



اللقاء العلمي 6

لمشاريع تخرج طلاب وطالبات
قسم الكيمياء 1438هـ - 1439هـ



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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د. حاتم محمد الطس

عميد كلية العلوم التطبيقية

انطلاقاً من الرؤية الطموحة للمملكة 2030 وبرنامج التحول الوطني 2020 والتي وضعت التعليم والتعلم على رأس الأولويات التي توليها حكومة خادم الحرمين الشريفين وولي عهده الأمين -حفظهم الله- أكبر اهتمام وأصبح لزاماً على الجامعات والكليات ان تسعى لذات الهدف لينعكس هذا الاهتمام إيجاباً على مخرجات التعلم والتي تتجلى في ربط البرامج الأكاديمية بسوق العمل.

وتأتي مهارة البحث العلمي والاستنتاج وكتابة النتائج العلمية بصورة علمية صحيحة كأحد أهم المهارات التي تجذب قطاعات العمل الحكومية والخاصة لخريجي كلية العلوم التطبيقية. ويشكل هذا العام اللقاء العلمي السادس لمشاريع التخرج بقسم الكيمياء 1439هـ أحد أهم الروافد التي تظهر براعة الطلاب والطالبات في استخدام مهارة البحث العلمي وعرض أعمالهم وافكارهم لتكون باكورة نتاجهم العلمي.

د. إسماعيل بن إبراهيم الثقفي رئيس قسم الكيمياء

الحمد لله الذي بحمده تتم الصالحات والصلاة والسلام على أشرف الأنبياء والمرسلين محمد بن عبدالله عليه افضل الصلاة وازكى التحيات يأتي ملتقى مشاريع التخرج السادس بقسم الكيمياء امتدادا لجهود القسم الفاعلة كل عام للاحتفاء بجهود الطلاب والطالبات وعرض انتاجهم العلمي والبحثي لتويجا لتخرجهم والتحاقهم بمجالات العمل المختلفة.

وانطلاقا من أهمية مشروع التخرج للطلاب حرص القسم ممثلا في أعضاء هيئة التدريس المشرفين على الطلاب والطالبات بتعليمهم الأسس العلمية الصحيحة للبحث العلمي نظريا وعمليا والاستفادة من كم المعلومات التي تلقوها خلال سنوات دراستهم لمرحلة البكالوريوس.

كذلك أهيمه مشروع التخرج من الناحية التطبيقية التي من الممكن ان يحصل الطالب من خلاله على ابتكار علمي له أهميته في المستقبل وهناك شواهد كثيرة في عالمنا الحاضر على تحول بعض من مشاريع التخرج لكثير من الطلاب الى ابتكارات احدثت نقلة تقنية او صناعية او طبية في العالم وأفادت البشرية وساهمت في التطور والتقدم العلمي. واملنا في طلاب وطالبات قسم الكيمياء بجامعة ام القرى العريقة ان يكون لهم تأثيرهم الإيجابي في مختلف مجالات العمل التي تدعم رؤية المملكة العربية السعودية 2030 الواعدة وهم ان شاء الله اهل لذلك.

في الختام أتقدم بالشكر الجزيل لزملائي وزميلاتي أعضاء هيئة التدريس الذين ساهموا في اخراج الملتقى بالصورة المشرفة ولجميع طلاب وطالبات مشاريع التخرج لحرصهم الواضح على تطوير قدراتهم العلمية والبحثية.

د. تهاني بنت محمد باوزير وكيلة رئيس قسم الكيمياء

الحمد لله رب العالمين، أحمده تعالى وأشكره، وأثني عليه الخير كله، وأسأله المزيد من فضله، وأصلي وأسلم على خير خلقه.

أما بعد ،، يسعدني قسم الكيمياء في كلية العلوم التطبيقية بتوجيهات من سعادة رئيس القسم الدكتور اسماعيل بن إبراهيم الثقفي إلى تحقيق تطلعات حكومتنا الرشيدة بقيادة خادم الحرمين الشريفين - حفظه الله - في خدمة الوطن والمواطن من خلال الاستراتيجيات التي تضمن التطوير المستدام والمواكب للتطورات العالمية مع ضمان تطبيق معايير الجودة في القسم لكي يؤدي مهامه بكفاءة عالية تنعكس نتائجها على الأداء العام للجامعة .

من هذا المنطلق، يلتزم القسم بتوفير بيئة جاذبة ومحفزة للإبداع والتميز في مخرجاته التعليمية والبحثية معاً. لذلك يحرص على اكتساب المعارف الجديدة ونشرها ومتطلباتها في المملكة. بهدف تخريج أجيال ريادية متميزة؛ ليعملوا ضمن بيئة ملهمة في مجالات وتخصصات متنوعة تلبية لحاجات سوق العمل لذلك حرص القسم على الاهتمام بالركائز الأربع الأساسية للإنجاز الأكاديمي والبحثي التي تتمثل في: توفير الموارد البشرية المتكاملة (طلاب، وباحثين، وفنيين)، وتوفير البنية التحتية المتجددة؛ لإثراء المعرفة (مكتبات، ومصادر معلومات، وخدمات آلية ورقمية متنوعة، وتجهيزات).

ويسعدني القسم لاحتلال موقع متقدم ورائد في مجال البحث العلمي على مستوى الجامعة لذلك وضع خطاً ملموسة لتحقيق هذا الهدف الطموح فهو يتيح لطلاب وطالباته تلقي العلم على أيدي نخبة من أعضاء هيئة تدريس من ذوي الكفاءة العالية والإنجازات العلمية المشهودة.

والله أسأل أن يمن علينا بالتوفيق والسداد، وأن يعيننا على تحقيق أهداف وآمال الجامعة والوصول إلى مكانة مرموقة ومتميزة محلياً وعالمياً.

إفتتاحية اللقاء

انطلاقاً من رؤية المملكة - في تحول المملكة إلى مجتمع معرفي مبدع، وفي سياق الإسهام في مسيرة الوطن التنموية والمعرفية، نبعت فكرة تنظيم اللقاء العلمي لمشاريع تخرج طلاب وطالبات قسم الكيمياء، وتبلورت الفكرة بعد دراسة متأنية لأفضل الطرق العلمية لنشر التوعية بأهمية البحث العلمي ودوره في حياتنا المعاصرة، وتسليط الضوء على تأثيرات الكيمياء وعلاقتها بالتكنولوجيا وتطبيقاتها.

ونأمل من خلال تنظيم هذا اللقاء السنوي أن يصبح الملتقى رافداً مهماً لتطوير الإبداع العلمي وإثراء المعرفة بتخصصات الكيمياء المختلفة، وتعزيز التفكير العلمي لطلاب القسم، وإطلاق الطاقات الإبداعية لديهم بما يعود نفعه علمياً على كلية العلوم التطبيقية وعلى الجامعة ومجتمعنا مستقبلاً، بإثرائهم بمشاريع وأفكار علمية وحلول لمشاكل مختلفة من خلال تنفيذ هذه المشاريع بإشراف نخبة من أعضاء وعضوات هيئة التدريس.

ويُعد هذا اللقاء نشاطاً علمياً سنوياً، يهتم بعرض مشاريع التخرج من خلال معرض للملصقات العلمية التي يتم فيها مناقشة أفكار هذه المشاريع وأهدافها العائدة للجامعة والمجتمع، بالإضافة إلى رفع مستوى خريجي القسم البحثية والتطبيقية. يصاحب الفعالية معرض يوضح بشكل أكبر أفكار تطبيقية لهذه المشاريع التي تعرض لزواره من طلاب القسم من مستويات مختلفة أو طلاب الجامعة عموماً وأعضاء هيئة التدريس الزوار المهتمين من المجتمع بالبحث العلمي وعلم الكيمياء على وجه الخصوص بأسلوب تفاعلي يواكب متطلبات العصر الحديث. بالإضافة للأركان خاصة للجهات الخارجية المستضافة بهدف تسليط الضوء على تطبيقات الكيمياء وعلاقتها بالمجتمع والأدوار التي تخدم بها الكيمياء المجتمع تحت شعار «شركائنا في النجاح».

وتتمثل رؤية اللقاء العلمي السادس لمشاريع التخرج لهذا العام في تجسيد أركان تفاعلية لإبراز دور قسم الكيمياء في تحقيق رؤية 2030 وذلك بتسليط الضوء على مساهمات القسم في التعليم وتنمية المواهب الشخصية للجيل القادم والعمل التطوعي في مختلف المجالات وخدمة ضيوف الرحمن (مكتسبة من الموقع الجغرافي لمدينة مكة المكرمة والفرص المتاحة لطلاب وطالبات القسم من خلال ربط الكيمياء بخدمة الحج والعمرة) ودعم المشاريع الصغيرة والأسر المنتجة من خلال تعزيز القدرة الاقتصادية على توليد فرص عمل متجددة.

إحصائية طلاب وطالبات مشاريع التخرج للعام الدراسي 1438 - 1439هـ

10	المشرفين
18	المشرفات
57	الطلاب
134	الطالبات

فعاليات اللقاء

المكان	الفعالية	الزمن
الصالة الخارجية للجوهرة	افتتاح المعرض العلمي المصاحب للقاء العلمي السادس لمشاريع التخرج (طلاب)	الاثنين 1438/7/30 هـ 8:00 – 9:00 م
الصالة الخارجية للجوهرة	افتتاح المعرض العلمي المصاحب للقاء العلمي السادس لمشاريع التخرج (طالبات)	الثلاثاء 1438/8/1 هـ 11:00 ص – 12:00 م
الصالة الخارجية للجوهرة	المعرض العلمي المصاحب للقاء العلمي السادس لمشاريع التخرج (طالبات)	الاربعاء والخميس 1438/8/3-2 هـ 11:00 ص – 12:00 م
الطلاب في مقر العابدية الطالبات في قاعد خوقير بالزاهر	الجلسات العلمية لمناقشة مشاريع التخرج اليوم الاول	الاربعاء 1438/8/9 هـ 9:00 ص – 1:00 م
الطلاب في مقر العابدية الطالبات في قاعد خوقير بالزاهر	الجلسات العلمية لمناقشة مشاريع التخرج اليوم الثاني	الخميس 1438/8/10 هـ 9:00 ص – 1:00 م



ملخصات أبحاث مشاريع التخرج

Enhancing Cotton Fabrics Properties Using ZnO₂ and Ag Nanoparticles

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"Kiswa Al-Kabba" lining was modified by using a high-quality cotton fiber which loses some of its strength as they daily get influenced by the surrounding condition especially high heat and humidity which contributes the growth of fungi and microbes, which may cause the penetration of toxic microbes in tissues and destruction of the fabrics. Enhanced and multi-functional cotton fabrics are prepared using zinc oxide nanoparticles, they were prepared using the sol-gel method, Cotton fabrics were coated with ZnO nanoparticles using sol-gel spin coating technique. The modifications have been applied to the properties of cotton fiber and produced the fiber resistant to the conditions such as self-cleaning and antibacterial.[1]

Various techniques were employed to characterize the changes on mechanical, surface and physical properties of cotton fabrics before and after coating, the results showed that the introduction of nanoparticles coating on cotton fabrics enhanced their mechanical property along with surface properties.

