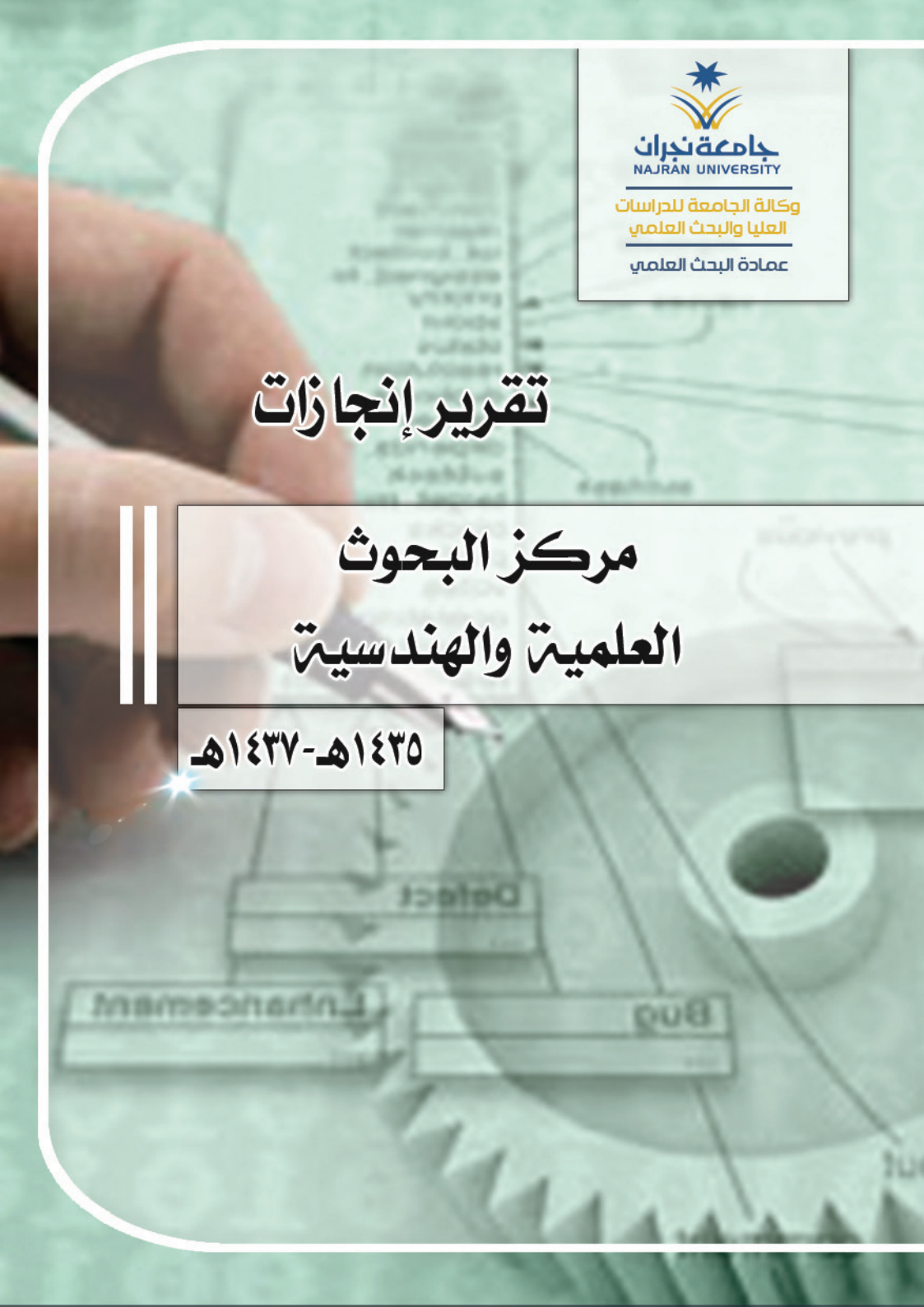
جامعة نجران
NAJRAN UNIVERSITY
وكالة الجامعة للدراسات العليا والبحث العلمي
عمادة البحث العلمي
تقرير إنجازات
مركز البحوث العلمية والهندسية
١٤٣٥هـ-١٤٣٧هـ

وكالة الجامعة للدراسات العليا والبحث العلمي

عمادة البحث العلمي

مركز البحوث العلمية والهندسية

تقرير إنجازات

مركز البحوث العلمية والهندسية

١٤٣٥هـ - ١٤٣٧هـ

مقدمة

انطلاقًا من أن البحث العلمي من ركائز الجامعة، ومؤشرًا على تقدمها وتميزها، تسعى عمادة البحث العلمي في جامعة نجران من خلال المراكز البحثية إلى: تحقيق التميز البحثي في المجالات ذات الأهمية الوطنية بصفة عامة، والمجتمع المحلي بصفة خاصة، بإجراء البحوث في المجالات الاستراتيجية المختلفة للكليات التي تقع تحت مجال كل مركز؛ وتطوير العملية التعليمية بتوفير بيئة بحثية محفزة؛ وتنمية مهارات الابتكار والإبداع، والتوسع في الشراكات البحثية، من خلال توفير متطلبات ومستلزمات الباحثين حسب اختصاصاتهم للنهوض بمستوى أبحاثهم. وتعمل عمادة البحث العلمي على تشجيع الباحثين من أعضاء هيئة التدريس والطلاب (من الجنسين) على إجراء البحوث الأصيلة والمبتكرة التي تساهم في إثراء وخدمة المجتمع، وتعلن عن المشاريع البحثية السنوية وفق آلية موحدة، حيث تقوم المراكز المتخصصة بالإشراف عليها والتحكيم الأولي لها، دون تحديد عدد معين لكل مركز، وقبول جميع المشاريع البحثية المقترحة من أعضاء هيئة التدريس التي تؤدي إلى تطوير التخصص العلمي والمجتمع المحلي. كما تهتم المراكز البحثية بالخدمات المجتمعية بتقديم الاستشارات وإقامة الشراكات في مجالات كل مركز، وإثراء الوسط الجامعي من الناحية العلمية بتنفيذ مجموعة من الأنشطة التي تشمل إقامة وتنظيم المؤتمرات والندوات العلمية والدورات التدريبية (سواء الموجهة للطلاب أو أعضاء هيئة التدريس) بالتنسيق مع الكليات والأقسام المعنية، وتشجيع النشر العلمي والإشراف عليه، والتنسيق بين الباحثين من مختلف الكليات والتخصصات العلمية لإجراء بحوث مشتركة في المجالات المختلفة.

الهيكل التنظيمي للمركز

عن المركز:

تم إنشاء مركز البحوث العلمية والهندسية بجامعة نجران عام ١٤٣٠ هـ، الموافق ٢٠٠٩م لكي يساهم ويساعد في خدمة البحث العلمي بالجامعة إضافة إلى إسهامه في خدمة المجتمع من خلال الكوادر المؤهلة بالجامعة وكذلك بناء شراكات تعاونية مع القطاع الحكومي والخاص ومع نظرائه من مراكز البحوث الأخرى.

مهام المركز:

من مهام مركز البحوث العلمية والهندسية بجامعة نجران نشر البحوث التي يقرها مجلس المركز عن طريق عمادة البحث العلمي، كما يهتم المركز بتقديم الخدمات المجتمعية وتنظيم الندوات والمحاضرات والدورات العلمية والهندسية سواء الموجهة بالطلاب أو أعضاء هيئة التدريس وبالتنسيق مع الأقسام المعنية. كما يقدم المركز الاستشارات الفنية في المجالات الهندسية.

مجلس إدارة المركز

د. عبد الله بن سعيد الوادعي	رئيساً
د. خيران بن دباش رجب	عضواً
د. ابراهيم حكيم	عضواً
د. مصعب مرغلاني	عضوا
د رشاد بن الجوفي	عضواً

رؤية المركز:

الريادة في اجراء البحوث العلمية والهندسية التطبيقية والتميز في المساهمات المجتمعية لتعزيز مكانة الجامعة التنافسية في مجال البحث العلمي وطنيا وعالميا

رسالة المركز:

يسعى مركز البحوث العلمية والهندسية بجامعة نجران لتحقيق رؤية المركز من خلال:

- اثراء الوسط الجامعي من الناحية العلمية من خلال اقامة وتنظيم المؤتمرات والندوات والانشطة العلمية والتدريبية
- التشجيع والاشراف والتنظيم لعملية النشر العلمي
- الربط بين الباحثين من مختلف الكليات العلمية لتحقيق ابحاث مشتركة في المجالات العلمية المختلفة
- التواصل مع المراكز البحثية الوطنية والعالمية وتشكيل شراكات فاعلة في تطوير البحث العلمي.
- الاسهام في تنمية وخدمة المجتمع من خلال الابحاث التي يقوم بها المركز.

