata (Wiedemann) in Attacking Fruits in Egypt

S. Elnagar, M. El-Sheikh, A. Hashem and Y. Afia

Aspects of Applied Biology (104): 97-102 (2010)

Different species of Family Tephritidae have been accidentally introduced into Egypt. Mediterranean fruit fly (Medfly), *Ceratitis capitata* (Wiedemann) was reported in Egypt early last century and ever since has been the serious pest of fruits. Recently in 1990, the peach fruit fly (PFF), *Bactrocera zonata* (Saunders), although recorded in Egypt as early as 1924, has been recognized as causing fruit damage on a range of fruits including mango, guava, apricot, peach, apple and pear. Three seasons of field monitoring, revealed a significantly higher abundance of *B. zonata* than of *C. capitata*, on all major fruit hosts in three different localities in Egypt. In laboratory comparisons, *B. zonata* manifested a higher threshold of

temperature than *C. capitata*. The reduced survival rate of immature stages of *B. zonata* at 35°C was less acute than that observed for *C. capitata. B. zonata* immature stages survived 40°C while those of *C. capitata* failed to survive. *B. zonata* appeared to prefer warmer conditions and seemed well adaptable to hot climates.

The seasonal abundance data suggested that the milder climate conditions in spring, autumn and early winter was favoured by *C. capitata*, while extreme summer high temperatures supported survival of *B. zonata*. Both fruit fly species disappeared during extreme cold winter. Present study concludes that *B. zonata* has gradually become so widely spread that it surpasses domination of *C. Capitata* as the major fruit pest. It is possible that climate change is responsible for the appearance of *B. zonata* as a pest over the past 20 years, although the species was recorded in Egypt about 50 years earlier.

Keywords: Ceratitis capitata; Internal pest invasion; Mediterranean fruit fly; Bactrocera zonata; Peach fruit fly.

48. Studies on Acceleration of Ras Cheese Ripening by Aminopeptidase Enzyme from Buffaloes' Pancreas. II- Utilization of Buffaloes' pancreas aminopeptidase in acceleration of Ras cheese ripening

M. A. El-Hofi; Azza A. Ismail; Fawzia H. R. Abd Rabo; Samia M. El-Dieb and O. A. Ibrahim

Journal of American Science, 6 (9): 575-581 (2010)

Aminopeptidases are an exopeptidase that catalyzes the hydrolysis of amino acid residues from the N-terminus of peptide or protein substrates, these are believed to act in concert to completely degrade the products of proteolysis into amino acids. The presence of free amino acids in Cheddar cheese and their contribution to aged flavor clearly and debittering effect in cheese indicates the importance of aminopeptidases in the ripening process. Fresh mixture of buffaloes' and cows' milk (1:1) was divided into five portions. The first portion was left without treatment and served as a control (C). The aminopeptidase was added at levels of 0.03 (T1), 0.06 (T2), 0.09 (T3) and 0.15 (T4) units / kg milk. All five milk samples were manufactured into ras cheese. Ras cheese samples were taken periodically when fresh and after 15, 30, 45, 60, 75, 90, 105 and 120 days of storage at 14 ± 1°C for analysis. After 60 days of ripening, sample T2 was more superior as it had an acceptable acidity and pH value and the difference between it and control was significant. The moisture and total nitrogen contents of sample T2 were 36.65 and 4.643% and there is no significant difference between T2 and control. The level of soluble nitrogen in the control cheese was lower than those of treated cheeses and the difference between sample T2 and control was significant. The use of buffaloes' pancreas aminopeptidase increased soluble tyrosine and tryptophan contents in the resultant cheeses as compared with the control. Specific assessment of proteolysis by measuring decrease in the intensity of protein bands by urea-PAGE showed considerable decreases in intact αs1 and β-casein in sample T2 compared to the control. Organolyptically treatment 2 had the highest total score among treatments followed by sample T1 then T3, T4 and finally control cheese. Therefore addition of 0.06 units of buffaloes' pancreas aminopeptidase / kg milk would accelerate the ripening process of Ras cheese through 60 days without any defects in its properties.

Keywords: Buffaloes' pancreas; Aminopeptidase; Ras cheese; Cheese ripening.

1-2-03 *Dept. of Food processing*

49. Quality Characteristics Improvement of Low Phenylalanine Toast Bread

Sobhy M. Mohsen, Attia A. Yaseen, Abdalla M. Ammar and Ayman A. Mohammad

International Journal Of Food Science and Technology (45): 2042-2051 (2010) IF: 1.172

This study was designed to prepare and evaluate low-phenylalanine toast bread madeform gliadin-free wheat flour and hydrocolloids. Wheat protein fraction (gliadin) rich in phenylalanine was extracted using aqueous alcohol solution for the production of low-phenylalanine wheat flour. Pectin, gum Arabic and carboxymethylcellulose (CMC)were used separately to improve the quality of bread at levels of 1,2 and 3%.chemical, rheological, organoleptic, baking, staling and microstructure of bread were studied. Phenylalanine Content of gliadin-free bread samples reduced by 43.2%compared with control. Separation of gliadinnegatively affected the rheological properties of dough and baking quality of bread, while rheological properties,baking quality and staling were improved upon hydrocolloids addition. Microscopic examination of crumb structure revealed remarkable differences in control and treated breads.it was found that acceptable bread could be produced using gliadin-free wheat flour with the addition of pectin or CMC up to 2 and 3%respectively.

Keywords: Amino acid; Hydrocolloids; Low –phenylalanine toast bread; Microstructure; Phenylketonuria; Rheological properties; Staling.

1-2-04 *Dept. of Plant Pathology*

50. Current Rhizoctonia Solani Anastomosis Groups in Egypt and their Pathogenic Relation to Cotton Seedlings

Maurice S. Mikhail, Kamel K. Sabet, Moawad R. Omar, Amal A. Asran and Khaled K. Kasem

African Journal of Microbiology Research, 4 (5): 386-395 (2010) IF: 0.407

Twenty eight isolates of *Rhizoctonia solani* were obtained from cotton seedlings and twenty three isolates from other hosts; eight from peanut, five from chickpea, two from each of flax, tomato and watermelon and one from each of potato, cantaloupe, pepper and lupine. Microscopic examination revealed that 17 isolates (33.33%) each belonged to AG-2-2,

17 and AG-4 HG-I, while 7 isolates (13.73%) belonged to AG-4 HG-II and 10 isolates (19.61%) belonged to AG-5. Pathogenicity test on cotton cultivar Giza 86, under greenhouse conditions, showed that 19 isolates significantly induced pre- and post-emergence damping-off, while they significantly decreased survival, plant height and dry weight. However, the pathogenic isolates of AG-2-2 represented 19.61% of the total isolates as well as the highest percentage of the pathogenic isolates (52.63%). There were no significant differences between effects of different AGs on the cotton seedling variables. Cluster analysis suggested that grouping the isolates based on their virulence patterns was not related to their geographic origins, AG or hos

Keywords: Rhizoctonia solani; Anastomosis groups; Cotton; pathogenicity.

1-2-05 ***Dept. of Soil and Water***

51. Modelling an Environmental Pollutant Transport from the Stacks to and Through the Soil

Rushdi M. M. El-Kilani and Mohammed H. Belal

Journal of Advanced Research, (1): 243–253 (2010) IF: 3.0

In this paper, a model is presented for predicting the transport of an environmental pollutant from the source to and through the soil. The model can predict the deposition of an environmental pollutant on the soil surface due to the pollutant being loaded on dust particles, which are later deposited on the soil surface. The model is a coupling of three models: a model for predicting the cumulative dust deposition from near and far field sources on a certain area; a canopy microclimate model for solving the energy partition within the canopy elements and so predicting the water convection stream for pollutant transport through the soil; and coupling the deposition of these pollutants on the soil surface to a model for its transport through the soil. The air pollution model uses the Gaussian model approach, superimposed for multiple emission sources, to elucidate the deposition of pollutant laden airborne particulates on the soil surface. A complete canopy layer model is used to calculate within the canopy energy fluxes. The retardation factor for the pollutant is calculated from an adsorption batch experiment. The model was used to predict the deposition of lead laden dust particles on the soil surface and lead's transport through the soil layers inside a metropolitan region for: (1) three large cement factories and (2) a large number of smelters. The results show that, due to the very high retardation values for lead movement through the soil, i.e. ranging from 4371 to 53,793 from previous data and 234 from the adsorption experiment in this paper, lead is immobile and all the lead added to the soil surface via deposited dust or otherwise, even if it is totally soluble, will remain mostly on the soil surface and not move downwards due to high affinity with the soil.

Keywords: Simulation model; Gaussian plume; Canopy climate model; Heavy metal movement; Retardation factor.

1-2-06 ***Dept. of Zoology and Agricultural Nematology***

52. Fingerprinting and Assessment of Genetic Variability of Varroa Destructor in Egypt

Nabil. S. Awad, Sally F. M. Allam, Margueriet A. Rizk, Morad. F. Hassan and Ayman.Y. Zaki

Journal of Apicultural Research, 49 (3): 251-256 (2010)

This study describes the use of eleven Random Amplified Polymorphic DNA (RAPD) primers to determine the genetic variability of Varroa destructor mites in Egypt. Mites from ten different Egyptian localities were included in this study. The results indicated that 133 bands were amplified, out of a total of 923. Of these amplified bands, 95 were polymorphic (71.4%) and 38 were monomorphic (28.6%). In addition, 37 specific positive RAPD markers for V. destructor in Egypt were identified. This is the first molecular genetic study carried out with V. destructor in Egypt. The markers obtained in the present study might have potential applications mite control for the beekeeping industry in Egypt. Further detailed investigations at DNA sequence level are needed to obtain complete and accurate identification of V. destructor in Egypt.

Keywords: Egypt; Genetic variability; Varroa destructor; Mites; RAPD-PCR; Fingerprint; DNA.

01-03 Faculty of Veterinary Medicine

1-3-01 ***Dept. of Biochemistry and Chemistry of Nutrition***

53. Polymorphism of Insulin-like Growth Factor-I Gene among Chicken Breeds in Egypt

Eman M. Gouda and Gamal S Essawy

Zeitschrift Fur Naturforschung Section C-A Journal of Biosciences, 65 c, 284 - 288 (2010) IF: 0.800

The insulin like growth factor I (IGF-I) regulates growth, protein synthesis, and cell proliferation and differentiation in vertebrates. Polymorphisms of IGF-I gene transcripts of 3 different breeds of chicken were assessed. The associations of these polymorphisms with growth rate of the studied breeds were also evaluated. Total RNA was isolated from chicken livers and the IGF-I gene was amplified from each breed RNA by RT-PCR using specific primers flanking a certain region of the gene. The amplified RT-PCR products were formed to identify the transcripts and to correlate them to phenotype of growth, by performing single strand conformational polymorphism, SSCP analysis for genotype identification. In this report, we describe how SSCP analysis of RT-PCR products can be used to evaluate the transcript expression pattern of avian IGF-I polymorphism and their effect on the growth traits of chickens This may afford prospective insight about a possible getting hold of post-natal sequence base markers for genetic based selection of high producing and fast growing animal and poultry breeds.

Keywords: IGF-I gene; Polymorphism; Chicken Breeds.

1-3-02 ***Dept. of Food Hygiene***

54. Propolis as a Natural Decontaminant and Antioxidant in Fresh Oriental Sausage

Fatma H. Ali, Gehan M. Kassem and Osama A. Atta−Alla

Veterinaria Italiana, 46 (2): 167−172 (2010)

The authors evaluate the effect of propolis on the shelf‐life and different quality criteria of fresh oriental sausage. Experimentally processed fresh oriental sausage treated with 0.6% ethanolic extract of propolis and control samples were kept in a refrigerator at 5°C and examined every 3 days until signs of spoilage were observed. Both groups were investigated for sensory, chemical and microbiological deteriorative criteria. The results revealed that control samples decomposed after 12 days, while treated samples had longer shelf‐life as they decomposed after 21 days. In general, the thiobarbituric acid (TBA) value (mg malondialdehyde/kg) and total volatile bases nitrogen (TVB‐N) mg/100 g increased gradually in all samples examined, with a significantly lower level for treated samples than for controls. In addition, a gradual increase in the microbiological load of control samples throughout the storage time was observed, whereas proteolytic, lipolytic and total mould and yeast counts were 6.39 ± 0.41, 6.0 ± 0.57 and 6.6 ± 0.53 log10 cfu/g, respectively, at day 12 and were rejected. Such counts were slightly lower in treated samples up to day 15 of storage, followed by a gradual increase until the end of storage. Propolis is recommended as a preservative in fresh oriental sausage processing.

Keywords: Antioxidant; Decontaminant; Egypt; Food; Meat; Preservative; Propolis; Safety; Sausage.

55. Quality and Acceptability of Value-Added Beef Burger

M.A. Gehan Kassem and M.M.T. Emara

World Journal of Dairy and Food Sciences, 5 (1): 14-20 (2010)

The sensory quality attributes of coated and uncoated beef burger patties formulated with texture soy granules or vegetables (peas and carrots) were studied in comparison to that of the control. In corporation of textured soy significantly reduced the color, marbling, appearance, flavor, tenderness, juiciness, taste and overall acceptability in comparison with either control or vegetable extended burgers. Addition of peas and carrots to uncoated burger significantly reduced the binding scores in raw samples, as well as flavor and juiciness in cooked samples, however, no significant differences could be observed in the other sensory attributes in both raw and cooked products. Vegetable extended burger had the highest cooking loss percent (20.14), followed by control samples (17.83), while soy extended product had the lowest value (15.82%). Application of batter and breading to vegetable extended burger significantly improved the investigated sensory parameters in comparison with the uncoated samples. On the other hand, application of batter and breading to soy extended burger revealed no improvement in the sensory quality attributes in both raw and cooked samples. Addition of soy granules and vegetables significantly increased the moisture, ash and carbohydrate and reduced the fat content of raw burger patties. Moreover the incorporation of textured soy significantly increased the protein content.

Keywords: Beef burger; Textured soy; Green peas; Carrots; Sensory quality; Chemical analysis; Energy.

1-3-03 ***Dept. of Veterinary Hygiene and Management***

56. Environmental Organisms as Risk Factors in the Occurrence of Mastitis in Dairy Buffaloes with Suggested Methods of Control. A Field Study

Manal M. Zaki, Hesham Y. El Zorba and Hussin A. Kaoud

Global Veterinaria, 5 (2): 97-105 (2010)

Mastitis results in tremendous economic losses to the dairy industry all over the world. A field study was carried out on 200 buffalo cows (native breed) aged from 2 to 4 years old in herd groups near Alexandria Desert Road (El-Khatatba), Giza, Egypt, whereas unhygienic measures were prevailed. 33 out of 200 examined animals were mastitic and the clinically diseased cases with acute mastitis were characterized by the visible moderate swelling and firmness of infected quarters, sign of chunks of milk, milk clots and sometimes viscous milk. Samples were taken from clinical mastitic quarters, bulk milk tank, milking machine and water sources (pipes and tank) and bacteriologically examined to identify the causative agent. It was found that the major causative agents isolated from the clinically mastitic cases were *Escherichia coli* (43.8 %), *Staph aureus* (37.4 %) and *Mycoplasma bovigenitalium* (16.5 %). When applying different lines of treatment, the diseased animals were classified into 3 groups (11 each). The first group received local treatment with intramammary infusion of 125 mg of ceftiofur hydrochloride, while the second group received systemic treatment with I/M injection of both enrofloxacin (5mg/kg body weight for 5 successive days) and I/V injection of carprofen (2.9ml/kg body weight) as an immunomodulator drug. The third group received a combination of both local and systemic treatment. The recovery percentage was 54.5, 80.9 and 90.9 for the three groups, respectively. The highest incidence of recovery was obtained in the third group, in which stimulation of the innate immune mechanisms of the animal was applied. The discard milk from sick or antibiotics treatment cases was examined before and after heat treatment to 55, 60, 65 and 70°C for either 2, 3, 5, 10 and 30 minutes. It could be concluded that both environmental and hygienic measures surrounded the animals constitute a major risk factors in the occurrence of mastitis, so continuous bacteriological investigation together with treatment of both mastitic animals and discard milk must be done.

Keywords: Buffaloes*; S. aureus*; *E. coli*; *M. bovigenitalium*; Enrofloxacin; Ceftiofur; Carprofen.

1-3-04 ***Dept. of Virology***

57. Angiogenin-induced tRNA-derived Stress - induced RNAs promote stress-induced Stress Granule Assembly

Mohamed M. Emara, Pavel Ivanov, Tyler Hickman, Nemisha Dawra, Sarah Tisdale, Nancy Kedersha, Guo-Fu Hu and Paul Anderson

Journal of Biological Chemistry, 285 (14): 10959–10968 (2010). IF: 5.328

Angiogenin (ANG) is a secreted ribonuclease that cleaves tRNA to initiate a stress-response program in mammalian cells. Here we show that ANG inhibits protein synthesis and promotes arsenite- and pateamine A-induced assembly of stress granules (SGs). These effects are abrogated in cells transfected with the ANG inhibitor RNH1. Transfection of natural or synthetic 5 but not 3 -tRNA fragments (tRNA-derived stress-induced RNAs; tiRNAs) induces the phospho-eukaryotic translation initiation factor 2 -independent assembly of SGs. Natural 5 tiRNAs but not 3 -tiRNAs are capped with a 5 - monophosphate that is required for optimal SG assembly. These findings reveal that SG assembly is a component of the ANG- and tiRNA-induced stress response program.

Keywords: Angiogenin; Stress Granules; tRNA-derived stress-induced RNAs; tiRNAs.

(2)
Engineering Sciences Sector

2-1 Faculty of Engineering

2-2 National Institute of Laser Enhanced Sciences

2-01. Faculty of Engineering

2-1-01. *Dept. of Electronics and Communications*

58. Novel Reconfigurable Defected Ground Structure Resonator on Coplanar Waveguide

Heba B. El-Shaarawy, Fabio Coccetti, Robert Plana, Mostafa El-Said and Essam A. Hashish

IEEE Transaction on Antenna and Propagation, 58 (11): 3622–3628 (2010) IF: 2.011

A novel reconfigurable defected ground structure (DGS) resonator fabricated on coplanar waveguide (CPW) technology is presented. The resonator is endowed with an original design which enables the generation of multiple transmission zeros at arbitrary frequencies. The chosen design is indeed based on a slot defect created on the lateral ground planes of the CPW with the double advantage to allow a simple reconfiguration, by means of surface mounted (or fabricated) components, and a very compact solution, by exploiting the transversal dimension of the coplanar wave transmission line (CPW-TL). Four different states of the diodes configuration are investigated, where in each state multiple transmission zeros are produced in the frequency range from 1 GHz to 11 GHz. The equivalent circuit of each state is obtained using a conventional circuit parameter extraction method. Moreover, the slotline design equations are used to identify the transmission zeros and validated using the magnetic field distribution inside the slot. In this work, the reconfigurability is first proven by means of short bridges mounted in specific locations. These bridges are then replaced by PIN diodes. Simulated and measured results are in good agreement.

Keywords: Circuit parameter extraction; Coplanar waveguide (CPW); Defected ground structure (DGS); Transmission zero.

59. A cross-layer Framework for Multiple Access and Routing Design in Wireless Multi-hop Networks

Tamer ElBatt and Timothy Andersen

Wiley Wireless Communications and Mobile Computing Journal, (2010) IF: 1.016

In this paper we explore the inherent coupling between MAC and routing in wireless multi-hop networks attributed to interference. This is primarily motivated by the observation that shortest path routing could potentially lead to degrading the single-hop MAC throughput which constitutes an upper bound on the end-to-end multi-hop throughput. First, we formulate an optimization problem that maximizes the MAC throughput subject to path length, scheduling, SINR, and power constraints and establish bounds on the optimal performance. Second, we propose a novel cross-layer routing framework (set-based routing) that reduces problem complexity via resolving intra- and inter-set interference among sets of spatially close transmitters. Third, we propose joint routing, scheduling and power control (RSP) to solve the problem within each set. Finally, we show, through simulations, that set-based routing achieves not only 60% of the optimal performance for plausible scenarios but also up to 50% improvement over a generic reference system that represents a broad class of state-of-the-art protocol stacks and uses minimum hop (MH) routing and collision-free scheduling with no interaction.

Keywords: Wireless multi-hop networks; Link scheduling; Routing; Cross-layer design; Combinatorics; Simulation.

60. Reconfigurable Defected Ground Structure Cell Using Pin Diodes On Coplanar Waveguide Technology

Heba B. El-Shaarawy, Fabio Coccetti, Robert Plana, Mostafa El-Said and Essam A. Hashish

Microwave and Optical Technology Letters, 52 (3): 766–770 (2010) IF: 0.682

This article addresses a novel reconfigurable defected ground structure resonator fabricated on Coplanar Waveguide (CPW) technology. The resonator is endowed with an original design that enables the generation of multiple transmission zeros at arbitrary frequencies. The chosen design is indeed based on a slot defect created on the lateral ground planes of the CPW with the double advantage to allow a simple reconfiguration, by means of surface mounted (or fabricated) components, and a compact solution, by exploiting the transversal dimension of the CPW. Three different states of the diodes configuration are investigated, where in each state multiple transmission zeros are produced in the frequency range from 1 GHz to 11 GHz. Slotline design equations are used to identify the resonant frequencies of the transmission zeros and validated using the magnetic field distribution inside the slot. In this work, the reconfigurability is first proven by means of open and short circuits in specific locations and then replaced by PIN diodes. Simulated and measured results are in good agreement.

Keywords: Defected ground structure; Coplanar waveguide; Transmission zero; Resonator.

2-1-02. *Dept. of Electrical Engineering*

61. Fault-Tolerant Stabilization for Time-Delayed Power Systems

Muthana T. Alrifai Mohamed F.Hassan and Hisham M. Soliman

International journal of innovative computing identification and control, 6 (7): 3247-3263 (2010) IF: 2.932

Dynamic stability enhancement of power systems can be achieved using power system stabilizer (PSS), applied either to excitation or governor or both. This paper presents a novel method to design fault tolerant excitation or governor controllers, taking into consideration the time delay in the later. With the available states, fault tolerant PSS ensures stability when both controllers act together (no failure) and

when either one of them fails (equivalently an actuator failure). The feedback for excitation controllers (F1) is the main optimal controller satisfying a desired degree of stability, while the redundant on for governor (F2) is either on (sound) for off (failed). Although the problem is too complex, it has been solved using evolutionary programming approach. A single machine infinite bus (SMIB) system is considered to demonstrate the suggested fault tolerant control. Effectiveness of the proposed stabilizers is checked under different load operating conditions.

Keywords: Power systems stabilizer; Fault tolerant control; Time delay systems; Particle swarm optimization.

62. Exponential Stability of LPV Systems with Guaranteed Convergence Rate and L_2 gain

M. Soliman H. Emara, A. Elshafei, A. Bahgat and H.M. Soliman

Int. J. Modelling, Identification and Control, 9 (4): 359-369 (2010)

In this paper, the design of observer-based output feedback controller that guarantees exponential stability for polytopic linear parameter varying (LPV) systems is derived in the LMI framework. The problem is first formulated in terms of bilinear matrix inequalities (BMIs) and then sufficient linear matrix inequalities (LMIs) with equality constraint are provided to ensure exponential stability. The convergence rate of the system is also estimated. In the case of structured uncertainty, such as in the case of LPV system, the presented approach achieves less conservative results than that in the case of representing the uncertainty as a norm bounded one.

Furthermore, the proposed controller synthesis guarantees many performance criteria such as:

1 the convergence rate of the closed loop system to be greater than certain desired value

2 the worst case L2 gain of the closed loop system to be less than certain desired value for all parameter trajectories.

Keywords: LPV systems; Robust control; Polytopic systems; Linear matrix inequality; LMI.

63. Reconfigurable Fault-tolerant PSS and FACTS Controllers

Hisham M. Soliman, Ehab H. E. Bayoumi and Mohamed A. Awadallah

Electric Power Components and Systems, 38:1446–1468 (2010) IF: 0.349

This article presents a design technique for reconfigurable fault-tolerant controllers acting on a flexible AC transmission system power system. A classical power system stabilizer of the generator excitation system and a controller of the thyristor-controlled series capacitor are considered. Sound operation of both con- trollers yields the required dynamic performance of the system. However, a faulty condition signifies a degraded control signal of one controller at a time. The proposed scheme suggests that the parameters of one controller switch to some predetermined values if the other controller is faulty with any degradation percentage.Maintaining a specific settling time of the dynamic response is assured against continual degradation of either controller as the design is carried out through the Kharitonov theorem and particle swarm optimization. The proposed design represents an indirect adaptive power system stabilizer. Simulation results denote distinct effectiveness of the proposed design in maintaining the desired system performance under sound and different faulty conditions.

Keywords: Reconfigurable control; Fault-tolerant control; Flexible AC transmission system; Thyristor-controlled series capacitor; Swarm optimization; Kharitonov theore.

2-1-03. *Dept. of Engineering Mathematics and Physics*

64. Numerical Experiments using CHIEF to Treat the Nonuniqueness in Solving Acoustic Axisymmetric Exterior Problems Via Boundary Integral Equations

Adel Abdel-Kader Mohsen and Martin Ochmann

Journal of Advanced Research, (1): 227–232 (2010) IF: 3.000

The problem of nonuniqueness (NU) of the solution of exterior acoustic problems via boundary integral equations is discussed in this article. The efficient implementation of the CHIEF (Combined Helmholtz Integral Equations Formulation) method to axisymmetric problems is studied. Interior axial fields are used to indicate the solution error and to select proper CHIEF points. The procedure makes full use of LU-decomposition as well as the forward solution derived in the solution. Implementations of the procedure for hard spheres are presented. Accurate results are obtained up to a normalised radius of ka = 20.983, using only one CHIEF point. The radiation from a uniformly vibrating sphere is also considered. Accurate results for ka up to 16.927 are obtained using two CHIEF points.

Keywords: Helmholtz equation; Boundary integral equations; Acoustic radiation and scattering; Nonuniqueness; CHIEF method.