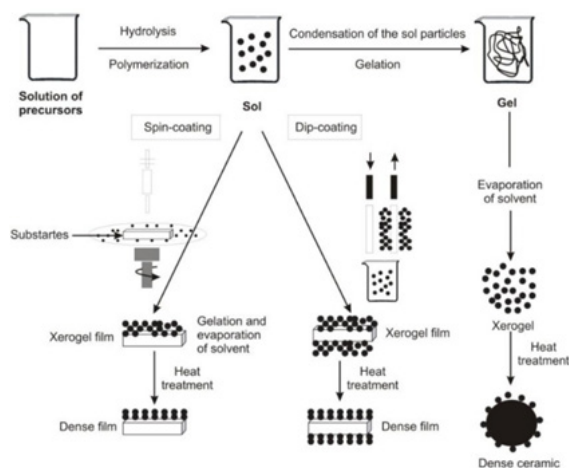


Figure (1). Sol-gel method [2]

1. Shaban, M., S. Abdallah, and A.A. Khalek, Characterization and photocatalytic properties of cotton fibers modified with ZnO nanoparticles using sol-gel spin coating technique. Beni-Suef University Journal of Basic and Applied Sciences, 2016. 5(3): p. 277-283
2. Kolodziejczak-Radzimska, A. and T. Jesionowski, Zinc Oxide-From Synthesis to Application: A Review. Materials (Basel), 2014. 7(4): p. 2833-2881.

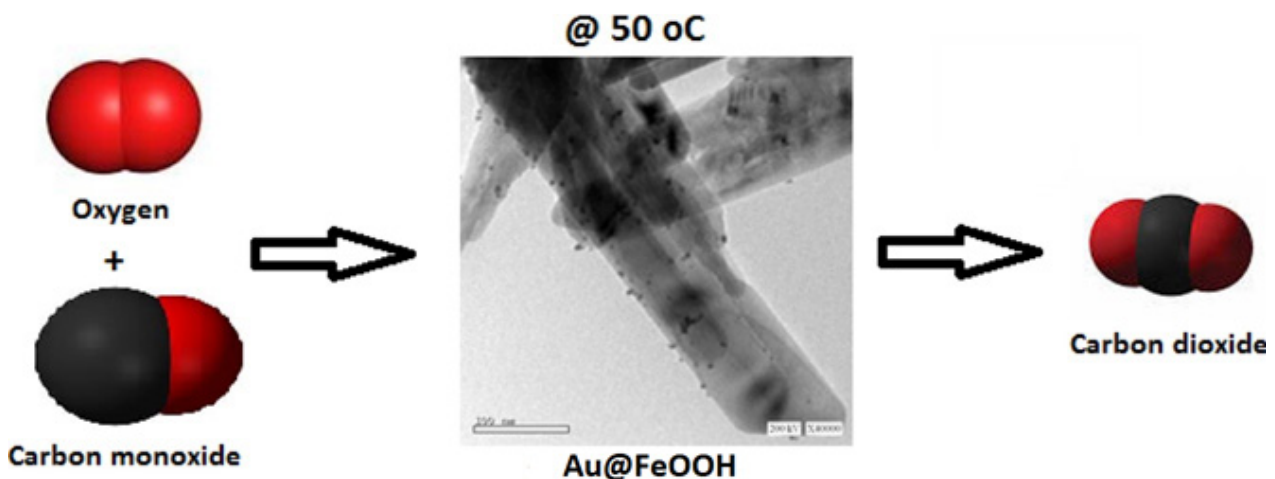
Nanocatalysis for environmental pollution control: Carbon oxide removal by oxidation over gold catalysts

Abd Elrahman S. Khdr,* Ammar Y. Hegazey, Odai O. Al-Ansarey, Mohmed K. Felmaban, Abdelmajeed S. Almasoudey, Anas Y. Azhar

Chemistry Department, Faculty Department of Chemistry, Faculty of Applied Science, Umm Al-Qura University, Makkah Al Mukarrama, Saudi Arabia

Abstract

In this project, a series of gold nanoparticles deposited on α -FeOOH nanorods were studied in relation to their performance in the low-temperature oxidation of CO. The catalysts were characterized by different techniques such as, FTIR, XRD, N_2 adsorption-desorption, H_2 -TPR and TEM images. The XRD proved the formation of α -FeOOH crystalline structure, and also showed small diffraction peaks for Au agglomerated particles on the surface. While, TEM images revealed the formation of α -FeOOH with nanorod structure with different dimensions, TEM also showed some agglomerations of Au particles on the support surface. The H_2 -TPR experiment the enhancement of Au/ α -FeOOH reducibility. The performance of Au/ α -FeOOH in the CO oxidation was greatly affected by Au content.



Synthesis of novel zinc-organic complexes and evaluation of their fertilizer potential

Arwa Al-Sowed, Ashwaq Al-Qurashi, Iman Abdi, Tasneem Al-Ghamdi, Traji Al-Qurashi, Manal Al-Fahmi, Najat Baksh, Rana Al-Sobhi, Salwa Al-Harbi, Booshra Al-Shreef, Shmoukh Al-Metrafy and Nashwa Mahoud El-Metwaly
Department of Chemistry, Faculty of Applied Science, Umm Al-Qura University, Makkah Al Mukarrama, Saudi Arabia

A series of benzohydrazide derivatives was synthesized and characterized deliberately. Zinc complexes were synthesized and the characterization process is in progress. The hybrid corn plant was cultured (fig. 1), this plant was chosen due to the complete growth of it takes only three to four months which is considered a suitable period for our study. The plant was irrigated by our new fertilizer as one from our new Zn(II) complexes in comparing with other cultured box by known fertilizer (NH_4NO_3) as well as a third one will be irrigated by water only without fertilizer to extensive the comparative study. The three corn hybrid were analyzed to examined the pigment content (chlorophyll). The concentrations determined reflect the promising feature for potential fertilizer used from Zn(II)-H2L5 complex. This feature extracted from a comparative data with that calculated over plant leaves in three cases. Also, the determining values of sucrose and total soluble sugars agree comfortably with the priority of potential fertilizer in comparing with other two cases.



Figure 1. The three hybrid corn plant cultured

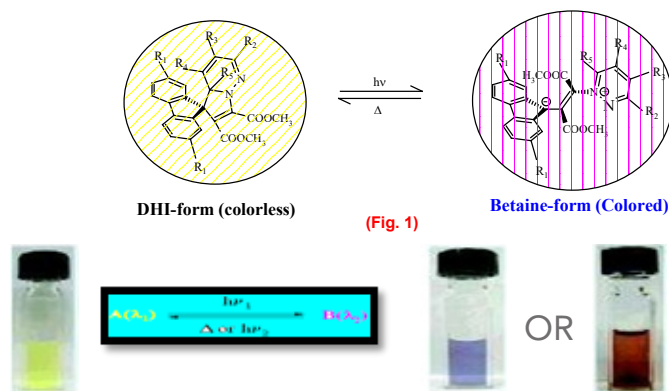
Photochromism of dihydroindolizines: Synthesis, photophysical and Applications.

Abdallah Nafadi, Mohammed Al-Magati, Yousef Hawsawi, Mohamed Alzuwahri, Mohand AlGamdi, Wesam Al-Amri, Essam Hussein and Saleh A. Ahmed

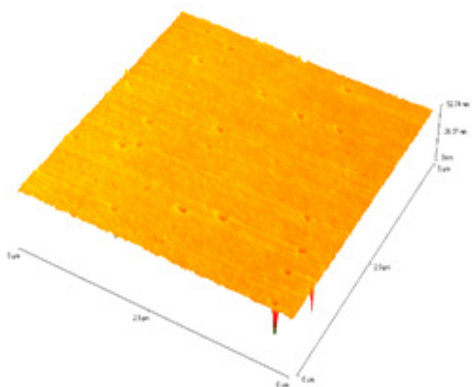
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Photochromism, as a branch of photochemistry, is currently attracting a great deal of interest. Photochromism is the most widely accepted word for the reversible absorption change exhibited by systems irradiated by light of suitable wavelength. The photochromic dihydroindolizines DHIs were obtained via modified cyclopropene route. When spirocyclopropenes allowed to react with substituted pyridazines, in dry ether in absence of light under nitrogen atmosphere for 24h, the desired photochromic the dihydroindolizines were obtained as pale to yellow crystals after crystallization from the proper solvent (Fig. 1).



The kinetics of the thermal 1,5-electrocyclization measurements showed that the half-lives of the colored betaines in second domain. Interesting, these materials showed a very good photochromic behavior not only in solution but also in the PMMA matrix. Irradiation of the slide prepared by the deep-coating methods led to the formation of the colored betaines and the kinetics of the thermally reversible 1,5-electrocyclization and the AFM picture of the film has been monitored (Fig.2). Indeed, the chemical and thermal stability of the investigated betaines in polymer (PMMA) will open a new era of applications.



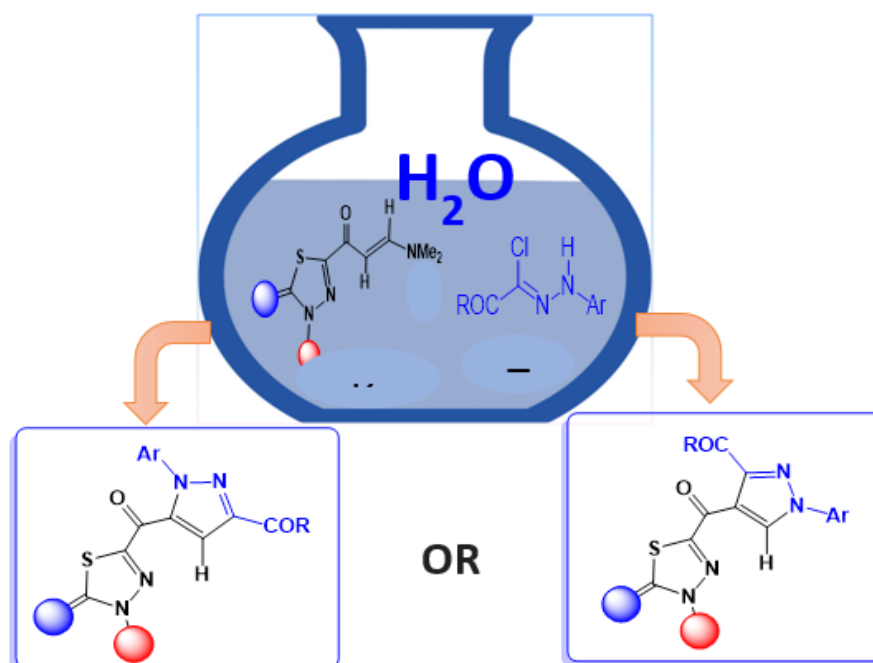
(Fig. 2)

Regioselective Eco-Friendly Synthesis of Thiadiazoles incorporated Pyrazoles or Thiazoles as Potential Anti-Alzheimer, Anti-inflammatory and Antimicrobial Agents

Awrad Al-ajlan, Samaher Binsalman, Rania Abo Naser, Mada Al-qahtani, Noura Al-zhrani, Abeer Al-zhrani, Noor Alreshi, Huda Albajali, Samah Alsharif and Thoraya A. Farghaly

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Based on the knowledge of the extent of the risk of Alzheimer's on the human life and its dangerous side effects in addition to the microbial and inflammation diseases, we focus our efforts to synthesize one drug for all these three diseases using green conditions to reduce the harmful effects of solvents used in chemical reactions. So, in this project we synthesized two series of thiadiazole incorporated with thiazole and pyrazole derivatives in water in the presence of THAC. A comparative study between the utility of triethylamine and Na₂CO₃/THAC as catalyst was achieved. Also, anti-inflammatory, antimicrobial and anti-alzheimer activities were screened for some selected compounds and the results indicated that some derivatives were more potent than the reference drugs used.