قيـم المـــركز:

القيم الجوهرية لمركز البحوث العلمية والهندسية في جامعة نجران

القيـــم	Value	التعريف
القيادة	**Leadership**	دعم وتعزيز المهارات والأدوار القيادية على كافة المستويات
المسؤولية	**Responsibility**	التفاعل الإيجابي تجاه الكلية والجامعة والمجتمع من واقع الإحساس بالمسؤولية
الأمانة	**Honesty**	أداء الواجبات والوفاء بالحقوق
الشفافية	**Transparency**	الوضوح في كافة الأنشطة والقرارات والتعاملات
المساءلة	**Accountability**	تحمل مسؤولية نتائج أعمالنا والاستعداد للتوضيح
العدالة	**Fairness**	إعطاء كل ذي حق حقه
الاحترام	**Respect**	التعامل بتحضر وإنسانية وحفظ للكرامة وفق القيم الإسلامية
العمل بروح الفريق	**Teamwork**	العمل الجماعي وتبادل الخبرات والمعارف
الإبداع	**Creativity**	تهيئة بيئة مناسبة لتحفيز التفكير الإبداعي المنتج وفقا لتعاليم الإسلام
الجودة	**Quality**	ضمان جودة الأداء وفقا للمعايير المحلية والعالمية

أهداف المركز:

يهدف مركز البحوث العلمية والهندسية بجامعة نجران إلى دعم وتشجيع البحوث العلمية والعناية بها ونشرها وتنظيمها وتطويرها لتحقيق الفائدة العامة خدمة للمجتمع، وتتركز هذه الأهداف فيما يلي: -

- المساهمة الفعالة في تقييم المشاريع البحثية في التخصصات الهندسية التي يتقدم بها أعضاء هيئة التدريس في الكليات التابعة لها.
- تبادل الخبرات وتحقيق التعاون بين المركز والهيئات العلمية والبحثية وطنيا وعالميا.
- تقديم الخدمات الاستشارية التي تطلب من المركز وطنيا وعالميا.
- نشر البحوث العلمية وتوثيقها عن طريق ما يتم إصداره من مجلات وإصدارات علمية لتسهيل الرجوع إليها، وتبادل النشرات الدورية والمطبوعات العلمية مع مراكز البحوث الوطنية والعالمية.
- أقامه ندوات وورش عمل لأعضاء هيئة التدريس في كليات الجامعة التابعة للمركز لنشر ثقافة البحث العلمي.

إنجازات المركز:

تحكيم البحوث المدعومة والمقدمة من قبل أعضاء هيئة التدريس للكليات المنطوية تحت مظلة المركز بالجامعة

حيث يتم تشكيل لجنة متخصصة لفرز البحوث المقدمة من قبل الكليات المنطوية تحت مظلة المركز، لتقوم بفرز البحوث وتقييمها وتحكيمها، وتقديم توصية بعد ذلك بقبولها أو رفضها بناء على مجموعة من الأسس والمعايير، والرفع بهذه التوصيات لعمادة البحث العلمي. وقد بلغ عدد البحوث التي تم تحكيمها في المراحل البحثية الستة السابقة قرابة (٢٥٠) بحث.

بناء على الخطوة السابقة فقد ساهم المركز بتقديم بحوث نوعية تم نشرها في مجلات علمية محكمة، عربية، وأجنبية مصنفة، من قبل أعضاء هيئة التدريس في جميع الكليات المنطوية تحت مظلة المركز (كلية الهندسة ، كلية علوم الحاسب ، كلية العلوم و الأداب ، كلية المجتمع).

الأنشطة المختلفة التي أقيمت بمركز البحوث العلمية والهندسية للأعوام ٢٠١٣ - ٢٠١٤ - ٢٠١٥ م

١. يوجد مقر للمركز بكلية الهندسة
٢. يوجد قاعة محاضرات للمركز
٣. تم اعداد الهيكل الاداري التنظيمي للمركز
٤. تم صياغة الرؤية والرسالة والاهداف
٥. تم تفعيل وتحديث الموقع الإلكتروني للمركز على صفحة الجامعة
٦. تم تقديم دراسة هندسية لمركز سلطانة بطلب من الدفاع المدني بتاريخ ٢٠١٣/٠٩/٢١م .
٧. إقامة محاضرات علمية لأعضاء هيئة التدريس ودورات طلابية بالمركز وذلك خلال الفصل الأول للعام الجامعي ١٤٣٥-١٤٣٦هـ (٢٠١٤م).
٨. إقامة محاضرات علمية لأعضاء هيئة التدريس ودورات طلابية بالمركز وذلك خلال الفصل الثاني للعام الجامعي ١٤٣٥-١٤٣٦هـ (٢٠١٥م).
٩. تكريم أعضاء هيئة التدريس المشاركين في الندوات والمحاضرات العلمية بالمركز
١٠. حصول المركز على درع من مديرية الدفاع المدني بنجران.

الندوات والدورات المقامة في الفصل الدراسي الأول للعام الجامعي ١٤٣٥-١٤٣٦هـ

م	اسم المحاضر	عنوان المحاضرة / الدورة	التاريخ Date
١	Prof. Abdulhmed Mohammed Abdulhmed	تقنية المحاكاة ما بين البرامج البسيطة والتطبيقات المعقدة للحزم البرمجية للحاسوب. Simulation Techiques be-) tween Simble Programing to Coplex Application With .(Coputer Package	Monday 20/11/1435H 15/09/2014M
٢	م. عمر الشرمان	دورة تصميم الأنظمة الرقمية بإستخدام الـ Circuit Maker	خلال شهر ذو القعدة (للطلاب فقط)
٣	Dr. Hashem Al-mattarneh	اختبارات الخرسانة الغير متلفة. .(Non Distrctive of Concrete)	Tuesday 20/12/1435H 14/10/2014M
٤	Dr. Abdullah Alhomadi	استخدام المخلفات الصناعية في تحسين مقاومة التربة. Using Y By-Products in) .(improvement Y Soils	Monday 10/01/1436H 03/11/2014M
٥	م. عمر الشرمان	دورة تصميم الدوائر الالكترونية باستخدام الـ Proteus	خلال شهر محرم (للطلاب فقط)
٦	د. إبراهيم حكيم Dr. Ibrahim Hakeem	تطوير خرسانة عالية وفائقة الأداء. Development of Ultra-High .Performance Concrete	Monday 24/01/1436H 2014M/ 17/11
٧	م. عمر الشرمان	الـ MATLAB لـ طلاب الهندسة الكهربائية.	خلال شهر صفر (للطلاب فقط)
٨	Dr. Abdalnoor ghanim	التغيرات المناخية وآثارها البيئية. Climatic change and its Im-) .(pacts on Environment	Monday 23/02/1436H 15/12/2014M

الندوات والدورات المقامة الفصل

الدراسي الثاني للعام الجامعي ١٤٣٥-١٤٣٦هـ

م	اسم المحاضر	عنوان المحاضرة / الدورة	التاريخ Date
١	د. محمد خيري Dr. Muhamad Khairi	How to Use LYNC for Communication.	الاثنين ١٤٣٦/٥٠/٤٠هـ ٢٠١٥/٣٠/٩٠م
٢	د. خميسي يوسفي Dr. Khamisi Yossefi	محاكات الروبوت الصناعي المناور Simulation Industrial Robot) (manipulator	الثلاثاء ١٤٣٦/٥٠/٥٠هـ ٢٠١٥/٢٠/٤٢م
٣	د. محمد خيري Dr. Muhamad Khairi	How to Use MS OUTLOOK to Manage Your Academic Work.	الاثنين ١٤٣٦/٥٠/١١هـ ٢٠١٥/٣٠/٢٠م
٤	د. إسماعيل خراشي Dr. Ismail Khrashi	أهمية المساحة للهندسة المدنية وبعض التطبيقات العملية Importance of Surveying to) Civil Engineers and Some (Practice Examples	الثلاثاء ١٤٣٦/٥٠/٢١هـ ٢٠١٥/٣٠/٣٠م
٥	د. محمد خيري Dr. Muhamad Khairi	Project Management Basics (including using MS PROJECT)	الاثنين ١٤٣٦/٥٠/٨١هـ ٢٠١٥/٣٠/٩٠م
٦	م. سيف شبل Eng. Sief Shebl	الكتابة الاحترافية للوثائق بلغة LaTeX Typesetting Professional Documents with LaTeX.	الاثنين ١٤٣٦/٥٠/٥٢هـ ٢٠١٥/٣٠/٦١م
٧	د. عبدالكريم الموجاني Dr. Abdulkarem Mawgani	التقنيات الحديثة في الاتصالات Modern Techniques for Communications	الاثنين ١٤٣٦/٦٠/٠١هـ ٢٠١٥/٣٠/٠٣م
٨	د. مصطفى العشري	تأثير الاشعاع Radiation Effects.	الثلاثاء ١٤٣٦/٦٠/١١هـ ٢٠١٥/٣٠/١٣م
٩	د. إبراهيم حكيم Dr. Ibrahim Hakeem	تطوير خرسانة عالية وفائقة الأداء (٢) Development of Ultra-High (Performance Concrete(1	الاثنين ١٤٣٦/٦٠/٧١هـ ٢٠١٥/٤٠/٦٠م

