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<input type="checkbox"/> 1	Survey of ground beetles inhabiting agricultural crops in south-east Kazakhstan   [Levantamento de besouros terrestres que habitam plantações agrícolas no sudeste do Cazaquistão]	Jasim, S.A., Yasin, G., Cartonno, C., (...), Jalil, A.T., Iswanto, A.H.	2024	Brazilian Journal of Biology 84,e260092	0
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Ground beetles (Carabid beetles) may be found in virtually all of the world's habitats. They are one of the three most diverse families of extant beetles, with 34,275 species documented, and they serve as vital ecological markers in all environments. Edaphic living beetles catch and eat a wide variety of arthropods that live in the soil. In the case of weeds, most of the ground beetles eat their seeds and help regulate their populations. The findings of a field study in agrocenoses in South-East Kazakhstan from 2019 to 2020 are presented in this article. Twenty-seven ground beetle species from 9 genera were discovered as a consequence of the study. 670 soil traps yielded a total of 1012 beetles. Polytopic mesophilic beetles provide the foundation of the agrocenoses fauna. Hygrophils, mesophiles, and eurybionts are among the beetles found in irrigated areas, as are mixed and herbivorous species. The Carabidae family of beetles is the most numerous in fields and steppe settings. As a result, mixed-diet beetles can be found depending on the habitat and air temperature. The species of beetles in all fields in the investigation area are in accordance with the insects' complex. During the growth season, the diet of beetles shifts: predatory beetles take precedence initially, followed by mixed-diet beetles.

<input type="checkbox"/> 2	Modeling and Optimizing the Charge of Electric Vehicles with Genetic Algorithm in the Presence of Renewable Energy Sources	Chupradit, S., Widjaja, G., Mahendra, S.J., (...), Fardeeva, I., Firman, F.	2023	Journal of Operation and Automation in Power Engineering 11(1), pp. 33-38	0
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In recent years, as a result of remarkable increase in energy industry, discrimination between lower and higher loads as well as economic crisis which pestered a majority of countries; hence the usage of power plants became a significant issue. In addition, growing consumption of power and inexistence of valid source in satisfying the requirements has brought different problems such as diminish of fossil fuel resources, adversarial environmental influences, universal growth of Greenhouse Gases (GHGs). The associated issues have created technologies compatible with situations including Electric Vehicles (EVs). Regarding the efficiency of two-side exchange of energy within these vehicles, if there was a connection among the number of them and net under management and intelligent monitor of organization stability, so they can treat like a virtual tiny energy plant with start-up speed and free of cost. This paper presented the modeling and optimizing of the charge of electric vehicles with genetic algorithm in the presence of renewable energy sources. According to the results of this study, the cost of the HEV charge connected to the net is 75.88% less than the EV compared to the payment costs of the car (dis)charge in optimal patterns.

Subject area	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> Materials Science (49) >	<input type="checkbox"/> 3 Thermodynamic and density functional theory study the removal of different forms of gas arsenic by using aluminum nitride nanotube	Liu, Q., Wang, J., Liu, W., (...), Kadhim, M.M., Sarkar, A.	2022	Fuel 329,125395	0
<input type="checkbox"/> Chemistry (40) >	Hide abstract ^ <a href="#">Full Text</a> View at Publisher Related documents				
<input type="checkbox"/> Physics and Astronomy (36) >	In this paper, we characterized the different forms of arsenic (As) in flue gas (FG), which is produced by coal power plants, at varying temperatures using density functional theory (DFT) and thermodynamics computations. Also, the interaction of an aluminum nitride nanotube (AINNT) with various gaseous species of As was scrutinized. The content of the trivalent As (As <sup>3+</sup> ) was the highest in FG, and the temperature of FG had a significant impact upon the morphological distribution of As <sup>3+</sup> . The As <sub>2</sub> O <sub>3</sub> molecules primarily had a trigonal bipyramid molecular geometry when the temperature of FF was below 850 K. However, the primary molecular geometry of the As <sub>2</sub> O <sub>3</sub> molecules when the temperature of FG exceeded 850 K was in the following order: chain > trigonal bipyramid. The current study confirmed that the AINNT is capable of adsorbing As in the FG, and the Al surface had better performance. The current study also theoretically supported the fact that As could be removed from FG produced by coal power plants using the AINNT as well as other semi-conductive materials as adsorbents.				