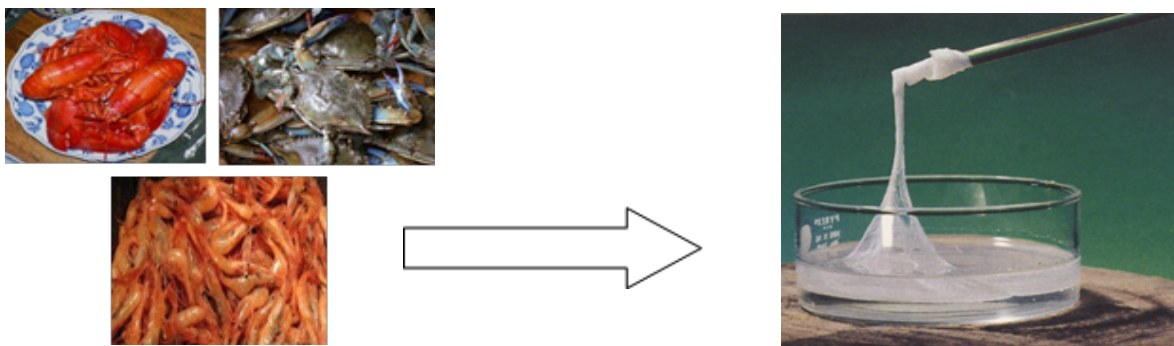


Determination of some heavy metals in (shrimp-crab-lobster) shells waste and preparation of bioplastic (nylon) from chitosan In order to be eco-friendly to prevent contamination of the agricultural soil.

Reem Kamal,* Shahad M. Al-Ghamdi, Tahani A. Hummdi, Reuof F. Al-Jeaid, Bashayer A. AL-Sobhi, Asmah A. AL-Salahi, Turkeyah B. AL-Malki, Reem B. AL-Qurashi and Ather S. AL-Maname.

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Plastic is hard product decomposition so the resulting plastic garbage will still exist on Earth for hundreds or even thousands of years. Scientific researchers are trying to synthesize a new type of plastic to be eco-friendly for the environment. Now, researchers and scientists have introduced new environmentally friendly plastics called "bioplastic" synthesize from many sources one of them is crustacean's shells. It is made from chitosan, a form of chitin the second most abundant organic material on Earth, Have positive biological effects. Hence, the aims of this study: i) Is the disposal of waste in a safe and useful way to the environment especially that some States consume large amounts of shrimp, crab and lobster during the year such Asian and coastal countries, ii) Preparation of nylon (bioplastic) can be degradable when buried, which is consumed by the user and does not harm humans, animals or soil, iii) Prove that the organic nylon (bioplastic) is already environmentally friendly scientifically by burying it in soil for two months or 3 months. The three main components of crustacean shells together with chitin are minerals (mainly calcium carbonate) and proteins.



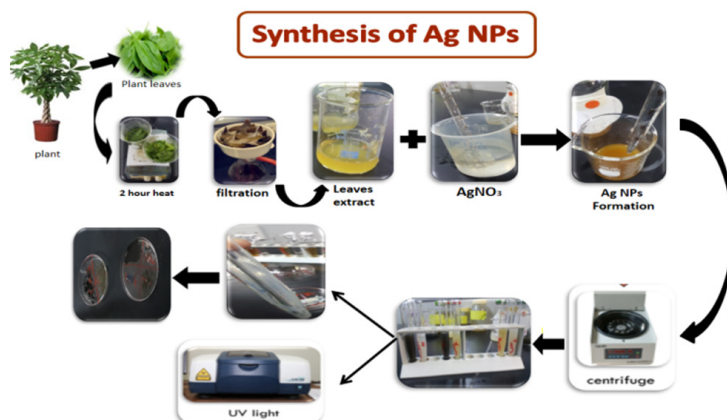
Green Synthesis and Characterization of Some Metal Nanoparticles and Their Application

Badriah A. Aljahdali, Shrooq alzhvani, Gadi Al-Kattabi, Ghaida Alhetershi, Ghaniyah Al-Mehdawi, Shoroug alzhvani, Salwa sulong, Noof almasuodi, Asrar alansari, Banader khayyat and Mada Al_harbi
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Abstract

The present study described green, simple, and low-cost synthesis of some metal nanoparticles by mixing different concentrations of metal solutions with the aqueous plant extracts, without any harmful reducing and capping agents. The biosynthesis of NPs was observed by the color change from colorless (metal salt solution) to a color solutions (nanoparticle), which was confirmed by UV-vis spectroscopy, UV-vis spectra showed a peak signature of NPs. Finally, the electrochemical, catalytic, corrosion effect and antibacterial activities of the biosynthesized NPs were investigated.

Keywords: Green synthesis, Plant extract, Metal nanoparticles, Antimicrobial Activity, Microorganisms, Corrosion inhibition.



References:

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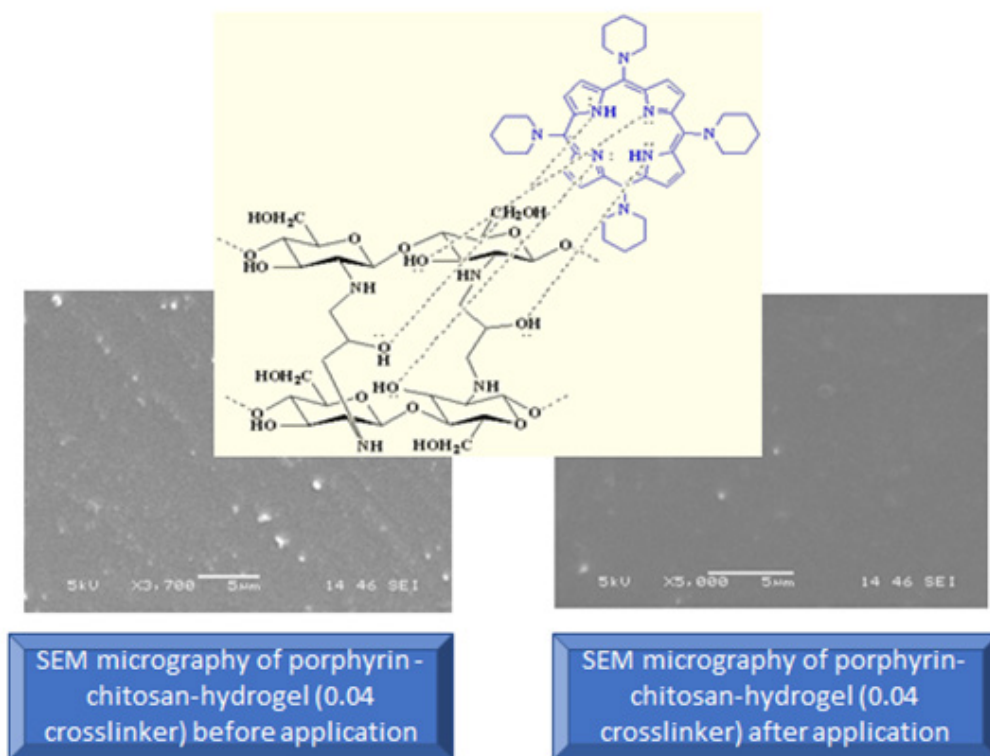
Porphyrin dyes into biopolymeric chitosan hydrogels as metal acceptors for localized waste water treatment

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Abstract

There is a very serious problem from the heavy metals for water and all the life forms on the earth so we focus our study in synthesizing adsorbent material for determination and removal of heavy metals. We synthesize porphyrin derivatives, chitosan-hydrogels and porphyrin-chitosan hydrogel composites using epichlorohydrin as crosslinker. On the other hand, we investigate their activity on removal of heavy metals from waste water (Tap, Sea and Well water). The efficiency of removal increased from hydrogels have lower concentration of crosslinker to high especially hydrogel contain porphyrin moiety. All compounds were confirmed by different spectroscopic tools such as SEM, XRD, TGA, ^1H NMR, IR and UV-vis spectra.



Insight into synthesis, spectral and photophysical studies of A-4meso tetrakis substituted porphyrins containing different meso bridges incorporating auxochromes and chromophores

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Abstract

We report the synthesis and optical properties of a series of organic dyes based on anchoring groups as an electron-donors- π -linker under acid catalyzed reaction. The latter photosensitizers were synthesized by reaction of four pyrrolic units with different aldehydes containing anchoring groups. The novel synthesized compounds were investigated via different spectral tools such as ^1H NMR, IR, UV-vis spectra. During photophysical application, it was found that the porphyrin structures possess better light harvesting properties with regard to extended conjugate length, red-shifted intramolecular charge transfer band absorption. As a result, the photosensitizers gave promising effects in photo studies.