م	اسم المحاضر	عنوان المحاضرة / الدورة	التاريخ Date
١٠	د. نضال أحمد التميمي Dr. Nedhal Al-Tamimi	الاتجاهات الحديثة في التصميم المعماري (المباني الخضراء نموذجا) Modern Trends in Architectural Design: Towards Green Buildings	الاثنين ٦٣٤١/٦٠/٤٢هـ ٥١٠٢/٤٠/٣١م
١١	د. أكرم المتولي	جودة التغذية الكهربية (المشاكل و الحلول) ytilauQ rewoP (snoituloS dna smelborP)	الثلاثاء ١٤٣٦/٠٦/٢٥هـ ٢٠١٥/٠٤/١٤م
١٢	د. جميل مهيوب Dr. Gameel Mahyob	تميع التربة (lioS fo noitcafeuqiL)	الاثنين ١٤٣٦/٠٧/٠١هـ ٢٠١٥/٠٤/٢٠م
١٣	د. عمار روايقية Dr.Ammar Rouaiguia	مقدمة عن برنامج أباكُس للهندسة SUQABA ot noitcudortnI (٢)gnireenignE rof erawtfoS	الثلاثاء ١٤٣٦/٠٧/٠٢هـ ٢٠١٥/٠٤/٢١م
١٤	د. نايل حرز الله	دورة تطوير نظام الأندرويد .tnempoleveD diordnA	الثلاثاء ١٤٣٦/٠٦/٢٤هـ ٢٠١٥/٠٤/١٤م

تكريم المشاركين بسلسلة الندوات والدورات المقامة بمركز البحوث العلمية والهندسية بالفصل الدراسي الأول للعام الجامعي ١٤٣٥-١٤٣٦هـ

أنهى مركز البحوث العلمية والهندسية سلسلة الندوات والدورات المقامة بالمركز بالفصل الدراسي الأول للعام الجامعي ١٤٣٥-١٤٣٦هـ، وقد أقيم حفل تكريم للمشاركين وتسليمهم شهادات شكر وتقدير على ما قدموه من اسهامات ومشاركات داعمه ومحفزه للبحث العلمي في الجامعة.

ملخصات أبحاث المركز

Synthesis of Mesoporous Ag/Zno Nano Crystals with Enhanced Photo Catalytic Activity

Mohd faisal. Ahsan, Adel Ali Ismail Abdel Dayem

Abstract:

Mesoporous Ag/ZnO Nano crystals have been successfully synthesized at different Ag contents (0-10 wt %) through a single-step sol-gel method in presence of tri-block copolymer as a structure directing agent. The as-prepared hybrid materials were calcined at 450 °C in air for 4 h, subsequently, Ag nanoparticles have been photo-reduced from AgNO3 onto mesopores ZnO nanocyrstals. The XRD and Raman analysis revealed that well crystalline ZnO hexagonal wurtzite phase and face-centered cubic metallic Ag nanoparticles were formed. TEM images of mesoporous ZnO Nano crystals showed that synthesized materials composed of discrete ZnO nanoparticles agglomerated with worm-like mesoporous structure. The lattice fringes exhibits the typical distances, i.e., Ag (111) and ZnO (100) and the average Ag and ZnO nanoparticle diameters are ~5 and 10 nm, respectively. The photo catalytic performance of different prepared photo catalysts were evaluated by degradation of methylene blue (MB) under visible light irradiation. The results indicates that the photo catalytic efficiencies of mesoporous ZnO photo catalysts were remarkably enhanced by adding 1% Ag nanoparticles which completely degrade the target MB dye within 150 min. The photo degradation rate was found to increase linearly with increasing the Ag contents from 0 to 1% and it is faster 2.2 times than undoped ZnO. From economic point of view, 1% Ag/ZnO photo catalyst contains optimum Ag content as there is no significant increase in the photo calatytic performance at higher Ag content.

Catalysis Today

Novel A-Fe2o3/Polypyrrole Nano Composite with Enhanced Photo Catalytic Performance

Ali Alhajry, Farid AbouRageh Mohamed Harraz

Abstract:

We developed a simple and mild one-step chemical method to produce novel and highly efficient α-Fe2O3/polypyrrole (PPy) photo catalysts. The formation of α-Fe2O3/PPy Nano composites proceeds via a simultaneous gelation and polymerization process. The XRD results revealed that all the diffraction peaks can be perfectly indexed to the rhombohedral structure of α-Fe2O3 and the polymerization of Py did not change the crystalline phase of α-Fe2O3. TEM images show that Fe2O3 nanoparticles are quite uniform in shape and size and their particle sizes are decreased from 20 to 5 nm by increasing Py content from 5 to 25%. The lattice fringes (3.7 Å) are distinctly visible and revealed structurally uniform crystals of α-Fe2O3 without dislocation. Compared to pure Fe2O3, the newly developed Nano catalyst demonstrated a remarkable activity toward the photo catalytic degradation of methylene blue (MB) under UV irradiation, at ambient temperature. Complete degradation of MB was achieved after only 20 min in the presence of the optimum photo catalyst containing 10% Py. The effective photo catalytic performance is associated with the mesoporous structure and crystalline nature of the prepared Nano composites. Additionally, such enhanced photo catalytic behavior was rationalized in terms of a synergetic effect for light absorption between α-Fe2O3 and PPy that eventually led to better charge separation and suppression of charge recombination. The photo catalyst could be removed from the reaction mixture and its recyclability remains effective after five cyclic runs. Proposed mechanism for the degradation of MB with the α-Fe2O3/PPy Nano catalyst under UV irradiation is also presented and thoroughly discussed.

Journal of Photochemistry & Photobiology, A: Chemistry

Surface -Enhanced Raman Scattering (Sers)-Active Substrates from Silver Plated-Porous Silicon for Detection of Crystal Violet

Houcine S. Bouzid, Farid AbouRageh Mohamed Harraz

Abstract:

Silver nanoparticles (AgNPs) have been reduced onto porous silicon (PSi) surface in a simple immersion plating bath. Here, PSi with average pore size of ~30 nm was used as both a mechanical support and a mild reducing agent. AgNPs-meso-PSi hybrid structures exhibit a highly sensitive and reproducible surface-enhanced Raman scattering (SERS) response. A detectable concentration as low as 100 pM of crystal violet has been achieved with an enhancement factor (EF) of 1.3 x 106. No aging effect was observed for the current substrates after storing in air for three weeks. The large EF is essentially attributed to a combination of electromagnetic enhancement and charge transfer mechanism.

Applied Surface Science

Using Nano Material for Radiation Detection

Ayman Mohamed Abd Elmoaty Abdalla

Abstract:

An irradiation radon chamber with a total volume of 87 liter was designed and constructed. This system is based on a natural radon source and a traceable reference radon detector (AB-5 Radon monitor), which allows the radon concentrations inside the chamber to be obtained in different ranges. The radon chamber was used to determine both the calibration factor of the radon detector and the equilibrium factor between radon and its short-lived daughters. In addition, the dependence of the equilibrium factor on the temperature and flow rate was studied. The equilibrium factor was observed to be linearly dependent on the flow rate and its value at 20 °C was found to be 2.2 times higher than the equilibrium factor value at 50 °C. These values are in good agreement with those reported using the surface barrier detector method.

Nuclear Instruments and Methods in Physics

Two-Temperature Generalized There Mo Elastic Infinite Medium with Cylindrical Cavity Subjected to Non-Gaussian Laser Beam

Eman Ageel Allehaibi

Abstract:

The present work is devoted to a study of the induced temperature and stress fields in an elastic infinite medium with cylindrical cavity under the purview of two-temperature there Mo elasticity. The medium is considered to be an isotropic homogeneous there MO elastic material. The bounding plane surface of the cavity is loaded thermally by time exponentially decaying laser pulse. An exact solution of the problem is obtained in Laplace transform space and the inversion of Laplace transforms have been carried numerically. The derived expressions are computed numerically for copper and the results are presented in graphical form.

Sylwan Journal

There Mo Elastic Waves of Cylindrical Nano-Beam

Eman Ageel Allehaibi

Abstract:

A mathematical model of cylindrical Nano-beam with constant elastic parameters will be constructed and the governing equations will be taken when the beam is quiescent first. Laplace transforms techniques will be used to get the general solution for any set of boundary conditions. The solution will be obtained for a certain model when the beam is subjected to ramp-type heating and the two ends of the beam will be clamped. Inversion of Laplace transforms will be obtained numerically, and the results will be presented graphically with some comparisons to study the impact of the ramping time parameter and the relaxation time on the speed of progress of mechanical and thermal waves through the beam.

Jökull journal

Synthesis of Germanium Semiconducting Nanostructures using Thermal Evaporation Process and its Device Application

Mohamed Eisa Abaker Adam, Ali Alhajry, Sang Hoon. Kim

Abstract:

Well-crystalline ZnO nanoparticles were prepared through simple, facile and rapid solution combustion process and utilized as photo anode material for the fabrication of dye-sensitized solar cell. The detailed characterizations of the ZnO nanoparticles revealed that the crystalline product with wurtzite hexagonal phase was grown in high-density.The chemical composition analyzed through FTIR and EDS confirmed the purity of the ZnO nanoparticles. UV-vis and Raman spectral studies were applied for studying the optical and vibrational properties of as prepared ZnO nanoparticles, respectively. The fabricated dye-sensitized solar cell exhibited overall photo-to-electricity conversion efficiency of 0.94%, open-circuit current of 0.531 V, short circuit current of 4.11 mA/cm2 and fill factor (FF) of 0.43.