<input type="checkbox"/> Biochemistry, Genetics and Molecular Biology (28) >	<hr/>				
<input type="checkbox"/> Engineering (26) >	<input type="checkbox"/> 4 Anti-neoplastic action of Cimetidine/Vitamin C on histamine and the PI3K/AKT/mTOR pathway in Ehrlich breast cancer	Ibrahim, S.S.A., El-Aal, S.A.A., Reda, A.M., Achy, S.E., Shahine, Y.	2022	Scientific Reports 12(1),11514	0
<input type="checkbox"/> Pharmacology, Toxicology and Pharmaceutics (22) >	Open Access				
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<input type="checkbox"/> Chemical Engineering (14) >	<hr/>				
<input type="checkbox"/> Computer Science (14) >	The main focus of our study is to assess the anti-cancer activity of cimetidine and vitamin C via combating the tumor supportive role of mast cell mediators (histamine, VEGF, and TNF- $\alpha$ ) within the tumor microenvironment and their effect on the protein kinase A(PKA)/insulin receptor substrate-1(IRS-1)/phosphatidylinositol-3-kinase (PI3K)/serine/threonine kinase-1 (AKT)/mammalian target of rapamycin (mTOR) cue in Ehrlich induced breast cancer in mice. In vitro study was carried out to evaluate the anti-proliferative activity and combination index (CI) of the combined drugs. Moreover, the Ehrlich model was induced in mice via subcutaneous injection of Ehrlich ascites carcinoma cells (EAC) in the mammary fat pad, and then they were left for 9 days to develop obvious solid breast tumor. The combination therapy possessed the best anti-proliferative effect, and a CI < 1 in the MCF7 cell line indicates a synergistic type of drug interaction. Regarding the in vivo study, the combination abated the elevation in the tumor volume, and serum tumor marker carcinoembryonic antigen (CEA) level. The serum vascular endothelial growth factor (VEGF) level and immunohistochemical staining for CD34 as markers of angiogenesis were mitigated. Additionally, it reverted the state of oxidative stress and inflammation. Meanwhile, it caused an increment in apoptosis, which prevents tumor survival. Furthermore, it tackled the elevated histamine and cyclic adenosine monophosphate (cAMP) levels, preventing the activation of the (PKA/IRS-1/PI3K/AKT/mTOR) cue. Finally, we concluded that the synergistic combination provided a promising anti-neoplastic effect via reducing the angiogenesis, oxidative stress, increasing apoptosis, as well as inhibiting the activation of PI3K/AKT/mTOR cue, and suggesting its use as a treatment option for breast cancer.				