65. Subsonic Triple Deck flow Past A Flat Plate with an Elastic Stretch

Tarek M.A. El-Mistikawy

Applied Mathematical Modelling, (217): (2010) IF: 1.375

The steady laminar subsonic flow past a flat plate having a stretch of an elastic membrane, the pressure on the other side of which is adjustable, is studied within the framework of the triple deck theory. The resulting lower deck problem is supplemented with a membrane equation relating the pressure difference across the membrane to its curvature. By pressurizing or depressurizing the membrane, it assumes the

form of a hump or a dent that alters the flow characteristics. Numerical solutions obtained, in either case, give plausible account of the interaction between the membrane and the flow.

Keywords: Subsonic triple deck; Elastic membrane; Hump; Dent; Numerical solution; Separation.

66. On the Numerical Solution of Linear and Nonlinear Volterra Integral and Integro-differential Equations

Adel Mohsen and Mohamed El-Game

Applied Mathematics and Computation, (217): 3330–3337 (2010) IF: 1.124

Sinc bases are developed to approximate the solutions of linear and nonlinear Volterra integral and integro-differential equations. Properties of these sinc bases and some operational matrices are first presented. These properties are then used to reduce the integral and integro-differential equations to systems of linear or nonlinear algebraic equations. Numerical examples illustrate the pertinent features of the method and its applicability to a large variety of problems. The examples include convolution type, singular as well as singularly-perturbed problems

Keywords: Sinc function; Collocation method; Volterra Integro-differential equations.

67. Prediction the Biodynamic Response of the Seated Human Body using Artificial Intelligence Technique

Mostafa A.M. Abdeen and Wael Abbas

International Journal of Engineering (IJE), 4 (6): 491-506 (2010)

The biodynamic response behaviors of seated human body subject to whole-body vibration have been widely investigated. The biodynamic response characteristics of seated human subjects have been extensively reported in terms of apparent mass and driving-point mechanical impedance while seat-to-head vibration transmissibility has been widely used to characterize response behavior of the seated subjects exposed to vibration. These functions (apparent mass, driving-point mechanical impedance) describe "to-the-body" force–motion relationship at the human–seat interface, while the transmissibility function describes "through-the-body" vibration transmission properties. The current study proposed a 4-DOF analytic biomechanical model of the human body in a sitting posture without backrest in vertical vibration direction to investigate the biodynamic responses of different masses and stiffness. Following the analytical approach, numerical technique developed in the present paper to facilitate and rapid the analysis. The numerical analysis used here applies one of the artificial intelligence technique to simulate and predict the response behaviors of seated human body for different masses and stiffness without the need to go through the analytic solution every time. The Artificial Neural Network (ANN) technique is introduced in the current study to predict the response behaviors for different masses and stiffness rather than those used in the analytic solution. The results of the numerical study showed that the ANN method with less effort was very efficiently capable of simulating and predicting the response behaviors of seated human body subject to whole-body vibration.

Keywords: Biodynamic response; Analytic seated human body model; Numerical simulation model; Artificial Neural Network.

2-1-04. *Dept. of Chemical Engineering*

68. Effect of Inorganic Additives on some Properties of NBR Vulcanizates

A.I. Hussain, I.F. Abadir and S.M. El Marsafy

Pigment and Resin Technology, 39 (2): 84–88 (2010) IF: 0.657

Purpose: The purpose of this paper is to study the effect of incorporating some inorganic fillers, namely aluminium oxide and aluminium hydroxide on the rheological, mechanical and thermal behaviour of acrylonitrile-butadiene rubber (NBR) vulcanizates. **Design/methodology/approach**: For improving physico-mechanical properties of NBR vulcanizates, various compositions were made by incorporating different concentrations of employed fillers with NBR. These properties included the torque, cure time, tensile strength, elongation at break, swelling, diffusivity, as well as thermal behaviour of the loaded and unloaded NBR with fillers were characterised. **Findings**: The incorporation of the two investigated fillers improves the thermal behaviour of the vulcanizates, especially aluminium hydroxide. All samples showed more or less a first order decomposition kinetics, for which the activation energy ranged from 177 to 187 kg/mol. **Research limitations/ implications**: NBR is extensively used industrially for its single, most important property, which is an exceptional resistance to attack by oils and solvents. However, incorporation of fillers in (NBR) leads to the development of improved, competitive properties of the vulcanizate. A further study must be carried out on the flame retarding effect of the fillers, beside the effect of surface treatment of the fillers on the dispersibility and physico-mechanical properties of the vulcanizates. **Practical implications**: The use of two investigated fillers provided a simple and practical solution to improving the resistance to swelling in motor and break oil as well as the thermal behaviour of the NBR. **Originality/value**: The use of these fillers was novel and could be used in many rubber industries especially in gasket and oil seals.

Keywords: Vulcanization; Fillers; Plastics and rubber technology; Thermal diffusivity; Rheological properties.

69. Investigating the Bio-corrosion Problem of MEOR in Oil Fields

M. Samir, M. Abu El Ela, S. El Marsafy, S. El Tayeb and H. Sayyouh

International Journal of Applied Chemistry (IJAC), (2010)

An Egyptian Microbial Enhanced Oil Recovery (MEOR) project evaluated the degree of corrosion action which may result, on the production tube, casing and surface equipment, during the using of bacteria to improve the ultimate recovery in oil fields. The high resolution metal loss technique and several standard coupons of the carbon steel were used to evaluate the level of corrosion of the bioproduct of these bacteria. The coupons were chosen to have the same material as that of the casing, the production tubes and the other surface facilities that may be used during the different phases of the MEOR project. Four solutions that are used during the project phases were examined. The first solution is the sea water solution, which is used to preflush the reservoir. The second is a mixture of the nutrient and the sea water, which is used to incubate the bacteria inside the reservoir. The third one is the bacterial solution (a mixture of sea water, nutrient and the bacteria) that is injected into the reservoir in case of the incubation of bacteria outside the reservoir. The fourth solution is the effluent fluid that comes out from displacement tests on a pilot model which simulates the process of the MEOR. This effluent solution includes bacteria and its metabolism, nutrient, formation water, sea water, and oil. The results showed that sea water and nutrient solution has the lowest rate of corrosion while the effluent from the model has higher corrosion rate than the third solution of sea water, nutrient and bacteria. The most corrosive solution was the sea water. These results indicate that the presence of *Pseudomonas aeruginos*a and its bio products don't represent a high corrosive media for the equipment used in the MEOR project. Resulting photographs by binocular microscope show that the occurrence of corrosion under the bacterial growth is a function of the bacterial type. It was found that some of species of bacteria cause minimum corrosion. This study contributes to the successful application of MEOR process.

70. Using Fibers in the Reinforcement of Concrete

S. M. El Marsafy

Material Science Research India, (2010)

The main target of the present research is to study the possibility of utilizing used (recycled) polypropylene (PP) packages in the reinforcement of concrete as an alternate for the virgin mono-filament and mesh PP currently in use in Fiber-Reinforced Concrete (FRC). The over-arching benefits of loading concrete with used PP may be summarized as: reducing the cost of FRC as a step towards wider range of applications, as well as utilizing a solid waste as a step towards a cleaner environment. In the present work PP fibers of different geometry (mesh, monofilament and recycled) are added to concrete in different concentrations namely: 0.1% by volume, equivalent to 900 gm fiber/m3 concrete and 0.2% by volume equivalent to 1800 gm fiber/ m3 concrete. The concrete specimens are subjected to both normal (soaking in water) and severe (soaking in acids at various concentrations) conditions, for periods of time: 7, 14 and 21 days. Compressive strength test was applied for all prepared blocks after soaking for 7, 14 and 21 days and the average values are recorded. The results obtained for the FRC are compared with those of the blank sample. Results showed that incorporating PP to concrete blocks leads to an enhancement in the compressive strength with increasing the incorporated-fiber concentration up till 0.1%, above which the compressive strength decreased significantly. On soaking in H2SO4, the highest strength for the three types of PP fibers was recorded after 14 days, after which the strength deteriorated rapidly until it reached the lowest value after 21 days. X-Ray analysis was applied in an attempt to interpret the obtained results.

Keywords: Fiber reinforced concrete; Fiber-reinforced composites; Polymer fibers; Polypropylene fibers reinforced concrete; Compressive strength; Solid waste utilization.

2-1-05. ***Dept. of Mechanical Design and Production***

71. Controlling Journal Bearing Instability Using Active Magnetic Bearings

A. El-Shafei and A. S. Dimitri

Journal of Engineering for Gas Turbines and Power, (132): (2010) IF: 0.635

Journal bearings (JBs) are excellent bearings due to their large load carrying capacity and favorable damping characteristics. However, journal bearings are known to be prone to instabilities. The oil whirl and oil whip instabilities limit the rotor maximum rotating speed. In this paper, a novel approach is used to control the journal bearing instability. An active magnetic bearing (AMB) is used to overcome the JB instability and to increase its range of operation. The concept is quite simple: Rather than using the AMB as a load carrying element, the AMB is used as a controller only, resulting in a much smaller and more efficient AMB. The load carrying is done by the journal bearings, exploiting their excellent load carrying capabilities, and the JB instability is overcome with the AMB. This results in a combined AMB/JB that exploits the advantages of each device and eliminates the deficiencies of each bearing. Different controllers for the AMB to control the JB instability are examined and compared theoretically and numerically. The possibility of collocating the JB and the AMB is also examined. The results illustrate the effectiveness of the concept.

72. Nonparametric Stochastic Modeling of Uncertainty in Rotordynamics – Part I: Formulation

Aly El-Shafei and Marc P. Mignolet

Journal of Engineering for Gas Turbines and Power, (132): (2010) IF: 0.635

A systematic and rational approach is presented for the consideration of uncertainty in rotordynamics systems, i.e., in rotor mass and gyroscopic matrices, stiffness matrix, and bearing coefficients. The approach is based on the nonparametric stochastic modeling technique, which permits the consideration of both data and modeling uncertainty. The former is induced by a lack of exact knowledge of properties such as density, Young's modulus, etc. The latter occurs in the generation of the computational model from the physical structure as some of its features are invariably ignored, e.g., small anisotropies, or approximately represented, e.g., detailed meshing of gears. The nonparametric stochastic modeling approach, which is briefly reviewed first, introduces uncertainty in reduced order models through the randomization of their system matrices (e.g., stiffness, mass, and damping matrices of nonrotating structural dynamic systems). Here, this methodology is extended to permit the consideration of uncertainty in symmetric and asymmetric rotor dynamic systems. More specifically, uncertainties on the rotor stiffness (stiffness matrix) and/or mass properties (mass and gyroscopic matrices) are first introduced that maintain the symmetry of the rotor. The generalization of these concepts to uncertainty in the bearing coefficients is achieved next. Finally, the consideration of uncertainty in asymmetric rotors is described in detail.

73. Nonparametric Stochastic Modeling of Uncertainty in Rotordynamics—Part II: Applications

Aly El-Shafei and Marc P. Mignolet

Journal of Engineering for Gas Turbines and Power, (132): (2010) IF: 0.635

In the first part of this series, a comprehensive methodology was proposed for the consideration of uncertainty in rotordynamic systems. This second part focuses on the application of this approach to a simple, yet representative, symmetric rotor supported by two journal bearings exhibiting linear, asymmetric properties. The effects of uncertainty in rotor properties (i.e., mass, gyroscopic, and stiffness matrices) that maintain the symmetry of the rotor are first considered. The parameter _ that specifies the level of uncertainty in the simulation of stiffness and mass uncertain properties (the latter with algorithm I) is obtained by imposing a standard deviation of the first nonzero natural frequency of the free nonrotating rotor. Then, the effects of these uncertainties on the Campbell diagram, eigenvalues and eigenvectors of the rotating rotor on its bearings, forced unbalance response, and oil whip instability threshold are predicted and discussed. A similar effort is also carried out for uncertainties in the bearing stiffness and damping matrices. Next, uncertainties that violate the asymmetry of the present rotor are considered to exemplify the simulation of uncertain asymmetric rotors. A comparison of the effects of symmetric and asymmetric uncertainties on the eigenvalues and eigenvectors of the rotating rotor on symmetric bearings is finally performed to provide a first perspective on the importance of uncertainty-born asymmetry in the response of rotordynamic systems.

Keywords:

2-02. National Institute of Laser

2-2-01. *Dept. of Laser Sciences and Interactions*

74. Infrared, Raman and Temperature-dependent NMR Spectra, Vibrational Assignments, Normal Coordinate Analysis, and DFT Calculations of Benzoxazoline-2-thione

Yehia A. Badr

Vibrational Spectroscopy, (52): 128–136 (2010) IF: 1.931

The tautomerism of benzoxazoline-2-thione (BOT; thio-keto) and 2-mercaptobenzoxazole (MBO; thioenol) has been thoroughly investigated by means of Raman (3600–100 cm_1), infrared (4000–200 cm_1), 1H and 13C NMR spectra and X-ray powder diffraction (XRD). In addition, temperature-dependent 1H NMR spectra from _90 to +90 8C were acquired. To complement experimental results with theoretical predictions, we performed Density Functional Theory (DFT) calculations utilizing B3LYP, B3PW91 and SVWN methods at 6-31G(d) basis set. Both computational and spectral results were in favor of thio-keto BOT structure with no evidence for the existence of thio-enol (MBO) tautomer which firmly eliminates the possibility of an existing equilibrium between keto and enol forms. Moreover the dimerization percentage of thio-keto benzoxazoline-2-thione (BOT) and benzothiazoline-2-thione (BTT) were found to be 11.9% and 2.5%, respectively which favors strong hydrogen bonding interactions in BOT. Aided by normal coordinate analysis, force constants in internal coordinates and potential energy distributions (PEDs), a complete vibrational assignment for all fundamentals was obtained. The results are compared with the sulfur analogue, benzothiazoline-2-thione (BTT) whenever appropriate.

Keywords: Benzoxazoline-2-thione; Infrared; Raman; Temperature-dependent 1H NMR; Force constants and DFT calculations.

75. Detection of up-conversion in nano-structure BaTiO3 co-doped with Er3+ and Yb3+ ions

I. K. Battisha, Y. Badr and N. M. Shash

Springer Science+Business Media, (2010) IF: 1.393

Nano-structure pure barium titanate BaTiO3 (BT) and (BT) co-doped with constant concentration of Er3+ ions and different concentrations of Yb3+ ions were prepared using sol–gel method. XRD results confirmed that the pure sample was found to crystallize in tetragonal phase by sintering at 750 _C for 1 h. All major peaks corresponding to perovskite BT phase appeared. Efficient infrared-to-visible up-conversion is reported in the doped samples. The conversion process and results in the generation of visible emissions are discussed. Up-conversion efficiency for red emission predominates in doped samples. Results illustrate the large potential of this class of materials for photonic applications in optoelectronics devices.

Keywords: Sol–gel; Powders; Thin films; Up-conversion; BaTiO3 nano-crystals; Er3+: Yb3+ ions.

76. UV laser-induced transport Properties Change in Silver Metaphosphate Glass

Ahmed Asaad I. Khalil, Fathy Salman and Zain Yamani

Optics Communications, 283, 5173-5182 (2010) IF: 1.316

Samples of $AgPO_3$ were prepared from analar oxides (BDH) using standard sintering ceramic technique. The effect of UV Nd:YAG pulsed laser irradiation with wavelength of 355 nm on the transport properties of the prepared glassy samples $AgPO_3$ was studied. The frequency and temperature dependences of the A.C. conductivity and dielectric properties were analyzed in the temperature range (300 K≤T≤393 K) throughout a range of applied frequencies (0.1 kHz ≤ f ≤ 400 kHz). The activation energies were calculated at different temperatures for the unirradiated and irradiated samples. Comparison between the A.C. electrical conductivity, dielectric constant, and dielectric loss, for unirradiated and irradiated samples was performed. The bulk conductivity has been measured with complex impedance method. Cole–Cole diagram has been investigated to obtain the bulk activation energy which corresponds to D.C. conductivity. Results indicate the semiconducting like behavior. At low temperatures and frequencies, random diffusion of the ionic charge carriers via activated hopping gives rise to a frequency independent conductivity characterizing the D.C. conductivity. It was observed that the A.C. and D.C. activation energies have the same order of magnitude.

Keywords: Pulsed laser; Nd:YAG; Dielectric property; Glass.

77. Influence of the Nd3+ ions Content on the FTIR and the Visible up-conversion luminescence Properties of Nano-structure BaTiO3, Prepared by sol–gel Technique

A.G.A. Darwish, Y. Badr, M. El Shaarawy, N.M.H. Shash, I.K. Battisha, M. G. El-Shaarawy and A. G. A. Darwish

Journal of Alloys and Compounds, 489 (2010) 451–455 (2010) IF: 2.135

The nano-structure BaTiO3 (BT) powder doped with different concentrations of Nd3+ ions were annealed at 750 ◦C for 1 h to form nano-structure tetragonal phase of BT powder. The structure properties studied using XRD and FTIR methods. Sensitized up-conversion luminescence observed under excitation of 808nm diode laser, suggesting that the Nd3+ ions-doped BT might be an ideal up-conversion material for infrared excitation. The influence of increasing the concentration of the Nd3+ ions on the luminescence intensity investigated using laser diode. The up-conversion mechanisms in the doped system will be discussed by analyzing the energy level structures of the Nd3+ ions.

Keywords: Sol–gel Powders; Up-conversion; BaTiO3 nano-crystals; XRD; FTIR and Nd3+ ions.

78. A Spectroscopic Analysis Study of Graphite Using Laser Technique1

Ahmed Asaad Ibrahim Khalil

Laser Physics 20 (1): 238-244 (2010) IF: 0.676

Results of single and double pulses (SP and DP) Q-switch Nd:YAG laser induced breakdown spectroscopy (LIBS) at atmospheric pressure on the structure of graphite target are reported. Various parameters, such as laser energy, placement of the focus with respect to the surface of illumination, and time delay between laser pulse and ICCD camera pulse were used as variables. This study contributes to a better understanding of the LIBS plasma dynamics of the SP and DP effect by observing the temporal evolution of emission line of graphite. The gate width and the delay time were adjusted to achieve the best possible signal to noise ratio. Electron densities were found from Stark broadening. The temporal behavior of the last one was also estimated. It was found that the electron density for DP of 2 × 20 mJ is higher than that for SP of 40 mJ of the same total energy. The results show a faster decay of continuum, spectral lines, and a shorter plasma life.

Keywords: LIBS; Nd:YAG; Graphite; Spectroscopy.

79. The RKR Potential Energy Curves of the $A^1\Sigma_u^+$ State of Ca_2

N. Al-Suliman, R. Al-Tuwirqi, Ahmed A. I. Khalil and M. A. Gondal

Asian Journal of Spectroscopy, 75-79 (2010)

The potential energy curves for the excited $A\,^1\Sigma_u^+$ state of Ca_2 dimer have been calculated using the Rydberg-Klein-Rees (RKR) method. In order to evaluate the rotational and vibrational constants to be used in constructing the RKR potential curves, the observed B(v) values are fitted to a polynomial in (υ + 1/2) equation by a least-squares fit program and the Dunham coefficients Y_{01}, Y_{11}, Y_{21}, Y_{31} were also computed. The work reported in this letter will be benficial in successful interpretation of future experimental spectra of the calcium dimer.

Keywords: RKR method; Potential energy curves; Ca dimer and $A^1 \Sigma_u^+$ state of Ca_2.

80. 193 nm ArF Excimer Laser and the Potential Risk for Cataract Formation

Abdelkawi S.A., Ghoneim D.F., Atoat W. and Badr Y.A.

Journal of Applied Sciences Research, 6 (7): 796-805 (2010)

The present work is designed to evaluate the effect of two different intensities of excimer laser on soluble lens protein of rabbit's eyes. Samples of lens protein from twenty albino rabbits were examined for the effect of argon fluoride (ArF) excimer laser (193 nm). In the 1st group the right eyes were submitted to 300 mJ/cm2 ArF excimer laser and left for 1 week, the 2nd group was submitted to 300 mJ/cm2 and left for 4 weeks, the 3rd group was submitted to 500 mJ/cm2 and left for 1 week and finally the 4th group was submitted to 500 mJ/cm2 and left for 4 weeks. The left eyes from each group were used as control. Measurements of protein concentration, refractive index (RI), column chromatography, sodium dodecyle sulfate polyacrylamide gel electrophoresis (SDS- PAGE) and ultraviolet absorption spectrum of soluble lens protein were investigated. The results indicate significant alteration in lens protein concentration and the refractive index measurements. The electrophoresis mobility and column chromatography separation indicates significant changes in molecular weights of lens proteins. The ultraviolet absorption spectrum revealed apparent depletion in lens protein concentration with pronounced changes outside the range of protein absorbance. It was concluded that, 193 ArF excimer laser treatment has a direct deleterious effect on lens protein which may be a possible risk for cataractogenesis.

Keywords: Excimer laser; Lens protein; Gel chromatography; Refractive index; Electrophoresis; UV Spectroscopy.

(3)
Medical Sciences Sector

3-1 Faculty of Medicine

3-2 Faculty of Pharmacy

3-3 National Cancer Institute

3-4 Faculty of Oral and Dental Medicine

3-5 Faculty of Nursing

03-01 Faculty of Medicine

3-1-01. *Dept. of Andrology*

81. Combination Clomiphene Citrate and Antioxidant Therapy for Idiopathic Male Infertility: A Randomized Controlled Trial

Hussein Ghanem, Osama Shaeer and Amgad El-Segini

Fertility and Sterility, 93 (7): 2232-2235 (2010) IF: 3.970

Objective: To assess the effect of treatment with a combination of clomiphene citrate as an antiestrogen and vitamin E as an antioxidant on the incidence of pregnancy and sperm variables in men with idiopathic oligozoospermia and infertility. **Design**: Prospective, randomized, placebo-controlled trial. **Setting**: The outpatient andrology clinic at a university hospital. **Patient**(S): Sixty infertile men with idiopathic oligoasthenozoospermia. **Intervention**(S): Patients were randomly assigned to two treatment groups: a group receiving the combination of clomiphene citrate (25 mg/day) and vitamin E (400 mg/day; n = 30) against a placebo group (n = 30). Treatment was maintained for 6 months**. Main Outcome Measure** (S): Pregnancy incidence and variations in semen parameters. **Result** (S): A significantly higher pregnancy rate was found among the combination treatment group in comparison to the control group. The odds ratio was 3.76 and the 95% confidence interval was 1.03-13.64, with a 36.7% pregnancy rate (11/30) in the combination treatment group compared with 13.3% pregnancy rate (4/30) in the control group. The trial showed a significantly higher increase in sperm count and progressive sperm motility with nonsignificant changes in total sperm motility, percentage of abnormal forms and semen volume in the combination treatment group as compared to the control group. **Conclusion**(S): The combination of clomiphene citrate as an antiestrogen and vitamin E as an antioxidant can significantly increase the pregnancy rate and improve sperm count and progressive sperm motility in cases of idiopathic oligoasthenozoospermia

Keywords: Sperm; Clomiphene; Antioxidant; Vitamin E; Oligoasthenozoospermia; Male infertility; Idiopathic.

3-1-02. *Dept. of Chest Diseases*

82. Epidemiology of Mesothelioma in Egypt. A ten-year (1998-2007) Multicentre Study

Yosri Akl, Safy Kaddah, Ahmed abdelhafeez, Randa Salah and Mohamed Lotayef

Arch Med Sci, 6 (6): 926-931 (2010) IF: 1.012

Background: Mesothelioma is a cancer strongly linked to exposure to carcinogenic minerals especially asbestos . **Study Objectives**: To detect the incidence of malignant pleural mesothelioma (MPM) in Egypt, to clarify the impact of occupational and environmental risk factors and to characterise it's demographic features. **Patients**: They were 584 cases diagnosed as MPM detected in Cairo University Hospitals and National Cancer Institute from 1998 to2007. Unfortunately full epidemiological data was only available for 165 cases due to absence of a reliable registration system. **Results**: A steady increase in the number of cases were detected, from 24 in 1998 peaking at 82 cases in 2005, followed by a gradual decline (though still high) with 68 cases in 2006 and 51 cases in 2007. Male/female ratio was 1.35/1 ($p > 0.05$). The occupational exposure to asbestos was 13.9%. Residential exposure plays a major role for two regions, Helwan and Shoubra (27.3% and 20.6 %) respectively, while in Upper and Lower Egypt (12.7% and 17.5%) respectively. Kaplan-Meier survival for sex, residence and the pathological types: epithelioid, biphasic and sarcomatiod were insignificant. The median survival for different grades and treatment modalities were significant ($P < 0.001$). **Conclusion**: There was a steady increase in the incidence of MPM from 1998 to 2005 followed by decline in 2006 -2007. Mesothelioma in Egypt is mainly concentrated at areas of high environmental pollution. The decline within the last 2 years may be attributed to recent strict industrial preventive measures. However, a better environmental control program would benefit Egypt.

Keywords: Malignant Pleural Mesothelioma; Epidemiology; Asbestos.

3-1-03. *Dept. of Clinical Pathology*

83. C/EBPα Expression in Egyptian Patients with Acute Myeloid Leukemia

Zainab A. El Saadany, Nevien B. Fouad, Amina A. Alshaqanqery and Nihal S. Ibrahim

Pan arab journal of oncology, 3 (4): 8–13 (2010)

Purpose: The CCAAT/enhancer binding protein alpha (C/EBPα or CEBPA) transcription factor plays an important role in myeloid differentiation. Alterations in C/EBPα levels have been described in AML. **Patients and methods:** We studied the C/EBPα expression level by real-time PCR in 49 newly diagnosed AML patients. **Results:** Low C/EBPα expression was observed in 40/49 (81.7%, median 0.018) compared to normal subjects (median 1.26) ($p = 0.001$). We observed that low C/EBPα expression was associated with low hemoglobin level ($p = 0.001$), high HLA-DR expression ($p=0.013$) and poor disease free survival (DFS) and overall survival (OS). **Conclusion:** low C/EBPα expression defined a subgroup of AML patients with poor DFS and OS, so can be used with other markers to assess prognosis of AML patients.