Journal of Nanoscience and Nanotechnology

Synthesis and Properties of Undoped-Doped Zno Nanostructures and their Applications for P-N Hetero Junction Diodes

Ghulam N. Dar, Ahmed Abdelbagi Ibrahim Mohammed

Sang Hoon. Kim

Abstract:

This paper reports the successful growth of aligned ZnO Nano rods on p-Si substrate via low temperature simple aqueous solution process. The prepared Nano rods were examined in terms of their morphological, structural, compositional and optical properties using several analytical tools such as field emission scanning electron microscopy(FESEM),energy dispersive spectroscopy(EDS), X-ray diffraction (XRD) androomtemperaturephotoluminescence(PL)spectroscopy.Thedetailedcharacterization studies revealed that the as-grown Nano rods are vertically aligned, well crystalline possessing wurtzite hexagonal phase, grown along the [0001] direction and possessing good optical properties. Furthermore, the prepared n-ZnO Nano rods/p-Siheteroj unctionass emblywas used to fabricate hetero junction diode. The fabricated heterojunction diode exhibits good rectifying behavior of rectification factor of 16 at voltage of 7.2 volts. High values of quality factor and series resistance of the device of ~ 4 and 52 kOhm, respectively, are obtained from I–V characteristics. The high series resistance may play the role of a shunt resistance that causes a partial drop in the output current of the whole assembly.

Journal of Nanoelectronics and Optoelectronics

Structural and Optical Characterization of Cr2o3 Nanostructure Role of Nanostructure as A Dielectric Medium

Fahd Mohsin Ahmed Rajab, Mohammad M. Alsyed

Abstract:

A systematic experimental work along with precise result analysis reflects the importance of this reported research work. Growth of Nano crystals by simple hydrothermal method and its structural, elemental, spectroscopic and optical characterization confirmed the identity and demonstrated the novel properties of the as-grown nanostructures. The physical-mechanism and the theoretical-interpretation of dielectric-properties of Cr2O3 nanostructures attest the potential candidature of the material as an efficient dielectric medium.

AIP Advances

Stability Analysis of A Model of Cancer Treatment by Immunotherapy

Mustafa Qaid Ahmed Khirallah

Abstract:

A mathematical model of cancer treatment by immunotherapy with constructed biological functions formulas is studied. The model has a large number of parameters which make it very complicated to study analytically. Two equilibrium points of the model system have been found analytically in a special case. The stability analysis of the two equilibrium points of the system is done, that is, the first point ( ) is always unstable whereas the second one can or cannot be stable, depending upon the parameters values.

European Journal of Scientific Research

Solving Nonlinear Equations Using A New Tenth– and Seventh–Order Methods Free from Second Derivative

Salwa Mohmmed Al Quria

Mohamed Ali Hafez Abdelaal

Abstract:

In this paper, we present numerical fifth order numerical methods to solve singularly perturbed Two-Parameter delay differential equations (DDEs) of second-order. The highest order derivative of these DDEs has multiplied by a small parameter and both the convection and reaction terms are with negative and positive shift. In this method, we approximate the terms containing negative and positive shifts using the Taylor series expansion to get three term recurrence relation, which has solved easily by discrete invariant imbedding algorithm. The effect of small delay δ, advance -, and perturbation - parameters on the boundary layer has also been discussed

European Journal of Scientific Research

Opinion Analysis from Reviews and Comments

Hejab Maazer Khaled Al Fawareh, Shahidah B. Jusoh

Abstract:

Opinions are always expressed in comments or reviews. Having a system that is able to analyze opinion automatically is desirable. The system can extract and process public opinions about a certain topic, product or service which is embedded in unstructured texts, can be considered as an intelligence business tool. Extracting opinions from reviews and comments requires a system to deal with natural language texts. The current focus in opinion analysis research is to classify opinion into three categories; positive, neutral, and negative. However, classifying opinion which is presented in a phrase still remain a challenge to researchers in this area. This paper

introduces an approach for classifying opinion which is presented in a phrase into two categories; positive and neutral. The approach is obtained by applying information extraction technique and fuzzy sets to the texts which contain opinions.

Key words: opinion analysis, opinion mining, information extraction, fuzzy sets

International Journal of Academic Research

Numerical Study of Soil Consolidation

Mohammed A Dahim, Ammar T. Rouaiguia

Abstract:

The basic objectives of this study are to describe the properties and characteristics of semi-arid soils of Najran (Saudi Arabia), it also investigates the collapsibility characteristics and behavior of the materials with particular reference to their response to wetting under different stress levels. Undisturbed soil samples from Najran area situated in the south of Saudi Arabia have been collected and studied by using both single and double odometer tests, and Standard Penetration Test (SPT). The results show that the highest value of collapse potential (CP=12.32%) of Najran soil is given by double Odometer tests for a depth of 1.5 m which represents a very severe trouble.

CRC Press, Taylor & Francis Group, A BALKEMA BOOK

Nonlinear Propagation of Surface Plasmon Polari Tons in High K-Dielectric

Muhammad Selim Reza, Muhammed S. Akond

Abstract:

Analysis of ultra-short pulse interaction inside widely used optical structure, such as directional coupler is conveyed using the well-known Finite Difference Time Domain (FDTD) technique and Time Domain Beam Propagation Method (TD-BPM). The optical device consists of GaAs material having dispersive property which is modeled using Lorentzian mathematical representation. The nonlinearity on the material can be achieved with the application of intense electric field. Modeling on such environment requires high performance computational tools. However, the implicit TD-BPM is innovated with higher order non-paraxial equation that is suitable for femtosecond pulse. The result obtained by the one-way technique, applied on the dispersive directional coupler, is verified with that of the widely used FDTD. A rigorous study is conveyed in order to distinguish the material dispersion from the intermodal dispersion. The analysis reveals that the material dispersion causes energy loss, in addition to extra pulse broadening and splitting that happens in case of intermodal dispersion in less extent.

OPTICAL REVIEW

Investigation of Super Halogen Behavior of Some Transition Metal HalIdes

Nadir Bouarissa, ShamoonAhmad. Siddiqui

Abstract:

A systematic quantum chemical study based on the density functional theory on the structure of neutral and anionic PdCln (n = 1–7) complexes has revealed a number of interesting features. The number of Cl atoms that can be attached to a Pd atom exceeds the maximal formal valence of the Pd atom. The calculated electron affinity (EA) and vertical detachment energy (VDE) of PdCln (n≥2) complexes exceed the EA of Cl implying that PdCln (n≥2) complexes can be termed as super halogens. When appropriate counterions are identified, these super halogen complexes could be used in the synthesis of new salts.

Main Group Chemistry

Highly-Sensitive Non-Enzymatic Glucose Sensor Based on Cuo Rosette-Like Nanostructures

Norah Y. Al Mehbad , Ahmed Mohamed Ibrahim Mohamed

Umar Mohmed. Ahmad

Abstract:

This paper reports the successful fabrication and characterization of phenyl hydrazine chemical sensor based on CuO rosette-like nanostructures. The CuO rosette-like nanostructures were synthesized by facile hydrothermal process at low-temperature and characterized in detail in terms of their morphological, structural and compositional properties. The detailed morphological studies revealed that the prepared CuO rosettes are made by the accumulation of hundreds of small CuO Nano disks which are arranged in a special fashion that they made rosette-like morphologies. The structural characterization, by X-ray diffraction (XRD), confirmed that the prepared CuO rosettelik structures are Nano crystalline and possessing monoclinic structure. The compositional studies further substantiates that the synthesized rosette-like morphologies are pure CuO. The fabricate phenyl hydrazine chemical sensor based on CuO rosette-like nanostructures exhibited very high sensitivity of ~ 49.532710 A/cm2.mM. Due to high sensitivity, it can be concluded that CuO rosette like nanostructures could be an effective candidate for the fabrication of highly sensitive phenyl hydrazine chemical sensors.

Journal of Nano science and Nanotechnology

Environmentally Friend Refrigeration Technology Study on Magnetic Refrigeration Materials

Adel Ali Ismail AbdelDayem, Houcine S. Bouzid

Ihab Abdel-Latif Abdel-Latif El-sayed

Abstract:

In the present work, polycrystalline perovskites of R0.6Sr0.4MnO3 Nano composites (R= La, Nd, or Sm) were synthesized using sol-gel method in presence of citric acid and polyethylene glycol as chelating and structure directing agents. The synthesized gel was calcined at 800 °C for 5 hours. The XRD revealed that the obtained Nano crystalline R0.6Sr0.4MnO3 is monoclinic crystal structure of space group (I 2/a). TEM images showed that the prepared perovskites are homogeneous and uniform with particle sizes in a range 20-40 nm and the HR-TEM images and lattice fringes displayed the monoclinic structure. IV measurements showed that Nd0.6Sr0.4MnO3 has semiconducting properties at room temperature. With applying low magnetic field, a transition from semiconductor behavior to Ohmic resistivity was observed. The static resistance of Nd0.6Sr0.4MnO3 was calculated to be ~ 2.985 T for semiconductor phase and the resistance increased 1000 times that gives rise to negative magnet or esitance (MR). The value of MR of Nd0.6Sr0.4MnO3 equals to 99.84%, leads to use these materials in fabrication of magnetic devices in the industrial scale.