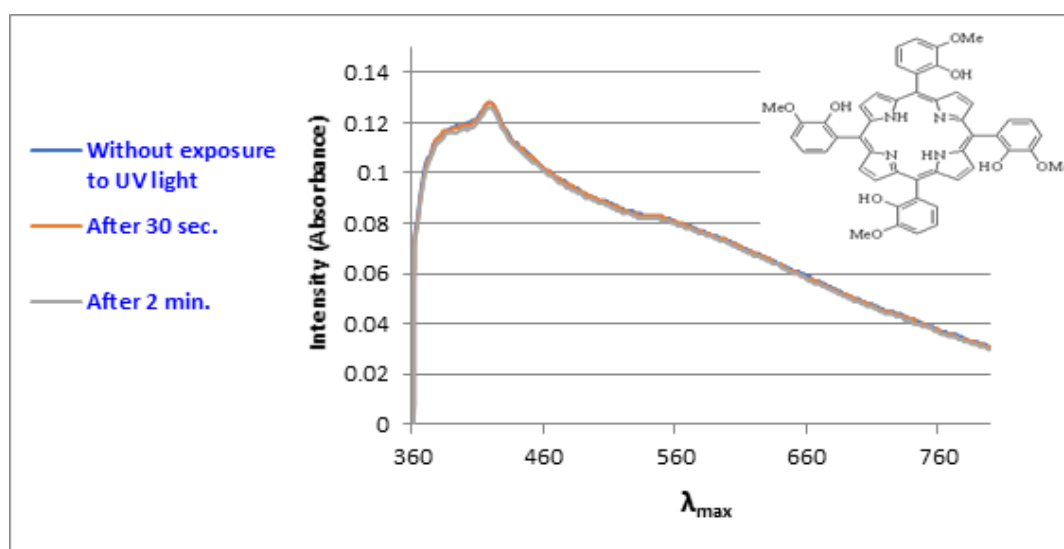


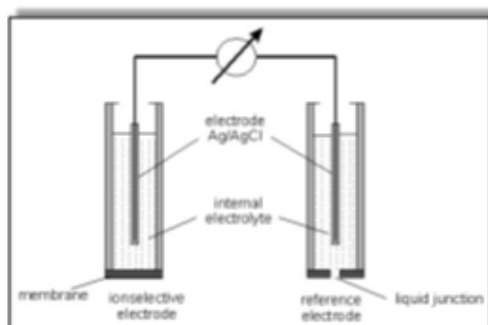
Fig. 1: Effect of time with or without the exposure to UV-vis radiation during the analysis of the sample

Ion Selective Electrode (ISE) for Metal Ion Determination

Yaser Alshareef, Hassan Almalky, Aadel Althaqafi, Saud Alomiri, Fissal Alhassani, Dukhil Almasuode, Amr L. Saber

Chemistry Department, Faculty Department of Chemistry, Faculty of Applied Science, Umm Al-Qura University, Makkah Al Mukarrama, Saudi Arabia

A rapid increase in the development and production of sensors during the last three decades signifies a fundamental change in chemical analysis tools. The most numerous group of these chemical sensors is composed of potentiometric sensors that include ion selective electrodes (ISEs). Currently a wide assortment of commercially available ISEs is being enriched with new developments and improvements in the known types of sensors. When compared with other analytical methodologies, ion selective electrodes are simple, relatively inexpensive, robust, durable and ideal for their use in field environments. Some other advantages involve that they can be used very rapidly, are invaluable tools for continuous monitoring, they measure the activity rather than the concentration and are not affected by turbidity or sample color. It is well known that ISE are one of the few techniques that can measure both positive and negative ions depending on the nature of the ionophore. Chemosensors (chemical sensors), as defined by IUPAC Commission (1) are miniaturized transducers that selectively and reversibly respond to chemical compounds or ions and yield electrical signals which depend on the concentration. The recognition makes use of specific chemical reaction such as complexation, ion association, addition and redox reactions. Chemical sensors can be classified into four major groups, namely electrochemical, optical, thermal and mass sensors. Electrochemical sensors are the most established class of chemosensors. This type includes ion-selective sensors which started very early in the form of glass pH sensor that was first described by other electrochemical sensors include amperometric, voltammetric and conductivity based sensors.



A low cost adsorbent for removal of brilliant cresyl blue dye from aqueous solution

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Synthetic dyes have been used for many years in industries products such as: clothes, plastic and food. These dyes are shiny , low cost , easy to use on fabric and soluble in water. Despite of their characteristics, dyes contain a harmful chemical compounds that can cause aquatic pollution when they discharge into the sewers. Due to dyes carcinogenicity and toxicity effects, dyes must be removed from wastewater before discharging. In order to do that, many different ways of dye removal have been used such as: chemical oxidation, solvent extraction, coagulation, biodegradation and membrane separation [1-3]. These methods are unlikely preferred to use due to their various in efficiency and high cost techniques. On other hand, adsorption method which is the result of an attractive force between adsorbent molecules on the surface, has a high efficiency and low cost therefore, making it an ideal method for removing unwanted particles (dyes) from water. This method can simply remove dyes from water using suitable adsorbent. An adsorbent is a solid particles which has a physical or chemical attractive force which will suspend the unwanted particles on its surface [1]

The purpose of this study is to use a convenience, low cost, locally available and natural adsorbents such as agriculture and food waste adsorbents to remove dyes from wastewater before discharge it into the seas. In this study, Orange peel will be used as an adsorbent to remove brilliant cresyl blue (BCB) dye from water. The adsorption characteristics such as sorbent dosage, contact time, solution pH and initial dye concentration will be studied during this study. The preparation of orange peel as following: First, fresh orange peel will be washed and cut into small pieces. Then, dried the fresh orange peel in an oven about 60°C for 24h and then crushed. After fresh orange peel becomes powder, it will be washed with hot water and dried into an oven about 60°C for 12h. lastly, it will be dried , sieved and then it ready to be used as an adsorbent [4].

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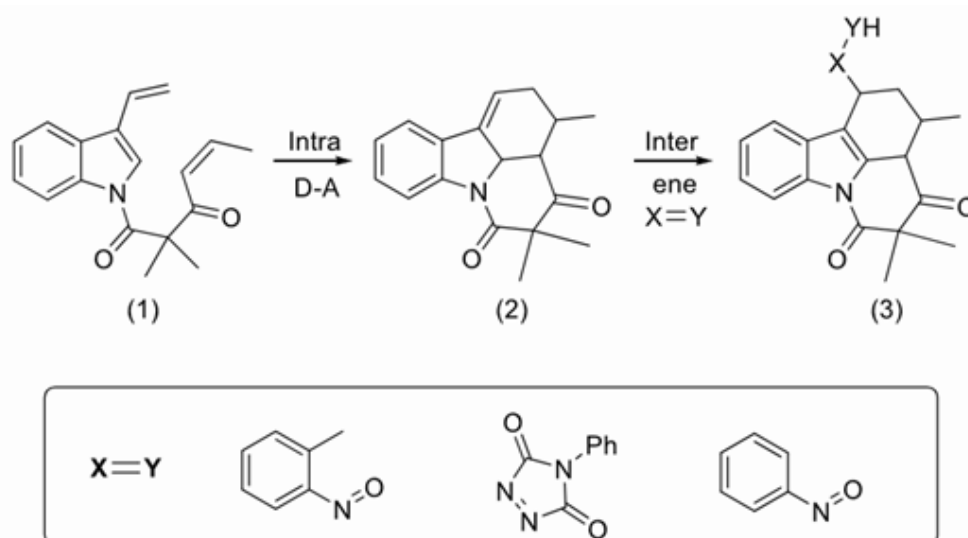
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A New Proposed Synthetic Approach to Carbazole Scaffold

Matokah M. Abualnaja*, Areej M. KhairAllah, Sara H. Abbas, Bayan M. Al-Otaiby, Lojyn Y. Al Hashemi, Mashaal A. Althobyani, Fadiyah F. Nujoom and Jomeah S. Al-arishy

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Carbazoles are privileged scaffolds found in many synthetic and naturally occurring biologically active compounds [1]. Thus, our work has focused on the proposed new synthetic approaches to the carbazole ring system as a route to new biologically active molecules [2, 3]. Herein we disclose our recent investigations into an intramolecular Diels-Alder (D-A) / intermolecular ene reaction sequence. Our approach is based on the formation of the D-A cycloadduct **2**, which could be functionalized further through the ene reaction using different enophiles to give tetrahydropyrrolo-carbazole compounds **3**, which could be biologically active molecules (Scheme 1). voltammetric and conductivity based sensors.



Scheme 1: Proposed intramolecular D-A/intermolecular ene approach to functionalized carbazoles

Application of Modified Electrode In Determination Of Trace Heavy Metals At Environmental Samples

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A new modified electrode formed by glassy carbon /chitosan (GCE/CS) was used for determination of heavy metals at ultra trace level in water samples. Heavy metals (HM) are non-biodegradable and accumulate in an ecosystem until they reach toxic levels. The electrochemical behavior of HM at the (GCE/CS) has been investigated using cyclic voltammetry. The stripping, differential pulse and square-wave voltammetry were used as an efficient method for the electroanalytical determination of HM. The influence of various parameters e.g. potential and time of accumulation, pH of the buffered solutions and potential sweep rate on the response of the electrode was investigated. Moreover, the proposed modified electrode exhibits high reproducibility, long-time storage stability and satisfactory anti-interference ability. Under the optimal conditions, the modified electrode showed a wide linear response to the concentration of HM in the range of (5.0 -500 ng mL⁻¹) with a detection limit of 0.8 ng mL⁻¹. Detection limit of the proposed electroanalytical method is much lower than other spectrophotometric methods. Finally, applicability of the (GCE/CS) electrode was evaluated by measuring some of heavy metals in industrial wastewater samples with good selectivity and precision.

Synthetic and Characterization of new Schiff base of Terephthalaldehyde with -4 ,2 dinitrophenylhydrazine Complexes with Cu^{II} and Pb^{II} ions

Sabrina hakim ouilem, Rukaiah Al-hothali, Hana'a al shamrani, Marwa abdulsalam felebane, Noor al-amir, Ghadeer Al-harbi, Jawharh al-javid, Dr. Aisha Al-Dawood

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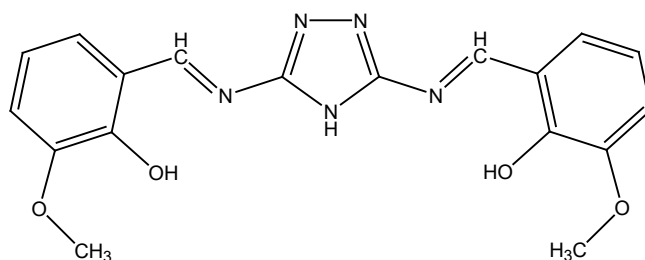
Terephthalaldehyde on reaction with 2, 4- dinitrophenylhydrazine yielded a new Schiff base ligand (TD) and metal complexes with copper (II), lead (II) have been synthesized, These complexes were characterized and the results shown that the ligand is coordinated, We Assignment the Schiff base and its copper and lead complexes by Conductivity FT-IR, UV-Vis spectroscopy, elemental analysis, and ¹H NMR analysis.