Keywords: CEPB*a*; AML; Real time PCR

84. Phase I Trial: Mesenchymal Stem Cells Transplantation in End Stage Liver Disease

Mervat El-Ansary and Samah Abd El-Hamid

Journal of American Science, 6 (12): 135-144 (2010)

End-stage liver disease (ESLD) and in particular human liver cirrhosis (LC) represents a worldwide health problem. Currently, liver transplant is the only effective treatment, but it is affected by many problems including relative lack of

donors, operative damage, and risk of rejection and high costs. Stem cell therapy is very attractive in this setting because it has the potential to help tissue regeneration with few complications. The aim of this study was to evaluate the effect of autologous transplantation of bone marrow derived mesenchymal stem cells (BMMSCs) in cirrhotic patients following chronic hepatitis C virus infection. **Methods**, Twelve patients with Child C LC, Model of End Stage Liver Disease (MELD) score > 12 were included. They divided into 2 groups according to method of MSCs injection, 1st group was injected intrasplenic and 2nd group was injected through the peripheral blood. First group patient's ages ranged from 32 to 69 years, mean value was 48.50 ±11.09, they were 4 males (67%) and 2 females (33%). Second group patient's ages ranged from 43 to 59 years, mean value was 50.83 ±6.88, they were 5 males (83%) and 1 female (17%). Fifty ml BM was aspirated from the iliac bone for separation of MSCs. Surface expression of CD271 and CD34 were analyzed using flowcytometry. Finally approximately 10 million MSCs/ 5ml saline were infused intrasplenic or peripherally in one session. There was highly statistical significant difference between CD271 before and after culture, p value was <0.01. **Results**, Monthly Follow up of patients for 6 months revealed partial improvement of liver function tests with decline of elevated bilirubin and liver enzymes and elevation of prothrombin concentration and serum albumin levels. There was statistically significant difference between total bilirubin, direct bilirubin, MELD score and creatinine level before and after MSCs injection in both groups, p value was <0.05. **Conclusion**, MSC transplantation can be used as a potential treatment for liver cirrhosis. The dose, frequency and route of administration of this treatment are still to be defined.

Keywords: End-stage liver disease; Liver cirrhosis; Liver transplant; Autologous transplantation; Bone marrow; Mesenchymal; Stem cell.

85. Detection of XRCC1 Gene Polymorphisms in Egyptian Patients with Acute Myeloid Leukemia

Mona Salah El-Din, Hanan Raslan, Manal Makhlouf and Samah Abd El-Hamid

Comp Clin Pathol, (10): 1120-1124 (2010)

XRCC1 is a polymorphic gene belonging to one of the major DNA repair pathways. XRCC1 is involved in base excision repair (BER) and the repair of single-strand breaks. Several variants of XRCC1 have been described, including one affecting codon 399 in exon 10 that results in an arginine (Arg) to glutamine (Gln) substitution and one affecting codon 194 in exon 6 that results in an Arg to tryptophan (Trp) substitution. The aim of this study was to determine the presence of these polymorphisms in the Egyptian population and to define their role in modulating susceptibility to development of AML using polymerase chain reaction restriction fragment length polymorphism (PCR-RFLP) technique in 40 de novo AML patients and 20 controls. The risk of development of AML was found to be significantly increased when variant XRCC1-399 (Arg/Gln) is present (P-value 0.025). Also the risk of AML development was found to be significantly increased when variant XRCC1-194 (Arg/Trp) is present (P-value 0.002), whereas the risk of AML development is even higher when both variants XRCC1-Arg-399 Gln and Arg-194 Trp alleles are present (odds ratio "OR", 6.15 & 4.00 and 95% CI 1.88-20.05 & 1.13-14.08), presumably because that an increase in DNA damage significantly increases the risk of development of AML, and that the phenotypes resulting interact to increase this risk. These results strongly suggest that BER pathway notably XRCC1 is important in the pathogenesis of de novo AML.

Keywords: XRCC1; AML; PCR-RFLP.

86. Detection of CXCL12 Gene Polymorphism and CXCR4 Expression in Egyptian Acute Myeloid Leukemia Patients

Aisha Abd El-Rahman, Samah Abdel-Hamid, Manal Makhlouf, Nermine El-Desouky, Mohamed Al-Feky and Sherif Yousri

Journal of American Science, 6 (9): 318-330 (2010)

CXC ligand 12 (CXCL12), a chemokine abundantly produced by the bone marrow (BM) microenvironment, and its receptor CXC chemokine receptor 4 (CXCR4) have crucial roles in malignant cell trafficking. In the present study CXCR4 expression was investigated by flowcytometry and CXCL12 G801A gene polymorphism was detected by polymerase chain reaction restriction fragment length polymorphism (PCR-RFLP) assay in 42 patients with de novo acute myeloid leukemia (AML) as well as 35 normal subjects as a control group. The CXCR4 positive expression was found exclusively in AML patients (in 55% of patients). The frequency of the CXCL12 genotypes among AML patients were 55% had a GG alleles genotype while 45% had an A allele genotype while among the control group 83% had a GG alleles genotype and 17% had heterozygous A/G genotype. There was a highly statistical significant relationship between the CXCL12 A allele and extramedullary tissue infiltration (*p* value= 0.01). Also there was a highly statistical significant relationship between each of CXCL12 genotypes and CXCR4 expression and treatment outcome (*p* value= 0.002 & 0.006 respectively). In conclusion CXCR4 expression predicts poor prognosis in AML and CXCL12 G801A polymorphism is a genetic determinant involved in the clinical presentation of leukemia.

Keywords: PCR-RFLP; CXCR4; Flowcytometry; AML.

87. Dendritic Cell Vaccine as an Adjuvant Therapy in the Treatment of Chronic Myeloid Leukemia

Mervat El-Ansary, Mervat Mattar, Shereen Kamel, Samah Abd El-Hamid and Rania Abou Elnour

Dynamic Biochemistry, Process Biotechnology and Molecular Biology, Global Science Books, 4 (1): 61-66 (2010)

Dendritic cells (DCs) are bone marrow (BM)-derived antigen-presenting cells (APCs) with a key role in the induction of immunity. This study aimed at generating a DC vaccine

expressing leukemia-associated antigen differentiated from myeloid blast cells to boost the immune system and to improve the clinical outcome of chronic myeloid leukemia (CML) patients. Two ml of venous blood were obtained from each patient to generate DCs by suspending them in liquid culture medium containing granulocyte monocyte colony stimulating factor (GM-CSF) and interleukin 4 (IL-4) and activated by adding tumor necrosis factor alpha (TNFα). DCs, identified by CD83 expression using flow cytometry, showed a significant increase after culture. A follow-up of patients by monitoring the immunological response was done by flow cytometric assessment of $CD8^+$ T-cells % before and after injection of DCs. This study included 22 patients diagnosed as chronic-chronic myeloid leukemia who were divided into 2 groups. Group I was a pathological control group which included 13 age- and sex-matched CML patients that were not given the DC vaccine and were injected with saline. Group II included 9 CML patients that were given the DC vaccine. The WBC count before (141.59 ± 100.51) and after (94.47 ± 76.14) vaccination was highly significantly different in group II patients ($P = 0.018$). Although there was no statistically significant difference in the median of the $CD8^+$ level and the absolute number of $CD8^+$ before and after vaccination, there was an actual increase in the percentages of both medians. We conclude that a DC vaccine may be used as an adjuvant therapy parallel to CML patients' chemotherapeutic regimen.

Keywords: Antigen-presenting cells; Expression of CD83; Generation of immune induction.

88. Mesenchymal Stem Cell Transfusion as a Novel Immunosuppressive Regimen with Possible Induction of Microchimerism

Gamal Saadi, Mervat El-Ansary, Samah Abd El-Hamid and Iman Abd El-Aziz

Dynamic Biochemistry, Process Biotechnology and Molecular Biology, Global Science Books, 4 (1): 55-60 (2010)

Human mesenchymal stem cells (MSCs) have immunosuppressive capacities. Although their efficacy is currently studied in graft versus host disease (GVHD), their effect on alloreactivity in solid organ transplant (SOT) patients is unknown. Our work aimed to use allogeneic donor-specific MSCs (DS-MSCs) transfusion prior to renal transplantation as an immunosuppressive induction regimen. Our study included 4 groups of patients, all of which were diagnosed with chronic renal failure and had undergone renal transplantation. The first group included 7 patients that were induced by DS-MSCs. The second included 6 patients induced by antithymocyte globulin (ATG). The third included 6 patients induced by anti-CD25 while the 4^{th} group included 7 patients who received no induction. The immunosuppressive regimen was cyclosporine (CsA), Mycophenolate mofetil (MMF) and prednisolone (PRD) for all patients. Bone marrow (BM) (90 ml) were aspirated from the iliac bone of related donors, to separate MSCs, then about 10 million MSCs placed in 10 ml saline were infused intravenously in 2 divided doses 1 week apart. Our results showed that the lowest mean serum creatinine level measured after 1, 3, and 6 months were in those patients who received pre-transplantation DS-MSC infusion (group I). Also rejection was less frequent in patients of group I. Microchimerism was detected after MSCs transfusion in one case of group I. We conclude that MSCs can escape immune recognition, can inhibit immune responses and prevent the development of cytotoxic T-cells so their transfusion may be used to treat organ allograft rejection and reduce the need for an immunosuppressive regimen after renal transplantation.

Keywords: Rejection; Renal transplantation; Stem cells.

89. Cadherin 5 and Annexin V as Circulating Endothelial Microparticles: Markers for Atherosclerotic Vascular Lesions in Patients with Chronic Renal Failure

Mohammed Shehata, Dina El Abd, Faten El Shanawani, Emad Ali Abdallah, Hesham Darwish, Mahmoud Farok Moghazy, Amna Metwaly and Afaf Ahmed Abdel Hadi

Kidney, (19): 307-315 (2010)

Cardiovascular disease is the leading cause of death in Chronic kidney disease patients. This study tries to identify circulating endothelial microparticles {MPs} [such as Cadherin 5 and Anexin V] in CKD patients with and without IHD as potential new risk factors of atherosclerotic vascular disease. This study was carried out in Theodor Bilharz Research Institute [TBRI] on 60 patients with chronic kidney disease on maintenance hemodialysis. They were 41 male and 19 females selected from hemodialysis unit in TBRI. They were further subclassified into the following two groups according to the Echocardiography and Electrocardiogram (ECG) to 25 patients of chronic kidney disease without cardiac complications (17 males, 8 females and ages were 53.5±9.9 years) and 35 patients of chronic kidney disease with cardiac complications (24 males, 11 females and ages were 57.5±7.4 years). Twenty healthy subjects were selected as healthy control, their age 50±9 years. Cadherin 5 & Annexin V Were done by enzyme linked immunosorbant assay (ELISA). The mean cadherin 5 levels in CKD with ischemic HD, CKD without ischemic HD and control group were 86.99±21.51, 33.21± 8.65 and 2.63±1.47 respectively which significantly higher in CKD with ischemic HD and CKD without ischemic HD than control group ($p<0.01$) and significantly higher in CKD with ischemic HD than CKD without ischemic HD ($p<0.01$). As regard to the mean annexin v levels in CKD with ischemic HD, CKD without ischemic HD and control group were 83.73±22.64, 28.51±9.73 and 0.47±0.36 respectively which significantly higher in CKD with ischemic HD and CKD without ischemic HD than control group ($p<0.01$) and significantly higher in CKD with ischemic HD than CKD without ischemic HD ($p<0.01$). Endothelial dysfunction leading to atherosclerotic vascular disease in patients with CKD can be assessed quantitatively by measurement of plasma levels of endothelial microparticles such as CD144-EMP (Cadherin 5) and Annexin V.

Keywords: Endothelial dysfunction; CKD; Haemodialysis; Ischemic heart disease; Cadherin5; Annexin V.

3-1-04. *Dept. of Critical Care Medicine*

90. Atrial Fibrillation Termination as a Procedural Endpoint During Ablation in Long-Standing Persistent Atrial Fibrillation

Claude S. Elayi, Luigi Di Biase, Conor Barrett, Chi Keong Ching, Moataz al Aly, Maria Lucciola, Rong Bai, Rodney Horton, Tamer S. Fahmy, Atul Verma, Yaariv Khaykin, Jignesh Shah, Gustavo Morales, Richard Hongo, Steven Hao, Salwa Beheiry, Mauricio Arruda, Robert A. Schweikert, Jennifer Cummings, J. David Burkhardt, Paul Wang, Amin Al-Ahmad, Bruno Cauchemez, Fiorenzo Gaita, Andrea Natale, FACC and FHRS

Heart Rhythm, 7 (9): 1216-1223 (2010) IF: 4.559

Background Ablation of long-standing persistent atrial fibrillation (AF) remains challenging, with a lower success rate than paroxysmal AF. A reliable ablation endpoint has not been demonstrated yet, although AF termination during ablation may be associated with higher long-term maintenance of sinus rhythm (SR). **Objective** The purpose of this study was to determine whether the method of AF termination during ablation predicts mode of recurrence or long-term outcome. **Methods** Three hundred six patients with long-standing persistent AF, free of antiarrhythmic drugs (AADs), undergoing a first radiofrequency ablation (pulmonary vein [PV] antrum isolation and complex fractionated atrial electrograms) were prospectively included. Organized atrial tachyarrhythmias (AT) that occurred during AF ablation were targeted. AF termination mode during ablation was studied in relation to other variables (characteristics of arrhythmia recurrence, redo procedures, the use of adenosine/isoproterenol for redo, and comparison of focal versus macroreentrant ATs). Long-term maintenance of SR was assessed during the follow-up. **Results** During AF ablation, six of 306 patients converted directly to SR, 172 patients organized into AT (with 38 of them converting in SR with further ablation), and 128 did not organize or terminate and were cardioverted. Two hundred eleven of 306 patients (69%) maintained in long-term SR without AADs after a mean follow-up of 25 _ 6.9 months, with no statistical difference between the various AF termination modes during ablation. Presence or absence of organization during ablation clearly predicted the predominant mode of recurrence, respectively, AT or AF (*P* _ .022). Among the 74 redo ablation patients, 24 patients (32%) had extra PV triggers revealed by adenosine/isoproterenol. Termination of focal ATs was correlated with higher long-term success rate (24/29, 83%) than termination of macroreentrant ATs (20/35, 57%; *P* _ .026). **Conclusion** AF termination during ablation (conversion to AT or SR) could predict the mode of arrhythmia recurrence (AT vs. AF) but did not impact the long-term SR maintenance after one or two procedures. AT termination with further ablation did not correlate with better long-term outcome, except with focal ATs, for which termination seems critical.

Keywords: Atrial fibrillation ablation; Pulmonary vein isolation; Complex fragmented atrial electrograms; Persistent atrial fibrillation; Atrial fibrillation termination.

3-1-05. *Dept. of Nephrology*

91. Status Epilepticus Induced by Putrid Salted Gray Mullet Fish Intoxication in Patients with Chronic Kidney Disease

Amin R. Soliman and Sadek Helmy

Hemodialysis International, 14 (4): 523–525 (2010)

Neurological an psychiatric symptoms are common presentions, but are often ignored in fresh salted gray Mullet fish intoxication. We report 2 patients with chronic renal failure at a perdialyzed stage who developed refractory status epilepticus after ingestion of putrid salted gray Mullet fish intoxication must be considered when patients with chronic kidney disease present with seizures or other unexplained neurological or psychiatric symptoms.

Keywords: Putrid fish; Status epilepticus; Neurotoxicity; Chronic renal disease.

3-1-06. *Dept. of Neurology*

92. Clinical Relevance of Carotid Atherosclerosis among Egyptians: A 5-Year Retrospective Analysis of 4,733 Subjects

Foad Abd Allah, Essam Baligh and Magdy Ibrahim

Neuroepidemiology, (35): 275–279 (2010) IF: 2.375

Background and Purpose: The prevalence of carotid artery stenosis has been studied in several cohorts and groups of populations. Prevalence estimates were mostly based on ultrasound studies, because duplex ultrasound is accurate, reproducible and inexpensive to diagnose and follow up patients with arterial disorders. The purpose of our study was to describe the pattern of carotid artery disease in a large sample of Egyptians. **Methods:** We analyzed the data of 4,733 Egyptian subjects, who underwent extracranial carotid duplex scanning at the vascular laboratories of Cairo University Hospitals from January 1, 2003, to January 1, 2008. Demographic, clinical data and causes of referral were correlated with ultrasound findings. **Results:** Atherosclerotic carotid artery disease was present in 41% of the study population in the form of intimal thickening in 835 (17.6%), < 50% stenosis in 983 (20.8%), 50–69% stenosis in 81 (1.7%), ≥ 70% stenosis in 38 (0.8%) and occlusion of internal carotid artery in 3 (0.06%) patients. Nonatherosclerotic disease was detected in 9 (0.2%) patients only. Significant and clinically relevant stenosis ≥ 50% was detected in 19 (2.5%) of the atherosclerotic symptomatic subjects. Multivariate stepwise logistic regression analysis selected age, diabetes mellitus, hypertension, smoking and dyslipidemia as independent predictors of the presence of carotid atherosclerotic disease. **Conclusion:** Hemodynamically significant and clinically relevant extracranial atherosclerotic carotid disease is rare among Egyptians. Risk factors for carotid atherosclerosis are the same as in societies where carotid disease is more prevalent.

Keywords: Egyptian population; Carotid atherosclerosis;

Epidemiology; Ultrasound.

93. Infantile Intracranial Neoplasms: Characteristics and Surgical Outcomes of a Contemporary Series of 21 Cases in an Egyptian Referral Center

Mohamed Ali El-Gaidi and Ehab Mohamed Eissa

Pediatric Neurosurgery, (35): 46: 272–282 (2010) IF: 0.967

Objective: To investigate the demographic, clinical, radiological,pathological and surgical features and outcomes ofinfantile intracranial neoplasms, the second most commonneoplasm in infants. **Patients and Methods:** We conducteda retrospective study in the Department of Pediatric Neurosurgeryat the Abo El-Reish Children's Hospital from 2005 to2008. **Results:** Out of 451 patients with primary intracranialneoplasms (age 0–14 years), 21 infants (< 1 year) underwentsurgery, representing 4.7% of total cases. The most commontumor was choroid plexus papilloma (23.8%), followed byteratoma (19%) then astrocytoma and ependymoma (14.3%each). Of the 21 surgical cases, 90% were intra-axial, 80%were in the supratentorial region, and 57% were intraventricular.There was only 1 case of intraoperative mortality(4.8%). Gross total excision was achieved in 65%, debulkingin 30%, and biopsy in 5%. Three patients received chemotherapy,but none received radiotherapy. The statisticallysignificant predictors of prognosis were the extent of resectionand tumor grade. **Conclusion:** Although the prognosisfor infantile intracranial neoplasms is worse than for olderchildren, an overall promising outcome with low operativemorbidity and mortality was achieved using gross total excision and appropriate adjuvant chemotherapy as part of amultidisciplinary approach.

Keywords: Intracranial neoplasms; Infants; Neonates; Congenitalintracranial neoplasms; Egypt; Choroid plexus papilloma; Teratoma.

3-1-07. ***Dept. of Obstetrics and Gynecology***

94. Efficacy and Safety of Two Doses of Low Molecular Weight Heparin (Enoxaparin) in Pregnant Women with a History of Recurrent Abortion Secondary to Antiphospholipid Syndrome

Fouda U. M., Sayed A. M., Ramadan D. I. and Fouda I. M.

J. Obstet Gynaecol, 30 (8): 842-846 (2010) IF: 0.431

The aim of this randomised controlled trial was to compare efficacy and safety of two doses of low molecular weight heparin (enoxaparin) in pregnant women with a history of recurrent abortion secondary to antiphospholipid syndrome. A total of 60 women with a minimum of three consecutive abortions before 10 weeks' gestation and positive lupus anticoagulant and/or anticardiolipin antibodies on at least two occasions at least 12 weeks apart were randomised into two groups based on computer generated randomisation list concealed in opaque envelopes. Pregnant women were treated with enoxaparin 40 mg plus low dose aspirin (LDA) (n = 30) or enoxaparin 20 mg plus LDA (n = 30). The live birth rate was 76.67% in enoxaparin 40 mg group and 70% in enoxaparin 20 mg group (p value = 0.559). There were no significant differences between both groups with respect to neonatal outcome, obstetric and maternal complications during pregnancy or puerperium. No cases of severe bleeding, thrombocytopenia or spontaneous fractures were reported in both groups.

Keywords: Antiphospholipid syndrome; Enoxaparin; Low-dose aspirin; Recurrent pregnancy loss.

95. Acomparative Study Between Isosorbide Mononitrate (IMN) Versus Misoprostol Prior to Hysteroscopy

Waleed El-Khayat, Ahmed Maged and Hassan Omar

Middle East Fertility Society Journal, (15): 278-280 (2010)

Objective: To compare the efficacy of a nitric oxide donor (isosorbide mononitrate) and a prostaglandin E1 analogue (misoprostol) for cervical priming before hysteroscopy. **Design**: Comparative clinical trial. **Methods**: A total of 162 patients with diagnosed intrauterine lesions scheduled for hysteroscopy. **were allocated to two groups**: in group A patients (*n*= 81) IMN 40 mg was inserted into the posterior fornix of the vagina while misoprostol 200 lg was inserted into the posterior fornix of the vagina in group B patients (*n*= 81). **Results**: There was no significant difference between IMN and misoprostol with regard to the duration of application or difficult dilatation. In contrast, there was a significant difference between IMN and misoprostol with regard to baseline cervical dilatation (5 mm for IMN and 8 mm for misoprostol) and duration of dilatation (73 s for IMN and 49 s for misoprostol). There was no significant difference between IMN and misoprostol with regard to nausea, vomiting and hot flushes. In contrast, there was a significant difference between IMN and misoprostol with regard to abdominal pain (17 cases for IMN and 55 cases for misoprostol) and headache (65 cases for IMN and 9 cases for misoprostol).

Keywords: Hysteroscopy; IMN; Misoprostol.

96. The use of Levonorgestrel-releasing Intrauterine System in Prevention of Endometrial Pathology in Women with Breast Cancer Treated with Tamoxifen

Hassan Omar, Waleed Elkhayat and Mohamed Aboulkasem

The International Journal of Medicine, 3 (1): 327-330 (2010)

Objective To determine whether the use of levonorgestrel-releasing intrauterine system prevents endometrial pathology

in women with breast cancer treated with tamoxifen or not. Participants and methods We did a randomized controlled trial on 121 women who required adjuvant therapy with tamoxifen for breast cancer. The women were randomly assigned to either group A (endometrial surveillance alone) or group B (endometrial surveillance before and after insertion of the levonorgestrel intrauterine system for two years). Endometrial surveillance was done by outpatient hysteroscopy and endometrial biopsy before and two years after the start of tamoxifen. Results The baseline assessment showed only benign uterine changes in all women (n=121).Women in group B had a much lower incidence of endometrial polyps than group A (1.8 % versus 16.1 % p value = 0.02). There was no statistical significant difference in the incidence of submucous fibroid between the two groups (6.4% in group A, 3.3% in group B, P value = 1.1). There was a higher incidence of bleeding in group B but this resolved to a baseline similar to that of group A. Conclusion The levonorgestrel-releasing intrauterine system has a protective action against the endometrial pathology caused by tamoxifen therapy in women with breast cancer. It reduces occurrence of de novo endometrial polyps.

Keywords: Levonorgestrel-Releasing intrauterine system; Tamoxifen; Breast cancer; Endometrial polyps.

97. Uterine Artery Blood Flow in Patients with Copper Intrauterine Device-Induced Abnormal Uterine Bleeding

Usama M. Fouda, Dalia Yossef and Hassan M. Gaafar

Middle East Fertility Society Journal, 15 (3): 168-173 (2010)

Objective: To test the hypothesis that copper intrauterine device (CIUD) induced abnormal uterine bleeding is secondary to an increase in the uterine artery blood flow and to determine whether transvaginal color Doppler can be used to identify women at risk of developing abnormal uterine bleeding after CIUD insertion. Design: Prospective clinical study. Setting: University teaching hospital. Methods: Ninety three women were examined by transvaginal color Doppler to detect the pulsatility index (PI) and resistance index (RI) in the uterine artery. Women were divided into three groups. Group I; included 32 women using CIUD (TCu-380A) and complaining of menorrhagia or menometrorrhagia, group II; included 30 women using CIUD with normal menstrual flow and group III which was a control group that included 31 women with normal menstrual flow and not using any contraceptive methods. Mean outcome measures: PI and RI of the uterine artery. Results: PI and RI were significantly lower in women with CIUD-induced abnormal uterine bleeding compared to women using CIUD with normal menstrual flow or women in the control group. The ROC curves for PI and RI revealed that PI 2.07 had sensitivity 84.4% and specificity 83.3% and RI 0.7 had sensitivity 78.1% and specificity 80% in detecting women with CIUD-induced abnormal uterine bleeding. Conclusion: The results of our study confirm the hypothesis that there is an increase in the uterine blood flow (as indicated by decreased PI and RI in uterine artery) in women with CIUD-induced abnormal uterine bleeding.

Keywords: CIUD; Doppler; Abnormal uterine bleeding.

3-1-08. ***Dept. of Orthopaedic Surgery***

98. Limb Geometry After Elastic Stable Nailing for Pediatric Femoral Fractures

Khaled Hamed Salem and Peter Keppler

The Journal of Bone and Joint Surgery, (92): 1409-1417 (2010) IF: 3.427

Background: Elastic stable intramedullary nailing has become a popular treatment for pediatric long-bone fractures. However, early limb malalignment and length differences may occur in children with femoral fractures who are managed with this procedure. **Methods**: We prospectively followed sixty-eight children (mean age, 5.6 years) who were managed with elastic stable intramedullary nailing for the treatment of a unilateral femoral shaft fracture in order to evaluate early angular or rotational malalignment or limb-length discrepancy. The average body weight was 21 kg (range, 10 to 45 kg). There were fifty-seven AO/ASIF Type-A fractures and eleven Type-B fractures. Malalignment was assessed with use of radiographs, computed tomography, or navigated ultrasound examination after four to seven months to evaluate the short-term result of fixation and to eliminate changes caused by later bone remodelling. **Results**: The mean femoral length difference was 0.5 mm of femoral lengthening. Only eleven patients (16%) had a limb-length discrepancy of >10 mm. Mechanical axial deviation of >5° occurred in one patient. However, the mean femoral rotational angle difference was 14.5°. Thirty-two children (47%) had >15° of torsional malalignment. **Conclusions**: Elastic stable intramedullary nailing can provide satisfactory results in terms of limb length and axial alignment, but a high rate of early torsional malalignment may be seen. **Level of Evidence**: Therapeutic Level IV. See Instructions to Authors for a complete description of levels of evidence.