Journal of Magnetism and Magnetic Materials

Direct Growth of Perforated Zno Nano Sheets Made by Accumulation of Nanoparticles on Fto Substrate for Dssc Application

Ghulam N. Dar, Umar Mohmed. Ahmad

Abstract:

Well-crystalline multi pod ZnO architectures made by accumulation of hexagonal Nano rods were synthesized, characterized and used as efficient anode material for the fabrication of dye-sensitized solar cell (DSSC). The multipod ZnO architectures were synthesized by simple and facile hydrothermal AL process and characterized by several techniques to examine the structural, morphological, optical and photo-voltaic properties. The morphological characterizations revealed that the synthesize dmultipod ZnO architectures were made of several hexagonal shaped ZnO Nano rods which are originated from a single Centre. The structural and compositional properties revealed that then anorods are pure ZnO and possessing well crystallinity and wurtzite hexagonal phase. The as synthesize dmultipods ZnO architectures were utilized as potential anode materials for the fabrication of dye-sensitized solar cell (DSSC). The dye sensitized solar cells fabricated with multipods ZnO architectures photo anode attained a reasonable solar to electricity energy conversion efficiency of ~1.9% with a photocurrent density i.e., short circuit current (JSC) of 4.59 mA/ cm2.

Journal of Nano science and Nanotechnology

Deterministic Algorithm for Constructing Fractal Attractors of an Iterated Function Systems

Wadia Faid Hassan Al-shameri

Abstract:

The Deterministic Iteration Algorithm is presented, to generate deterministic fractal attractor of an iterated function system (IFS) iteratively. We introduce the notion of the Hausdorff distance metric and its connection to the Hausdorff space as the space of deterministic fractal attractors. Finally, the algorithm is implemented by Mat lab program and illustrated by some computed attractors to be deterministic fractal attractors of the IFSs.

European Journal of Scientific Research

Detection of Electronically Equivalent Tautomer's of Adenine Base Using Hetero Fullerene

Nadir Bouarissa, Shamoon Ahmad. Siddiqui

Abstract:

It is always difficult to differentiate between normal and rare tautomeric form of various nucleic acid bases as they have similar electronic structure and energies. In the present work we performed theoretical calculations in order to accomplish the task of differentiating between adenine-thymine base pair and rare tautomer of adenine-thymine base pair using GaN doped fullerene (C58GaN). We used Density Functional Theory with the popular B3LYP functional in all calculations. The HOMO-LUMO gap was used to examine the electronic properties of these complexes. Our findings reveal that GaN doped C60 can be used as a Nano-biosensor.

Main Group Chemistry

Derivative- Ratio Spectrophotometric and HPLC Validated Methods for Simultaneous Determination of Metformin and Glibenclamide

Nabil Abdraqeb Farhan Alhemiary

Abstract:

The aim of the present Study was to develop a simple and rapid method for determination of metformin (MET) and glibenclamide (GLB)) in Pharmaceutical dosage form. A high-performance liquid chromatographic, first and second derivative spectrophotometric methods used for the simultaneous determination of MET and GLB. The first derivative amplitudes at 236 nm and 275.7 nm were selected for the assay of MET and GLB, respectively. Calibration curves were established at 5–120 µg/ml for and 1–20 µg/ml, with limits of detection of 0.21µg/ml and 0.29 µg/ml and limits of quantification of 0.64µg/ml and 0.89 µg/mL for MET and GLB, respectively. The second derivative amplitudes at 244.6 nm and 229 nm were selected for the assay of MET and GLB, respectively. Calibration curves were established at 5–120 µg/ml for and 1–20 µg/ml, with limits of detection of 0.46 µg/ml and 0.30 µg/ml and limits of quantification of 0.1.41µg/ml and 0.91 µg/ml for MET and GLB, respectively. In the HPLC method separation was performed by using C18 reversed phase column and a mobile phase of acetonitrile: 0.05 M KH2PO4 (60:40v/v) adjusted by phosphoric acid to pH 3. at flow rate of 1 ml/min and the detection wavelength were 210 nm and 238 nm ,the retention time was found to be 3.145 and 7.792 min, linearity over the concentration ranges of 5–75 µm/ml and 2-45 µg/ml, with limits of detection of 0.64 µm/l and 0.02 µg/ml and limits of quantification of 1.95 µg/l and 0.07 µg/mL for MEt and GLB, respectively. The methods were also applied for the determination of AMLB and VAT in the presence of their degradation products formed under variety of stress conditions. Proposed methods were validated for precision, accuracy, linearity range, robustness and ruggedness.

Oriental Journal of Chemistry Impact Factor 0.238 an Efficient Visible Light Mediated Photo Catalytic Approach for Waste Water Treatment

Ahmed Abdelbagi Ibrahim, Mohammed mohd Faisal. Ahsan

Abstract:

A simple and facile chemical method to synthesize SnO2 doped ZnO nanostructures have been investigated in the presence of polyethylene glycol (PEG) as a surfactant for highly efficient photo catalyst. The structural investigation indicated that the XRD patterns reveal highly crystalline ZnO nanoparticles. The FE-SEM images show that the synthesized SnO2 doped ZnO has aggregated layers with caves like structure. The newly prepared SnO2 doped ZnO nanostructures have been evaluated for photo degradation of methylene blue (MB) under visible light. The photo degradation of MB proceeds much more rapidly in the presence of SnO2 doped ZnO compared to the undoped ZnO nanoparticles. The photo catalytic performance was in the order of 0.5 % SnO2/ZnO> 1.0 % SnO2/ZnO> 0.2 % SnO2/ZnO> undoped ZnO, suggesting that doping of SnO2 improves the photo catalytic activity of ZnO. These results indicate that SnO2 doped ZnO nanostructures are very promising to fabricate highly efficient photo catalysts.

Journal of Molecular Catalysis. A, Chemical

A Study of Smart Phone Usage Among Najran University Community

Shahidah B. Jusoh

Hejab Maazer Khaled A Fawareh L

Abstract:

This paper presents a study on trends in smartphone usage among university students in Saudi Arabia. Students (N=324) from various academic levels and programs at Najran University, Saudi Arabia had participated completing survey questionnaires. Of participants, 94.4% (n=305 /324) owned smartphones. Based on this , the trends are evaluated, by categorizing usage into 2 types; normal usage and usage for learning. Results that majority of students in Saudi Arabia used smartphones as a regular mobile phone, as a computer an internet connection, and as a digital camera. To study, the trends in smartphone usage for learning, related to learning activities such as login to academic portal, use Blackboard, download class , taking and recording lecture notes using smartphones, were asked. Research results indicate that % of students have used smartphones to login to their academic portal. However, results also indicate that % of participants never used smartphones for Blackboard, 66.01% students never used smartphones as a for taking notes in a classroom and 66.89% participants never used smartphones to record class lectures. better percentage is shown for downloading class materials, where 54.49% of the participants used for downloading class materials. Research findings indicate nearly every student owned a and used for normal usage. However, the findings also suggest that university students in Saudi did not fully utilized smartphones for learning purposes.

International Journal of Academic Research

A Knowledge-Guided Approach to Line NURBS Curve Intersection

Khairan Dabash Ahmed Rajab

Abstract:

This work presents a robust algorithm to solve the line-curve intersection problem used frequently in design, manufacturing, graphics, art, etc. A global solution is proposed, i.e. all the intersections are found and computed to high accuracy requirements. The emphasis is on robustness, reliability and to handle geometric as well as numerical anomalies. The main thrusts of the method lie in the use of a knowledge-guided NURBS system, a tight baric decomposition and proper pre- and post-processing of the entities as well as the intersections. All these contribute to achieve a high level of reliability: the method is immune to such cases as tangential intersections, inflection points, or line-curve overlaps. The intersection points produce various relationships that are recorded in the knowledge-guided system so that all the results are reproducible in the receiving system, should the intersection point be recomputed with a different level of accuracy.

Computer-Aided Design and Applications

A Biologically Inspired Approach to Approximating the Circle with Integral B-spline

Khairan Dabash Ahmed Rajab

Abstract:

The aim of this paper is to narrow this gap by focusing entirely onin put data anomalies, how to prepare the data for error free computation and how to post process the results for downstream computing. The medial axis computation, using VRONI (Held, 2001, "VRONI: An Engineering Approach to the Reliable and Efficient Computation of Voronoi Diagram of Points and Line Segments," Compute. Geom.—Theory Appl., 18, pp. 95–123), is singled out as an example and it is shown that based on how the data are prepared, the results can be vastly different. We argue in this paper that the success of geometric computing depends equally on algorithm design as well as on data processing. VRONI (and most geometric algorithms) does not understand the concept of noise, gaps, or aliasing. It only sees a polygon and generates the medial axis accordingly. It is the job of the applications engineer to prepare the data so that the out putis acceptable.