Synthesis and characterization of the new Schiff base ligand named of -3,5diamino-1,2,4-triazole

Amel Ahmed Alghamdi, Layla Ali Asiri, Salwa Ayed Alkabkabi, Atheer tami alsharif, Asmaa Salem Alsaadi, Hoda A. El-Ghamry

Department of Chemistry, Faculty of Applied Science, Umm Al-Qura University, Makkah Al Mukarrama, Saudi Arabia

A new Schiff base ligand resulting from the condensation of o-vaniline and 3,5-diamino-1,2,4-triazole have been synthesized. The structure of the ligand will be deduced and elucidated by various available analytical and spectroscopic tools to let the students acquire the skills of the ability to identify the structure of novel organic compounds. The spectroscopic and analytical tools used are FTIR spectra, elemental analysis, mass spectra and UV-Vis spectra.

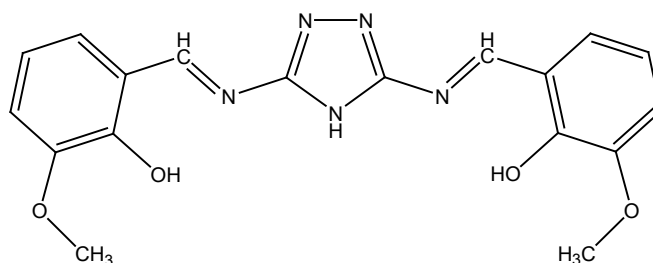


Synthesis, characterization and theoretical studies of a new Schiff base ligand and its metal complexes

Noora Mansoor Aldosari, Mariam hemied raslan, Lamyia Rahmatu allah Lahza, Asmaa Abdelrazik Abdeaziz, Hoda A. El-Ghamry

Department of Chemistry, Faculty of Applied Science, Umm Al-Qura University, Makkah Al Mukarrama, Saudi Arabia

A Schiff base ligand resulting from the condensation of o-vaniline and 3,5-diamino-1,2,4-triazole have been synthesized and its structure will be elucidated by different analytical and spectroscopic tools. Theoretical studies of the structure of the ligand will be performed by using Hyperchem software and will be compared with the experimental results. The complexes of the synthesized ligands will also be synthesized.



The Influence of Polymer on the Fluorescent Properties

Rahaf M. Nawawi, Saffanah S. Alahmadi, Nada M. Alharbi, Anhar A. Bin Iuswad and Mona A. Alhasani

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There has been a main focus on developing a sensor device that can detect gas phase molecules for environmental monitoring and medical diagnostics purposes. Fluorescence is one method that can detect the gas phase molecules. A sensor device that consists of a substrate, a polymer layer, and a fluorescent dye layer shows a fluorescent enhancement however there is still uncertainty as to how this enhancement is produced. The aggregation of the fluorescent dye could play a possible role in this enhancement.

Greener synthesis and structural characterization of transition metal complexes with sulfa ligand as a potential antitumor and antimicrobial agents

Omar A. Elswat, Khaled M. Alyobi, Raad S. Alhawsawi, Ahmed S. Rawas, Ammar M. Alshareef

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Abstract

Thin films coated with fluorescence dye were prepared by dip-coating, and drop-coating. The thickness of the dye layer strongly influences both the absorption and emission spectra depending on the technique used. The absorbance spectrums show one maximum and one apparent shoulder. As the thin film becomes thicker, the observed maximum shifts to lower energy. This is caused by monomer formation and molecular aggregation.

Greener synthesis and structural characterization of transition metal complexes with sulfa ligand as a potential antitumor and antimicrobial agent

Omar A. Elswat, Khaled M. Alyobi, Raad S. Alhawsawi, Ahmed S. Rawas, Ammar M. Alshareef

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The Schiff base ligand [(2-hydroxybenzylidene)amino]-N-(1,3-thiazol-2-yl) benzenesulfonamide (H_2L) that formed by condensation of sulfathiazole with salysaldehyde has been prepared and structurally characterized using elemental analysis, FT-IR, 1H -NMR and UV-Vis spectra. A series of homo bi-nuclear Sn(II), Pb(II), Cu(II), Fe(III) and Cr(III) complexes with H_2L were synthesized applying greener solid state reaction at room temperature. The complexes were structurally characterized using variable spectral and analytical methods. FT-IR revealed that H_2L coordinates to the metal ions in a di-basic tetra-dentate mode through the Schiff base center and

Synthesis of -2Methyl-5-nitroimidazole Ester Derivatives: The Discovery of Novel Antibiotic and Antiparasitic

Rawan Alzhrani, Mashael Alotaibi, Asmaa Alomiry, Muna Bahwainy, Sara Alfahmi, Marwa Alidaros, Daniyah Maaki, Kholoud Almqati and Dr. Abrar Bayazeed

Department of Chemistry, Faculty of Applied Science, Umm Al-Qura University, Makkah Al Mukarrama, Saudi Arabia

A variety of 2-methyl-5-nitroimidazole twin esters derivatives were synthesized to enhance the bioactivity, bioavailability and the pharmacological properties of nitroimidazole drugs. Hemiesters analogues of secnidazole and metronidazole were successfully prepared from phthalic, gluteric and succinic anhydrides. Identical twin esters of secnidazole and metronidazole were synthesized from respective hemiesters.

The catalytic activity of metals doped Fe_2O_3 in photodegradation of some organic compounds

Mea'ad K. Al-Harbi, Rahaf M. Bajaber, Aisha M. Al-Roqi, Bashaer S. Khan and Layla S. Al-Mazroai

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Photocatalysis is one of the promising applications for environmental remediation. Most of semiconductors are used as a photocatalyst in many applications such as: water, air purification, and degradation of organic dyes. The photocatalytic activity of metal oxides is enhanced by doping with transition metals. The green preparation of M-doped Fe_2O_3 (M=Co,Ni,Cu,Bi) by microwave radiation as a method promotes their photocatalytic activity. Waste organic compounds degraded by irradiating of the photocatalysts under visible light are investigated. The role of the transition metal inhibits the electron/hole recombination which effect on the photocatalytic efficiency of the photocatalysts.

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Determination of Cadmium, Lead, Copper, Iron and Zinc in yogurt using flame atomic absorption spectrometry (FA-AAS)

Smaher M. Qaid , Hind O. Al-Osaimi, Mada M. Al-Harbi and Habiba O. Shuaib, Marwa G. Elghalban

Department of Chemistry, Faculty of Applied Science, Umm Al-Qura University, Makkah Al Mukarrama, Saudi Arabia

Yogurt is very common in our food list due to its nutrient value, since it is a source of some vitamins and a lot of mineral constituents which are necessary for proper development and functioning of different tissues and organs. However, overdose of these vitamins and mineral constituents can be harmful because of its high utilization by infants and children. This study was directed to measure the concentrations of Zinc (Zn), Cadmium (Cd), Iron (Fe), Copper (Cu) and Lead (Pb) in yogurt available commercially in Saudi Arabia using Flame Atomic Absorption Spectrometer. The mean elemental concentration values in ppm of Fe, Cu, Zn, Cd, and Pb in yogurt were : (3.265), (0.3992), (3.243) , (0.0172) and (0.0987) respectively. The obtained mean elemental concentrations were compared with the corresponding values of different countries available in the literature.

Analysis of trace toxic metals and minor metals in milk using flame atomic absorption

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Milk is important component of the human diet. Milk has been described as a complete food because it contains vital nutrients including proteins, essential fatty acids, lactose, vitamins and minerals in balanced proportions. However, milk can also contain chemical hazards and contaminants, which constitute a technological risk factor for dairy products, for the related commercial image and, above all, for the health of the consumer. This study was conducted to quantify the concentrations of essential metals (Cu , Fe , Zn) and toxic metals (Cd and Pb) in milk and to estimate the daily intake and health risk index of metals through consumption of milk. The quantitative analysis of the metals were performed using flame atomic absorption spectrometry (FA-AAS).

Effect of Different Substituents on the Electronic Structure of Some Azodyes: A Theoretical Study

Emad M. Alqthami, Talal H. Almalki, Basel M. Bugis, Abdullah A. Almeahmadi, Hesham M. Bashiban and Ahmed M. El Defrawy

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The potential of tetracycline as a corrosion inhibitor for iron in 2 M HCl at different concentrations was determined using weight loss. The effect of temperature on corrosion inhibition has been studied and thermodynamic activation parameters were calculated. The inhibition was found to increase with increasing the inhibitor concentration and decreases with rise in temperature. The inhibition efficiencies of these compounds obtained from the all various measurements were in good agreement. assessment of their catalytic, electrocatalytic and phenol remediation properties, Adv. Mater. Lett. 2016; 7(5); 383-389.

Effect of Different Substituents on the Electronic Structure of Some azodyes: A Theoretical Study

Smaher M. Qaid , Hind O. Al-Osaimi, Mada M. Al-Harbi and Habiba O. Shuaib, Marwa G. Elghalban

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In this study, quantum chemical calculations at different level of theory will be employed to investigate the effect of different substituents on the geometry and electronic structure of the 4-(phenyldiazenyl)benzene-1,3-diol derivative compounds. In addition to that, the protonated and the deprotonated forms as well as the tautomeric forms of these compounds will be theoretically investigated. The results will be discussed in terms of stability and reactivity descriptors for the compounds under investigation. The results obtained could be helpful for further experimental studies using these compounds as building moieties.

Kinetics and Mechanism of Oxidation of Some Biopolymers

Ahmed Fawzy, * Ahmed G. El-Etiby, Mazen M. El-Bakmy, Naser A. Sharahily, Fadi A. El-Ahmady, Solaiman D. Kassar

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Biopolymers have a large list of industrial applications in food, medical and pharmaceutical uses, and have other applications in industry. Despite the potential applications of different types of biopolymers in various fields, these compounds are frequently subjected to the action of oxidizing agents and their activities depend largely in their redox behaviour. The information regarding the oxidation kinetics of these important molecules by any oxidant is scarce in the literature. This fact may be attributed to the complexity of the oxidation kinetics for these compounds since they contain various groups in their structure. In view of these facts, the present work is of particular significant in order to investigate the kinetics and mechanism of oxidation of some selected biopolymers by some widely used oxidizing agents in both alkaline and acidic aqueous media.

Corrosion inhibition of some metals in aqueous solutions spectrometry (FA-AAS)

Metwally A. Abd Elsaid, * Rayan Abu Alaa, Al Baraa Haddad, Mohamed Al Harbi, Mohamed Sobhy, Tala Al-Salifi

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The corrosion inhibition of some metals such as iron, carbon steel, aluminum, nickel and zinc was studied in various aqueous solutions. Some chemical techniques such as weight loss and thermometry measurements and electro chemical techniques such as galvanostatic, potentiostatic, potentiodynamic anodic polarization have been used to evaluate the values of the percentage inhibition efficiency (%IE). Several compounds were used to inhibit the general and pitting corrosion of these metals in aqueous solution. For example, inorganic compounds such as sodium molybdate, sodium chromate. Organic compounds containing hetero atoms such as 1-methyl pyrazole, 1-phenyl-5-mercapto-1,2,3,4-tetrazole, pyrazinamide, some thiosemicarbazide derivatives, benzotriazole, thiocarbanilide, 2-mercaptobenzimidazole. Surfactant compounds such as tween compounds, cationic surfactant, nonionic surfactants and natural extract of some plants. The mechanism of inhibition of corrosion of these metals in aqueous solution due to the adsorption of inhibitor at the metal /solution interface, The adsorption may be purely physical or purely chemical or a mixture of physical and chemical adsorption. The percentage value of inhibitory efficiency depends on several factors; such as the occurrence of some active center in the chemical composition of the inhibitor to accelerate the adsorption process, the nature of the electrode and the corrosive solution used, the charge density, molecular size, temperature, reaction and ability of the inhibitor to form complexes with metal ions.