Keywords: Elastic stable intramedullary nailing; Pediatric femoral fractures; Rotation; Limb length discrepancy.

3-1-09. ***Dept. of Otolaryngology***

99. Orbital and Periorbital Vascular Anomalies – an Approach to Diagnosis and Therapeutic Concepts

Behfar Eivazi, Susanne Wiegand, Hesham Negm, Afshin Teymoortash, Stephan Schulze, Siegfried Bien and Jochen A. Werner

Acta Oto-Laryngologica, (130): 942-951 (2010) IF: 0.984

Conclusion: A correct and universally accepted terminology based on the biologic behavior of orbital vascular anomalies is essential to avoid misleading diagnoses, to choose an adequate therapy regimen, and to compare different therapeutic approaches. The management of these diseases is multi-modal and an interdisciplinary challenge. Background: There is persisting terminological and clinical confusion about vascular anomalies involving the orbit. Review of the literature reveals

a diverse or misleading terminology and a lack of consensus for the treatment of vascular malformations or vascular tumors of the orbit. **Methods**: This study comprised a detailed analysis of cases presenting with orbital vascular anomalies followed by an extensive review of the literature. Results: Thirty-six patients were analyzed, among them 19 patients with peri- and/or intraorbital hemangiomas, 3 with intraorbital and 2 with periorbital venous malformations, 2 with orbital involvement of complex vascular malformations, and 10 with lymphatic malformations involving the orbit.

Keywords: Vascular malformations; Hemangiomas; Cavernomas; Orbital surgery; Laser therapy; Lymphangiomas; Orbital diseases; Orbital tumors.

3-1-10. *Dept. of Pediatrics*

100. Fibroblasts Facilitate the Engraftment of Embryonic Stem Cell-Derived Cardiomyocytes on Three Dimensional Collagen Matrices and Aggregation in Hanging Drops

Kurt Pfannkuche, Sabine Neuss, Frank Pillekamp, Lukas P. Frenzel, Wael Attia, Tobias Hannes, Jochen Salber, Mareike Hoss, Martin Zenke, Bernd K. Fleischmann, Jürgen Hescheler and Tomo Šaric

Stem Cells and Development, 19 (10): 1589–1599 (2010) IF: 4.146

There is growing interest in the use of cardiomyocytes purified from embryonic stem (ES) cells for tissue engineering and cardiomyoplasty. However, most transplanted cells are lost shortly after transplantation due to the lack of integration into the host tissue and subsequent apoptosis. Here we examine whether murine embryonic fibroblasts (MEFs) can support the integration of purified murine ES cell-derived cardiomyocytes in a 3-dimensional tissue culture model based on a freezed-dryed collagen matrix with tubular structure. Collagen matrix was seeded either with cardiomyocytes alone or in combination with MEFs. The collagen sponges that were transplanted with cardiomyocytes alone showed neither morphological nor functional integration of viable cells. Cardiomyocytes also did not appear to be capable of attaching quantitatively to any of 16 different 2-dimensional biomaterials. However, cardiomyocytes co-cultured with MEFs formed fiber-like structures of rod-shaped cells with organized sarcomeric structure that contracted spontaneously. Electrical coupling between cardiomyocytes was suggested by strong expression of connexin 43. In addition, MEFs as well as cardiac fibroblasts supported re-aggregation of dissociated cardiomyocytes in hanging drops in the absence of collagen matrix. We conclude that fibroblasts promote cardiomyocyte engraftment and formation of functional 3-dimensional tissue in vitro. Elucidation of the mechanism of this phenomenon may help improve the integration of cardiomyocytes in vivo.

Keywords: Stem cells; Cardiomyocytes; Fibroblasts; Engraftment.

101. Renal Doppler Indices in Diabetic Children with Insulin Resistance Syndrome

Abdelghaffar S., Elkaffas K., Hegazy R. and Mostafa M.

Pediatric Diabetes, 11 (7): 479-486 (2010) IF: 2.628

End-stage **renal** failure is still a leading cause of mortality among type 1 **diabetes** patients. Insulin resistance plays a larger role in type 1 **diabetes** disease process than is commonly recognized. Detection of diabetic nephropathy as early as possible currently offers the best chance of delaying or possibly preventing progression to end-stage disease. **Renal** resistive index (RI) and pulsatility index (PI), measured using **renal Doppler** ultrasonography, reflect intrarenal vascular resistance. The present work aimed at examining **renal Doppler indices** (RI and PI) in type 1 diabetic children and their relation to features of insulin resistance and other established parameters of early diabetic nephropathy as microalbuminuria. One hundred diabetic children with a mean age of 13.4 ± 2.9 yr and an average **diabetes** duration of (7.2 ± 2.5 yr) were included. Thirty healthy children served as controls. All **renal Doppler indices** were significantly higher in children with type 1 **diabetes mellitus** ($p \leq 0.01$). The worst parameters were observed in children diagnosed with insulin resistance syndrome (IRS) (38%), hypertensive (12%), and obese (4%) children. Resistive index showed a significant correlation to blood pressure ($r = 0.2$, $p = 0.04$), waist-hip ratio ($r = 0.5$, $p = 0.02$), insulin dose ($r = 0.2$, $p = 0.02$) and estimated glucose disposal rate ($r = -0.5$, $p = 0.01$). No correlation was noted to microalbuminuria, HbA1c, or duration of **diabetes**. The present work concluded that **renal Doppler indices** are worse in diabetic children and particularly those with IRS. These children appear to be at graver risk for diabetic nephropathy. In these patients adding **renal Doppler** assessment to their work up, might diagnose diabetic nephropathy at a prealbuminuric stage.

Keywords: Doppler; Insulin resistance; Nephropathy; Type 1 diabetes.

102. Effect of High-flux Versus Low-flux Dialysis Membranes on Parathyroid Hormone

Samuel H. Makar, Happy K. Dawod, Tarek M. Farid, Waleed M. Ali and Mona F. Schaalan

Iranian Journal of Kidney Diseases,4 (4): 327–332 (2010)

Introduction: hyperparathyroidism is a common finding in patients with renal insufficiency and parathormone (PTH) is considered a uremic toxin responsible for many of the abnormalities of the uremic state and bone disease. The aim of this study is to investigate the influence of permeability of low-flux vs. high-flux membranes on intact parathyroid hormone (IPTH) during hemodialysis (HD). **Patients & methods:** forty four pediatric patients with age 4-13 years old (22males and 22 females) on regular HD were enrolled in a prospective study. Low-flux polysulfone membranes were used for at least 6 months and then the patients were switched to use high-flux polysulfone membranes for another 3 months.

Results: at the end of three months use of high-flux filters, predialytic IPTH level (mean ± SD: 49.40 ± 19.64 ng/dl) showed a highly significant decline ($p < 0.001$) than the predialytic IPTH (mean ± SD: 21.67 ± 4.85 ng/dl) using low flux at the start of the study. IPTH correlated negatively with ionized calcium and positively with phosphorus only in pre dialysis samples with the use of low-flux but not high flux filters. **Conclusion:** high-flux dialysis membranes are more efficient in removal of PTH, one of the middle molecule uremic toxins, than low-flux membranes.

Keywords: Parathyroid hormone; Low-flux membrane; High-flux membrane; Hemodialysis; Uremic toxins.

3-1-11. *Dept. of Plastic Surgery*

103. A Single Hypoglossal Nerve for Bilateral Smile Reconstruction in MÖbius Syndrome

Tarek Ahmed Amer

The Journal of Craniofacial Surgery, (21): 1926-1927 (2010) IF: 0.812

MÖbius syndrome is a rare congenital disorder characterized by a variety of cranial nerve defects. Although there are several variants of Mobius syndrome depending on which cranial nerves are affected, the commonest form involves facial and abducens cranial nerve paralysis. Despite several strategies for bilateral smile reconstruction that have been advocated, the condition still presents a challenge to the plastic surgeon. The most acceptable method nowadays is bilateral free neurovascularized muscle transfer. The author represents a new method of using a single hypoglossal nerve to supply both free flaps in a MÖbius patient. The procedure is done on 2 stages using both latissimus dorsi muscles and a single hypoglossal nerve. The patient regained a natural symmetric smile 12 months after the first stage. Despite hemilingual atrophy, no tongue morbidity was observed. The author concludes that despite the limitation of the study, the hypoglossal nerve is a good nerve source to supply both free flaps for smile reconstruction in MÖbius syndrome.

Keywords: MÖbius syndrome; Facial nerve; Hypoglossal nerve; Facial reanimation.

3-1-12. *Dept. of Psychiatry*

104. Therapeutic Factors in Group Psychotherapy: A Study of Egyptian Drug Addicts

S. Ahmed, S. Abolmagd, M. Rakhawy, S. Erfan and R. Mamdouh

Journal of Groups in Addiction and Recovery, 5 (3-4): 194-213 (2010)

The effect of group therapy on substance-dependent patients has been demonstrated in several studies emphasizing the cost-effectiveness of this intervention. However, little research was conducted on how group therapy can help these patients. The objective of this article is to study the therapeutic factors of group therapy among a group of substance-dependent patients and to study the relation between the therapeutic factors of group therapy with these patients and clinical outcome of relapse or continuing abstinence. The study includes 80 patients divided into two groups. Group I includes 40 substance-dependent patients attending group therapy sessions. Group II is a comparison group of 40 substance-dependent patients who did not attend group therapy. Both groups received the same treatment except for group therapy. All subjects were diagnosed according to a structured interview applying the International Classification of Diseases-10th Revision. Fifteen-session group therapy was conducted for Group I, and subjects were subjected to the Yalom test for assessing group therapeutic factors.

The relapse/sobriety outcome was assessed and compared between the two groups 1 year after the intervention. All subjects have been subjected to drug screening before and after 1 year follow-up. The relation between choice of the therapeutic factor and outcome was studied. Group I patients cited the most helpful therapeutic factor in group therapy as catharsis, followed by group cohesiveness and interpersonal learning (output). Identification is perceived as the least helpful factor in group therapy. One year into the study, 52.5 % of Group I remained sober in comparison to 22.5 % of Group II. No significant statistical relation was found between the choice of therapeutic factor and the outcome in Group I subjects. The most helpful factor perceived by addicts in group therapy is catharsis, followed by group cohesiveness and interpersonal learning (output). Patients who received group therapy had a significantly more favorable outcome rate than those who received other modes of treatment.

Keywords: Substance dependence; Abuse; Addiction; Psychotherapy; Addiction severity index; ASI; Group therapy; Therapeutic factors relapse; Sobriety; Abstinence.

3-1-13. *Dept. of Public Health and Community Medicine*

105. Collection, Storage and use of Blood Samples for Future Research: Views of Egyptian Patients Expressed in a Cross-sectional Survey

Alaa Abou-Zeid, Henry Silverman, Magdi Shehata, Mohamed Shams, Mervat Elshabrawy, Tamer Hifnawy, Safa Abdel Rahman, Bahiga Galal, Hany Sleem, Nabiel Mikhail and Nadia Moharram

JME Journal Medical Ethics J Med Ethics, (2010) IF:1.206

Objective To determine the attitudes of Egyptian patients regarding their participation in research and with the collection, storage and future use of blood samples for research purposes. **Design** Cross-sectional survey. **Study population** Adult Egyptian patients (n1⁄4600) at rural and urban hospitals and clinics. **Results** Less than half of the study population (44.3%) felt that informed consent forms should provide research participants the option to have their blood samples stored for future research. Of these participants,

39.9% thought that consent forms should include the option that future research be restricted to the illness being studied. A slight majority (66.2%) would donate their samples for future genetic research. Respondents were more favourable towards having their blood samples exported to other Arab countries (62.0%) compared with countries in Europe (41.8%, p<0.001) and to the USA (37.2%, p<0.001). **Conclusions** This study shows that many individuals do not favour the donation of a blood sample for future research. Of those who do approve of such future research, many favour a consent model that includes an option restricting the future research to the illness being studied. Also, many Egyptians were hesitant to have their blood samples donated for genetic research or exported out of the Arab region to the USA and European countries. Further qualitative research should be performed to determine the underlying reasons for many of our results.

Keywords: Blood samples; Egypt; Ethics; Patients; Future research.

106. The Role of Anthropometric Indices in Predicting Comorbidities of Obesity in a Rural Egyptian Population

Rehab Abdel Hai, Hanan El Raghi, Madiha Abdel Razik and Nesrine Kamal

Int. J. Food Safety, Nutrition and Public Health, 3 (1): 16-26 (2010)

Obesity is associated with higher prevalence of co-morbidities; type2 diabetes and hypertension. Objectives were determining prevalence of obesity, type2 diabetes and hypertension in a rural Egyptian village. This cross sectional study included 1,000 male and female ≥ 20 years. Blood pressure, anthropometry fasting and 2 hours post-prandial glucose were determined. Results showed 29.7% overweight and 45.6% obese. Visceral obesity, by waist circumference (WC), was 24.4% in males and 69.2% in females, respectively. Prevalence of pre-diabetes and diabetes among obese was 5.7% and 9.6%, respectively while hypertension was 32.1%. BMI cut-off diabetes predictors were 27.5 to 29.8 Kg/m^2 while hypertension predictors were 26.05 to 28.6 Kg/m^2. WC cut-off diabetes predictors were 93.5cm in males and 97.5cm for females, while for hypertension were 90.5 cm and 94.5 cm similarly. Logistic regression showed WC, age, and family history of diabetes to increase risk of co-morbidities. To conclude, obesity is associated with increased prevalence of type 2 diabetes and hypertension. Thus we recommend introducing simple anthropometry for early detection of obesity and its' comorbidities.

Keywords: Obesity; Comorbidities; Diabetes; Hypertension; Anthropometric indices; Rural Population; Egypt; Public Health Nutrition; Comorbidities.

107. Assessing Validity of the Adapted Arabic Paediatric Asthma Quality of Life Questionnaire Among Egyptian Children with Asthma

Rehab Abdel Hai, Eman Taher and Mohamed Abdel Fattah

Eastern Mediterranean Health Journal, 16 (3): 274 – 280 (2010)

The recent focus in asthma management is rendering children a better quality of life (QOL). Validity and reliability of an adapted Arabic translation of the Paediatric Asthma Quality of Life Questionnaire (PAQLQ-A) among Egyptians was assessed in a cohort of 103 asthmatic children aged 8–16 years. Discriminative validity of mean scores was significantly higher among mild asthmatics than those with moderate/severe asthma. Construct validity of domains was significantly negatively correlated with clinical severity score. Reliability and internal consistency were assessed using Cronbach alpha coefficient ($\alpha = 0.84$). Reproducibility and responsiveness were high among both stable and unstable asthma patients. PAQLQ-A is valid and reliable for assessing QOL among Egyptian asthmatic children.

Keywords: Asthma; Pediatrics; Quality of Life; Questionnaire; Validation.

108. Attitudes Towards Transfers of Human Tissue Samples Across Borders: An International Survey of Researchers and Policy Makers in Five Countries

Xinqing Zhang, Kenji Matsui, Benjamin Krohmal, Alaa Abou Zeid, Vasantha Muthuswamy, Young Mo Koo, Yoshikuni Kita and Reidar K. Lie

BMC Medical Ethics, 11-16 (2010)

Sharing of tissue samples for research and disease surveillance purposes has become increasingly important. While it is clear that this is an area of intense, international controversy, there is an absence of data about what researchers themselves and those involved in the transfer of samples think about these issues, particularly in developing countries. A survey was carried out in a number of Asian countries and in Egypt to explore what researchers and others involved in research, storage and transfer of human tissue samples thought about some of the issues related to sharing of such samples. The results demonstrated broad agreement with the positions taken by developing countries in the current debate, favoring quite severe restrictions on the use of samples by developed countries. It is recommended that an international agreement is developed on what conditions should be attached to any sharing of human tissue samples across borders.

Keywords: Human tissue samples; Ethics; Attitute; Researchers; Transfer.

3-1-14. *Dept. of Radiodiagnosis*

109. Ultrafast MRI of the Fetus: an Increasingly Important Tool in Prenatal 3 Diagnosis of Congenital Anomalies

Iman A. Hosny and Hamed S. El-Ghawabi

Magnetic Resonance Imaging, (2010)

Objective: To demonstrate the additional utility of ultrafast magnetic resonance imaging (MRI) of the fetus in the evaluation of 9 sonographically detected or equivocal fetal congenital anomalies.10 **Material and methods**: Twenty five pregnant women with ultrasound detected fetal congenital anomalies underwent ultrafast fetal MRI.11 **Results**: MRI findings altered the diagnosis of two cases of giant arachnoid cyst and sizable interhemispheric cyst associated with agenesis of 12 the corpus callosum. MRI added additional findings of occult spinal diastematomyelia in two out of four cases of Chiari/meningocele 13 malformation. MRI revealed impaired sulcation and unilateral cleft palate in suspected case of Walker-Warburg syndrome. In the remaining 14 18 cases MRI confirmed the diagnosis of Meckel–Gruber syndrome in three cases, hydronephrosis in six cases, cerebral ventriculomegaly in 15 five cases, isolated omphalocele in three cases and findings suggestive of aneuploidy in the last case. 16 **Conclusion**: Ultrasound is the screening method of choice for evaluation of the fetus. Ultrafast MRI is a complementary adjunctive modality 17 with excellent tissue contrast that can image the fetus in multiple planes and add information in sonographically detected or equivocal 18 congenital anomalies that may be significant to establish definitive accurate diagnosis and hence adequate management and counseling.

Keywords: Fetal MRI; Fetal anomalies; Fetal US.

3-1-15. *Dept. of Rheumatology and Rehabilitation*

110. Prevalence and Predictive Value of Anti-cyclic Citrullinated Protein Antibodies for Future Development of Rheumatoid Arthritis in Early Undifferentiated Arthritis

Yasser Emad, Mohamed Shehata, Yasser Ragab, Ahmed Saad and Alaa Abou-Zeid

Mod Rheumatol, (2010)

The aim of this study is to evaluate the prevalence and predictive value of anti-cyclic citrullinated protein (CCP) antibodies as a diagnostic marker for future development of rheumatoid arthritis (RA) in a cohort of patients presenting with undifferentiated arthritis (UA). The study comprised 69 patients (22 males and 47 females) presenting with UA, and 66 healthy subjects as control group. For all patients the following parameters were assessed: swollen joint count (SJC), tender joint count (TJC), and duration of morning stiffness in minutes. Baseline laboratory investigations included erythrocyte sedimentation rate (ESR) first hour, C-reactive protein (CRP), complete blood count, complete liver and kidney function tests, urine analysis, anti-nuclear antibodies, rheumatoid factor (RF), and anti-CCP antibodies. Positive correlations were observed between anti-CCP versus SJC, TJC (p = 0.001), duration of morning stiffness (p = 0.04), ESR first hour, and bone erosive changes (p = 0.001). Anti-CCP showed sensitivity of 57%, specificity of 37.9%, positive predictive value of 65.1%, and negative predictive value of 39.3%. Sensitivity and positive predictive values of anti-CCP are close to those observed for RF. In patients presenting with UA, anti-CCP antibodies may allow prediction of RA, thereby allowing early individualized therapeutic decisions.

Keywords: Undifferentiated arthritis (UA); Rheumatoid factor (RF); Anti-cyclic citrullinated protein (CCP2) antibodies (anti-CCP2).

111. Enthesitis and Related Changes in the Knees in Seronegative Spondyloarthropathies and Skin Psoriasis: Magnetic Resonance Imaging Case Control Study

Yasser Emad, Yasser Ragab, Iman Bassyouni, Omar Moawayh, Magdy Fawzy, Ahmed Saad, Alaaabou-Zeid And Johannes J. Rasker

The Journal of Rheumatology, (37): 1709-1717 (2010)
IF: 3.854

Objective. To describe enhanced magnetic resonance imaging (MRI) features and characteristic entheseal changes in the knees in patients with seronegative spondyloarthropathy (SpA). **Methods.** The 56 patients included 30 with psoriatic arthritis, 5 with ankylosing spondylitis, 5 with reactive arthritis, 5 with ulcerative colitis (UC), 5 with Crohn's disease, and another 6 with skin psoriasis. Controls were 20 healthy subjects without knee complaints. MRI was performed in all participants, emphasizing entheseal sites. **Results.** Both knees were studied in 45 (80.3%) patients and one knee in 11 (19.6%). MRI showed evidence of bone marrow edema in 13 (23.2%) patients, cartilaginous erosions in 18 (32.1%), and bone erosions in 9 (16.1%). Enthesitis was found in medial collateral ligaments in 18 (32.1%), lateral collateral ligaments in 8 (14.3%), posterior cruciate ligaments in 3 (5.35%), patellar tendon in 18 (32.1%), biceps femoris insertion in 3 (5.35%), medial patellofemoral ligaments (MPFL) in 5 (8.9%), and lateral patellofemoral ligament in 1 patient (1.8%). In the UC and Crohn's patients (n = 10), 2 had bone erosions and 5 had enthesitis. In the skin psoriasis group (n = 6), one had bone marrow edema; enthesitis was detected in 5 at the patellar tendon insertion and in one in the MPFL. Entheseal Entheseal-related changes were absent in the controls. **Conclusion**. This is the first study showing entheseal-related changes in the knees in patients with inflammatory bowel disease or skin psoriasis without clinical arthritis. Enthesitis of the knee onMRI may be an early finding in SpA..

Keywords: Magnetic Resonance Imaging Knee Joint Enthesitis Psoriasis Seronegative Spondyloarthropathies Inflammatory Bowel Disease.

112. Enthesitis in Seronegative Spondyloarthropathies with Special Attention to the Knee Joint by MRI: A Step Forward Toward Understanding Disease Pathogenesis

Yasser Ragab,Yasser Emad, Hanan Darweesh and Johannes J. Rasker

Clin Rheumatol, (30): 313-322 (2010) IF: 1.668

Seronegative spondyloarthropathies are a unique group of disorders sharing similar clinical characteristics (e.g., inflammatory back pain, spondylitis, sacroiliitis, uveitis, inflammatory bowel disease, skin rashes, and enthesitis). Clinical and genetic similarities suggest that they also share similar causes or pathophysiologies. Rheumatoid factor (RF) is characteristically negative in this group of disorders, hence collectively termed seronegative spondyloarthropathies (SpA). They include psoriatic arthritis, ankylosing spondylitis, reactive arthritis, ulcerative colitis, and Crohn's disease. "Enthesitis", the term used to describe inflammation at tendon, ligament, or joint capsule insertions, is considered a common feature in this domain and was included in the European Spondyloarthropathy Study Group criteria for the classification of SpA. Evaluation of entheseal-related changes at different joints by MRI became an important item on the research agenda in both differentiated and undifferentiated arthritis. Most of the research focused on MRI findings in the hand and wrist joints among patients with RA and SpA and support two patterns of inflammation "RA" phenotype where synovial involvement is the primary target of inflammation and "SpA" pattern where enthesitis comes first followed by synovitis. In this review, we summarize the literature on enthesitis in SpA and focus on MRI findings in the knee joint in the SpA group of disorders and subclinical synovitis among patients with skin psoriasis.

Keywords: Enthesitis; Knee enthesitis; Knee joint; MRI imaging of enthesitis; Rheumatoid arthritis; Seronegative spondyloarthropathies.

113. What Are the Potential Roles Magnetic Resonance Imaging Can Play in Differentiated and Undifferentiated Arthritis?

Yasser Emad, Yasser Ragab, Iman Bassyouni, Hanan Darweesh, A. Almansari and J.J. Rasker

Journal of Clinical Rheumatology and Musculoskeletal Medicine, (2010)

Magnetic resonance imaging (MRI) has advanced our understanding of many types of arthritis, with respect to both inflammatory processes and articular damage. The role of MRI in differentiating between different forms of arthritis is still debatable and under discussion. The current available data suggest that MRI can separate subsets of early synovitis patients on the basis of two principal imaging patterns: one in which the inflammatory changes are located primarily in the synovium; and another in which the periarticular entheses are inflamed in association with intense edema of the adjacent bone. These two patterns are proposed to broadly classify patients with early synovitis into an ''RA'' phenotype where synovitis is the primary process, and a ''spondyloarthropathy'' (SpA) phenotype where enthesitis is the primary process and synovitis occurs on a secondary basis. Enthesitis is a common feature on MRI in SpA, which can help to determine the evolving pattern of patients with undifferentiated arthritis of the knee joint, and may have important clinical implications for classification purposes.

Keywords: Enhanced magnetic resonance imaging (MRI); Undifferentiated arthritis; Knee enthesitis; Rheumatoid arthritis; SPA.

03-02 Faculty of Oral and Dental Medicine

3-2-01. ***Dept. of Fixed Prosthodontics***

114. Effect of Metal Selection and Porcelain Firing on the Marginal Accuracy of Titanium-based Metal Ceramic Restorations

Tamer E Shokry, Mazen Attia, Ihab Mosleh, Mohamed Elhosary, Tamer Hamza and Chiayi Shen.

The Journal of Prosthetic Dentistry IF: 1.215

Statement of problem. Titanium is the most biocompatible metal used for dental casting; however, there is concern about its marginal accuracy after porcelain application since this aspect has direct influence on marginal fit.

Purpose. The purpose of this study was to determine the effect that metal selection and the porcelain firing procedure have on the marginal accuracy of metal ceramic prostheses.

Material and methods. Cast CP Ti, milled CP Ti, cast Ti-6Al-7Nb, and cast Ni-Cr copings (n=5) were fired with compatible porcelains (Triceram for titanium-based metals and VITA VMK 95 for Ni-Cr alloy). The Ni-Cr alloy fired with its porcelain served as the control. Photographs of metal copings placed on a master die were made. Marginal discrepancy was determined on the photographs using an image processing program at 8 predetermined locations before airborne-particle abrasion for porcelain application, after firing of the opaque layer, and after firing of the dentin layer. Repeated-measures 2-way ANOVA was used to investigate the effect of metal selection and firing stage, and paired *t* tests were used to determine the effect of each firing stage within each material group (α=.05).

Results. ANOVA showed that both metal selection and firing stage significantly influenced the measured marginal discrepancy ($P<.001$), and there was interaction between the 2 variables ($P<.001$). Student-Newman-Keuls multiple comparison tests showed that there were significant differences between any 2 metals compared, at each stage of measurement. Paired *t* tests showed that significant changes in marginal discrepancy occurred with opaque firing on milled CP Ti ($P=.017$) and cast Ti-6Al-7Nb alloy ($P=.003$).