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Document type	Hide abstract ^ <a href="#">Full Text</a> View at Publisher Related documents				
<input type="checkbox"/> Article (142) >	<hr/>				
<input type="checkbox"/> Review (15) >	The main focus of our study is to assess the anti-cancer activity of cimetidine and vitamin C via combating the tumor supportive role of mast cell mediators (histamine, VEGF, and TNF- $\alpha$ ) within the tumor microenvironment and their effect on the protein kinase A(PKA)/insulin receptor substrate-1(IRS-1)/phosphatidylinositol-3-kinase (PI3K)/serine/threonine kinase-1 (AKT)/mammalian target of rapamycin (mTOR) cue in Ehrlich induced breast cancer in mice. In vitro study was carried out to evaluate the anti-proliferative activity and combination index (CI) of the combined drugs. Moreover, the Ehrlich model was induced in mice via subcutaneous injection of Ehrlich ascites carcinoma cells (EAC) in the mammary fat pad, and then they were left for 9 days to develop obvious solid breast tumor. The combination therapy possessed the best anti-proliferative effect, and a CI < 1 in the MCF7 cell line indicates a synergistic type of drug interaction. Regarding the in vivo study, the combination abated the elevation in the tumor volume, and serum tumor marker carcinoembryonic antigen (CEA) level. The serum vascular endothelial growth factor (VEGF) level and immunohistochemical staining for CD34 as markers of angiogenesis were mitigated. Additionally, it reverted the state of oxidative stress and inflammation. Meanwhile, it caused an increment in apoptosis, which prevents tumor survival. Furthermore, it tackled the elevated histamine and cyclic adenosine monophosphate (cAMP) levels, preventing the activation of the (PKA/IRS-1/PI3K/AKT/mTOR) cue. Finally, we concluded that the synergistic combination provided a promising anti-neoplastic effect via reducing the angiogenesis, oxidative stress, increasing apoptosis, as well as inhibiting the activation of PI3K/AKT/mTOR cue, and suggesting its use as a treatment option for breast cancer.				
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<input type="checkbox"/> Journal Of Molecular Liquids (5) >	Ansari, M.J., Bokov, D., Markov, A., (...), Mohammadi, A., Dadashpour, M.				
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<input type="checkbox"/> Journal Of Nanostructures (4) >	The main focus of our study is to assess the anti-cancer activity of cimetidine and vitamin C via combating the tumor supportive role of mast cell mediators (histamine, VEGF, and TNF- $\alpha$ ) within the tumor microenvironment and their effect on the protein kinase A(PKA)/insulin receptor substrate-1(IRS-1)/phosphatidylinositol-3-kinase (PI3K)/serine/threonine kinase-1 (AKT)/mammalian target of rapamycin (mTOR) cue in Ehrlich induced breast cancer in mice. In vitro study was carried out to evaluate the anti-proliferative activity and combination index (CI) of the combined drugs. Moreover, the Ehrlich model was induced in mice via subcutaneous injection of Ehrlich ascites carcinoma cells (EAC) in the mammary fat pad, and then they were left for 9 days to develop obvious solid breast tumor. The combination therapy possessed the best anti-proliferative effect, and a CI < 1 in the MCF7 cell line indicates a synergistic type of drug interaction. Regarding the in vivo study, the combination abated the elevation in the tumor volume, and serum tumor marker carcinoembryonic antigen (CEA) level. The serum vascular endothelial growth factor (VEGF) level and immunohistochemical staining for CD34 as markers of angiogenesis were mitigated. Additionally, it reverted the state of oxidative stress and inflammation. Meanwhile, it caused an increment in apoptosis, which prevents tumor survival. Furthermore, it tackled the elevated histamine and cyclic adenosine monophosphate (cAMP) levels, preventing the activation of the (PKA/IRS-1/PI3K/AKT/mTOR) cue. Finally, we concluded that the synergistic combination provided a promising anti-neoplastic effect via reducing the angiogenesis, oxidative stress, increasing apoptosis, as well as inhibiting the activation of PI3K/AKT/mTOR cue, and suggesting its use as a treatment option for breast cancer.				
<input type="checkbox"/> Systematic Reviews In Pharmacy (4) >	<hr/>				

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<input type="checkbox"/>	Final (145) >	Abnormal vasculature is one of the most conspicuous traits of tumor tissue, largely contributing to tumor immune evasion. The deregulation mainly arises from the potentiated pro-angiogenic factors secretion and can also target immune cells' biological events, such as migration and activation. Owing to this fact, angiogenesis blockade therapy was established to fight cancer by eliminating the nutrient and oxygen supply to the malignant cells by impairing the vascular network. Given the dominant role of vascular-endothelium growth factor (VEGF) in the angiogenesis process, the well-known anti-angiogenic agents mainly depend on the targeting of its actions. However, cancer cells mainly show resistance to anti-angiogenic agents by several mechanisms, and also potentiated local invasiveness and also distant metastasis have been observed following their administration. Herein, we will focus on clinical developments of angiogenesis blockade therapy, more particular, in combination with other conventional treatments, such as immunotherapy, chemoradiotherapy, targeted therapy, and also cancer vaccines. [MediaObject not available: see fulltext.]					