Journal of Computing and Information Science in Engineering

Mathematical Probit and Logistic Mortality Models of the Khapra Beetle Fumigated with Plant Essential Oils

Alsayed Metawea Abd Elrhim Metawea

El Hadi Ebrahim Mohamed El Amir

Abstract:

In the current study, probit and logistic models were employed to t experimental mortality data of the Khapra beetle, Trogoderma granarium(Everts) (Coleoptera: Dermestidae), when fumigated with three plant oils of the gens Achillea. Ageneral-ized inverse matrix technique was used to estimatethe mortality model parameters instead of the usual statistical iterative max-imum likelihood estimation. As this technique needs to perturb the observe mortality proportions if the proportions in-clude 0 or 1, the optimal perturbation in terms of minimum least squares (L2) error was also determined. Ac-cording to our results, it was better to log-transform con-centration and timeas explanatory variables in modeling mortality of the test insect. Estimated data using the probit model were more accurate in terms of L2 errors, than the logistic one. Results of the predicted mortality revealed also that exten ding the fumigation period could be an effective control strategy, even, at lower con-cen-tration's. Results could help in using a relatively safe and effective strategy for the control of this serious pestusing alternative control strategy to reduce the health and environmental drawbacks resulted from the excessive relianceon the broadly toxic chemical pesticides and in order to contribute safeguard world-wide grain supplies.

Mathematical Biosciences and Engineering (MBE)

Fabrication of Heterojunction Diode Based on n-ZnO Nanowires/p-Si Substrate: Temperature Dependent Transport Characteristics

Mohamed Eisa Abaker Adam, Umar Mohmed. Ahmad

Abstract:

Herein, we report the growth and characterizations of well-crystalline n-ZnO nanowires assembled in micro flower-shaped morphologies. The nanowires are grown on p-Silicon substrate and characterized in terms of their structural, morphological and electrical properties. Temperature depend enttransport characteristics of the fabricated n-ZnO/p-Si heterojunction diode were examined. The morphology gicalstudies revealed that the nanowires are grown in high-density and arrange in specialmicro flower shaped morphology. The structural characterizations confirmed that the nanowires are well-crystalline and possessing wurtzite hexagonal phase. The electrical properties were evaluated by examining the I–V characteristics of the fabricated n-ZnO/p-Si heterojunction diode. The I–Characteristics were studied at temperature <300 K and ≥300 K in the forward and reverse biasconditions. The detailed temperature dependent electrical properties revealed that the fabricated heterojunction assembly shows a diode-like behavior with a turn-on voltage of 5 V at almost all temperatures and the delivered current changes between ~1 to ~5 A when temperature changes from 77 K to 425 K. The rectifying behavior of the fabricated heterojunction diode, at 5 V, was demonstrated by rectifying ratio of ~4 at 77 K which decreases to ~1.5 at 425 K. This analysis also showed that the mean potential barrier of the fabricated heterojunction (~1.2 eV) is larger than the energy difference (0.72 eV) of the work functions between Si and ZnO.

Journal of Nano science and Nanotechnology

Facile Synthesis and Photo Catalytic Activity of Cocoon-Shaped Cuo Nanostructures", and "A Robust Enzyme Less Glucose Sensor Based on Cuo Nano Seed Modified Electrodes

Ahmed Abdelbagi Ibrahim Mohammed

Umar Mohmed. Ahmad

Abstract:

Well crystalline cocoon shaped CuO nano structures were synthesized by simple solution process and used as an efficient heterogeneous photo catalyst for the degradation of harmful organic dye under temperature. The as synthesized CuO nano cocoons were characterized in detail using several techniques which revealed that the prepared nano structures are well crystalline, grown in very high density and possessing monoclinic crystal structure. Further, as a photo catalyst, the CuO nano cocoons exhibited reasonable photo catalytic degradation to ward harmful organic dye, i.e. acridine orange (AO). The kinetic study revealed that the photocatalytic degradation of AO using CuO nano cocoons as photo catalyst follo wsapseudo-first order kinetics .and Herein, we demonstrate the fabrication of a robust enzyme ess-glucose sensor based on CuO nano seeds (CNSs) synthesized at low temperature. The as-fabricated sensor exhibited excellent electro catalytic ability in a wide-linear range and was further employed for the glucose concentration determined in freshly drawn mice whole blood and serum samples

Materials Letters and Dalton Transactions

Ab Initio Investigation of 2, 2'-Bis (4-Trifluoromethylphenyl)-5, 5'-Bithiazole for the Design of Efficient Organic Field Effect Transistors

Shamoon Ahmad. Siddiqui

Abstract:

The initial molecular structure of 2, 2'-bis (4-trifluoromethylphenyl)-5, 5'-bithiazole has been optimized in the ground state using density functional theory (DFT). The distribution patterns of highest occupied molecular orbital (HOMO) and lowest unoccupied molecular orbital (LUMO) have also been evaluated. To shed light on the charge transfer properties, we have calculated the reorganization energy of electron λe, the reorganization energy of hole λh, adiabatic electron affinity (EAa), vertical electron affinity (EAv), adiabatic ionization potential (IPa) and vertical ionization potential (IPv) using DFT. Based upon the evaluation of hole reorganization energy λh and electron reorganization energy λe, it has been predicted that 2, 2'-bis (4-trifluoromethylphenyl)-5, 5'-bithiazole would be a better electron transport material. Finally the effect of electric field on the HOMO, LUMO and HOMO-LUMO gap were observed to check its suitability for the use as a conducting channel in organic field effect transistors (OFET).

International Journal of Quantum Chemistry

Accurate Orthogonal Circular Moment Invariants of Gray-Level Images

Khalid Mohamed Hosny

Abstract:

Problem statement: Orthogonal circular moments of gray level images such as Zernike, pseudo Zernike and Fourier-Mellin moments are widely used in different applications of image processing, pattern recognition and computer vision. Computational processes of these moments and their translation and scale invariants still an open area of research. Approach: a unified methodology is presented for efficient and accurate computation of orthogonal circular moment invariants. The orthogonal circular moments and their translation and scale invariants are expressed as a linear combination of radial moments of the same order in polar coordinates, where the later moments are accurately computed over a unit disk. A new mapping method is proposed where the unit disk is divided into non-overlapped circular rings; each of these circular rings is divided into a number of circular sectors of the same area. Each circular sector is represented by one point in its center. The total number of input Cartesian image pixels is equal to the number of mapped circular pixels. Results: The implementation of this method completely removes both approximation and geometrical errors produced by the conventional methods. Numerical experiments are conducted to prove the validity and efficiency of the proposed method. Conclusion: A unified methodology is presented for efficient and accurate computation of orthogonal circular moment invariants .

Journal of Computer Science

Urocortin 1 Inhibits Guinea Pig Gallbladder Contractility in Vitro via Corticotropin-Releasing Factor Receptor 2

Samy M. Abd El-Aziz, Basel A. Abdel-Wahab

Abstract:

In this study, we tested the effect of urocortin 1 (Ucn1) on the contractility of gallbladder smooth muscle (GBSM) strips from guinea pigs and studied the involvement of corticotropin-releasing factor (CRF) receptors in this effect. The effect of Ucn1 on the isometric contractions of non-contracted and acetylcholine (Ach)-contracted GBSM, and the effects of CRF-R antagonists antalarmin and astressin 2B on the effect of Ucn1 were studied. In addition, the expression of receptors for CRF-R1 and CRF-R2 in guinea pig gallbladder were investigated using reverse transcription – polymerase chain reaction (RT–PCR). Ucn1 dose-dependently inhibited the contractility of GBSM. Moreover, Ucn1 decreased the resting tension, R2, but not CRF-R1 receptor subtype is expressed in the muscular is muscle of guinea pig gallbladder. In conclusion, Ucn1 has an inhibitory effect on the contractility of GBSM of guinea pig mediated through stimulating CRF-R2 receptors in GBSM. More studies are needed to clarify the intracellular signaling events involved in this effect. Key words: urocortin 1, guinea pig gallbladder, gallbladder smooth muscle, corticotropin-releasing factor, antalarmin, astressi 2B, corticotropin-releasing factor receptors.

Can. J. Physiol. Pharmacol.

Role of Antioxidants and Exercises Therapy Program in Modulation of Hand Functions in Diabetic Neuropathy

Yasser Ibrahim Seadaa, Mohamed Saied Tawfikb

Abstract:

The purpose of the study was designed to clarify the role of antioxidants and exercises therapy program on modulation of hand functions in diabetic neuropathy. In this respect, the muscles power of both flexors and extensors in wrist and fingers, the range of their motion of wrist and fingers flexion and extension and their effect of motor nerve conduction velocities and electromyography study of median nerve in both sexes. Subjects Sixty males and females were insulin dependent diabetic patients , their age ranged from 40-60years old and their weight ranged from 60-90Kg. They were randomly divided into three equal groups (G1,G2 and G3). G1cosists of 20 type2 insulin dependent diabetic patients of both sexes and was treated by antioxidants only without any exercises therapy program, G2 consists of 20 type1 insulin dependent diabetic patients of both sexes and was treated by exercises therapy program only without antioxidant and G3 consists of 20 type1 insulin dependent diabetic patients of both sexes and was treated by antioxidants and exercises therapy program. Vital signs as blood pressure, body temperature, pulse rate and respiratory rate were measured before and after the treatment sessions. Assessments, in all group studied, Tensiometer was used to measure the muscle power of flexors and extensors in wrist and fingers, the digital goniometer was used to investigate the range of their movement either during flexion and extension, Purdue beg board was used to measure of hand functions either pretension or counting. Moreover, by the use of standard nerve conduction velocity and electromyography (NCV-EMG) to measure motor nerve conduction velocity, AP amplitude and their latencies and compound muscle action potentials of median nerve. Statistically the results for all

groups were analyzed by ANOVA to compare the differences between the three groups. The statistical package of social sciences (SPSS, version10) was used for data processing using the p-value 0.05 as a level of significance. Results, showed that there was significant improvements in all variables in G3 only. However, there was a little improvement but not significant in both G1and G2 with best results for G2 regarding to clinical and electrophysiological parameters. Therefore, it could be concluded that the use of antioxidants combined with exercises program were the good method to improve hand function, increase muscle power of flexors and extensors of wrist and fingers and the range of their movements together with determination of motor nerve conduction velocities and electromyography. Our results open a new link to manage the motor deterioration of hand function in diabetic neuropathies via the use of antioxidants combined with exercises program..