Conclusions. Titanium copings fabricated by CAD/CAM demonstrated the least marginal discrepancy among all groups, while the base metal (Ni-Cr) groups exhibited the most discrepancy of all groups tested.

3-2-02. ***Dept. of Oral Pathology***

115. Expression of Receptor Activator of Nuclear Factor jB Ligand in Ligatureinduced Periodontitis in Osteoporotic and Non-osteoporotic Rats

E. Allam, A. Draz, A. Hassan,A. Neamat, M. Galal and L. J. Windsor

Periodont Res; 45: 136–142 (2010) IF: 1.966

Background and Objective: This study investigated the expression of a key mediator that regulates differentiation of osteoclasts, receptor activator of nuclear factor jB ligand (RANKL), in rats with or without osteoporosis and periodontitis, to provide a better understanding of the association between these two diseases. **Material and Methods**: Forty adult Albino rats were divided into four groups: (1) control group; (2) experimentally induced periodontitis group; (3) experimentally induced osteoporosis group; and (4) experimentally induced osteoporosis and periodontitis group. At the end of the experimental period, blood samples were obtained and animals were sacrificed. Serum alkaline phosphatase (ALP) activity levels were measured. Histological evaluation and immunohistochemical detection of RANKL in the periodontal ligament and bone tissues were performed. **Results:** There were significantly higher ALP levels in all of the experimental groups than in the control group. The pathology observed in the histological sections from group 4 was more severe than in either group 2 or group 3. The percentage of RANKL-immunoreactive cells in both the periodontal ligament and bone tissues in group 4 (16.8 ± 5.1 and 11.2 ± 5.2%, respectively) was significantly higher ($p < 0.001$) than in the other groups. In the periodontal ligament, the percentage of RANKL-immunoreactive cells in group 2 (10.1 ± 1.9%) was significantly higher ($p < 0.001$) than in group 3 (5.3 ± 2.7%) and the control group (4.12 ± 1.5%). **Conclusion:** The increased bone loss observed in group 4 compared with either group 2 or group 3 supports the existence of an additive pathological effect of the two disease conditions. This is consistent with the increased RANKL expression observed in group 4.

Keywords: Receptor activator of nuclear factor jB ligand; Periodontitis; Osteoporosis; Immunohistochemistry.

116. Polymeric-Calcium Phosphate Cement Composites-Material Properties: in Vitro and in Vivo Investigations

Rania M. Khashaba, Mervet M. Moussa, Donald J. Mettenburg, Frederick A. Rueggeberg, Norman B. Chutkan, and James L. Borke

International Journal of Biomaterials, (2010)

New polymeric calcium phosphate cement composites (CPCs) were developed. Cement powder consisting of 60 wt% tetracalcium phosphate, 30 wt% dicalcium phosphate dihydrate, and 10 wt% tricalcium phosphate was combined with either 35% w/w poly methyl vinyl ether maleic acid or polyacrylic acid to obtain CPC-1 and CPC-2. The setting time and compressive and diametral tensile strength of the CPCs were evaluated and compared with that of a commercial hydroxyapatite cement. *In vitro* cytotoxicity and *in vivo* biocompatibility of the two CPCs and hydroxyapatite cement were assessed. The setting time of the cements was 5–15 min. CPC-1 and CPC-2 showed significantly higher compressive and diametral strength values compared to hydroxyapatite cement. CPC-1 and CPC-2 were equivalent to Teflon controls after 1 week. CPC-1, CPC-2, and hydroxyapatite cement elicited a moderate to intense inflammatory reaction at 7 days which decreased over time. CPC-1 and CPC-2 show promise for orthopedic applications.

Keywords: Calcium phosphate-based cement; Connective tissue reactions; Histopathologic method.

117. The Influence of Ginger as a Chemopreventive Agent on Proliferation and Apoptosis in Chemically Induced Oral Carcinogenesis

Dina S. Khater

Nature and Science, 8 (11): 44-51 (2010)

Cancer chemoprevention is the use of natural, synthetic, or biologic chemical agents which suppress or prevent carcinogenic progression. One of the natural ingredients that plays a role in cancer chemoprevention is ginger (Zingiber officinale Roscoe, Zingiberaceae) .It has an anti-carcinogenic activities. **Objective**: The purpose of this study is to detect the chemopreventive effect of ginger on tongue carcinogenesis induced by 4-nitroquinoline 1-oxide (4-NQ) with correlation to its anti-proliferative activity and induction of apoptosis. **Materials and Methods:**Twenty male albino rats were divided into two groups. 4-NQ was delivered to the two groups in the drinking water. The second group was given in addition, ginger tablets after grinding into fine powder added to the laboratory chow Tongue samples were obtained after thirty two weeks. Immunohistochemical staining for Caspase-3 was performed for detection of apoptosis and silver nitrate staining of nucleolar organizer regions (AgNORs) was done for estimating the proliferation of cells. The data were analyzed using Student's independent t-test and one-way analysis of variance (ANOVA). **Results:** The first group (4-NQ treated group) revealed pathological evidence of carcinogenesis .However, the second group(the ginger treated group) revealed no invasion or carcinomas. Only hyperplasia with hyperkeratosis and dysplastic lesions were observed. Apoptosis detected by caspase-3 immunostaining was statistically highly significant in the ginger treated group ($p<0.05$) meanwhile proliferation estimated by AgNOR nuclear count was statistically highly significant in the 4-NQ treated group ($p<0.05$).**Conclusion:** Ginger may have a chemopreventive effect on oral carcinogenesis through induction of apoptosis and suppression of tumour growth and proliferation.

Keywords: Carcinogenesis; Cancer chemopreventive agents; Ginger.

3-2-03. *Dept. of Orthodontics and Dentofacial Orthopedics*

118. Three-dimensional Dental Measurements: An Alternative to Plaster Models

Hend Mohammed El-Zanaty, Amr Ragab El-Beialy, Amr Mohammed Abou El-Ezz, Khaled Hazem Attia, Ahmed Ragab El-Bialy and Yehya Ahmed Mostafa

American Journal of Orthodontics and Dentofacial Orthopedics, (137): 259-265 (2010) IF: 1.327

Introduction: The aim of this study was to compare the accuracy of dental measurements taken with calipers on plaster dental casts and those from computed tomography scans of the dentition with a dental measurement program. **Methods**: The sample consisted of plaster dental models of 34 orthodontic subjects. Dental arch measurements, including mesiodistal widths of teeth, arch widths, arch lengths, arch perimeters, and palatal depths were made with the calipers. The patients were also scanned with computed tomography, and measurements were made digitally with a 3-dimensional-based dental measurements program (3DD, Biodent, Cairo, Egypt). **Results**: The results showed strong agreement in most measurements between the conventional method and the 3DD in the 3 planes of space. The mesiodistal measurements of the maxillary right and left second premolars, left central incisor, and right first molar, and the mandibular left and right central incisors, right canine, and left first premolar had fair agreement. **Conclusions**: Excellent agreement between the measurements with the conventional and 3DD methods in the 3 planes of space was found; 3DD can be an alternative to conventional stone dental models.

Keywords: Dental arch measurements; Plaster dental casts; Computed tomography; Arch widths; Arch lengths.

119. Methods for Managing 3-dimensional Volumes

Asem Awaad Othman, Amr Ragab El-Beialy, Sahar Ali Fawzy, Ahmed Hisham Kandil, Ahmed Mohammed El-Bialy andYehya Ahmed Mostafa

American Journal of Orthodontics and Dentofacial Orthopedics, (137): 266-273 (2010) IF: 1.327

The introduction of 3-dimensional (3D) volumetric technology and the massive amount of information that can be obtained from it compels the introduction of new methods and new technology for orthodontic diagnosis and treatment planning. In this article, methods and tools are introduced for managing 3D images of orthodontic patients. These tools enable the creation of a virtual model and automatic localization of landmarks on the 3D volumes. They allow the user to isolate a targeted region such as the mandible or the maxilla, manipulate it, and then reattach it to the 3D model. For an integrated protocol, these procedures are followed by registration of the 3D volumes to evaluate the amount of work accomplished. This paves the way for the prospective treatment analysis approach, analysis of the end result, subtraction analysis, and treatment analysis.

Keywords: 3-dimensional (3D) volumetric technology; Orthodontic diagnosis; Virtual model; Prospective treatment analysis; Subtraction analysis; Treatment analysis.

120. Four Curious Cases of Cone-beam Computed Tomography

Yehya A. Mostafa, Amr Ragab El-Beialy, Gihan A. Omar and Mona Salah Fayed

American Journal of Orthodontics and Dentofacial Orthopedics, (137): 5136-5140 (2010) IF: 1.327

Cone-beam computed tomography (CBCT) has become popular, and its many inherent advantages are indisputable. Nevertheless, CBCT is prescribed cautiously because the radiation dosage is higher than that of conventional radiography. When and to what extent should CBCT be prescribed for orthodontic patients? The purpose of this article is to present 4 curious cases in which a considerable discrepancy was found between the conventional panoramic radiograph and the CBCT view. Is it time to spare patients an unnecessary conventional panoramic radiograph and shift to CBCT for all patients?

Keywords: Cone-beam computed tomography; Panoramic radiograph; Radiation dosage; TAD.

03-03 Faculty of Pharmacy

3-3-01. *Dept. of Biochemistry*

121. Possible Role of Vitamin E, Coenzyme Q10 and Rutin in Protection Against Cerebral Ischemia/reperfusion Injury in Irradiated Rats

Amal A. Abd-El-Fattah, Maha M. El-Sawalhi, Engy R. Rashed And Mona A. El-Ghazaly

Int. J. Radiat. Biol, (86): 1070–1078 (2010). IF: 1.842

Purpose: To investigate the possible role of vitamin E, coenzyme Q10 and rutin in ameliorating the biochemical changes in brain and serum induced by cerebral ischemia/reperfusion (I/R) in whole body γ-irradiated rats. **Materials and methods:** Cerebral ischemia was induced in male Wistar rats (either irradiated or non-irradiated) followed by reperfusion.

Results: I/R increased brain content of malondialdehyde (MDA) and depleted its glutathione (GSH) content with a compensatory elevation in cytosolic activities of glutathione peroxidase (GPx) and glutathione reductase (GR) enzymes. It also raised brain cytosolic lactate dehydrogenase (LDH) activity and calcium (Ca^{2+}) level. Furthermore, I/R provoked an inflammatory response reflected by an increment in serum levels of the proinflammatory cytokines tumour necrosis factor-α (TNF- α) and interlukin-1β (IL-1β). Moreover, induction of I/R in irradiated rats resulted in a further increase in brain oxidative stress and cytosolic LDH activity, disturbed

brain Ca^{2+} homeostasis and exaggerated the inflammatory reaction. During irradiation, administration of each of vitamin E, coenzyme Q10 (CoQ10) and rutin to irradiated rats before induction of I/R, alleviated the brain oxidative stress. Moreover, these antioxidants caused attenuation of the rise of the cytosolic activities of GPx and GR. A lowering effect of the cytosolic LDH activity and Ca^{2+} level were caused by treatment with antioxidants. Each of vitamin E and rutin revealed an anti-inflammatory action of these antioxidants, while CoQ10 had no effect on serum levels of TNF-α and IL-1β.

Conclusion: These findings indicate that supplementation with either vitamin E, CoQ10 or rutin ameliorated most of the biochemical changes induced by I/R in irradiated rat brain and serum.

Keywords: Cerebral ischemia/reperfusion; γ-radiation; Vitamin E; Coenzyme Q10; Rutin.

3-3-02. *Dept. of Microbiology and Immunology*

122. Pathogen Microevolution in High Resolution

Ramy K. Aziz and Victor Nizet

Science TM 2 (16): 16ps4: 1-4 (2010) IF: 29.747

Microbial genomics has revolutionized infectious diseases and epidemiology research and is facilitating the tracking and containment of emerging biological threats. Among the most serious contemporary infectious agents are multiple antibiotic–resistant strains of the human pathogen *Staphylococcus aureus*, which present a formidable public health challenge that is no longer limited to hospitalized patients. To address key hypotheses regarding microbial strain evolution or virulence, conventional genotyping methods do not offer enough power to resolve minor changes between closely related strains. The application of next-generation high-throughput genotyping technologies, as illustrated in a recent analysis of a highly resistant *S. aureus* strain, can provide new clues about the geographical origin and intrahospital spread of important microbial pathogens.

Keywords: *Staphylococcus aureus*; MRSA; SNPs; High-resolution genotyping; DNA sequencing.

123. Do Pathogenic Bacteria Encode More Secreted Proteins than their Non-pathogenic Relatives?

Ahmed Abo-Bakr Mahmoud and Ramy Karam Aziz

BMC Bioinformatics, (2010): IF: 3.428

Pathogenic and non-pathogenic bacteria secrete proteins for nutrient acquisition, cell-cell communication, and niche adaptation. We hypothesized that pathogenic bacteria may encode larger fractions of secreted proteins (fsp) than their non-pathogenic relatives, assuming that pathogens might be under selective pressure to secrete virulence proteins involved in host immune evasion, invasion, and toxigenesis. To test this hypothesis, we compared the Sec-dependent fsp of various gram-positive and gram-negative bacteria and investigated the relation between the fsp and pathogenic potential of an organism. We developed a pipeline for the determination and comparison of fractions of secreted proteins in bacterial genomes, and observed significant differences between pathogenic and non-pathogenic species of staphylococci and streptococci.

Keywords: Bioinformatics; Secretome; Genomics; Signal-P.

124. Integrating Neighbor Clustering, Coexpression Clustering and Subsystems Analysis to Define Dynamic Changes in Regulatory Networks Associated with Group A Streptococcal Sociomicrobiology and Niche Adaptation

Ramy K Aziz, Bruce J Aronow, William L Taylor, Sarah L Rowe, Rita Kansal, Mark J Walker and Malak Kotb

BMC Bioinformatics, 11(54): P12:1-2 (2010): IF: 3.428

Bacterial colonies often consist of heterogeneous communities rather than genetically identical cells with harmonized gene expression profiles. Dramatic changes, such as the onset of infection, may perturb a colony's sociomicrobiology leading a minor subpopulation with a mutant phenotype to prevail in the host; however, capturing such transitions in real time is difficult. While differential microarray analysis has become a method of choice for comparing the transcriptomes of bacterial subpopulations, current microarray analysis tools are more optimized to the study of eukaryotic organisms. Here, we developed a systems biology model for studying the transcriptional reprogramming underlying the transition of M1T1 group A streptococci from a virulent to a hypervirulent phenotype. In addition, we integrated and optimized microarray analysis strategies to better understand bacterial regulatory networks.

Keywords: Streptococcus pyogenes; Microarrays; RNA; Transcriptomics; Gene regulation; Regulation of virulence.

125. Nutriproteomics and Proteogenomics: Cultivating Two Novel Hybrid Fields of Personalized Medicine with Added Societal Value

Vural Ozdemir, Jean Armengaud, Laurette Dubé, Ramy Karam Aziz and Bartha M. Knoppers

Current Pharmacogenomics and Personalized Medicine, 8 (4): 240-244 (2010)

Personalized medicine requires diagnostics that enable customization of health interventions such as drugs, vaccines, stem cell therapy and nutrition. It is important to approach personalized medicine with this broader outlook, rather than a narrow focus on drug therapy, as nutrition and other health interventions influence health. Such global vision is also

needed in order to integrate information from multiple levels of the biological hierarchy from genome to proteome to metabolome, and ways in which these biological parts interact with each other, the environment, and society more generally. In the past, nutrition research and public health programs have focused on adequate access to food or alleviation of nutritional deficiencies. This framework, however, has shifted considerably over the past decade. Recognition of population heterogeneity in nutritional and adverse responses to food led to a greater emphasis on understanding the molecular basis of this variability and by extension, on the possibility of nutritional interventions customized at a subpopulation level.

Keywords: Genomics; Pharmacogenomics; Nutriproteomics; Nutrigenomics; Proteogenomics.

126. Helicobacter Pylori: a Ooor Man's Gut Pathogen?

Mohammed Mahdy Khalifa, Radwa Raed Sharaf and Ramy Karam Aziz

Gut Pathogens, 2 (2): 1-12 (2010)

Helicobacter pylori is one of the human pathogens with highest prevalence around the world; yet, its principal mode of transmission remains largely unknown. The role of *H. pylori* in gastric disease and cancer has not been established until the end of the 20th century. Since then, its epidemiology has been extensively studied, and an accruing body of literature suggests that not all humans are equally at risk of infection by this gut pathogen. Here, we briefly review the different epidemiological aspects of *H. pylori* infection with emphasis on those factors related to human poverty. The epidemiology of *H. pylori* infection is characterized by marked differences between developing and developed countries, notably among children. In addition, congruent lines of evidence point out to socioeconomic factors and living standards as main determinants of the age-dependent acquisition rate of *H. pylori*, and consequently its prevalence. These data are alarming in the light of the changing global climate and birth rate, which are expected to change the demography of our planet, putting more children at risk of *H. pylori* and its complications for years to come.

Keywords: *Helicobacter pylori;* Epidemiology; GDP; Gastrointestinal tract; Routes of infection; Infectious diseases.

127. Parameters Governing Invasive Disease Propensity of Non-M1 Serotype Group A Streptococci

Peter G. Maamary, Martina L. Sanderson-Smith, Ramy K. Aziz, Andrew Hollands, Jason N. Cole, Fiona C. McKay, Jason D. McArthur, Joshua K. Kirk, Amanda J. Cork, Rachael J. Keefe, Rita G. Kansal, Hongmin Sun, William L. Taylor, Gursharan S. Chhatwal, David Ginsburg, Victor Nizet, Malak Kotb and Mark J. Walker

J Innate Immun, (2): 596–606 (2010)

Group A *Streptococcus* (GAS) causes rare but life-threatening syndromes of necrotizing fasciitis and toxic shock-like syndrome in humans. The GAS serotype M1T1 clone has globally disseminated, and mutations in the control of virulence regulatory sensor kinase (*covRS*) operon correlate with severe invasive disease. Here, a cohort of non-M1 GAS was screened to determine whether mutation in *covRS* triggers systemic dissemination in divergent M serotypes. A GAS disease model defining parameters governing invasive propensity of differing M types is proposed. The vast majority of GAS infection is benign. Nonetheless, many divergent M types possess limited capacity to cause invasive infection. M1T1 GAS readily switch to a *covRS* mutant form that is neutrophil resistant and frequently associated with systemic infection. Whilst non-M1 GAS are shown in this study to less frequently accumulate *covRS* mutations in vivo, such mutants are isolated from invasive infections and exhibit neutrophil resistance and enhanced virulence. The reduced capacity of non-M1 GAS to switch to the hypervirulent *covRS* mutant form provides an explanation for the comparatively less frequent isolation of non-M1 serotypes from invasive human infections.

Keywords: *Streptococcus pyogenes*; Virulence factors; Gene regulation; CovRS; Invasive infection.

128. The Human Microbiome Project, Personalized Medicine and the Birth of Pharmacomicrobiomics

Mariam R. Rizkallah, Rama Saad and Ramy K. Aziz

Current Pharmacogenomics and Personalized Medicine, 8 (3): 182-193 (2010)

After the completion of the human genome sequence, international efforts have been directed to the characterization of the genomes of human-associated resident microbes. The Human Microbiome Project was launched in 2007 with the aim of sequencing the resident microbiota from different sites of the human body. In this paper, we introduce the Human Microbiome Project, the role of the human microbiome in health and disease, and the implications of the microbiome variations in personalized medicine and in pharmacomicrobiomics, which we define as the effect of microbiome variations on drug disposition, action, and toxicity.

Keywords: Metagenomics; Microbiome; Microbiota; Next-generation sequencing; Pharmacogenomics; Personalized medicine.

129. The Preparation of 6x His-tagged Granulocyte Colony Stimulating Factor using an Improved In Vitro Expression

Helmy, O. M., Hussein, M. M. M., Murad, F. E. and Shoeb, H. A.

African Journal of Biotechnology, 9 (50): 8566-8577 (2010)
IF: 0.565

An improved *in vitro* expression system called the rapid translation system (RTS) was used in this study for the *in vitro* biosynthesis of 6x His tagged granulocyte colony stimulating factor (6x His-tagged granulocyte colony-stimulating factor (GCSF). This was done to overcome the problems associated with traditional cell based biotechnology. The study involved the preparation of template DNA for cell-free protein synthesis through gene amplification of open reading frame (ORF) of hGCSFb, cloning in pIVEX 2.4d vector and transformation of the produced construct in chemically competent *Escherichia coli* DH 5 α cells. A cell free protein synthesis system, RTS 100 *E. coli* HY kit, was tested for 6x His tagged G-CSF protein synthesis. Protein purification was done using Ni-NTA chromatography. Protein production was detected by two methods electrophoretically by sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE) and immunologically by dot blotting immunodetection. The use of these methods yielded purified 6xHis-tagged GCSF with a concentration of about 250 µg/ml RTS reaction.

Keywords: Granulocyte colony stimulating factor; *In vitro* expression system; RTS systems.

3-3-03. *Dept. of Pharmaceutical Chemistry*

130. Simultaneous Determination of Diclofenac Potassium and Methocarbamol in Ternary Mixture with Guaifenesin by Reversed Phase Liquid Chromatography

Ehab F. Elkady

Talanta, (82): 1604–1607 (2010) IF: 3.290

New, simple, rapid and precise reversed phase liquid chromatographic (RP-LC) method has been developed for the simultaneous determination of diclofenac potassium (DP) and methocarbamol (MT) in ternary mixture with guaifenesin (GF), degradation product of methocarbamol. Chromatographic separation was achieved on a Symmetry® Waters C18 column (150mm×4.6mm, 5_m). Gradient elution based on phosphate buffer pH (8)-acetonitrile at a flow rate of 1mL min−1 was applied. The UV detector was operated at 282nm for DP and 274nm for MT and GF. Linearity, accuracy and precision were found to be acceptable over the concentration ranges of 0.05–16, 0.5–160 and 0.5–160_gmL−1 for DP, MT and GF, respectively. The optimized method proved to be specific, robust and accurate for the quality control of the cited drugs in pharmaceutical preparation.

Keywords: Diclofenac potassium; Methocarbamol; Guaifenesin; Reversed phase liquid chromatography; Gradient elution; Pharmaceutical preparation.

131. Novel Substituted and Fused Pyrrolizine Derivatives: Synthesis, Anti-inflammatory and Ulcerogenecity Studies

Safinaz E. Abbas, Fadi M. Awadallah, Nashwa A. Ibrahim and Ahmed M. Gouda

European Journal of Medicinal Chemistry, 45: 482–491 (2010) IF: 3.269

Synthesis of several substituted pyrrolizines **10a-f**, **11a-f**, **13a-c**, pyrimidopyrrolizines **14a-c**, **15a-c**, and pyrrolizinopyrimidoisoindoles **12a-c** was discussed. The starting compounds 6-amino-7-cyano-*N*-(4-(un)substitutedphenyl)-2,3-dihydro-1*H*-pyrrolizine-5-carboxamides **9a-c** were reacted with different aldehydes, acid chlorides, and acid anhydrides to give the target compounds. The structures of the new compounds were characterized by spectral and elemental analyses. All compounds were tested for their anti-inflammatory activity using the carrageenan-induced rat paw oedema model and exhibited weak to good activities compared to ketorolac as the reference drug. Also, analgesic activity of selected compounds, which are the most active in the anti-inflammatory screening, was measured using the acetic acid-induced writhing model; revealing activities comparable to or higher than ketorolac. Ulcer indices for the most active compounds were calculated and some compounds showed no or minimal ulcerogenic effect compared to ketorolac.

Keywords: Pyrrolizines; Pyrimidopyrrolizines; Anti-inflammatory activity; Analgesic activity; Ulcerogenicity.

132. Synthesis, Anti-inflammatory and Ulcerogenicity Studies of some Substituted Pyrimido[1,6-a] Azepine Derivatives

Nehad A. El-Sayed, Fadi M. Awadallah, Nashwa A. Ibrahim and Mohammed T. El-Saadi

European Journal of Medicinal Chemistry, (45): 3147–3154 (2010) IF: 3.269

New series of pyrimido[1,6-a]azepines were prepared through reaction of the key amino compound **4** with various reagents to give a variety of 3-N-substituted amino derivatives **5-13**. The synthesized compounds included the Mannich bases **5a-c**, the formimidic acid ester **6**, the phenylformamidines **7a-c**, the benzylidine amino derivatives **8a-c**, the acetic acid derivatives **9**, **10a-c** and **11**, the carbamoylformates **12a,b** and the amides **13a,b**. All compounds were screened for their anti-inflammatory activity using the carrageenan-induced paw oedema in rats using diclofenac sodium as reference drug. In addition, ulcer indices for the most active compounds were calculated. Compounds **3**, **4**, **8a,c**, **11** and **12a,b** showed activity similar to or higher than diclofenac sodium with no or minimal gastric ulceration. The most active compound with no ulcerogenic effect is the amino derivative **4** (IC 50 = 6.61 mmol/kg).

Keywords: Pyrimido[1,6-a]azepines; Anti-inflammatory activity; Ulcerogenicity.

133. Design, Synthesis and Preliminary Evaluation of some Novel [1,4]Diazepino [5,6-b] Pyrrolizine and 6-(2-oxopyrrolidino)-1 Hpyrrolizine Derivatives as Anticonvulsant Agents

Safinaz E. Abbas, Fadi M. Awadallah, Nashwa A. Ibrahim and Ahmed M. Gouda

Med Chem Res, (2010) IF: 1.037

New series of diazepino[5,6-*b*]pyrrolizines **7a-c and 8a-c** and 6-(2-oxopyrrolidino)-1*H*-pyrrolizines **10a-c** were synthesized through acylation of the key aminonitrile derivatives **5a-c** (Scheme 1) with the appropriate acid chlorides. Subsequent cyclization reaction yielded the target compounds (Schemes 2 and 3). The chemical structure of the synthesized compounds was elucidated by spectral and elemental analyses. The synthesized compounds were evaluated for their ability to protect mice against PTZ-induced seizures, the most active compounds were **10a-c** where compound **10b** exhibited 67.9% relative potency compared to phenobarbitone and compound **10a** provided the maximum protection % of all compounds (60%) at dose of 50mg/kg comparable to phenobarbitone at a dose of 20mg/kg.