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<input type="checkbox"/>	Osol Aldeen University College (38) >	<input type="checkbox"/> 6	Synthesis, characterization, cytotoxic, and computational studies of new complexes (copper and cadmium)	Waheeb, A.S., Al-Adilee, K.J., Al-Janabi, A.S., Shanmuganathan, R., Kadhim, M.M.	2022	Journal of Molecular Structure 1267,133572	0
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<input type="checkbox"/>	University of Mosul (24) >	A novel 2- [-2-(4, 5-dimethyl thiazolyl) azo] -5-dimethyl amino benzoic acid was synthesized from 2-amino-4,5- dimethyl thiazole. The azo ligand was obtained by the diazotization of 2-amino-4,5- dimethyl thiazole and coupling with 3-dimethyl aminobenzoic acid in an alkaline alcoholic solution. The compounds were characterized by spectroscopic methods such as 1H, 13C NMR, UV-Vis, FT-IR, mass spectroscopy, and X-ray diffraction. In addition, standard characterization techniques including elemental analysis, thermogravimetric analysis, molar conductivity, and FESEM were employed for characterization. These studies revealed octahedral geometries around the Co(III) and Cd(II) ions. The prepared compounds were screened for bioactivity against Streptococcus, Escherichia coli, and Penicillium. sp. MTT assay demonstrated that the synthesized compounds had excellent anticancer activity against the breast carcinoma cell lines (MCF-7), proposing them as a suitable candidate for future anticancer therapies. Docking was also employed to evaluate the cancer cells' physical properties and the inhibitory action of the synthesized compounds against the cancer cells.					
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<input type="checkbox"/>	Islamic Azad University (2) >						
<input type="checkbox"/>	Ministry of Higher Education and Scientific Research (2) >	Hide abstract <a href="#">Full Text</a> <a href="#">View at Publisher</a> <a href="#">Related documents</a>					
<input type="checkbox"/>	Mustansiriyah University (2) >	A new family of two-dimensional (2D) transition metal carbides, carbonitrides, and nitrides that were discovered and developed at Drexel University in 2011, which is called MXene and is applicable for several critical applications. These so-called MXene structures possess excellent properties e.g., rich surface chemistry, electronic structures, high electrical conductivity, hydrophilicity, thermal and mechanical stability, and large specific surface area, which have attracted tremendous attention. This review article will focus on some most recent progress and review comprehensively their fabrication methods and compositing with polymers and metals. A major part has been associated with the electrochemical applications, medical, flame retardance effect in a polymer matrix, and electromagnetic shielding properties. In addition, briefly, we will delve into a brief discussion on the current limitations, and future research needs, along with the various corresponding challenges in order to provide a better understanding of these new 2D materials.					
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<input type="checkbox"/>	Arkansas Biosciences Institute (1) >	<input type="checkbox"/> 8	Intranasally administered melatonin core-shell polymeric nanocapsules: A promising treatment modality for cerebral ischemia	Bseiso, E.A., Abd El-Aal, S.A., Nasr, M., Sammour, O.A., Abd El Gawad, N.A.	2022	Life Sciences 306,120797	0

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Aims: The neurohormone melatonin (MEL) has been reported as a promising neuroprotective molecule, however it suffers pharmaceutical limitations such as poor solubility and low bioavailability, which hinder its pharmacological and clinical potential. In the current work, MEL was loaded in core-shell nanocarrier system; polymeric nanocapsules (PNCs), and assessed for its potential in cerebral ischemia reperfusion injury rat model when administered intranasally. Key findings: Adopting a D-optimal factorial design, MEL-PNCs were successfully formulated using the nanoprecipitation technique. MEL-PNCs exhibited a particle size ranging from 143.5 to 444 nm, negative zeta potential values ranging from -24.2 to -38.7 mV, cumulative release % for MEL ranging from 36.79 to 41.31 % over 8 h period, with overall good storage properties. The selected MEL-PNCs formulation displayed 8-fold higher permeation than the drug solution across sheep nasal mucosa. MEL-PNCs administered intranasally decreased oxidative stress and hippocampal inflammation, and the histological examination revealed the significant restoration of hippocampal neurons. Significance: MEL-PNCs administered intranasally could be a promising treatment modality in brain ischemia.