Application of Green Chemistry to Synthesis of Novel Heterocyclic Compounds

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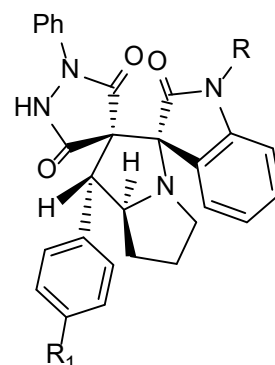
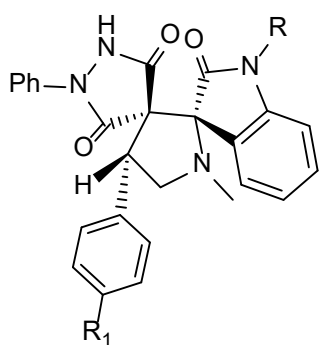
In this graduation project development of new and efficient synthetic strategies for biologically active heterocyclic derivatives will be achieved using green chemistry concept. The targeted compounds will be achieved by the condensation reaction of bisnucleophiles with active organo-halogen compounds such as α -haloketones using microwave irradiation as well as ultrasonication. This work will be expected to exhibit high activity and selectivity. The structures of products will be confirmed on the basis of their elemental analyses and spectroscopic data.

1,3-Dipolar cycloaddition reactions: A convenient tool approach to synthesis of dispiro-fused 2-oxindoles

Abdulaziz Alorfi, Abdullah Alshehri, Anas Alssaadi, Maher Almasoudi, Mohamed Alyazidi, Mohammad Altwirqi, and Essam M. Hussein

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A 1,3-dipolar cycloaddition of 4-arylidene-1-phenylpyrazolidine-3,5-diones to azomethine ylide, generated in situ via decarboxylative condensation of isatin and sarcosine or L-proline, has been reported to form the dispiro[pyrazolidine-4,3'-pyrrolidine-2',3''-indoline]-2'',3,5-triones or dispiro[pyrazolidine-4,3'-pyrrolizidine-2',3''-indoline]-2'',3,5-triones, respectively, regioselectively and in good yields.



Spectrophotometric determination of heavy metal using new chromogenic reagent

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Chemistry Department, Faculty Department of Chemistry, Faculty of Applied Science, Umm Al-Qura University, Makkah Al Mukarrama, Saudi Arabia

Thus, the present study aimed to overcome the spectral matrix interference for the precise analysis and speciation of mercury(II) in water by dual-wavelength λ -correction spectrophotometry using 4-(2-thiazolylazo) resorcinol (TAR) as chromogenic reagent. The principle was based on measuring the correct absorbance for the formed complex of mercury(II) ions with TAR reagent at 547 nm (λ max). The values of RSD and relative error (RE) obtained for λ -correction method and single wavelength spectrophotometry were 1.3, 1.32% and 4.7, 5.9%, respectively. The method was validated in tap and sea water in terms of the data obtained from inductively coupled plasma-optical emission spectrometry (ICP-OES) using student's t and F tests. The developed methodology satisfactorily overcomes the spectral interference in trace determination and speciation of mercury(II) ions in water.

Synergistic Effect of KI on Corrosion of Iron in Presence Tetracycline as Inhibitor

Dr.Ameena Mohsen Al-bonayan

Mervat Noor Mohammad, Renad Mohammad al-Harbi, Ohood saeed al-otaibi, Sarah obeid Al-Otaibi.

The synergistic effect of KI of an antibacterial Tetracycline on the corrosion of iron were studied in 2 M HCl at different concentrations using weight loss. The effect of temperature on corrosion inhibition has been studied and thermodynamic activation parameters were calculated. The inhibition was found to increase with increasing the inhibitor concentration and decreases with rise in temperature. The inhibition efficiencies of these compounds obtained from the all various measurements were in good agreement.

Removal of rhodamine b dye from aqueous solution by using Roselle's petals

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Dyes are important because of their broad applications in different industries like textile, leather, paper, and food .The total dye consumption in textile industries is upper than 10,000 ton per year[1]. Dyes and pigments are widely used in the textile, paper, plastic, leather, guest–host liquid crystal displays, solar cells, food and mineral processing industries[2]. The Rhodamine b dye is one of fresh peach of synthetic dyes and it is widely used as a colorant in the manufacturing of textiles and food stuffs. It has been medically proven that drinking water contaminated with Rhodamine dyes could lead to subcutaneous tissue borne sarcoma which is highly carcinogenic. Dyes must be removed from wastewater before discharging. In order to do that, many different ways of dye removal have been used such as: chemical oxidation, solvent extraction, coagulation, and biodegradation and membrane separation. The purpose of this study is to use a convenience, low cost, locally available and natural adsorbents such as agriculture and food waste adsorbents to remove dyes from wastewater before discharge it into the seas. In this study, Roselle petals will be used as an adsorbent to remove rhodamine b (RB) dye from water. The adsorption characteristics such as sorbent dosage, contact time, solution pH and initial dye concentration will be studied during this study. The preparation of Roselle petals as following: First, Roselle petals will be washed to remove dirt, boiled with distill water to get rid of natural dye, dry in the oven at 60 – 70 Co and then powder and sieve [3].

References

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- [2] M. F. Hou, C. X. Ma, W. De Zhang, X. Y. Tang, Y. N. Fan, and H. F. Wan, "Removal of rhodamine B using iron-pillared bentonite," J. Hazard. Mater., vol. 186, no. 2–3, pp. 1118–1123, 2011.
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Deoxyribonucleic acid as an inhibitor for some metal in acidic media

Aida Mahdi Alqarhi, Bushra Mohammed Mahdi, Nada Ali Howish, Nouf Ahmad Banabilah, Nujood Numan Alsubhi, Rawan Mosaed Alhazmi, Salma Salim Alhodli, Samaher Siraj Ageel, Shrooq Baraka Albeladi and Alia A. Alfi*.

* Assistant Professor at Department of Chemistry, Faculty of Applied Science, Umm Al-Qura University, KSA.

Corrosion is the interaction of minerals with the surrounding environment causing damage to their shape, performance and properties. The occurrence of this process is due to the presence of the metal in a non-suitable environment for it, such as, wet environment, an environment with changes in temperatures in addition to pH and the presence of acid media. This process (metal corrosion) affect minerals and then their applications. Therefore, to control corrosion, its necessary to know the type of corrosion weather it is a uniform or localized first and then reagents or factors that occur in the environment system of the corroded metal in order to find a suitable solution.

There are many techniques which have been used to reduce metal corrosion. The most important and easy method found to control the corrosion was by adding an inhibitor to the system. Inhibitors are differing, such as, organic and inorganic or mixed inhibitors, such as, Deoxyribonucleic acid (DNA)[1], phosphate ions, epoxy phenol coating, ... etc.

The most new and interesting inhibitor found recently to reduce metal corrosion is the using of DNA. The effect of (DNA) was studied and followed using different concentrations of NaCl as same as different concentrations and lengths of DNA itself. Excellent inhibition properties were investigated by using DNA ranging from 20-80 bases. This study was applied on steel. The results showed that the DNA inhibitor increased the corrosion resistance of the steel significantly, by forming a film on the steel via physisorption of DNA on the steel. All results were confirmed by X-ray photoelectron spectroscopy (XPS)[1].

This idea will become more interesting by using different metals instead of steel or concrete, such as aluminum, zinc, nickel or copper at different concentrations of multiple acids as same as different temperatures. Weight- loss method will be applied as an initial applicable method in order to investigate the effect of the corrosion inhibition (DNA).

[1] S. Jiang, L. Jiang, Z. Wang, M. Jin, S. Bai, S. Song, X. Yan, Deoxyribonucleic acid as an inhibitor for chloride-induced corrosion of reinforcing steel in simulated concrete pore solutions, construction and building materials, 150 (2017) 238-247.



نبذة عن اركان المعرض المصاحب لمشاريع التخرج



كوني منتجة (صناعة العطور) كوني منتجة (صناعة صابون الجلوسرين بعطور واشكال جاذبة)

الأسماء المشاركة

أ.د. محمد ربيع و أ.د. ثريا عبد الرحيم فرغلي
بالاشتراك مع طالبات مشروع التخرج للدكتورة ثريا فرغلي

نبذة عن الركن

انطلاقاً من رؤية المملكة 2030 التي تحرص على تدعيم دور المرأة في المجتمع وجعلها مصدر فعال ومنتج نحصر هنا في هذا الركن على اكساب الطالبات مهارة انشاء مشروع صغير مربح باستخدام الكيمياء

أهداف الركن

- 1- ابراز اهمية المشروعات الصغيرة المستمدة من الكيمياء واهميتها في رفع اقتصاد الاسرة وجعلها اسرة منتجة.
- 2- مثال حي لمشروع صغير مربح وهو صناعة العطور.
- 3- صناعة صابون الجلوسرين بعطور واشكال جذابة وكيفية تسويقها.

الشركة البحثية بين قسم الكيمياء ومصنع كسوة الكعبة ودور الطالبات في التطوع البحثي

الأسماء المشاركة

د. تهاني محمد باوزير
بالاشتراك مع طالبات مشروع التخرج

نبذة عن الركن

يهدف هذا البحث إلى دراسة العوامل المسببة لتغير لون كسوة الكعبة وتهتك نسيج الثوب عن طريق إجراء بحوث تهدف للوصول إلى الطريقة المثلى لصبغة الحرير لتفادي العيوب التي تطرأ على الثوب وذلك بإجراء عدد من الإختبارات على السطح الخارجي لـ«الحرير» و إجراء عدد من الإختبارات على مرحلة غسيل «الحرير» وتحديد النسب المناسبة، وذلك حسب الأبحاث المنشورة علمياً، لتحديد أوزان كل مادة كيميائية يتم إضافتها.

أهداف الركن

- 1- تهدف الشراكة إلى تفعيل دور معمل البحوث بالمصنع من خلال الأبحاث والمشاريع المقدمة من فريق العمل للاستغناء عن إرسال أي شيء خارج المملكة.
- 2- الوصول إلى الطريقة المثلى لعملية غسيل «الحرير» و ثبات لون «الحرير» بعد عملية الصبغة باختلاف الظروف البيئية و بجودة عالية في الخواص الميكانيكية والكيميائية و بالتالي الوصول إلى مرحلة الإستقرار للمنتج النهائي.