Keywords: Pyrrolizines; Pyrimidopyrrolizines; Anti-inflammatory activity; Analgesic activity; Ulcerogenicity.

3-3-04. ***Dept. of Pharmaceutical Organic Chemistry***

134. New octahydroquinazoline derivatives: Synthesis and hypotensive activity

Osama I. El-Sabbagh, Mohamed A. Shabaan, Hanan H. Kadry and Ehab Saad Al-Din

European Journal of Medicinal Chemistry, (45): 5390-5396 (2010) IF: 3.269

Several novel1-(4-chlorophenyl)-7,7-dimethyl-1,2,3,4,5,6,7,8-octahydro-5-oxo-3-(substituted phenyl)quinazoline derivatives (**2-21**)structurally similar to prazosin, were prepared using *Mannich* reaction of 3-(4-chlorophenylamino)-5,5-dimethyl-2-cyclohexenone (**1**) with different aromatic amines in the presence of formaline. The structures of the quinazoline derivatives were established using elemental and spectral analyses. Compounds **18, 20** and **21** were found to possess a high hypotensive effect through their expected α1-blocking activity like the clinically used drug prazosin but with advantageous of being did not cause reflex tachycardia and having prolonged duration of action when tested in adrenaline-induced hypertension in anaesthetized rats.

Keywords: Synthesis; Octahydroquinazoline derivatives; Hypotensive activity.

135. Synthesis of New Nonclassical Acridines, Quinolines, and Quinazolines Derived from Dimedone for Biological Evaluation

Osama I. El-Sabbagh, Mohamed A. Shabaan, Hanan H. Kadry and Ehab Saad Al-Din

Arch. Pharm. Chem. Life Sci, 343 (9) 514-523 (2010)

New nonclassical acridines, quinolines and quinazolines were prepared starting from cyclic *β*-diketones, namely dimedone through application of *Hantzsch,* Michael addition and *Mannich* reactions, respectively. The antimicrobial activity revealed that the nonclassical decahydroacridin-1,8-dione $\mathbf{2_e}$ bearing 3-nitrophenyl group and the hexahydroquinoline $\mathbf{4_e}$ having 2,4-dichlorophenyl moiety were the most active ones against both Gram-positive and negative bacteria when compared with the reference drug ciprofloxacin upon using disc diffusion method. Cytotoxic activity study for decahydroacridin-1,8-diones $\mathbf{2_{a-e}}$ against liver carcinoma ($HepG_2$) cells using the MTT cell viability assay revealed that decahydroacridin-1,8-dione bearing 4-methylphenyl moiety $\mathbf{2_d}$ showed higher cytotoxic activity (IC_{50} = 4.42 µg/ml) than other derivatives.

Keywords: Synthesis; Dimedone; Acridines; Quinolines; Quinazolines; Antimicrobial; Cytotoxic activity.

136. Design, Synthesis, and Molecular-modeling Study of Aminothienopyridine Analogues of Tacrine for Alzheimer's Disease

Mohga M. Badran, Maha Abdel Hakeem, Suzan M. Abuel-Maaty, Afaf El-Malah, and Rania M. Abdel Salam

Arch. Pharm. Chem. Life Sci, (10): 590–601 (2010)

2-Amino-3-cyanothiophenes were successfully condensed with a number of cycloalkanones to afford tacrine analogues in a one-step reaction mediated with Lewis acid. The newly synthesized compounds have been tested for their ability to inhibit acetylcholine esterase (AChE) activity using tacrine as standard drug. Some of the tested compounds showed moderate inhibitory activity in comparison with tacrine, especially compounds 6a which displayed the highest inhibitory activity. Furthermore, molecular-modeling studies were performed in order to rationalize the obtained biological results.

Keywords: AChE (Acetylcholine esterase); Alzheimer's disease; Docking; Tacrine analogues; Thienopyridines.

3-3-05. ***Dept. of Pharmaceutics and Industrial Pharmacy***

137. The Role of Ca2+ in Ultrasound-elicited Bioeffects: Progress, Perspectives and Prospects

Mariame A.Hassan, PaulCampbell and Takashi Kondo

Drug Discovery Today, (15): 892–906 (2010) IF: 6.630

Intracellular calcium (Ca(2+)) transients have been observed in association with exposure to therapeutic ultrasound and correlated to both early- and late-onset bioeffects. For example, it has been suggested that early 'ultra-short' Ca(2+) transients recorded during sonoporation can mediate Ca(2+)-dependent exocytosis and endocytosis processes as complementary mechanisms for membrane self-sealing. Moreover, apoptosis induction has been reported to occur through a partial mediation of a Ca(2+)-dependent pathway. In this review, we attempt to assemble the salient facts into a cogent whole, with special attention given to the relationships arising through altered Ca(2+) levels, which underscore its crucial role during ultrasonic interactions with biological systems and its consequent implications in the context of therapeutics.

Keywords: The role of Ca(2+) in ultrasound-elicited bioeffects.

138. Modulation Control Over Ultrasound-Mediated Gene Delivery: Evaluating the Importance of Standing Waves

Mariame A. Hassan**,** Mikhail A. Buldakov, Ryohei Ogawa, Qing-Li Zhao, Yukihiro Furusawa, Nobuki Kudo, Takashi Kondo and Peter Riesz

Journal of Controlled Release, (141): 70-76 (2010) IF: 5.949

Low modulation frequencies from 0.5 to 100Hz were shown to alter the characteristics of the ultrasound field producing solution agitation (<5Hz; region of "ultrasound streaming" prevalence) or stagnancy (>5Hz; region of standing waves establishment) (Buldakov et al., Ultrason. Sonochem., 2009). In this study, the same conditions were used to depict the changes in exogenous DNA delivery in these regions. The luciferase expression data revealed that lower modulations were more capable of enhancing delivery at the expense of viability. On the contrary, the viability was conserved at higher modulations whereas delivery was found to be null. Cavitational activity and acoustic streaming were the effecters beyond the observed pattern and delivery enhancement was shown to be mediated mainly through sonopermeation. To promote transfection, the addition of calcium ions or an echo contrast agent (Levovist((R))) was proposed. Depending on the mechanism involved in each approach, differential enhancement was observed in both regions and at the interim zone (5Hz). In both cases, enhancement in standing waves field was significant reaching 16.0 and 3.3 folds increase, respectively. Therefore, it is concluded that although the establishment of standing waves is not the only prerequisite for high transfection rates, yet, it is a key element in optimization when other factors such as proximity and cavitation are considered.

Keywords: Gene delivery Low-intensity ultrasound Pulse repetition frequency (PRF) Ultrasound streaming Standing waves.

139. Floating Tablet of Trimetazidine Dihydrochloride: An Approach for Extended Release with Zero-Order Kinetics

A.Abdelbary, O.N. El-Gazayerly, N. El-Gendy and A. Ali.

AAPS PharmSciTech, 11 (3): (2010) IF: 1.190

Trimetazidine dihydrochloride is an effective anti-anginal agent; however, it is freely soluble in water and suffers from a relatively short half-life. To solve this encumbrance, it is a prospective candidate for fabricating trimetazidine extended-release formulations. Trimetazidine extended-release floating tablets were prepared using different hydrophilic matrix forming polymers including HPMC 4000 cps, carbopol 971P, polycarbophil, and guar gum. The tablets were fabricated by dry coating technique. *In vitro* evaluation of the prepared tablets was performed by the determination of the hardness, friability, content uniformity, and weight variation. The floating lag time and floating duration were also evaluated. Release profile of the prepared tablets was performed and analyzed. Furthermore, a stability study of the floating tablets was carried out at three different temperatures over 12 weeks. Finally, *in vivo* bioavailability study was done on human volunteers. All tablet formulas achieved <0.5 min of floating lag time, more than 12 h of floating duration, and extended $t_{1/2}$. The drug release in all formulas followed zero-order kinetics. T4 and T8 tablets contained the least polymer concentration and complied with the dissolution requirements for controlled-release dosage forms. These two formulas were selected for further stability studies. T8 exhibited longer expiration date and was chosen for *in vivo* studies. T8 floating tablets showed an improvement in the drug bioavailability compared to immediate-release tablets (Vastrel® 20 mg).

Keywords: Effervescent; Extended release; Floating tablets; Oral drug delivery; Trimetazidine dihydrochloride.

140. Simultaneous HPLC Determination of Enalapril and Hydrochlorothiazide in Human Plasma and its Pharmacokinetic Application

N. Foda, O.N. El-Gazayerly A. Abd Elbary, and.Ghada Abdelbary

Journal of Pharmaceutical Sciences and Research, 2 (11): 786-794 (2010)

A sensitive and specific HPLC method has been developed and validated for the simultaneous determination of enalapril and hydrochlorothiazide in human plasma using C18 reversed-phase column.The average recoveries range from 0.005-0.1μg/ml and 0.01-0.2 μg/ml for each drug were 92.7% and

93.3 % respectively. The limit of detection were 2.5 and 0.14 ng /ml for enalapril and hydrochlorothiazide respectively. the validated method has been used successfully to study enalapril and hydrochlorothiazide pharmacokinetic, bioavailability and bioequivalence in 24 adult volunteers.

Keywords: Enalapril; Hydrochlorothiazide; HPLC determination; Human plasma; Bioequivalence; Pharmacokinetics; Bioavailability.

141. Effect of Formulation Design and Freeze-drying on Properties of Fluconazole Multilamellar Liposomes

O. H. El-Nesr , S. A. Yahiya and O.N. El-Gazayerly

King Saud University Saudi Pharmaceutical Journal, 18 (4): 217-224 (2010)

Fluconazole-entrapped multilamellar liposomes were prepared using the thin-film hydration method. The effects of cholesterol molar ratio, charge-inducing agents, and α-tocopherol acetate on encapsulation efficiency values and in vitro drug release of multilamellar liposomes were studied. Freeze-dried liposomal products were prepared with or without cryoprotectants. Results showed that incorporation of stearylamine resulted in an increased entrapment of fluconazole, whereas incorporation of dicetyl phosphate decreased the drug entrapment efficiency. The incorporation of α-tocopherol acetate into fluconazole multilamellar liposomes resulted in the increase of entrapment efficiency of fluconazole liposomes. In vitro release studies revealed that incorporation of cholesterol into multilamellar liposomal formulations decreased drug permeability from formulations. Positively charged fluconazole multilamellar liposomes gave rise to a slow release rate compared to neutral liposomes whereas negatively charged fluconazole liposomes showed a rapid release rate. Physical stability studies showed that lyophilized cake of liposomes without cryoprotectants was compact and difficult to reconstitute compared to fluffy easily reconstituted cakes upon using cryoprotectants. Fluconazole retained in freeze-dried liposomes without cryoprotectants was 63.452% compared to 91.877% using three grams of trehalose as a cryoprotectant per gram lipid in positively charged multilamellar liposomes. Physical stability studies showed superior potentials of the lyophilized product after reconstitution in comparison with those of a solution product.

Keywords: Fluconazole; Multilamellar liposomes; Freeze drying.

142. Formulation and Evaluation of Amlodipine Besylate Fast Dissolving Tablets

Ahmed Abdel Bary, Omneya M Khowessah and Mugahed M. Al-Gamrah

Inventi Rapid: Pharm Tech, 1 (1): 786-794 (2010)

Amlodipine besylate**,** {2-[(2-Aminoethoxy)methyl]-4-(2-chlorophenyl)-3-ethoxycarbonyl -5-methoxycarbonyl-6-methyl-1,4-dihydropyridine benzenesulfonate} is an antihypertensive drug of dihydropyridine calcium channel blocker class, administered orally as a long acting antihypertensive agent that is used in the treatment of acute and chronic hypertension and as prophylactic treatment of angina pectoris. Fast-dissolving tablets (FDTs) of amlodipine besylate were prepared by direct-compression method. Nine formulae having three subliming agents at three different concentration levels were prepared to assess the most efficiency and critical concentration level. Twelve formulae having three subliming agents at the predetermined level and two superdisintegrants at two different concentration levels were prepared to assess the efficiency of superdisintegrants and their critical concentration level. Six formula having three subliming agents at the most efficient level and coprocessed superdisintegrant at different concentrations levels were prepared to assess the efficiency of coprocessed superdisintegrants and its critical concentration level. The prepared tablets were evaluated with respect to their shape, size, organoleptic properties, drug content uniformity, weight variation, mechanical strength, water absorption ratio, wetting time, dissolution behavior and disintegration time. All the prepared powder blends showed passable to excellent flowability. The prepared tablets were of acceptable drug content and weight variation according to USP specifications. Tablets containing camphor (15%) and Ac- Di- Sol (8%) showed superior organoleptic properties, mechanical properties, water absorption ratio, wetting time, along with excellent in-vivo disintegration time and drug release, as compared to other formula.

Keywords: Amlodipine besylate; Subliming agent; Superdisintegrant.

143. Comparative Study on the Different Techniques for the Preparation of Sustained-Release Hydrophobic Matrices of A Highly Water-Soluble Drug

Shady M. Abd El-Halim, Maha M. Amin, Omaima N. El-Gazayerly, Nabaweya A. Abd El-Gawad.

Drug Discoveries and Therapeutics, 4 (6): (2010)

The objective of the present study was to control the release of freely water-soluble salbutamol sulphate (SS) over a prolonged period of time by embedding the drug into slowly eroding waxy matrix materials such as Precirol® ATO 5, Compritol® 888 ATO, beeswax, paraffin wax, carnauba wax, and stearyl alcohol. The matrices were prepared by either direct compression or hot fusion techniques. The compatibility of the drug with the various excipients was examined using differential scanning calorimetry (DSC). A factorial design was employed to study the effect of polymer type, polymer concentration (15% and 35%), and filler type (Avicel® PH101 and dibasic calcium phosphate dehydrate (DCP) on the *in vitro* drug release at 6 h. Results of DSC confirmed drug excipient compatibility. Increasing the polymer ratio resulted in a significant retardation of drug release. The use of DCP resulted in significant retardation and incomplete drug release while the use of Avicel did not. The hot fusion method was

found to be more effective than the direct compression method in retarding SS release. A Precirol formulation, prepared using the hot fusion technique, had the slowest drug release, releasing about 31.3% of SS over 6 h. In contrast, Compritol, prepared using the direct compression technique, had the greatest retardation, providing sustained release of 59.3% within 6 h. A hydrophobic matrix system is thus a useful technique for prolonging the release of freely water-soluble drugs such as salbutamol sulphate.

Keywords: Salbutamol sulphate; Controlled release; Hot fusion.

03-04 National Cancer Institute

3-4-01. *Dept. of Clinical Pathology*

144. Solvent-detergent Filtered (S/D-F) Fresh Frozen Plasma and Cryoprecipitate Minipools Prepared in A Newly Designed Integral Disposable Processing Bag System

M. El-Ekiaby, M. A. Sayed, C. Caron, S. Burnouf, N. El-Sharkawy, H. Goubran, M. Radosevich, J. Goudemand, D. Blum, L. de Melo, V. Souli´e, J. Adam and T. Burnouf

Transfusion Medicine, (20): 48–61 (2010) IF: 1.808

Solvent-detergent (S/D) viral inactivation was recently adapted to the treatment of single plasma donations and cryoprecipitate minipools. We present here a new process and a new bag system where the S/D reagents are removed by filtration and the final products subjected to bacterial (0· 2 μm) filtration. Recovered and apheresis plasma for transfusion (FFP) and cryoprecipitate minipools (400 پ} 20 mL) were subjected to double-stage S/D viral inactivation, followed by one oil extraction and a filtration on a S/D and phthalate [di(2-ethylhexyl) phthalate (DEHP)] adsorption device and a 0· 2 μm filter. The initial and the final products were compared for visual appearance, blood cell count and cell markers, proteins functional activity, von Willebrand factor (VWF) multimers and protein profile by sodium dodecyl sulfate–polyacrylamide gel electrophoresis (SDS–PAGE). Tri (*n*-butyl) phosphate (TnBP) was quantified by gas chromatography and Triton X-45 and DEHP by high-performance-liquid chromatography (HPLC). General safety tests were by 6· 5 mL/kg intravenous injection in rats. The treated plasmas and cryoprecipitates were very clear and the protein content and functionality, VWF multimers and SDS–PAGE profiles were well preserved. TnBP and Triton X-45 were <1 and <25 ppm, respectively, and DEHP (about 5 ppm) was less than it was in the starting materials. Blood cell counts and CD45, CD61 and glycophorin A markers were negative. There was no enhanced toxicity in rats. Thus, plasma and cryoprecipitate can be S/D-treated in this new CE-marked disposable integral processing system under conditions preserving protein function and integrity, removing blood cells, S/D agents and DEHP, and ensuring bacterial sterility. This process may offer one additional option to blood establishments for the production of virally inactivated plasma components.

Keywords: Blood establishments; Cryoprecipitate; FFP; Filtration; Plasma; Solvent-detergent; Viral inactivation.

145. Internal Tandem Duplication of FLT3 Gene in Egyptian Adult Acute Myeloid and Acute Lymphoblastic Leukemia

Nahla M. El Sharkawy and Thoraya M. Abdel Hamid

Journal of American Science, 6 (9): 344-352 (2010)

Background: FLT3 plays an important role in stem cell proliferation, differentiation, and survival. The most common mutation in the *FLT3* gene is internal tandem duplication (*FLT3*/ITD). Several studies have demonstrated that FLT3 mutations are a strong detrimental prognostic factor in AML and ALL. Aim: Our study was designed to evaluate the relative frequency of *FLT3*/ITD status in adult AML and ALL patients and its possible impact on response to treatment and overall survival. **Patients and Methods**: This study was carried out on 110 newly diagnosed adult acute leukemia cases including 61 AML and 49 ALL. Bone marrow or peripheral blood samples were collected from patients at diagnosis. All samples were analyzed for mutation in exon 11 of the *FLT3* gene using genomic PCR method. *FLT3*/ITD appears as an extra PCR band (mutant band) in addition to the 133-bp wild band. ALL cases were treated according to the risk adapted chemotherapy protocol while mature B phenotype cases were excluded from the study. AML cases received induction with 3&7 regimen combing Daunorubicin, 45m/m2 IV day 1-3 and cytosine arabinoside100 mg /m2 by continuous infusion from day 1 to 7 as an induction regimen. Evaluation of response was carried out at the end of induction. **Results**: *FLT3*/ITD mutant band was found in 21.3 % (13 / 61) of AML cases. The highest frequency of *FLT3*/ITD was associated with M3 (40%) followed by M5 (37.5%) and M4 (33.3%), less frequent in M2 (13.6%), M1 (13.3%) and none in M0 and M7. In ALL cases *FLT3*/ITD was detected in (5/44) 10.2%. The highest frequency was associated with precursor B phenotype (11.4%) and less in T- ALL patients (7.1%). No association was detected between the *FLT3*/ITD on one side and age, gender, high leucocytic count, BM blasts, DNA index or CD34 expression on the other side in either AML or ALL. We could not find statistically significant difference in response to treatment between *FLT3*/ITD positive and negative cases in either AML or ALL patients. **Conclusion**: *FLT3*/ITD in our AML patients was 21.3 % which is comparable to the literature. However in adult ALL it was much higher than that reported in literature. In contrast to the literature we failed to demonstrate a detrimental effect of *FLT3*/ITD on treatment outcome in adult AML patients. Further study on a large scale is recommended to identify the prognostic impact of *FLT3*/ITD in adult ALL.

Keywords: Prognostic factors; Adult AML and ALL; FLT3.

3-4-02. ***Dept. of Diagnostic Radiology***

146. Effect of Y-90 SIR-Spheres Therapy for Multiple Liver Metastases in a Variety of Tumors

Isis W. Gayed, Hisham Wahba, David Wan, Usha Joseph and Ravi Murthy

Journal of Cancer Science and Therapy, (2): 043-046 (2010)

Objective: To evaluate the outcomes of patients receiving Y- 90 SIR-Spheres in patients with multiple liver metastases from different tumors. **Methods:** 29 consecutive patients with multiple liver metastases from colorectal (13), Islet cell tumors (9), carcinoid tumors (4) or non-small cell lung cancer (3) who were treated with Y-90 SIR-Spheres between March, 2003 and February, 2006 were included. Only patients who had follow-up radiological exams at our institution were included. Data regarding Y-90 SIR-Spheres dose, lobe of liver treated, and chemotherapy (CTx) administered were collected. Patients' outcomes were evaluated based on radiological evidence of change in size and number of liver metastases. **Results:** The study population included 8 females and 21 males at a mean age of 60y. The mean Y-90 SIR-Spheres dose administered was 39.8 mCi. Both lobes of the liver, the right lobe only or the left lobe only were treated in 26, 2, 1 patients, respectively. Sixteen patients received Y-90 SIR-Spheres after CTx failure, 5 patients as adjuvant therapy after completion of CTx, 7 patients as concurrent therapy and one patient refused repeat CTx. The mean interval between the last CTx and Y-90 SIR-Spheres was 108 days. Four patients (14%) demonstrated radiological improvement and 9 (31%) were stable for a mean interval of 2.8 mo. after Y-90 SIR-Spheres infusion. Sixteen patients (55%) demonstrated continued progress of liver metastases. **Conclusion:** Y-90 SIR-Spheres therapy is useful in reducing or stabilizing multiple liver metastases from a variety of tumors.

Keywords:Y-90; SIR-Spheres; SIR therapy liver metastases.

3-4-03. ***Dept. of Medical Oncology***

147. Treatment of the Pregnant Mother with Cancer: A Systematic Review on the use of Cytotoxic, Endocrine, Targeted Agents and Immunotherapy During Pregnancy. Part II: Hematological Tumors

Hatem A. Azim Nicholas Pavlidis and Fedro A. Peccatori

Cancer Treatment Reviews, (36): 110–121 (2010)
IF: 5.295

Managing pregnant patients with hematological tumors pose even more conflicts compared to solid tumors. Unlike the majority of solid tumors, hematological malignancies are potentially curable; hence it is important to deliver the best treatment options available, which sometimes could be too aggressive to deliver during pregnancy. In part II, we report the results of women with hematological malignancies treated with systemic therapies during the course of pregnancy. Lymphoma, acute leukemia and chronic myeloid leukemia were the most commonly treated. We discuss the safety of the different regimens reported and propose alternatives to standardized approaches in case they pose significant risk to the pregnancy and/or the fetus.

Keywords: Leukemia in pregnancy; Lymphoma in pregnancy; Rituximab; Chemotherapy; Safety.

148. Treatment of the Pregnant Mother with Cancer: A Systematic Review on the use of Cytotoxic, Endocrine, Targeted Agents and Immunotherapy During Pregnancy. Part I: Solid Tumors

Hatem A. Azim, Fedro A. Peccatori and Nicholas Pavlidis

Cancer Treatment Reviews, (36): 101–109 (2010) IF: 5.295

The association of cancer and pregnancy is increasingly encountered nowadays in clinical practice. Due to the relative rarity of the situation, it lacks a systematized approach. Different systemic therapies are used in managing cancer with uncertainty regarding the potential hazards they could pose on the pregnancy and/or the fetus. We have performed a systematic review of literature to identify all reports addressing cancer patients who were exposed to any of the known systemic therapies during the course of the pregnancy. The results were discussed in two parts; part I addresses pregnant patients with solid tumors while part I for those with hematological malignancies. In part I, we identified different solid tumors diagnosed and treated during the course of pregnancy. Breast cancer was the most commonly treated followed by ovarian cancer. Other tumors were treated as well including lung cancer, cervical cancer, sarcoma and melanomas. It is important to acknowledge the intent of therapy (palliative vs. curative) and the patients has to be properly counseled to reach an informed decision. We aim to provide a more robust consensus on how to approach these cases and provide a higher degree of evidence to support the safety of applying certain management strategies over the other.

149. Lung Cancer in the Pregnant Woman: to Treat or not to Treat, that is the Question

Hatem A. Azim, Fedro A. Peccatorib and Nicholas Pavlidis

Lung Cancer, (67): 251–256 (2010) IF: 3.140

Lung cancer in pregnancy is a rare situation; however, it is increasingly reported in the past two decades. The association might be more encountered in the coming years due to the rising trends of cigarette smoking among young women and tendency to delay pregnancy to later in life. We performed a literature search without any date or language restriction and identified 44 cases diagnosed and/or treated for lung cancer during the course of pregnancy. Patients had poor post-partum

outcome with less than one-forth alive at 1 year following delivery. There was a high incidence of metastases to the products of conception reaching 26%. Eight patients were treated with systemic therapies during the course of gestation with normal fetal outcome and no evidence of fetal or placental metastases. Counseling of these patients is very important. Apart from the clinical conflict they pose, some ethical aspects should be taken in consideration. The poor maternal prognosis should be discussed and the patient's autonomy should be respected to decide whether she wants to keep the pregnancy or not.

Keywords: Lung cancer in pregnancy; Gestation; Chemotherapy; Ethical conflict; Placental metastases; Fetal metastases.

150. Simultaneous Targeting of Estrogen Receptor and HER2 in Breast Cancer

Hatem A. Azim and Martine J. Piccart

Expert Rev. Anticancer Ther, 10 (8): 1255–1263 (2010)
IF: 2.493

Approximately 50% of HER2-positive breast cancers express estrogen receptor (ER) and these tumors are characterized by short-lived responses to hormonal agents. Preclinical models have shown that dual targeting of ER and HER2 could reverse and delay the development of drug resistance. Two studies (TAnDEM & EGF3008) have recently been published addressing the combined use of an aromatase inhibitor (AI) and an anti-HER2-targeted agent. Both studies showed that the combined approach is associated with improvement in response rate and progression-free survival compared with an AI alone with an acceptable toxicity profile. These results would indeed extend the treatment options for patients with ER/HER2-positive metastatic breast cancer. In this article, we discuss how the improved understanding of the complex cross-talk between ER and HER2 has resulted in better clinical outcomes. We analyze clinical evidence regarding the combined use of AIs and anti-HER2-targeted agents. We also touch on possible mechanisms of resistance and ways to improve research in this field.

Keywords: Aromatase inhibitors; Cross-talk; Estrogen receptor: HER2; Lapatinib; Resistance; Trastuzumab.