<input type="checkbox"/> 9	Morin offsets PTZ-induced neuronal degeneration and cognitive decrements in rats: The modulation of TNF- $\alpha$ /TNFR-1/RIPK1,3/MLKL/PGAM5/Drp-1, IL-6/JAK2/STAT3/GFAP and Keap-1/Nrf-2/HO-1 trajectories	Abd El-Aal, S.A., El-Abhar, H.S., Abulfadl, Y.S.	2022	European Journal of Pharmacology 931,175213	0
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Morin is a bioactive flavonoid with prominent neuroprotective potentials, however, its impact on epilepsy-provoked cognitive dysregulations has not been revealed. Hence, the present investigation aims to divulge the potential anticonvulsant/neuroprotective effects of morin in rats using a pentylenetetrazole (PTZ)-induced kindling model with an emphasis on the possible signaling trajectories involved. Kindling was induced using a sub-convulsive dose of PTZ (35 mg/kg, i.p.), once every other day for 25 days (12 injections). The expression of targeted biomarkers and molecular signals were examined in hippocampal tissues by ELISA, Western blotting, immunohistochemistry, and histopathology. Contrary to PTZ effects, administration of morin (10 mg/kg, i.p., from day 15 of PTZ injection to the end of the experiment) significantly reduced the severity of seizures coupled with a delay in kindling acquisition. It also preserved hippocampal neurons, and diminished astrogliosis to counteract cognitive deficits, exhibited by the enhanced performance in MWM and PA tests. These favorable impacts of morin were mediated via the abrogation of the PTZ-induced necroptotic changes and mitochondrial fragmentation proven by the suppression of p-RIPK-1/p-RIPK-3/p-MLKL and PGAM5/Drp-1 cues alongside the enhancement of caspase-8. Besides, morin inhibited the inflammatory cascade documented by the attenuation of the pro-convulsant receptor/cytokines TNFR-1, TNF- $\alpha$ , IL-1 $\beta$ , and IL-6 and the marked reduction of hippocampal IL-6/p-JAK2/p-STAT3/GFAP cue. In tandem, morin signified its anti-oxidant capacity by lowering the hippocampal contents of MDA, NOX-1, and Keap-1 with the restoration of the impaired Nrf-2/HO-1 pathway. Together, these versatile neuro-modulatory effects highlight the promising role of morin in the management of epilepsy.

<input type="checkbox"/> 10	Computational study of the effect of Fe-doping on the sensing characteristics of BC <sub>3</sub> nano-sheet toward sulfur trioxide	Altimari, U.S., Mireya Romero Parra, R., Ketut Acwin, N., (...), Suksatan, W., Ahmadi Peyghan, F.	2022	Computational and Theoretical Chemistry 1215,113805	0
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Density functional theory (DFT) calculations were undertaken to investigate the effect of Fe-doping on the capability of a graphene-like BC3 nano-sheet (Fe@BC3NS) in detecting the gas SO3. The interaction of the pure BC3NS with SO3 was a physisorption, showing that it could not be used as a sensor. However, there was a considerable increase in the sensitivity and reactivity of the BC3NS after Fe was replaced with B. The adsorption energy of SO3 increased from 7.9 to 23.3 kcal/mol after doping Fe into the surface of the BC3NS. Moreover, there was a reduction in the energy gap of Fe@BC3NS (~38.9%) after SO3 was adsorbed, which increased the electrical conductivity to a great extent. Therefore, we found that Fe-doping increased the sensitivity of the BC3NS to SO3 with a short recovery time of 9.5 s at room temperature. Our theoretical results further supported the fact that metal@BC3 nano-structures have widespread practical applications.