The Little Scientist

الأسماء المشاركة

- | | | | |
|------------------|-----------------|-------------------|------------------|
| 1- بيداء سيامك | 2- أعياد الجعيد | 3- حنين بامصفر | 4- حنين طارق |
| 5- خلود الهوساوي | 6- دعاء باقي | 7- ريهام اللحياني | 8- ريهام الروقي |
| 9- سمر عاشور | 10- عبير الحكمي | 11- عروب اللحياني | 12- لمى الهوساوي |
- إشراف الدكتورة حصة الشريف

نبذة عن الركن

تجارب عملية مناسبة للأطفال من سن 3 سنوات وما فوق سهلة التنفيذ وبمواد بديلة للمواد الكيميائية.

أهداف الركن

- 1- تقوية الترابط بين الطفل والأهل من خلال المشاركة في عمل التجارب.
- 2- تحفيز الطفل على التفكير في كيفية حدوث التفاعل.
- 3- المتعة واستغلال أوقات الفراغ فيما هو مفيد.

الكيمياء في كشف وحل حقائق مسرح الجريمة

الأسماء المشاركة

لمى الحريبي، رغد القرشي، ندى الحساني، ولجين قحاف،
إشراف الدكتورة رزان سناري

نبذة عن الركن

سيتم وصف هذا المشروع عن طرق تقنية إلكترونية وسوف يتم عرضها في (البوستر) كملخص مختصر وشامل عن هذا الموضوع، من تعريف لعلم الكيمياء الجنائية وما يحدث في مسرح الجريمة من انواع للقتل والجرائم الصعبة وسيتم (شرح لمجسم مبسط يحاكي موقع الجريمة) ماذا حدث؟ وكيفية معرفة الأدلة للجريمة والطرق لنفي الفرضية أو إثباتها حول المجرم، ثم (كشف آثار الجريمة ببعض المواد الكيميائية)، التي تظهر صفات او آثار لهذا المجرم. ثم بتقنية إلكترونية أخرى سيتم شرح بالفيديو عن كيفية التعرف على آثار هذا المجرم.

أهداف الركن

- 1- نبذة مبسطة عن علم الكيمياء الجنائية وأهميتها.
- 2- معرفة كيفية اكتشاف المجرم بأكثر من طريقه ووسيلة.
- 3- اثبات أو نفي الفرضيات المطروحة أثناء التحقيق.



Scan and be aware of your surroundings

الأسماء المشاركة

أمجد القرشي

شهد منشي

إشراف دكتورة رزان سناري

نبذة عن الركن

يمكن لمعرفتنا البسيطة في الكيمياء أن تساعدنا في العديد من المهام في حياتنا، فيتمثل دورنا بطرح فكرة مبتكرة عن كيفية ربط المنتجات الغذائية ومنتجات التنظيف ومستحضرات التجميل عن طريق ربطها بباركود يحتوي على أهم المعلومات عن المواد الكيميائية المتواجدة في المنتج المستخدم. إضافة إلى عرض كيفية صنع العطور منزلياً مع اللامام بجميع المواد المستخدمة عن طريق ارفاق باركود معرّف بالمكونات وبيان اضرار الضار منها ليسهل على الأشخاص فهمها.

أهداف الركن

- 1- إظهار دور الكيمياء في حياتنا.
- 2- تسهيل فهم المواد الكيميائية المستخدمة من قبل أفراد المجتمع وربطهم بالكيمياء.

العمل التطوعي

الأسماء المشاركة

آمنة عيدروس العيدروس/ خلود بكر تكروني/ بندري عبد العزيز الثقفي/ خلود أحمد غروي/ فاطمة عبد الرحمن النفيسي/ صفية علي الشمراني/ صفية حاسن المالكي/ رهام علي خبراني/ رغد عبد الله المسعودي/ تغريد عبود المقاطي/ سارة محمد اليماني/ روان محمد الثقفي/ امتنان زهير علاء الدين.

نبذة عن الركن

نسعى لخلق روح انسانية تعاونية بين أفراد المجتمع الواحد والمجتمعات المختلفة لبذل مالي أو عيني أو بدني أو فكري يقدمه المتطوع عن رضا وقناعة. يتم إبراز الركن من خلال أبرز الاعمال التطوعية البحثية العلمية التي تهدف لبناء مجتمعات علميه واعييه وخلق افراد متطوعين باحثين لخدمة مجتمعهم.

أهداف الركن

- 1- التعلم واكتساب خبرات جديدة.
- 2- استثمار أوقات فراغ المتطوع في اعمال اجتماعية تحقق له إشباع معنوي في نواحي مختلفة.
- 3- تعريف المجتمع بمدى أهمية وارتباط الكيمياء بمختلف الأنشطة الشخصية والاجتماعية والصناعية.
- 4- إبراز الأبحاث التطوعية العلمية التي ساهمت في إفادة المجتمعات والأفراد.



تحضير متراكبات جديدة للزنك الغنيه بالنيتروجين و تطبيقاتها كسماد بديل للسماد المركب في زراعة نباتات اقتصادية

الأسماء المشاركة

- 1- سلوي الحازمي 2- تسنيم الغامدي 3- منا الفهمي 4- نجاه بخش
5- ايمان عبدي 6- تراحي القرشي 7- رنا الصبحي 8- أشواق القرشي
9- بشري الشريف 10- شموخ المطرفي
إشراف الأستاذ الدكتورة نشوه المتولي

نبذة عن الركن

يهدف هذا البحث للارتقاء بصناعة السماد و التي تهتم بها المملكه في رؤيتها المستقبلية حيث تعتبر المملكه المصدر الأول في الدول العربية للسماد الأزوتي و الذي يصاحبه دائما تصنيع الأمونيا و هي أحد ملوثات البيئه بالتالي هو تدريب للطالبات لكيفية التعامل البحثي مع مشكلات الصناعات و كيفية استخدام الاسلوب البحثي المناسب للتغلب عليها. و هذا يفتح مجال لمشاركة العنصر النسائي في مجال التصنيع الكيميائي في مصانع الأسمده بالمملكه.

أهداف الركن

- 1- إبراز عيوب الأسمده الأزوتيه المعروفه و مقارنتها بالسماد المقترح.
- 2- توضيح أوجه الأختلاف الايجابيه للسماد الجديد و مميزاته.
- 3- توضيح مميزات النبات الذي تم زراعته بالاستعانه بالصور باستخدام السماد المقترح بالمقارنه بالاسمده المعروفه.
- 4- عرض لصور التجارب المعملية التي تم انجازها و اختلفها عن طرق تحضير السماد العادي.

الكيمياء الحيوية في حياتنا اليومية وفي موسم الحج والعمرة

الأسماء المشاركة

سعادة الدكتورة هنادي بنت أحمد كتوعة وطالبات مقرر الكيمياء الحيوية للفصل الدراسي الثاني في العام الدراسي 1438-1439هـ

نبذة عن الركن

يهدف معرض الملصقات العلمية إلى توعية المجتمع باحتياجات ضيوف الرحمن في موسمي الحج والعمرة في الأماكن المقدسة. ويسعى لتثقيف جميع طبقات المجتمع من مقيمين وزوار في موسم الحج والعمرة، ونشر الوعي بينهم بضرورة تمييز الأعراض التي تظهر عليهم وضرورة الإسراع لاستشارة أقرب مركز صحي واستعمال العلاج بوصفة طبية وحسب إرشادات الطبيب وملاحظة الأعراض الجانبية وما ينتج بسبب التداخل في استخدام الأدوية وأضرار تناول الأدوية مع مشروبات غير الماء. كذلك يبرز ضرورة المحافظة على التطعيمات اللازمة في موسم الحج والعمرة واستعمال الأدوية المناسبة من مضادات حيوية ومسكنات وفيتامينات، لتقوية مناعتهم ومكافحة انتشار العدوى بين الحشود في أوقات الازدحام والتي تساعدهم على أداء المناسك بأمان.

أهداف الركن

- 1- تعلم أساليب البحث العلمي.
- 2- اكتساب مهارات تسلسل الأفكار العلمية.
- 3- التدريب على تصميم ملصق علمي وتصميم شعارات.
- 4- اكتساب مهارات الإلقاء.
- 5- تعريف المجتمع بأهمية علم الكيمياء الحيوية وارتباطه بمجالات الحياة.
- 6- إبراز أهم المضادات الحيوية والتطعيمات والفيتامينات وأدوية الهرمونات والمسكنات الأكثر شيوعاً في موسم الحج والعمرة.
- 7- خلق روح التعاون والعمل بين الطالبات للعمل ضمن المجموعة.
- 8- التدريب على طريقة توثيق المراجع.



جدول المناقشات العلمية لأبحاث مشاريع التخرج

(شطر الطالبات) الزاهر

Time	Subjects	The names of the students	Supervisor
	Research Projects of Organic Chemistry		
9:00-9:10	Regioselective Eco-Friendly Synthesis of Thiadiazoles incorporated Pyrazoles or Thiazoles as Potential Anti-Alzheimer, Anti-inflammatory and Antimicrobial Agents	Awrad Al-ajlan, Samaher Binsalman, Rania Abo Naser, Mada Al-qahatani, Noura Al-zhrani, Abeer Al-zhrani, Noor Alreshi, Huda Albajali, Samah Alsharif and	Prof. Thoraya A. Farghaly
9:15-9:25	Porphyrin dyes into biopolymeric chitosan hydrogels as metal acceptors for localized waste water treatment	Kholoud H. Al-harbi, Fatema A. Brnawi, Raya M. Aljahdali, Athar A. Hassanian, Bushra H. Al-lehyani, Waad M. Al-Zahrani, Najwa M. Ali, Sama-her S. Alsulimani,	Dr. Rasha E. El-Mekawy
9:30-9:40	Insight into synthesis, spectral and photophysical studies of A4-meso tetrakis substituted porphyrins containing different meso bridges incorporating auxochromes and chromophores	Kholoud H. Al-harbi, Fatema A. Brnawi, Raya M. Aljahdali, Athar A. Hassanian, Bushra H. Al-lehyani, Waad M. Al-Zahrani, Najwa M. Ali, Sama-her S. Alsulimani,	Dr. Rasha E. El-Mekawy
9:45-9:55	Synthesis of 2-Methyl-5-nitroimidazole Ester Derivatives: The Discovery of Novel Antibiotic and Antiparasitic Agents	Rawan Alzhrani, Mashael Alotaibi, Asmaa Alomiry, Muna Bahwainy, Sara Alfahmi, Marwa Alidaros, Daniyah Maaki, Kholoud Almqati	Dr. Abrar Bayazeed
10:00-10:10	A New Proposed Synthetic Approach to Carba-zole Scaffold	Areej M. KhairAllah, Sara H. Abbas, Bayan M. Al-Otaiby, Lojyn Y. Al Hashemi, Mashael A. Althobyani, Fadiyah F.Nujoom and Jomeah S. Al-arishy	Dr. Matokah M. Abualnaja