3-4-04. *Dept. of Nuclear Medicine*

151. False-positive F-18 FDG Uptake in PET/CT Studies in Pediatric Patients with Abdominal Burkitt's Lymphoma

Raef Riada, Walid Omara, Iman Sidhomb, Manal Zamzamb, Iman Zakyc, Magdy Hafezd and Hussein M. Abdel-Dayeme

Nucl Med Commun, Doi 10.1007/s00259-009-1276-1279
IF: 1.315

IntroductionIn pediatric patients with abdominal Burkitt's lymphoma, the involvement of the gastrointestinal tract and abdominal lymph nodes is the main presenting feature of the disease. Chemotherapy is the main treatment modality and could be preceded by surgical excision of the abdominal masses. To achieve cure or long-term disease-free survival a balance has to be struck between aggressive chemotherapy and the probability of tumor necrosis secondary to treatment complicated by acute infections, perforation or intestinal bleeding. F-18 fluorodeoxyglucose-positron emission tomography/computed tomography (F-18 FDG-PET/CT) has been recommended over conventional imaging modalities for the follow-up of these patients and for monitoring treatment response. As the incidences of postchemotherapy complications are high, the positive predictive value of PET/CT studies in these patients is very low and the false-positive rate is high from acute infections and tumor necrosis. Accordingly, histopathological confirmation of positive lesions on F-18 FDG-PET/CT studies is essential. This is especially important as post-therapy complications might present with nonspecific and nonurgent symptoms. At the same time initiating a second course of salvage chemotherapy is risky.

Aim of studyRetrospectively reviewed F-18 FDG-PET/CT studies for 28 pediatric patients with abdominal Burkitt's lymphoma and diffuse large B-cell lymphoma after their treatment with chemotherapy or surgery.

ResultsFour positive studies were found. All had pathological verification and were because of acute inflammation and tumor necrosis and there was no evidence of viable tumor cells. One patient had multiple recurrent lesions in the abdomen after the initial surgical excision and before starting chemotherapy. The incidence of acute complications in this series is 10.7%.

ConclusionThis study confirms the high incidence of tumor necrosis and inflammation after chemotherapy for the abdominal Burkitt's lymphoma and consequently, the incidence of true-positive F-18 FDG studies is low. This necessitates the need for histopathological confirmation of positive studies.

Keywords: Abdominal Burkitt's lymphoma; F-18 FDG-PET/CT; Pediatric malignant lymphoma; Tumor necrosis.

3-4-05. *Dept. of Radiotherapy and Nuclear Medicine*

152. Comparison of Dosimetric Characteristics of Siemens Virtual and Physical Wedges for ONCOR Linear Accelerator

Ehab M. Attalla, H. S. Abo-Elenein, H. Ammar and Ismail El-Desoky

Journal of Medical Physics, 35 (3): 164-169 (2010)

Dosimetric properties of virtual wedge (VW) and physical wedge (PW) in 6- and 10-MV photon beams from a Siemens ONCOR linear accelerator, including wedge factors, depth doses, dose profiles, peripheral doses, are compared. While there is a great difference in absolute values of wedge factors, VW factors (VWFs) and PW factors (PWFs) have a similar trend as a function of field size. PWFs have stronger depth dependence than VWF due to beam hardening in PW fields. VW dose profiles in the wedge direction, in general, match very well with those of PW, except in the toe area of large

wedge angles with large field sizes. Dose profiles in the non-wedge direction show a significant reduction in PW fields due to off-axis beam softening and oblique filtration. PW fields have significantly higher peripheral doses than open and VW fields. VW fields have similar surface doses as the open fields, while PW fields have lower surface doses. Surface doses for both VW and PW increase with field size and slightly with wedge angle. For VW fields with wedge angles 45° and less, the initial gap up to 3 cm is dosimetrically acceptable when compared to dose profiles of PW. VW fields in general use less monitor units than PW fields.

Keywords: Physical wedge; Virtual wedge; Wedge; Wedge dosimetry.

3-4-06. *Dept. of Tumour Biology*

153. The Alternative End-joining Pathway for Repair of DNA Double-strand Breaks Requires PARP1 but is not Dependent Upon Microhomologies

Wael Y. Mansour,Tim Rhein and Jochen Dahm-Daphi

Nucl. Acids Res, 38 (18): 6065-6077 IF: 7.479

Non-homologous end-joining (NHEJ), the major repair pathway for DNA double-strand breaks (DSB) in mammalian cells, employs a repertoire of core proteins, the recruitment of which to DSB-ends is Ku-dependent. Lack of either of the core components invariably leads to a repair deficiency. There has been evidence that an alternative end-joining operates in the absence of the core components. We used chromosomal reporter substrates to specifically monitor NHEJ of single I-SceI-induced-DSB for detailed comparison of classical and alternative end-joining. We show that rapid repair of both compatible and non-compatible ends require Ku-protein. In the absence of Ku, cells use a slow but efficient repair mode which experiences increasing sequence-loss with time after DSB induction. Chemical inhibition and PARP1-depletion demonstrated that the alternative end-joining *in vivo* is completely dependent upon functional PARP1. Furthermore, we show that the requirement for PARP1 depends on the absence of Ku but not on DNA-dependent protein kinase (DNA-PKcs). Extensive sequencing of repair junctions revealed that the alternative rejoining does not require long microhomologies. Together, we show that mammalian cells need Ku for rapid and conservative NHEJ. PARP1-dependent alternative route may partially rescue the deficient repair phenotype presumably at the expense of an enhanced mutation rate.

Keywords: Alternative NHEJ; DSB repair; GFP-based vectors; PARP1; Microhomology.

154. Targeting DNA Double-strand Break Repair: is it the Right Way for Sensitizing Cells to 5-fluorouracil?

El-Awady RA, Saleh EM and Dahm-Daphi J.

Anti-Cancer Drugs, 21 (3): 277-287 (2010) IF: 2.230

Inhibition of the repair of 5-fluorouracil (FU)-induced DNA lesions may improve the response of many tumors to this anticancer agent. Despite the identified associations between DNA strand breaks and the lethality of thymidylate synthase inhibitors, the role of DNA double-strand break (DSB) repair pathways in a cellular response to 5-FU treatment has not been studied yet. Isogenic cell lines defective (irs1SF), wild type (AA8), or reconstituted (1SFK8) in the DSB repair protein XRCC3 were used to investigate the effect of defective DSB repair on the overall sensitivity of cells to 5-FU and to see how targeting DSB repair may affect other cellular responses to 5-FU. Treatment with 5-FU resulted in (i) similar induction of DSB in both cell lines as indicated by the formation of gamma-H2AX (a marker for DSB). The repair of these breaks was complete in AA8 but not in irs1SF cells. (ii) Concentration-dependent reduction in the survival of both cell lines. The AA8 cells were six times more sensitive to 5-FU than the irs1SF cells. (iii) An earlier and more prolonged G(1)/S phase arrest in AA8 compared with the irs1SF cells. (iv) Induction of apoptosis as indicated by sub-G(1) cells and caspase-3 activity in AA8 but not in irs1SF cells. XRCC3 complementation of irs1SF cells restored the wild-type phenotype. This result shows that targeting DSB repair is not always associated with increased sensitivity to DNA damaging agents such as 5-FU because it may affect other cellular responses such as cell cycle regulation and induction of apoptosis.

Keywords: Apoptosis; DNA double-strand breaks; DNA repair; 5-fluorouracil, XRCC3.

155. Expression of RAD51, BRCA1 and P53 does not correlate with Cellular Radiosensitivity of Normal Human Fibroblasts

Saleh EM and El-Awady RA.

Irish J Med Sci, (2010) IF: 0.696

Aims: To evaluate the potential role of key DNA repair proteins in the sensitivity of normal human fibroblasts to ionising radiations. Methods: Radiosensitivity of six human fibroblast strains established from skin biopsies of women who had undergone conservative breast surgery and received a curative breast conserving radiotherapy was measured by colony-formation assay. The expression level of RAD51, BRCA1 and p53 proteins were studied using western blot analysis. Results: The six fibroblast strains represent a typical spectrum of normal human radiosensitivity with the surviving fraction measured for a dose of 3.5 Gy (SF3.5) ranging from 0.21 to 0.40. We found that these differences in cell survival did not correlate with the expression of RAD51, BRCA1 nor

p53 in the tested normal human fibroblast strains. Conclusions: We conclude that measurement of protein expression of the three tested genes (RAD51, BRCA1 and p53) did not reflect sensitivity of normal fibroblasts to IR.

Keywords: RAD51; BRCA1; p53; DNA repair; Ionizing radiation.

03-05 Faculty of Nursing

3-5-01. *Dept. of Maternal-Newborn Health Nursing*

156. An Introduction of OSCE versus Traditional Method in Nursing Education: Faculty Capacity Building & Students' Perspectives

Shadia A. Eldarir, Hanan A. El Sebaae, Hanaa A. El Feky, Hewida A. Hussien, Nagwa Abd El Fadil and Inas H. El Shaeer

Journal of American Science, 6 (12): (2010) IF: 0.000

Background Assessment of clinical competence is of great importance when evaluating the expected learning outcomes of nursing education. Increasing number of students enrolled at Egyptian nursing faculties might increase the chances of malpractice that compromise patients' conditions. Therefore it is challenging to have such an objective assessment tool to comprehensively assess students' clinical competencies especially with increased students' number. Aims of the current project are building capacity of nursing faculties and staff members for OSCE; establishing simulated learning experiences (OSCE) in nursing practice; comparing the feasibility, utility, and effectiveness of using OSCE versus traditional clinical assessment; examining faculty and students perspectives for OSCE; and evaluating the effectiveness of OSCE versus traditional clinical assessment. Method: To achieve aims of this study needs' assessment of faculty members were carried out during conduction of raising awareness seminar about OSCE which attended by 72 faculty and staff members from both Cairo and Ain Shams Universities. A total of 7 workshops were held to build up their capacities on the scheme of OSCE and clinical scenario writings .One-hundred and forty faculty and staff members were attended and pre-post tests a were administered. Out of the 140, 31 were trained as data collectors. . Implementation of the OSCE was carried out on 400 second and third year students at the areas of critical care units. Comparison of students' achievements at traditional and OSCE methods were carried out. Faculty's and students' perspectives were investigated. Results: Needs' assessment revealed that 57% of faculty members knew nothing about OSCE and 98.6% of them had no experience in using OSCE; also a high statistical significant differences between OSCE and traditional assessment groups in the first and second trial ($t = 2.423$, $p= 0.016$), and ($t= 6.23$, $p= 0.000$) respectively. The students' achievements were better with OSCE. Faculty staff members indicated that, OSCE saves time (76.3%), prepares highly qualified competent students (62.5%) and improve students' performance (62.5%). Conclusion OSCE examination offers an attractive option for assessment of students' competency. It provided particular strengths in terms of faculty staff objectivity and reliability of the assessment process for all students, especially when compared with other methods of assessing practice.

Keywords: Assessment; OSCE; Traditional method; Faculty capacity building; Students' perspectives.

(4)
Social & Humanity Sciences Sector

4-01. Faculty of Economics and Political Science

4-1-01. ***Dept. of Statistics***

157. Bayes Estimation of Gompertz Distribution Parameters and Acceleration Factor Under Partially Accelerated Life Tests with Type-I Censoring

Ali A. Ismail

Journal of Statistical Computation and Simulation, 80 (11): 1253–1264 (2010) IF: 0.5

In this paper, the Bayesian approach is applied to the estimation problem in the case of step stress partially accelerated life tests with two stress levels and type-I censoring. Gompertz distribution is considered as a lifetime model. The posterior means and posterior variances are derived using the squared-error loss function. The Bayes estimates cannot be obtained in explicit forms. Approximate Bayes estimates are computed using the method of Lindley [D.V. Lindley, *Approximate Bayesian methods*, Trabajos Estadistica 31 (1980), pp. 223–237]. The advantage of this proposed method is shown. The approximate Bayes estimates obtained under the assumption of non-informative priors are compared with their maximum likelihood counterparts using Monte Carlo simulation.

Keywords: Bayesian estimation; Step-stress test; Acceleration factor; Gompertz distribution; Maximum likelihood; Squared-error loss function; Non-informative priors; Posterior mean; Posterior variance; Type-I censoring; Lindley's approximation; Monte carlo simulation.

158. Optimal Planning of Failure-step Stress Partially Accelerated Life Tests Under Type-II Censoring

Ali A. Ismail and H.M. Aly

Journal of Statistical Computation and Simulation, 80 (12): 1335–1348 (2010) IF: 0.5

This paper considers optimum plans for failure-step stress partially accelerated ,life tests with two stress levels under type-II censoring assuming Weibull distribution as a lifetime model. The optimum test plans determine the optimum proportion of test units failing at each stress according to a certain optimality criterion. The D-optimality criterion is considered. Some numerical illustrations are provided to illustrate the proposed procedure.

Keywords: Partially accelerated life test; Failure-step stress test; Weibull lifetime distribution; Type-II censoring; Maximum likelihood method; Fisher-information matrix; Generalized asymptotic variance; Optimal design; D-optimality.

159. Cost Analysis of A Two Dissimilar-Unit Cold Standby Redundant System Subject to Inspection and Random Change in Units

C.H.Matta and G.S. Mokaddis

J. of Mathematics and Statistics, 6 (3): 306-315 (2010)

Problem statement: This paper deals with the cost analysis of a two dissimilar unit cold standby redundant system subject to inspection and random change in units. In this system each unit works in two different modes normal and total failure. Assuming that the failure, repair, post repair, interchange of units and inspection times are stochastically independent random variables each having an arbitrary distribution. Approach: The system is analyzed by semi Markov process technique Results: The time-dependent availability, steady-state availability, busy period analysis, expected number of visits by the repairman were obtained numerically and cost analysis was obtained numerically and graphically Conclusion: Expected cost per unit time decreased with respect to the increase of failure rate.

Keywords: Availability; Busy period; Expected number of visits by the repairman; Cost analysis.

4-02. Faculty of Commerce

4-2-01. ***Dept. of Accounting***

160. Intellectual Capital Reporting in Knowledge Economy: the Relevance of Corporate Governance

Tariq H. Ismail

VDM Publishing House Ltd: Germany, (2010)

The twenty-first century is a century of the knowledge economy, where large investments are directed to intellectual assets rather than physical assets. Intellectual capital reporting is a new powerful instrument in the knowledge domain, which serves as a management and communication instrument and delivers information for investment decisions. The crash of the dot com companies and the debacle of Enron and World Com have refocused the discussion on intellectual capital and its indispensability in corporate governance. This book discusses comprehensive measurement models and reporting of intellectual capital and investigates the governance drivers that might impact the voluntary intellectual capital disclosures. As a manager, investor, accountant, auditor, standards setter and policy maker, you will realize the role played by corporate governance in enhancing information disclosed on intellectual capital, which in turn emphasizes the need for more effective corporate governance mechanisms that provide greater maintaining of financial accounting processes to ensure integrity of financial reporting.

Keywords: Intellectual capital; Human capital; Customer capital; Structual cappital; Financial reporting; Corporate governance; Egypt.

161. Firm Characteristics Determinants and Disclosure Level in Emerging market of Egypt

Tariq H. Ismail, Nermeen F. Shehata and Khaled Dahawy

Ismail, T. (ed.), Perspectives in Accounting Practices: Corporate Disclosure, Performance, Governance and Risk Management, VDM Publishing House Ltd: Germany, (2010)

Numerous efforts have been exerted by Egyptian regulators that ended with issuance of the complete set of the Egyptian Accounting Standards in 2006. More adequate information disclosure is expected after compliance with the newly issued standards. The research has two main objectives. Firstly, to measure listed companies' mandatory disclosure in the first year of implementing the Egyptian Accounting Standards, and secondly, to assess the relationship between firm characteristics and mandatory disclosure level in the Egyptian environment. Firm characteristics have been divided as most studies on disclosure, into three groups: structure-related, market-related, and performance related characteristics. 2007 annual reports of 39 listed companies on the Egyptian Stock Exchange are used. Findings reveal that the average mandatory disclosure level was 74%, which is considered a low level as being mandatory. This shows that Egyptian regulators must exert more effort to make compliance with the Egyptian Accounting Standards obligatory. Only when enforcements are put into effect, penalizing non compliance companies, mandatory disclosure is expected to reach the utmost level. Moreover, findings indicate that company size, and auditor type have a positive significant relationship with disclosure level, whereas liquidity has a negative relationship. The secretive culture existing in the Egyptian environment explains the current results.

Keywords: Financial disclosure; Mandatory disclosure; Culture factors; Financial reports; Financial statements; Profitability; Return on assets; Multiple regression.

4-03. Faculty of Arts

4-2-01. *Dept. of English*

162. Epistolary Memory: Revisiting Traumas in Women's Writing

Walid El Hamamsy

Alif: Journal of Comparative Poetics, (2010)

This article deals with two epistolary novels: Alice Walker's *The Color Purple* and Hanan al-Shaykh's *Beirut Blues*, showing the similarities between the two works from the formal/structural point of view as well as pointing out the function of the letter form and its symbolic significance in each. It tackles the confessional nature of the letters and the way they help the two protagonists in achieving a better understanding of their positions, even though the letters written by both protagonists are for the most part one-sided, and do not receive responses as in regular correspondence.

Keywords: Memory; Trauma; Epistolary novel; Women's writing.

4-2-02. *Dept. of Psychology*

163. Impact of Integration and a Cognitive Training Program on Basic Cognitive Processes Among Egyptian Preschoolers With Down Syndrome

Fadia Elwan and Mariam Nour El Din

Developmental Disabilities Bulletin, 38 (1 & 2): 1-19 (2010)

Forty preschool children with Down Syndrome were selected from Egyptian preschool settings that were designed for mentally retarded children. The children were divided randomly into three intervention groups and one non-intervention control group. One intervention group was exposed to an integrated program for two hours per day three times a week. The second group received a cognitive training program based on PASS theory of intelligence. The third group was exposed to both integration as well as introduced to the cognitive training program. The relative efficacy of each intervention was tested by pre-and post test performance on simultaneous, successive and attention processes. Measured tasks were modified to fit to the intelligence level of preschoolers with Down Syndrome. ANCOVA results showed that the largest improvement in all the three cognitive processes occurred for the cognitive training group. Results were discussed in terms of specific problems related to implementing a successful integration program as well as mechanisms that stand for the big improvement made by the cognitive training group.

Keywords: Developmental Disabilities; Integration; Mental Retardation.

4-2-03. *Dept. of Spanish Language and Literatures*

164. Murder Frontiers and Guilty Identities: "Moors" and "Blacks" in the Spanish Literature of the New Millennium

Rasha Ahmed Ismail

Anaquel de Estudios Árabes, (21): 235-252 (2010)

The heterogeneity and the hybridism that characterize the present Spanish society, as opposed to the ethnocentrism of long ago, leaves their clear marks in the narrative production of the two last lustrums. In this work we will try to study the impact of the new social and political phenomenon on the present Spanish novel guided by what Arabic, Muslim and African heritage and the Orientalism leave in the Spanish imaginary.

Keywords: Immagration. The "other". Morish and Black. Spanish Novel.

165. El Paradigma Del Héroe En La Cuentística De Cortázar

Abeer Mohamed Abd El Hafez

Estudios Hispánicos, (57): 510-520 (2010)

This paper aims to high light the concept of the protagonist in the short stories of the Argentinean writer Julio Cortázar. The protagonic roles in his stories introduce a kind of symbols of the stereotype of the Latin American citizen in general and the Argentinean in particular. On the other hand we will try to analyze the function of the actors in the narrative text, considering the poetic of Cortázar based on the fantasy between other aspects.

Keywords: Julio Cortázar; Latin American short stories; Surrealism; Protagonist.

4-04. Faculty of Archeology

4-3-01. *Dept. of Conservation*

166. Investigation and Analysis of Three Gilded Wood Samples from the Tomb of Tutankhamun

Mai M. Rifai and Nesrin M.N. El Hadidi

Decorated Surfaces on Ancient Egyptian Objects: Technology, Deterioration and Conservation; J. Dawson, C. Rozeik, M.M. Wright, (2010)

This paper describes the examination and documentation of three samples of gilded wood from the tomb of the pharaoh Tutankhamun. The samples were sent for identification at the Royal Botanic Gardens in Kew in 1932 and returned to Egypt for further examination in 1984. By studying these samples using techniques such as scanning electron microscopy–energy dispersive spectroscopy (SEM-EDS), X-ray diffraction (XRD), polarised light microscopy (PLM) and Fourier transform infrared spectroscopy (FTIR), variation in materials became evident. The composition of the gold leaf and the plaster layer varies, as does the type of wood used. Different imported coniferous wood species were used for the funerary furniture, such as *Cedrus libani* and *Cupressus sempervirens*. The difference in the colour of the gold leaf was due to a wide variation in the composition and concentration of the alloying elements. The rich red colour of one of the samples was originally considered to be due to the presence of cuprite but elemental analysis using EDS showed the presence of iron. The thickness and composition of the textile, gilding and gesso layers were investigated, and the condition of the wood, substrate and gilding was documented.

In the samples studied, two important layers were applied between the wood and gold leaf. On each sample, linen textile had been glued onto the wood. This was then covered by a second layer of gesso. In samples 1 and 3, rough gesso was overlain by fine gesso. In sample 2, a rough gesso layer was overlain by a layer of black pigment, applied between the gesso layer and the gold leaf. It is interesting to note that, although the samples come from the same group of objects in a single, undisturbed tomb, the materials used varied widely. It is common to find different types of wood in one object, due to the scarcity of wood in Egypt, and it is possible to find differently coloured gold leafs on one artefact but it comes as a surprise to find that the techniques and materials were so varied and different in the chosen gilded samples.

Keywords: Gilded wood; Tutankhamun; EDS; XRD; FTIR.

167. Fungal Deterioration of Historical Textiles and Approaches for Their Control in Egypt

Omar Abdel-Kareem

e-Preservation Science journal, (2010)

This study represents both a study case about the fungal microflora deteriorating historical textiles in the Egyptian Museum and the Coptic Museum in Cairo, and evaluation of the efficacy of several combinations of consolidants for reinforcement of textiles and fungicides for prevention of fungal deterioration. Two different methods were used for isolation of fungi from historical textile objects. The plate method with a manual key was used for identification of fungi. The results show that the most dominant fungi isolated from the examined textile samples belong to *Alternaria*, *Aspergillus*, *Chaetomium*, *Penicillium* and *Trichoderma* species. Microbiological testing was used for evaluation of the usefulness of consolidation polymers combined with fungicides in prevention of fungal deterioration of ancient Egyptian textiles. Textile samples were treated using four selected polymers combined with two selected fungicides. Untreated and treated textile samples were deteriorated by three selected active fungal strains isolated from ancient Egyptian textile objects. This study reports that all of the tested polymers combined with fungicides prevent fungal deterioration of textiles. The treatments not only reinforce textiles, but also prevent fungal deterioration and increase their durability. The tested polymers without fungicides reduce fungal deterioration of textiles but do not prevent it entirely.

Keywords: Biodeterioration; Consolidation; Fungicide treatment; Conservation.

4-05. Institute of Eductional Studies and Research

4-4-01. *Dept. of Technology of Educaion*

168. The effect of using some electronic information resources on developing searching and inquiring skills and students attitudes of both 'Peoples Friendship University of Russia and Cairo University in Egypt

Amal Abd Elftah Ahmed swidan

Российский Университет дружбы народов -Факультет гуманитарных и социальных наук Кафедра иностранных языков-Языковой аспект интеграции и самоидентификации в современном мире-Материалы межвузовской конференции- МОСКВА - ЦИФРОВИЧОК (2010)

The effect of using some electronic information resources on developing the skills of searching and inquiring and students attitudes at both the University of Friendship between nations in Russia and Cairo University in Egypt.