Journal of faculty of medicine. Zagazig Univeristy

دراسة و مقارنة حول اساليب توقع الاداء للنظم المؤسسة على المكونات

عادل عبد العزيز ، الدين عثمان

الخلاصة:

النظم المؤسسة على المكونات اصبحت تسترعى اهتماما واسعا لما تلعبه من دور واضح فى تسهيل بناء النظم المعقـدة و توفيـر قدر عالي من الاعتمادية. و يصبح من المهـم متابعة و تقييم اداء البرمجية فى مراحل مبكرة من بناء النظام. ان تجاهل اداء البرمجيات اثناء تطوير النظام و الانتظار حتى مرحلة اكتمال النظام او مرحلة تكاملية النظم تقود الى تأخر التعرف على اوجه القصور في الاداء و بالتالي الفشل في تطوير النظام او عدم الايفاء بمتطلبات المستخدم للمنتج البرامجي و هو ما يعنى زيادة في التكاليف و الجهد. طرق عديدة لتوقع اداء البرمجيات تم اقتراحها الا انه لا توجد حتى الان طريقة واحدة شائعة و معظم الطرق عبارة عن ادوات و ليست اساليب ،عليه مازال الحقل في حوجه الى اساليب متكاملة تراعى خصوصية النظم المؤسسة على المكونات . في هذه الورقة نقدم نتيجة المقارنة التي تم اجراءها بين الاساليب العامة لتوقع الاداء و المتمثلة في اساليب القياس ، الاساليب القائمة على النموذج ، الاسلوب المختلط. نشير الى انه قد تم تنفيذ المقارنة بناءاه على معايير مختارة، والهدف النهائي من عملنا المستمر في هذا المجال يتمثل في تقديم طريقة ذات فعالية افضل تحقق الهدف الرئيس المتمثل في تطوير برمجيات ذات اداء عالي. و ذلك بتطوير اطار عمل متكامل مزود بالأدوات اللازمة. نتيجة المقارنة تشـير الى فعالية الاسـلوب المختلط في التوقع للنظم المؤسسـة على المكونات و بالتالي سيتم تضمينه في اطار العمل المقترح في المرحلة المقبلة. من اسهامات هذه الدراسة انها تسلط الضوء على موضوع حيوي باللغة العربية، مما يسـهم في تقريب الرؤية لكثير من المفاهيم للمهتمين و الباحثين المسـتخدمين للغة العربية .

Communications of the Arab Computer Society

WSN-based Support for Irrigation Efficiency Improvements in Arab Countries

Ali Al-Hamdi, Ahmed Monjurul Hasan

Muhammad Akram Is

Abstract:

Arab countries suffer from an acute water scarcity where most of its parts depends on underground resources on water consumptions. Among the different consumptions, agriculture is the sector that demands the highest percentage of water for irrigation. Anthropogenic factors and mismanagement of irrigation process play a significant role to make the water situation more severe. Nevertheless, with proper supporting tools, the irrigation efficiency can be improved. The work in this paper aims at proposing a contextual architecture model utilizing WSN technology. The ultimate goal of this model is to support the operation and management of irrigation technologies and the irrigation stakeholders' activities as well.

The 12th International Arab Conference on Information Technology

Fabrication of High Sensitive Gas Sensors Based on 1-Dimensional Zno And Sno2 Nanowires

Sang Hoon Kim, Sang Woon Hwang

Abstract:

The oxide semiconductors are important gas sensing materials due to their good sensitivity and accuracy in detection of the some minor components in the gas phase which are important for the safe environmental maintenance and the control of reaction process and productivity. The sensing behavior is the most important property of 1D metal oxide materials due to their high sensitivity to their chemical environment. The sensing mechanism of the metal oxide based gas sensors lies on a change in the electrical conductivity due to the process of interaction between the available reactive species at the surface of the nanowire and the gas molecules of the targets. It is well known that the oxygen vacancies on the oxide surfaces are electrically and chemically active. Among all nanomaterial's, ZnO, with a wide band gap and large exaction binding energy possesses several advantages in the fabrication of various electronic devices. In this research, we decide one material that is standard material ZnO. And the undoped/doped ZnO and SnO2 nanowires are synthesized by thermal evaporation process exhibit simple low-cost synthesis and high quality. Moreover, we developed the electrical properties of ZnO nanowires such as carrier mobility and electrical conductivity through plasma and thermal treatments.

J. Nanosci. Nanotechnology

Well-Crystalline ZnO Nanowire Based Field Effect Transistors (FETs)

S. H. Kim Ahmad Umar S. W. Hwang

S. A. Al-Sayari M. Abaker and A. Al-Hajry

Abstract:

Well-crystalline ZnO nanowires were grown on Si(100) via non-catalytic thermal evaporation process using metallic zinc powder in presence of oxygen. The detailed morphological characterizations by field emission scanning electron microscopy (FESEM) and transmission electron microscopy (TEM)confirmed that the synthesized products are nanowires with the typical diameter and lengths of∼55±5 nm and several micrometers, respectively and are grown in high density over the silicon substrate. The detailed structural characterizations by high-resolution TEM and X-ray diffraction confirmed that the synthesized nanowires are well-crystalline and possessing wurtzite hexagona phase. The presence of Raman-active optical-phonon Ehigh2 mode at 437 cm−1 in the Ramans catteringspectrum confirms good crystal quality for the as-grown ZnO nanowires. The electrical transport properties of the as-grown nanowires were explored by fabricating single nanowire based field effect transistors (FETs). The fabricated single ZnO nanowire based FET exhibits carrier concentration and electron mobility of ∼7.49×1017 cm−3 and ∼8.42 cm2V−1s−1, respectively. J. Nanosci. Nanotechnol. 2011, Vol. 11, No. xx 1533-4880/2011/11/001/006 doi:10.1166/jnn.2011.4744 1 RESEARCH ARTICLE

Journal of Nanoscience and Nanotechnology

Synthesis and Characterization of Undoped/Doped Zno Nanowires and their Applications for High-Performance Nano-Electric

Sang Hoon Kim, Sang Woon Hwang

Abstract:

Recently, many research groups have an effort in the area of wide band gap semiconductor materials due to their wide range of applications. Among them, ZnO is regarded as one of the promising candidates for high performance optoelectronic, electronic and sensor applications due to their wide band gap (3.37 eV), large exaction binding energy (60 meV), high electron velocity and high mechanical stability, and high surface-to-volume ratio. In particular, ZnO semiconducting materials that have been doped with transition metals are currently generating much research interest. Because metal-doped ZnO nanostructures have been investigated to determine the effects of transition metal incorporation into the lattice on electrical, optical, magnetic, and structural properties of ZnO. Moreover, the introduction of impurity atoms into ZnO semiconducting materials is the primary method for controlling the properties, such as band gap, mobility and electrical conductivity. Therefore, transition metal doping of ZnO nanowires are of great interest for Nano-electronic devices applications, such as field effect transistors and p-n junction devices. In this research, we explore the possibility of fabricating transition metal-doped ZnO nanowires by thermal evaporation process. And we report the fabrication of Nano-electronic devices using 1D undoped/doped ZnO nanowires using by conventional lithography and e-beam lithography method. .

Citation: AIP Conf. Proc

Effect of Iron Doping on the Physical Properties of Europium Manganite's

A. Abdel-Latif, S.A. Saleh

Abstract:

Polycrystalline samples of Eu0.65Sr0.35FexMn1-xO3 (x = 0.1 & 0.5) were prepared by a solid state reaction technique. Preliminary microstructure and crystal structure of the compound at room temperature were studied using field emission scanning electron microscope (FESEM) and X-ray diffraction (XRD) technique, respectively. It is found that with Fe doping, the grain size decreases, where the compound crystallizes in a single-phase orthorhombic structure. Both samples show three active Raman vibrational modes around 210, 488 and 610 cm-1. The substitution of Fe at the Mn site results in a slightly change in band positions of Raman spectra The temperature variation of resistivity shows that these compounds have semiconductor behavior with activation energy 0.152 eV for x = 0.1 increases to the value 0.535 eV for x = 0.5 The frequency dependence of dielectric constant in these materials indicates that space charge polarization contributes significantly to their observed dielectric parameters.