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| <input type="checkbox"/> | 11 | Galangin mitigates DOX-induced cognitive impairment in rats: Implication of NOX-1/Nrf-2/HMGB1/TLR4 and TNF- $\alpha$ /MAPKs/RIPK/MLKL/BDNF | Abd El-Aal, S.A., AbdElrahman, M., Reda, A.M., (...), El-Gazar, A.A., Ibrahim, S.S.A. | 2022 | NeuroToxicology 92, pp. 77-90 | 0 |
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The cognitive and behavioral decline observed in cancer survivors who underwent doxorubicin (DOX)-based treatment raises the need for therapeutic interventions to counteract these complications. Galangin (GAL) is a flavonoid-based phytochemical with pronounced protective effects in various neurological disorders. However, its impact on DOX-provoked neurotoxicity has not been clarified. Hence, the current investigation aimed to explore the ability of GAL to ameliorate DOX-provoked chemo-brain in rats. DOX (2 mg/kg, once/week, i.p.) and GAL (50 mg/kg, 5 times/week., via gavage) were administered for four successive weeks. The MWM and EPM tests were used to evaluate memory disruption and anxiety-like behavior, respectively. Meanwhile, targeted biochemical markers and molecular signals were examined by the aid of ELISA, Western blotting, and immune-histochemistry. In contrast to DOX-impaired rats, GAL effectively preserved hippocampal neurons, improved cognitive/behavioral functions, and enhanced the expression of the cell repair/growth index, BDNF. The antioxidant feature of GAL was confirmed by the amelioration of MDA, NO and NOX-1, along with restoring the Nrf-2/HO-1/GSH cue. In addition, GAL displayed marked anti-inflammatory properties as verified by the suppression of the HMGB1/TLR4 nexus and p-NF-KB p65 to inhibit TNF- $\alpha$ , IL-6, IL-1 $\beta$ , and iNOS. This inhibitory impact extended to entail astrocyte activation, as evidenced by the diminution of GFAP. These beneficial effects were associated with a notable reduction in p-p38MAPK, p-JNK1/2, and p-ERK1/2, as well as the necroptosis cascade p-RIPK1/p-RIPK3/p-MLKL. Together, these pleiotropic protective impacts advocate the concurrent use of GAL as an adjuvant agent for managing DOX-driven neurodegeneration and cognitive/behavioral deficits. Data availability: The authors confirm that all relevant data are included in the supplementary materials.

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| <input type="checkbox"/> | 12 | A first principle study on sensing properties of quasi-planer born (B <sub>36</sub> borophene) towards COS, SO2, H2S and CS2 gases | Kadhim, M.M., Taban, T.Z., Shadhar, M.H., (...), Rheima, A.M., Masileno, A. | 2022 | Physica E: Low-Dimensional Systems and Nanostructures 143,115364 | 0 |
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Density functional theory was used to investigate the possible use of the B36 borophene in the detection of H2S, CS2, COS, and SO2 gases. In general, the order of interaction stability for the studied gases is as follows: SO2 > CS2 > H2S > COS. There seems to be a relation between the energy of absorption and the electric dipole moment of the molecules. The B36 borophene is indeed a  $\Phi$ -type sensor that only detects SO2 and also an electronic sensor that detects SO2 and CS2. As a  $\Phi$ -type sensor, it can be extrapolated that the B36 borophene is able to identify SO2 in the presence of H2S, COS, and CS2. Furthermore, it may work selectively between SO2 and CS2 as an electronic sensor by changing different electronic conductivity values in the presence of the as-mentioned gases. It is an electronic or function-type sensor for the detection of COS and SO2. The B36 borophene has a short recovery time of around 0.7 s and 0.1 s for the desorption of CS2 and SO2 from the surface at ambient temperature. It has been determined that this borophene is able to function in a moist environment.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 13	Study to amino acid-based inhibitors as an effective anti-corrosion material	Fawzi Nassar, M., Zedan Taban, T., Fadhel Obaid, R., (...), Kadhim, M.M., Liu, P.	2022	Journal of Molecular Liquids 360,119449	0