Index

Research Titles Index

Code No.	3. Medical Sciences Sector	Page
	Mohamed Ali El-Gaidi and Ehab Mohamed Eissa	
[94]	Efficacy and Safety of Two Doses of Low Molecular Weight Heparin (Enoxaparin) in Pregnant Women with a History of Recurrent Abortion Secondary to Antiphospholipid Syndrome **Fouda U. M., Sayed A. M., Ramadan D. I. and Fouda I. M.**	**35**
[95]	Acomparative Study Between Isosorbide Mononitrate (IMN) Versus Misoprostol Prior to Hysteroscopy **Waleed El-Khayat, Ahmed Maged and Hassan Omar**	**35**
[96]	The use of Levonorgestrel-releasing Intrauterine System in Prevention of Endometrial Pathology in Women with Breast Cancer Treated with Tamoxifen **Hassan Omar, Waleed Elkhayat and Mohamed Aboulkasem**	**35**
[97]	Uterine Artery Blood Flow in Patients with Copper Intrauterine Device-Induced Abnormal Uterine Bleeding **Usama M. Fouda, Dalia Yossef and Hassan M. Gaafar**	**36**
[98]	Limb Geometry After Elastic Stable Nailing for Pediatric Femoral Fractures **Khaled Hamed Salem and Peter Keppler**	**36**
[99]	Orbital and Periorbital Vascular Anomalies – an Approach to Diagnosis and Therapeutic Concepts **Behfar Eivazi, Susanne Wiegand, Hesham Negm, Afshin Teymoortash, Stephan Schulze, Siegfried Bien and Jochen A. Werner**	**36**
[100]	Fibroblasts Facilitate the Engraftment of Embryonic Stem Cell-Derived Cardiomyocytes on Three Dimensional Collagen Matrices and Aggregation in Hanging Drops **Kurt Pfannkuche, Sabine Neuss, Frank Pillekamp, Lukas P. Frenzel, Wael Attia, Tobias Hannes, Jochen Salber, Mareike Hoss, Martin Zenke, Bernd K. Fleischmann, Jürgen Hescheler and Tomo Šaric**	**37**
[101]	Renal Doppler Indices in Diabetic Children with Insulin Resistance Syndrome **Abdelghaffar S., Elkaffas K., Hegazy R. and Mostafa M.**	**37**
[102]	Effect of High-flux Versus Low-flux Dialysis Membranes on Parathyroid Hormone **Samuel H. Makar, Happy K. Dawod, Tarek M. Farid, Waleed M. Ali and Mona F. Schaalan**	**37**
[103]	A Single Hypoglossal Nerve for Bilateral Smile Reconstruction in Mo¨bius Syndrome **Tarek Ahmed Amer**	**38**
[104]	Therapeutic Factors in Group Psychotherapy: A Study of Egyptian Drug Addicts **S. Ahmed, S. Abolmagd, M. Rakhawy, S. Erfan and R. Mamdouh**	**38**
[105]	Collection, storage and use of blood samples for future research: views of Egyptian patients expressed in a cross-sectional survey **Alaa Abou-Zeid, Henry Silverman, Magdi Shehata, Mohamed Shams, Mervat Elshabrawy, Tamer Hifnawy, Safa Abdel Rahman, Bahiga Galal, Hany Sleem, Nabiel Mikhail and Nadia Moharram**	**38**
[106]	The role of anthropometric indices in predicting comorbidities of obesity in a rural Egyptian population **Rehab Abdel Hai, Hanan El Raghi, Madiha Abdel Razik and Nesrine Kamal**	**39**
[107]	Assessing validity of the adapted Arabic Paediatric Asthma Quality of Life Questionnaire among Egyptian children with asthma **Rehab Abdel Hai, Eman Taher and Mohamed Abdel Fattah**	**39**
[108]	Attitudes Towards Transfers of Human Tissue Samples Across Borders: An International Survey of Researchers and Policy Makers in Five Countries **Xinqing Zhang, Kenji Matsui, Benjamin Krohmal, Alaa Abou Zeid, Vasantha Muthuswamy, Young Mo**	**39**

4. Social & Humanity Sciences Sector

4-1. Faculty of Economics and Political Science

4-2. Faculty of Commerce

4-3. Faculty of Arts

4-4. Faculty of Archaeology

4-5. Faculty of Educational Studies

Appendix

Appendix 1

Statistical Data

List of top 10 authors according to the number of publications
(Year 2010)

Rank	Name	Faculty	No. of Pub.
1	**Ahmed M. Soliman**	**Engineering**	**20**
2	**Gehad G. Mohamed**	**Science**	**13**
3	**Ramy K. Aziz**	**Pharmacy**	**13**
4	**Amal El-Beshlawy**	**Medicine**	**12**
5	**Kamal M. Dawood**	**Science**	**11**
6	**Olfat Shaker**	**Medicine**	**11**
7	**Abdel-Ghaffar F**	**Science**	**10**
8	**Ahmad M. Farag**	**Science**	**9**
9	**H. A. Kaoud**	**Veterinary Medicine**	**9**
10	**A. M. Abd El-Aty**	**Veterinary Medicine**	**8**
10	**Fatma A.Ragab**	**Pharmacy**	**8**
10	**T. Mostafa**	**Medicine**	**8**
10	**Zekri A.R**	**National Cancer Institute**	**8**

Statistical Data

List of top 10 authors according to the sum of their impact factor
(Year 2010)

Rank	Name	Faculty	Sum IF
1	**Ramy K. Aziz**	**Pharmacy**	**66.014**
2	**Amal El-Beshlawy**	**Medicine**	**52.38**
3	**Ashraf Selim**	**Medicine**	**28.899**
4	**Gehad G. Mohamed**	**Science**	**22.726**
5	**T. Mostafa**	**Medicine**	**20.828**
6	**A. M. Abd El-Aty**	**Veterinary Medicine**	**19.667**
7	**Osama Shaeer**	**Medicine**	**19.536**
8	**Abo-Madyan Y**	**Medicine**	**18.88**
9	**Amany Mohamed Fekry**	**Science**	**18.485**
10	**Rany Shamloul**	**Medicine**	**17.919**
11	**Abdel-Ghaffar F**	**Science**	**17.21**

Statistical Data

List of top 10 authors according to highest single impact factor
(Year 2010)

Rank	Name	Faculty	Max. IF
1	**Ramy K. Aziz**	**Pharmacy**	**29.74**
2	**Ashraf Selim**	**Medicine**	**28.899**
3	**Amal El-Beshlawy**	**Medicine**	**10.555**
4	**Ismail Hassan Ismail**	**Science**	**9.574**
5	**Ahmed S. Attia**	**Pharmacy**	**8.978**
6	**Mohamed El Kashouty**	**Science**	**8.00**
7	**M. B. Mohamed**	**National Institute of Laser Enhanced Sciences**	**7.493**
8	**Ramy K. Aziz**	**Pharmacy**	**7.479**
9	**Saleh EM**	**National Cancer Institute**	**7.479**
10	**SA Ibrahim**	**Science**	**7.135**
11	**Mohamed A.F.M.**	**Medicine**	**7.042**

Statistical Data

List of faculties with highest score of impact factor
(Year 2010)

Faculty	Count	%	Tot IF	%	Avg.	Max	Min
Science	289	26.5	431.21	29.78	1.492	9.57	0.181
Agriculture	75	6.89	53.52	3.697	0.714	4.71	0.349
Veterinary Medicine	86	7.9	78.635	5.432	0.914	6.79	0.406
Statistical Studies and Research Institute	4	0.37	3	0.207	0.75	3	3
National Institute of Laser Enhanced Sciences	27	2.48	50.604	3.495	1.874	7.49	0.676
Engineering	131	12	116.03	8.014	0.886	3.29	0.161
Computer	6	0.55	6.624	0.458	1.104	2.44	0.317
Medicine	228	20.9	397.63	27.47	1.744	28.9	0.173
Oral and Dental Medicine	19	1.74	17.819	1.231	0.938	2.14	1.215
Pharmacy	125	11.5	224.67	15.52	1.797	29.7	0.176
National Cancer Institute	37	3.4	58.38	4.032	1.578	7.48	0.092
Physical Therapy	1	0.09	1.101	0.076	1.101	1.1	1.101
Nursing	2	0.18	0	0	0	0	
Economics and Political Science	10	0.92	5.109	0.353	0.511	1.5	0.383
Commerce	8	0.73	0	0	0	0	
Mass Communication	3	0.28	0.362	0.025	0.121	0.36	0.362
Law	2	0.18	0	0	0	0	
Arts	15	1.38	0	0	0	0	
Archaeology	19	1.74	3.059	0.211	0.161	1.85	1.212
Educational Studies	2	0.18	0	0	0	0	
Total	**1089**	**100**	**1447.8**	**100**	**15.68**		

Statistical Data

List of number of publications
(2006-2010)

Faculty	2006	2007	2008	2009	2010	Total
Science	142	162	241	242	290	**1078**
Medicine	49	64	124	154	226	**617**
Engineering	56	79	109	140	131	**515**
Pharmacy	27	40	77	104	126	**743**
Agriculture	8	14	35	83	75	**512**
Veterinary Medicine	11	20	47	53	86	**721**
National Cancer Institute	9	16	16	27	37	**105**
National Institute of Laser Enhanced Sciences	13	11	9	21	27	**81**
Economics and Political Science	13	14	13	8	10	**58**
Arts	7	7	17	15	15	**61**
Statistical Studies and Research Institute	8	6	11	7	4	**36**
Archaeology	1	2	5	16	19	**43**
Computers and Information	2	3	4	11	6	**26**
Oral and Dental Medicine			1	15	19	**35**
Physical Therapy					1	**1**
Nursing			1	4	2	**7**
Commerce	4	2	1	4	6	**17**
Mass Communication			1		3	**4**
Educational Studies and Research					2	**2**
African Research and Studies Institute		1	2			**3**
Dar Al-Oloum	1					**1**
Total	**351**	**441**	**814**	**926**	**1089**	**3621**

Appendix 2

Top 50 authors of Cairo University
(According to no. of publications)

Rank	Author Name	Affiliation	No. of Pub
1	**Ahmed A. Shafik**	Kasr El-Aini School of Medicine, Dept. of Surgery and Experimental Research	502
2	**Ahmed M. Soliman**	Dept. of Electronics and Communication Engineering	349
3	**Mohamed Hilmy Elnagdi**	Dept. of Chemistry	226
4	**Yousry M. Issa**	Dept. of Chemistry	188
6	**Ahmed A. M. Moala**	Faculty of Agriculture, Dept. of Physics	174
7	**Hesham G. Al-Inany**	Dept. of Obstetrics and Gynecology	140
8	**Ahmad S. A. S. Shawali**	Dept. of Chemistry	129
9	**Waheed A. Badawy**	Dept. of Chemistry	128
10	**Said R. Grace**	Faculty of Engineering, Dept. of Engineering Mathematics	120
11	**Yasser M. Kadah**	Faculty of Engineering, Dept. of Biomedical Engineering	117
12	**H. Khalifa**	Dept. of Chemistry	104
13	**Shafik, Ismail A. Ismail A.**	Kasr El-Aini School of Medicine, Dept. of Surgery and Experimental Research	103
14	**Amir F. Atiya**	Faculty of Engineering, Dept. of Computer Engineering	96
15	**A. M. Abd El-Aty**	Dept. of Pharmacology	93
16	**Abdou Osman Abdelhamid**	Dept. of Chemistry	88
17	**Badr, Yahia A. kh.**	Dept. of Physics	88
18	**Ahmed Mohamed Galal**	Dept. of Chemistry	86
19	**Mohammed Talaat Abdel Aziz**	Faculty of Pharmacy, Departments of Pharmacology and Toxicology	85
20	**Mohamed El-Nadi**	Dept. of Physics	85
21	**Hussien M. Khaled**	National Cancer Institute	82
22	**Kamal Mohammed Dawood**	Dept. of Chemistry	79
23	**Amr Amin Adly**	Faculty of Engineering, Electrical Power and Machines Department	78
24	**Mohamed T. Khayyal**	Faculty of Pharmacy, Dept. of Pharmacology	78
25	**Rashika R. El Ridi**	Faculty of Science, Dept. of Zoology	74

Rank	Author Name	Affiliation	No. of Pub
26	**Mohamed A. Zayed**	Dept. of Chemistry	74
27	**Magdy W. Sabaa**	Dept. of Chemistry	70
28	**Gehad Genidy Mohamed**	Dept. of Chemistry	67
29	**Taymour Mostafa**	Kasr El-Aini School of Medicine, Faculty of Medicine	66
30	**Maher Zaki Elsabee**	Dept. of Chemistry	66
31	**Mohamed Abdel Harith**	Natl. Inst. of Laser Enhanced Sci.	65
32	**Rafat Milad Mohareb**	Dept. of Chemistry	65
33	**Fathy A. Abdel-Ghaffar**	Cairo University, Department of Zoology	65
34	**Ahmad M. Farag**	Dept. of Chemistry	64
35	**Gamal Esmat**	Medicine	62
36	**Elshafei, Abdel Latif**	Electrical Power and Machines Dept.	61
37	**Amr M. Shaarawi**	Faculty of Engineering, Dept. of Engineering Mathematics	60
38	**Mohamed Shaarawy**	Kasr El-Aini School of Medicine, Dept. of Obstetrics and Gynecology	59
39	**Samir I. Shaheen**	Faculty of Engineering, Dept. of Computer Engineering	59
40	**Rany M. Shamloul**	Dept. of Andrology	58
41	**Ahmed A. Soliman**	Dept. of Chemistry	58
42	**Abdel Rahman Zekri**	National Cancer Institute	58
43	**Mohamed Mahmoud Abdel-Kader**	Dept. of Physics	56
44	**Ahmed M. Kassem**	Faculty of Pharmacy	56
45	**Rashad S. Barsoum**	Cairo Kidney Center	55
46	**Olfat Gamil Shaker**	Dept. of Biochemistry	54
47	**El- Tawil, Magdy A.**	Faculty of Engineering, Dept. of Engineering Mathematics	54
48	**Samy A. Madbouly**	Dept. of Chemistry	53
49	**Youssef F. Rashed**	Dept. of Structural Engineering	51
50	**Sherif Mourad Sherif**	National Research Council Canada, Institute for Microstructural Sciences	49
51	**Nadia Ahmed Mohamed**	Dept. of Chemistry	47
52	**Ahmed H. H. Elghandour**	Dept. of Chemistry	44
53	**Mohamed Saada El-Deab**	Faculty of Science, Dept. of Chemistry	43

Top 50 authors of Cairo University
(According to total no. of citations)

Rank	Author Name	Affiliation	Tot. Citation
1	**Ahmed A. Shafik**	Kasr El-Aini School of Medicine, Dept. of Surgery and Experimental Research	2925
2	**Ahmed M. Soliman**	Faculty of Engineering, Dept. of Electronics and Communication Engineering	2500
3	**Mohamed Hilmy Elnagdi**	Dept. of Chemistry	1839
4	**Amir F. Atiya**	Faculty of Engineering, Dept. of Computer Engineering	1223
5	**Yousry M. Issa**	Faculty of Science, Department of Chemistry	1085
6	**Ahmad S. A. S. Shawali**	Dept. of Chemistry	960
7	**A. M. Abd El-Aty**	Dept. of Pharmacology	957
8	**Ahmed Mohamed Galal**	Dept. of Chemistry	957
9	**Hesham G. Al-Inany**	Dept. of Obstetrics and Gynecology	918
10	**Hussien M. Khaled**	Department of Medical Oncology	880
11	**Gehad Genidy Mohamed**	Dept. of Chemistry	843
12	**Waheed A. Badawy**	Dept. of Chemistry	809
13	**Rabab M. Gaafar**	National Cancer Institute	724
14	**Mohamed Mohamed Shoukry**	University of Erlangen-Nuremberg, Institute of Inorganic Chemistry	678
15	**Ahmed A. M. Moala**	Faculty of Agriculture, Dept. of Physics	666
16	**Mohamed Saada El-Deab**	Faculty of Science, Dept. of Chemistry	647
17	**Said S. E. H. Elnashaie**	Dept. of Chemical Engineering	641
18	**Ahmad M. Farag**	Dept. of Chemistry	618
19	**Mohamed Shaarawy**	Kasr El-Aini School of Medicine, Dept. of Obstetrics and Gynecology	598
20	**Aziz, Ramy K.**	Cairo University Faculty of Phamacy	572
21	**Ismail, M. Y.**	Faculty of Science, Department of Physics	567
22	**Yasser M. Kadah**	Faculty of Engineering, Dept. of Biomedical Engineering	547
23	**Rashika R. El Ridi**	Faculty of Science, Dept. of Zoology	520
24	**EIBatt, Tamer A.**	Cairo University Faculty of Engineering,	497
26	**Farag, Mohamed Ali**	Cairo University Pharmacognosy Department	483

Rank	Author Name	Affiliation	Tot. Citation
27	**Nadia Ahmed Mohamed**	Dept. of Chemistry	482
28	**Gamal Esmat**	Medicine	471
29	**Kamal Mohammed Dawood**	Dept. of Chemistry	455
30	**Mohamed T. Khayyal**	Faculty of Pharmacy, Dept. of Pharmacology	445
31	**Maher Zaki Elsabee**	Dept. of Chemistry	442
32	**Khaled M. Ismail**	Dept. of Chemistry	441
33	**Ayman Wahba Erian**	Faculty of Science, Dept. of Chemistry	401
34	**Radwan S. Farag**	Dept. of Biochemistry	398
35	**Abdel Rahman Zekri**	National Cancer Institute	378
36	**Nadia Mokhtar**	National Cancer Institute	368
37	**Rany M. Shamloul**	Dept. of Andrology	359
38	**Said R. Grace**	Faculty of Engineering, Dept. of Engineering Mathematics	352
39	**Ahmed A Soliman**	Dept. of Chemistry	346
40	**Maher Zaki Elsabee**	Dept. of Chemistry	336
41	**Mohamed A. Zayed**	Dept. of Chemistry	332
42	**Rafat Milad Mohareb**	Dept. of Chemistry	329
43	**Taymour Mostafa**	Kasr El-Aini School of Medicine, Faculty of Medicine	324
44	**Amr Amin Adly**	Faculty of Engineering, Electrical Power and Machines Department	320
45	**Badr, Yahia A kh**	Dept. of Physics	319
46	**Samy A. Madbouly**	Dept. of Chemistry	303
47	**Sherif Mourad Sherif**	National Research Council Canada, Institute for Microstructural Sciences	301
48	**Nour Tawfik Abdel-Ghani**	Faculty of Science, Dept. of Chemistry	294
49	**Magdy W. Sabaa**	Dept. of Chemistry	294
50	**Hala G. El-Shobaky**	Faculty of Science, Dept. of Chemistry	290
51	**Amal El-Beshlawy**	Dept. of Biochemistry, Genetics and Molecular Biology	276
52	**Mohamed Abdel Harith**	Natl. Inst. of Laser Enhanced Sci.	275

Top 50 authors of Cairo University
(According to h-index)

Rank	Author Name	Affiliation	h-index
1	**Ahmed M. Soliman**	Faculty of Engineering, Dept. of Electronics and Communication Engineering	23
2	**Hesham G. Al-Inany**	Dept. of Obstetrics and Gynecology	18
3	**Ahmed A. Shafik**	Kasr El-Aini School of Medicine, Dept. of Surgery and Experimental Research	18
4	**Mohamed Saada El-Deab**	Faculty of Science, Dept. of Chemistry	18
5	**Mohamed Hilmy Elnagdi**	Dept. of Chemistry	17
6	**Kamal Mohammed Dawood**	Dept. of Chemistry	17
7	**Gehad Genidy Mohamed**	Dept. of Chemistry	17
8	**Hussien M. Khaled**	National Cancer Institute	16
9	**Ahmed Mohamed Galal**	Dept. of Chemistry	15
10	**Waheed A. Badawy**	Dept. of Chemistry	15
11	**Mohamed Shaarawy**	Kasr El-Aini School of Medicine, Dept. of Obstetrics and Gynecology	15
12	**Ahmad M. Farag**	Dept. of Chemistry	15
13	**Abdel Rahman Zekri**	National Cancer Institute	15
14	**Said S. E. H. Elnashaie**	Dept. of Chemical Engineering	14
15	**Farag, Mohamed Ali**	Cairo University Pharmacognosy Department	14
16	**Yousry M. Issa**	Dept. of Chemistry	13
17	**Khaled M. Ismail**	Dept. of Chemistry	13
18	**Ahmad S. A. S. Shawali**	Dept. of Chemistry	13
19	**Fawzy A. Attaby**	Dept. of Chemistry	13
20	**Ramy K. Aziz**	Cairo University Faculty of Phamacy	12
21	**Ahmed A. M. Moala**	Faculty of Agriculture, Dept. of Physics	12
22	**Amir F. Atiya**	Faculty of Engineering, Dept. of Computer Engineering	12
23	**Mohamed Mohamed Shoukry**	University of Erlangen-Nuremberg, Institute of Inorganic Chemistry	12
24	**Magdy W. Sabaa**	Dept. of Chemistry	12
25	**Samy A. Madbouly**	Dept. of Chemistry	12
27	**Rashad S. Barsoum**	Cairo Kidney Center	12
28	**Ismail, M. Y.**	Faculty of Science, Department of Physics	12

Rank	Author Name	Affiliation	h-index
29	**Rashika R. El Ridi**	Faculty of Science, Dept. of Zoology	12
30	**Nadia Ahmed Mohamed**	Dept. of Chemistry	12
31	**A. M. Abd El-Aty**	Dept. of Pharmacology	12
32	**Rabab M. Gaafar**	National Cancer Institute	11
33	**Rany M. Shamloul**	Dept. of Andrology	11
34	**Taymour Mostafa**	Kasr El-Aini School of Medicine, Faculty of Medicine	11
35	**A. H. M. Elwahy**	Dept. of Chemistry	11
36	**Yasser M. Kadah**	Faculty of Engineering, Dept. of Biomedical Engineering	11
37	**Gamal Esmat**	Kasr El-Aini School of Medicine, Faculty of Medicine	11
38	**Barsoum, B. Barsoum**	Department of Chemistry	11
39	**Mohamed Abdel Harith**	Natl. Inst. of Laser Enhanced Sci.	10
40	**Said R. Grace**	Faculty of Engineering, Dept. of Engineering Mathematics	10
41	**Badr, Yahia A. kh.**	Dept. of Physics	10
42	**Mohamed A. Zayed**	Dept. of Chemistry	10
43	**Olfat Gamil Shaker**	Dept. of Biochemistry	10
44	**Youssef F. Rashed**	Dept. of Structural Engineering	10
45	**Hala G. El-Shobaky**	Faculty of Science, Dept. of Chemistry	10
46	**Abdel-Ghani, Nour Tawfik**	Dept. of Chemistry	10
47	**Ahmed A. Soliman**	Dept. of Chemistry	10
48	**Doha, Eid H.**	Dept. of Mathematics	9
49	**Ahmed H. H. Elghandour**	Dept. of Chemistry	9
50	**Mosselhi, A. N. Mosselhi**	Dept. of Chemistry	9
51	**Mohamed T. Khayyal**	Faculty of Pharmacy, Dept. of Pharmacology	9

Appendix 3

Top 5 authors of Cairo University Faculties
(According to no. of publications from Top 50)

1- Kasr El-Aini School of Medicine,

Rank	Author Name	No. of Pub
1	**Ahmed A. Shafik**	502
2	**Hesham G. Al-Inany**	140
3	**Shafik, Ismail A Ismail A**	126
4	**Taymour Mostafa**	92
5	**Gamal Esmat**	62

2- Faculty of Engineering,

Rank	Author Name	No. of Pub
1	**Ahmed M. Soliman**	347
2	**Said R. Grace**	120
3	**Yasser M. Kadah**	117
4	**Anir F. Atiya**	96
5	**Amr Amin Adly**	78

3- Faculty of Science,

Rank	Author Name	No. of Pub
1	**Mohamed Hilmy Elnagdi**	226
2	**Yousry M. Issa**	188
3	**Ahmad S. A. S. Shawali**	129
4	**Waheed A. Badawy**	128
5	**Ahmed Mohamed Galal**	93

4- Faculty of Pharmacy,

Rank	Author Name	No. of Pub
1	**Mohamed Talaat Abdel Aziz**	85
2	**Mohamed T. Khayyal**	78
3	**Mohamed S. Karawya**	71
4	**Ahmed A. Kassem**	56
5	**Sherif El-Basil**	51

5- National Cancer Institute,

Rank	Author Name	No. of Pub
1	**Hussien M. Khaled**	82
2	**Abdel Rahman Zekri**	58
3	**Abber Bahnassy**	34
4	**Rabab M. Gaafar**	31
5	**Nadia Mokhtar**	31

6- Natl. Inst. of Laser Enhanced Sci.

Rank	Author Name	No. of Pub
1	**Mohamed Abdel Harith**	65

7- Faculty of Veterinary Medicine,

Rank	Author Name	No. of Pub
1	**A. M. Abd El-Aty**	93

Top 5 authors of Cairo University Faculties (According to total no. of citations from Top 50)

1- Kasr El-Aini School of Medicine,

Rank	Author Name	Tot. Citation
1	**Ahmed A. Shafik**	2925
2	**Hesham G. Al-Inany**	918
3	**Mohamed Shaarawy**	541
4	**Olfat El Sibai**	469
5	**Gamal Esmat**	437

2- Faculty of Science,

Rank	Author Name	Tot. Citation
1	**Mohamed Hilmy Elnagdi**	1839
2	**Yousry M. Issa**	1085
3	**Ahmad S. A. S. Shawali**	960
4	**Ahmed Mohamed Galal**	957
5	**Gehad Genidy Mohamed**	843

3- Faculty of Engineering,

Rank	Author Name	Tot. Citation
1	**Ahmed M. Soliman**	2500
2	**Amir F. Atiya**	1223
3	**Said S. E. H. Elnashaie**	641
4	**Yasser M. Kadah**	547
5	**EIBatt, Tamer A.**	497

4- National Cancer Institute,

Rank	Author Name	Tot. Citation
1	**Hussien M. Khaled**	880
2	**Rabab M. Gaafar**	724
3	**Abdel Rahman Zekri**	378
4	**Nadia Mokhtar**	368
5	**Azza M. Kamel**	244

5- Faculty of Pharmacy,

Rank	Author Name	Tot. Citation
1	**Adel M. Talaat**	1015
2	**Mohamed A. Farag**	680
3	**Ramy K. Aziz**	572
4	**Mohamed T. Khayyal**	445
5	**Mohamed S. Karawya**	171

6- Natl. Inst. of Laser Enhanced Sci.,

Rank	Author Name	Tot. Citation
1	**Badr, Yahia A. kh.**	319
2	**Mohamed Abdel Harith**	275

7- Faculty of Veterinary Medicine,

Rank	Author Name	Tot. Citation
1	**A. M. Abd El-Aty**	957

8- Faculty of Agriculture,

Rank	Author Name	Tot. Citation
1	**Radwan S. Farag**	398

Top 5 authors of Cairo University Faculties
(According to h-index from Top 50)

1-Faculty of Engineering,

Rank	Author Name	h_Index
1	**Ahmed M. Soliman**	23
2	**Said S. E. H. Elnashaie**	14
3	**Amir F. Atiya**	12
4	**Yasser M. Kadah**	11
5	**Said R. Grace**	10

2- Faculty of Science,

Rank	Author Name	h_Index
1	**Mohamed Saada El-Deab**	18
2	**Mohamed Hilmy Elnagdi**	17
3	**Gehad Genidy Mohamed**	17
4	**Kamal Mohammed Dawood**	17
5	**Ahmed Mohamed Galal**	15

3- Kasr El-Aini School of Medicine,

Rank	Author Name	h_Index
1	**Hesham G. Al-Inany**	18
2	**Ahmed A. Shafik**	18
3	**Mohamed Shaarawy**	15
4	**Taymour Mostafa**	11
5	**Rany M. Shamloul**	11

4- National Cancer Institute,

Rank	Author Name	h_Index
1	**Hussien M. Khaled**	16
2	**Abdel Rahman Zekri**	15
3	**Rabab M. Gaafar**	11

5- Faculty of Pharmacy,

Rank	Author Name	h_Index
	Adel M. Talaat	16
1	**Mohamed A. Farag**	14
2	**Ramy K. Aziz**	12
3	**Mohamed T. Khayyal**	9

6- Natl. Inst. of Laser Enhanced Sci.

Rank	Author Name	h_Index
1	**Mohamed Abdel Harith**	10
2	**Badr, Yahia A. kh.**	9

7- Faculty of Veterinary Medicine,

Rank	Author Name	h_Index
1	**A. M. Abd El-Aty**	12