Journal of Alloys and Compounds

Bacterial Prevalence and Resistance to Antimicrobial Agents in Southwest, Saudi Arabia

Masoud E.A, Mahdy M.E1, Esmat A.M

Abstract:

One hundred and eighty eight organisms were isolated from clinical specimens (71 isolates from urine, throat swabs (40), stool (39) pus (17), blood (14), wound swabs (7)) collected from laboratories of hospitals and polyclinics distributed in Najran Area, Saudi Arabia, between February 2010 to November 2011. Bacteria were identified by Gram staining and biochemical tests, and antibiotic sensitivities tested by the disc diffusion method at microbiology laboratory, Najran University. The most prevalent bacteria isolated were E. coli (35.63%) followed by Klebsiella pneumoniae (18.08%), Staph. Aureus (14.89%) ,Salmonella spp. (13.29%) , Pseudomonas aeruginosa(6.91%), Streptococcus pneumoniae (5.31%) , Shigella spp (3.19%) , Enterococcus faecalis(1.59%) and Proteus mirabilis (1.06%). The multi-drug resistance rates (MDR) among common isolates were Pseudomonas aeruginosa (38.46%) followed by Klebsiella pneumoniae (32.35%), Staph. aureus(32.14%)and E. coli(31.34%) .The overall multi-drug resistance rate among isolates was high (2 8.72%).

Determination of Aflatoxin M1 Concentrations in Full-Fat Cow's Uht Milk Sold for Consumption in Najran-Saudi Regarding its Public Health Significance

Medhat I.M. Abdallah, Mohamed S. Bazalou

Mohamed Z. Al-Julaifi

Abstract:

This study aimed to evaluate the concentrations of aflatoxin M1 in full fat, cow's UHT milk solid in Najran–Saudi Arabia with regard to its public heath significance. 96 samples of different brands full fat, cow's UHT milk were randomly punched from different supermarkets at Najran city during the period of September 2011 to January 2012. The samples were examined for AFM1 using the competitive enzyme-linked immunosorbent assay (ELISA), AFM1 residues were detected in 79 samples (82.30% of total). The minimum concentration was 0.01, the maximum concentration was 0.19 and the mean value was 0.058±0.0053mg/L-1. Data also indicated that AFM1 residues concentrations detected in all the positive samples were below the tolerated level of AFM1. So it could be concluded that contamination of AFM1 in dairy products marketed in Najran city does not appear to be serious public health problem at the moment .

Egypt . J. of Appl. Sci.

Toxic and Antifeedant Activity of Extracts, Latex and Flavonoids of Calotropis Procera (Ait) Against Two Coleopteran Stored-Grain Insects.

Gomah Nenaah

Abstract:

In the course of screening for natural products as bio rational grain protectants, aqueous and solvent extracts were prepared from the leaves and flowers of Calotropis procera (Ait.) (Gentian ales: Asclepiadaceous). The latex protein (LP) and the flavonoids (FCp) of the plant were also isolated and purified. Their effects on survival and the feeding behavior of the rice weevil, Sitophilus oryzae L (Coleoptera: Curculionidae) and the lesser grain borer, Rhyzopertha dominica (F) (Coleoptera: Bostrichidae), two of the most harmful pests of stored grains were evaluated. All phytochemicals, especially the (FCp) and (LP) showed adulticidal activities against the test insects with S. oryzae was more susceptible than R. dominica. When adults of both insects were exposed to a dry film residue of these extracts, the flavonoid fraction (FCp) was the most toxic, followed by LP, methanol extracts of the leaves and flowers with LC50,s of (36.1 and 47.6), (45.9 and 60.2), (58.3 and 69.00) and (73. 0 and 86.8) µg/cm2 at 48 h post-treatment against S. oryzae and R. dominica, respectively. All compounds were more toxic when insects were fed phytochemicals-treated grains, where LC50,s of FCp and LP reached (21.8 and 27.4) and (28.2 and 39.5) mg/kg grains at 48 h post-treatment against R. dominica and S. oryzae, respectively. In this case, the aqueous extracts of the leaves exhibited promising toxicity with LC50,s of 49.2 mg/kg grains against S. oryzae. Nutritional studies using the flour disc bioassay and sub-lethal doses of the test products revealed significant reduction in the growth rate (RGR), food consumption rate (RCR) and food utilization (ECI) by both insects with feeding deterrent indices (FDI) reached (86.4 and 74.5) % with the FCp against S. oryzae and R. dominica, respectively. The study recommends the use of such phytochemicals as natural leads to protect stored grains from insect infestation.

Journal of stored Product

Improvement of Gait in Parkinsonian Patients By Reactive Neuromuscular Training

Yasser Ibrahim Seada, Farouk Farouk Ahmad Yousif

Mohamad saied Tawfik

Abstract:

This study was done to investigate the influence of reactive neuromuscular training on gait of Parkinsonian patients .A total subject of thirty Parkinsonian patients of both sexes, aging from 50-77 years and weighting 60-90Kg were chosen in our study. The patients were randomly divided into two equal groups.Group1(G1) was the control group managed by traditional physical therapy program (stretching, strengthening, balancing and weight shifting exercises) while patients in GroupII(the target experimental group), were managed by Biodex Multi-Joint System for reactive neuromuscular training in addition to the same exercise therapy program for G1.In all patients this therapy training program was done for 40 minutes, 3 days per week day after day for 2 months. The vital signs for all patients were detected along the course of managed program .In the two groups studied, all patients reactions were assessed by Biodex Multi-Joint System for reactive neuromuscular training , balance was assessed by Biodex Balance system SD motion analysis system ,gait was assessed by Unified Parkinson Disorder Rating Scale (UPDRS), step length and velocity were assessed by motion analysis system and muscle activity for rectus abdominus and erector spinae muscles were assessed by electromyography before and after the last sessions. Our results showed significant changes and improvement in groupII in all parameters assessed regarding to all clinical and electro my graphic parameters.

Automatic Classification of Questions into Bloom's Cognitive Levels Using Support Vector Machines

Anwar Ali Yahya, Addin Osman

Abstract:

In recent years, E-learning has increasingly become a promising technology in educational institutions Among numerous components of E-learning systems question bank is a primordial component. Question bank is a repository of questions that assists students and instructors in the educational process. In question bank, questions are annotated, stored and retrieved based on predefined criteria such as bloom's cognitive levels. Definitely, for question bank management, the automatic classification of questions according to Bloom's cognitive levels is of particular benefit. This paper explores the effectiveness of support vector machines (SVMs), in tackling the problem of question classification into Bloom's cognitive levels. To do so, a dataset of pre-classified questions has been collected. Each question is processed through removal of punctuations and stop words, tokenization, stemming, term weighting and length normalization. SVMs classifiers, namely linear kernel, have been built an d evaluated on approximately 70% and 30% of the dataset respectively, using SVM-Light software package. The obtained preliminary results show a satisfactory effectiveness of SVMs with respect to classification accuracy and precision. However, due to the small size of the current dataset, the results of the classifiers' recall and F-measure suggest a need for further experiments with larger dataset to obtain conclusive results.

The 12th international Arab conference information technology Naif Arab University for security sciences

Development of an Ict-Based Layer Model for Improving Managerial Decision Making on Water Issues in Arid and Semi-Arid Regions

Ali Al-Hamdi, Muhammad Akram

Ahmed Monjurul Hasan

Abstract:

Fresh water is an essential element for human survival and land-based life forms. Right quantity and quality of fresh water is a fundamental element for human continued existence and land-based life forms. About 97% of earth water is salt water and from remaining 3% only 0.4% fresh water is available for human use. Many countries of the world are facing problem of inadequate drinking water supply, management of wastewater and basic sanitation. About more than one billion peoples did not have access to the safe water and two billions are lack of safe sanitation. This is a constant challenge for several regions of the world. Effective water management is very important to overcome the water problems. Nevertheless, with the use of Information & communication technology (ICT) techniques, this situation can be improved. In this research paper we have discussed the essential factors that effects on different water issues in arid and semi-arid resigns, moreover these water problems are classified into structured, semi-structures and unstructured. To improve the managerial decision making on water challenges; we also have proposed an ICT based layer model with consideration on operations, operational management, tactical management and strategic management

International Journal of Computer and Information Technology

Growth of In-Doped ZnO Hollow Spheres Composed of Nano sheets Networks and Nano cones: Structural and Optical Properties

S. H. Kim, G. N. Dar, Ahmad Umar

Abstract:

This work reports the facile growth and characterizations of In-doped ZnO hollow spheres composed of Nano sheets networks and Nano cones. The In-doped ZnO hollow spheres composed of Nano sheets networks and Nano cones were grown on Si (100) substrate by simple and non-catalytic thermal evaporation process using metallic zinc and indium powders in the presence of oxygen. The prepared materials were examined in terms of their morphological, compositional, structural and optical properties. The detailed morphological studies revealed that the synthesized products are hollow spheres composed of Nano sheet networks and Nano cones and grown in high-density. The observed structural properties exhibited well-crystallinity and wurtzite hexagonal phase for the grown materials. The room-temperature photoluminescence (PL) spectrum showed a broad band in the visible region with a suppressed UV emission and hence due the enhancement in the green emission, the prepared materials exhibits a great interest in the area of ZnO phosphors, such as field emissive display technology, etc.

Journal of Nano science and Nanotechnology

تقرير إنجازات
مركز البحوث العلمية والهندسية
١٤٣٥هـ - ١٤٣٧هـ