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The inhibitory behavior of L-Cysteine (Cys) and its derivatives towards iron corrosion through density functional theory (DFT) was investigated. The current research study undertakes a rigorous evaluation of global as well as local reactivity descriptors of the Cys in protonated as well as neutral forms and the changes in reactivity after the combination of Cys into di- and tripeptides. The inhibitory effect of di- and tri-peptides increases since, in the molecular structure, the number of reaction centers increase. We computed the adsorption energies (Eads) and low energy complexes with most stability for the adsorption of small peptides and Cys amino acids onto the surfaces of Fe (1 1 1). We found that the adsorption of tri-peptides onto these substrates was through a chemical adsorption. The absolute Eads values between these inhibitors on the investigated metal surface rose within the protonated forms. The adsorption ability of the peptides onto the surface of the iron was the best, demonstrating that their inhibitory efficiency is the highest from a theoretical perspective. The findings demonstrate that small peptides are promising candidates to be utilized as efficient “green” corrosion inhibitors.

<input type="checkbox"/> 14	Perception of Mg adsorption on the BC <sub>2</sub> N nanotube as a anode for rechargeable Mg ion batteries	Jassim, G.S., Taban, T.Z., Shadhar, M.H., (...), Rheima, A.M., Mohamadi, A.	2022	International Journal of Hydrogen Energy 47(67), pp. 29006-29013	0
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Owing to their cost-effectiveness and the natural abundance of magnesium, magnesium-ion batteries (MIBs) were introduced as encouraging alternatives to Lithium-ion batteries. Following the successful synthesis of carbon nano-tube, its B and N doped derivatives which were doped with B and N enjoyed the attention of researchers as novel anode materials (AM) for MIBs. Here, we investigated a BC<sub>2</sub>N nanotube (BC<sub>2</sub>NNNT) as an encouraging AM for MIBs. To have a deeper understanding of the electrochemical properties, cycling stability, specific capacity (SC) and the adsorption behavior of this nano-tube, first-principles density functional theory computations were performed. By performing NMR calculations, we identified two types of non-aromatic hexagonal rings, namely B<sub>2</sub>C<sub>2</sub>N<sub>2</sub> (I) and BC<sub>4</sub>N (II). Magnesium was adsorbed onto I with the adsorption energy of -40.38 kcal/mol and on II with the adsorption energy -20.15 kcal/mol. The SCs were as high as 783 mAh/g. The predicted average open-circuit voltage for BC<sub>2</sub>NNNT was 1.94 V, which was greater than that of other 2D materials. The findings demonstrated the possibility of utilizing the BC<sub>2</sub>NNNT as an AM for MIBs. The results can provide useful insights into the design of boron-carbon-nitrogen-based AMs for MIBs.

<input type="checkbox"/> 15	Al-, Ga-, and In-decorated BP nanotubes as chemical sensors for 2-chloroethanol	Kadhim, M.M., Sead, F.F., Jalil, A.T., (...), Shadhar, M.H., Hamel, S.	2022	Monatshefte fur Chemie 153(7-8), pp. 589-596	0
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B3LYP density functional is utilized for probing the effect of decorating Al, Ga, and In on the sensing performance of a boron phosphide nanotube (BPNT) in detecting the 2-chloroethanol (CHE) molecule. We predict that the interaction of pure BPNT with CHE is physisorption, and the sensing response (SR) of BPNT is approximately 6.3. The adsorption energy of CHE is about  $-26.3$  to  $-91.1$ ,  $-96.6$ , and  $-100.3$  kJ/mol, when the Al, Ga, and In metals are decorated on the BPNT surface, respectively. This indicates that the decorated metals significantly strengthen the interaction. Also, the corresponding SR meaningfully rises to 19.4, 41.0, and 93.4, indicating that by increasing the atomic number of metals, the sensitivity is increased. Therefore, we found that In-decorating much more increases the sensitivity of BPNT toward CHE. The SR of metal-decorated BPNT decreases in the water solvent. Our theoretical results further support the fact that the metal-decorated BP nanostructures have practical applications. Graphical abstract: [Figure not available: see fulltext.].