(شطر الطالبات) الزاهر

Time	Subjects	The names of the students	Supervisor
	Research Projects of Physical Chemistry		
10:15-10:25	Synergistic effect of KI on corrosion of iron in presence Tetracycline As inhibitor	Mervat Noor Mohammad, Renad Mohammad al-Harbi, Ohood saeed al-otaibi, Sarah obeid Al-Otaibi	Dr.Ameena Mohsen Al-bonayan
10:30-10:40	Inhibiting effect of Tetracycline towards the corrosion of iron in HCl Solutions	Waad Mohammed Abdullah, Maram Abdulrahman Alhazmi, Kareemah yagoop Adam, Khadi-jah Mahmood Mahmmd	Dr.Ameena Mohsen Al-bonayan
10:45:10:55	Enhancing Cotton Fabrics Properties Using ZnO₂ and Ag Nanoparticles	Abeer A. Bin Heleman, Nora S. Al-Jahdali, Rahaf K. Alhothly and Rawia R. Aldaadi	Dr. Tahani M. Bawazeer
11:00-11:10	Superhydrophobic and Ultraviolet Protec-tive for Silk Fiber by ZnO-coating	Hanan M. Alkhalofa , Ghadi Gh. Almatrafi , Amjad E. Alsubhi , Seham A. Almajnoui and Am-nah S. Al-sheikh	Dr. Tahani M. Bawazeer
11:15-11:25	The catalytic activity of metals doped Fe₂O₃ in photodegradation of some organic compounds	Mea'ad K. Al-Harbi, Rahaf M. Bajaber, Aisha M.Al-Roqi , Bashaer S. Khan	Dr. Layla S. Al-Mazroai
11:30-11:40	Antimicrobial Activity of Some Antibiotics and their Nano Metal Complexes	Shrooq Ahmed alzhvani, Gadi Sameer Al-Kattabi	Dr. Badriah Al-Jahdali
11:45-11:55	Microbial synthesis of nanoparticles and their applications	Ghaida Ghazi Alhetershi, Ghani-yah Mohammed Al Mehdawi	Dr. Badriah Al-Jahdali
12:00-12:10	Corrosion Inhibition Efficiency of Biosynthesis Metal Nanoparticles for Mild Steel in acidic media	Shoroug fawaz alzhvani, Salwa Abdulrahman sulong, Noof almasuodi	Dr. Badriah Al-Jahdali
12:15-12:25	Green Synthesis of metal nanoparticle and their biological activity	Asrar Abdullah Alansari, Banader Ahmed Khayyat, Mada Obeid Allah Al-harbi	Dr. Badriah Al-Jahdali

(شطر الطلاب) العابدية

Time	Subjects	The names of the students	Supervisor
Research Projects of Organic Chemistry			
9:00-9:10	Photochromism of dihydroindolizines: Synthesis, photophysical and Applications.	Abdallah Nafadi, Mohammed Al-Magati, Yousef Hawsawi, Mohamed Alzuwahri, Mohand AlGamdi, Wesam Al-Amri,	Prof. Thoraya Prof. Saleh A. Ahmed and Dr. Essam Hussein
9:15-9:25	1,3-Dipolar cycloaddition reactions: A convenient tool approach to synthesis of dispiro-fused 2-oxindoles	Abdulaziz Alorfi, Abdullah Alshehri, Anas Alssaadi, Maher Almasoudi, Mohamed Al-yazidi, Mohannad Altwirqi	Dr. Essam M. Hussein
9:30-9:40	Application of Green Chemistry to Synthesis of Novel Heterocyclic Compounds	Shehab T. Kafas, Badr A. Alhazmi, Faisal S. Alotebi, Basel S. Alghamdi, Metab A. Alsalmi, Omar M. Alkosy, Abd Elaziz S. Aledwani, Wasem A. Sadeq	Prof. Mohamed R. Shaaban
Research Projects of Inorganic Chemistry			
9:45-9:55	Greener synthesis and structural characterization of transition metal complexes with sulfa ligand as a potential antitumor and antimicrobial agents	Omar A. Elswat, Khaled M. Alyobi, Raad S. Alhawsawi, Ahmed S. Rawas, Ammar M. Alshareef	Prof. Abdallah Khedr

(شطر الطلاب) العابدية

Time	Subjects	The names of the students	Supervisor
Research Projects of Organic Chemistry			
9:00-9:10	Kinetics and Mechanism of Oxidation of Some Biopolymers	Ahmed G. El-Etiby, Mazen M. El-Bakmy, Naser A. Sharahily, Fadi A. El-Ahmady, Solaiman D. Kassar	Dr. Ahmed Fawzy
9:15-9:25	Effect of Different Substituents on the Electronic Structure of Some Azodyes: A Theoretical Study	Emad M. Alqthami, Talal H. Almalki, Basel M. Bugis, Ab-dullah A. Almehmadi, Hesham M. Bashiban	Dr. Ahmed M. El Defrawy
9:30-9:40	Corrosion inhibition of some metals in aqueous solutions	Rayan Abu Alaa, Al Baraa Haddad, Mohamed Al Harbi, Mohamed Sobhy, TalaAl-Salifi	Prof. Metwally A. Abd Elsaid
9:45-9:55	Nanocatalysis for environmental pollution control: Carbon oxide removal by oxidation over gold catalysts	Ammar Y. Hegazey, Odai O. Al-Ansarey, Mohamed K. Felmaban, Abdelmajeed S. Almasoudey, Anas Y. Azhar	Prof. Abd Elrahman S. Khdr
Research Projects of Analytical Chemistry			
10:00-10:10	Ion Selective Electrode (ISE) for Metal Ion Determination	Yaser Alshareef, Hassan Almalky, Aadel Althaqafi, Saud Alomiri, Fissal Alhassani, Dukhil Almasuode,	Dr. Amr L. Saber
10:15-10:25	Spectrophotometric determination of heavy metal using new chromogenic reagent	Saad Fawaz Ghazi Almasoudi	Prof. Abdallah Khedr

(شطر الطالبات) الزاهر

Time	Subjects	The names of the students	Supervisor
	Research Projects of Analytical Chemistry		
9:00-9:10	Determination of some heavy metals in (shrimp-crab-lobster) shells waste and preparation of bioplastic (nylon) from chitosan In order to be eco-friendly to prevent contamination of the agricultural soil.	Shahad M. Al-Ghamdi, Tahani A. Hummdi, Reuof F. Al-Jeaid, Bashayer A. AL-Sobhi, Asmahan A. AL-Salahi, Turkeyah B. AL-Malki, Reem B. AL-Qurashi and A-ther S. AL-Maname	Dr. Reem Kaml
9:15-9:25	A low cost adsorbent for removal of brilliant cresyl blue dye from aqueous solution	G.I. Mohammed, A. T. Al-Hulaise, B.T. Al-Breky, H.M. Abdullah, S.F. Alahmadi	Dr. Gharam I. Mohammed
9:30-9:40	Removal of rhodamine b dye from aqueous solution by using Roselle's petals	G.I. Mohammed, M.H. Arafsha, K.M. Al-Nafi, M.A. Almoadi, M.A. Alabdali	Dr. Gharam I. Mohammed
9:45-9:55	Application of Modified Electrode In Determination Of Trace Heavy Metals At Environmental Samples	Wedian A. Alhasani, ⁽¹⁾ Najla A. Altalh, ⁽¹⁾ Atheer M. Alzaid, ⁽¹⁾ Jumana N. Qari ⁽¹⁾	Dr. Enas H. Aljuhani
10:00-10:10	Determination of Cadmium, Lead, Copper, Iron and Zinc in yogurt using flame atomic absorption spectrometry (FA-AAS)	Smaher M. Qaid, Hind O. Al-Osaimi, Mada M. Al-Harbi and Habiba O. Shuaib	Dr. Marwa G. Elghalban
10:15-10:25	Analysis of trace toxic metals and minor metals in milk using flame atomic absorption spectrometry (FA-AAS)	Manar F. Al-harbi, Tahani F. Al-Subaie, Rawan A. Al-sulami, Shahad I. Alshareef and Albandri J. Alotibi	Dr. Marwa G. Elghalban

(شطر الطالبات) الزاهر

Time	Subjects	The names of the students	Supervisor
	Research Projects of Inorganic Chemistry		
10:30-10:40	Synthesis of novel zinc-organic complexes and evaluation of their fertilizer potential	Arwa Al-Sowed, Ashwaq Al-Qurashi, Iman Abdi, Tasneem Al-Ghamdi, Traji Al-Qurashi, Manal Al-Fahmi Najat Baksh, Rana Al-Sobhi, Salwa Al-Harbi, Booshra Al-Shreef , Shmoukh Al-Metrafi	Pro. Nashwa Mahoud El-Metwaly
10:45:10:55	Synthesis and characterization of the new Schiff base ligand named of 3,5-diamino-1,2,4-triazole	Amel Ahmed Alghamdi, Layla Ali Asiri, Salwa Ayed, Alkabbabi, Atheer Tami, Alsharif, Asmaa Salem Alsaadi	Dr. Hoda A. El-Ghamry
11:00-11:10	Synthesis, characterization and theoretical studies of a new Schiff base ligand and its metal complexes	Noora Mansoor Aldosari, Mariam hemied raslan, Lamyah Rahmatu allah Lahza, Asmaa Abdelrazik Abdeaziz	Dr. Hoda A. El-Ghamry
11:15-11:25	The Influence of Polymer on the Fluores-cent Properties	Rahaf M. Nawawi, Saffanah S. Alahmadi, Nada M. Alharbi, Anhar A. Bin Iuswad	Dr. Mona A. Alhasani
11:30-11:40	Fluorescence Dye Structure on Ultrathin Films	Shoroq A. Softa, Eshraq A. Obudan, Afnan A. Alzahrani, Shouq S. Alsaedi	Dr. Mona A. Alhasani
11:40-11:50	Synthetic and Characterization of new Schiff base of Terephthalaldehyde with 2, 4- dinitrophenylhydrazine Complexes with Cu^{II} and Pb^{II} ions	Sabrina hakim ouilem, Rukaiah Al-hothali, Hana'a al shamrani, Marwa abdulsalam felembane, Noor al-amir, Ghadeer Al-harbi, Jawharh al-jauid,	Dr. Aisha Al-Dawood



مكتبة صور فعاليات اللقاء



مقتطفات من فعاليات اللقاء



دليل التدريب الصيفي



التقرير السنوي للعام الأكاديمي ١٤٣٧ - ١٤٣٨ هـ





تصميم وتنفيذ



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