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|--------------------------|----|---|---|------|--|---|
| <input type="checkbox"/> | 16 | Potential application of some metal decorated AIP nano-sheet for detection of boron trichloride | Kadhim, M.M., Sh. Jassim, G., Fadhel Obaid, R., (...), Hachim, S.K., Sharma, S. | 2022 | Computational and Theoretical Chemistry<br>1214,113792 | 0 |
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BCl<sub>3</sub> is toxic gas and its detection is of great importance. Thus, here, B3LYP, M06-2X, and B97D density functionals are utilized for probing the effect of decorating Zn, Cd, and Au on the sensing performance of an AIP nano-sheet (AIPNS) in detecting the BCl<sub>3</sub>. We predict that the interaction of pure AIPNS with BCl<sub>3</sub> is physisorption, and the sensing response (SR) of AIPNS is approximately 9.2. The adsorption energy of BCl<sub>3</sub> changes from  $-4.1$  to  $-18.8$ ,  $-19.1$ , and  $-19.5$  kcal/mol by decorating the Zn, Cd, and Au metals into the AIPNS surface, respectively. Also, the corresponding SR meaningfully rises to 40.4, 59.0, and 80.9, indicating that by increasing the atomic number of metals, the sensitivity of metal decorated AIPNS (metal@AIPNS) is increased. Therefore, we found that Au-decorating much more increases the sensitivity of AIPNS toward BCl<sub>3</sub>. As energy decomposing analysis reveals the electrostatic, also known as cation-lone pair interaction, is mostly the nature of the interaction between the BCl<sub>3</sub> and metal@AIPNS.

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| <input type="checkbox"/> | 17 | Study to molecular insight into the role of aluminum nitride nanotubes on to deliver of 5-Fluorouracil (5FU) drug in smart drug delivery | Al-Zuhairy, S.A.S., Kadhim, M.M., Hatem Shadhar, M., (...), Mousa, M.N., Cao, Y. | 2022 | Inorganic Chemistry Communications<br>142,109617 | 0 |
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The adsorption process of 5-Fluorouracil (5FU) drugs on Aluminum nitride nanotubes surface (AlNNTs) have been evaluated through density functional theory (DFT). The DFT results show that the interaction of AlNNTs with the F atoms of 5FU drugs is strong due to the fact that the amount of adsorption energy was about  $-29.65$  kcal.mol<sup>-1</sup>. Conversely, the interaction of the 5FU through O atoms with the AlNNTs was weaker due to the lower value of adsorption energy. Also, based on the values of Gibbs free energy, the 5FU adsorption on the surfaces of AlNNTs was spontaneous. In addition, based on natural bond orbital (NBO) analysis, the direction of charge transfer was from fluorine's  $\sigma$  orbitals of the drug to nitrogen's and aluminum's  $n^*$  orbitals of AlNNTs with a considerable amount of transferred energy. Based on the obtained results, 5FU drug's tendency toward interaction with AlNNTs is favorable. During the adsorption of 5FU drug onto the AlNNTs, a significant changed in the electrical band gap (E<sub>g</sub>) were seen, resulting in increased electrical conductance. The current research is devoted to investigating the potentials of AlNNTs for 5FU anticancer drugs delivery in a bio-based environment.

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| <input type="checkbox"/> | 18 | Development of hybrid machine learning model for simulation of chemical reactors in water treatment applications: Absorption in amino acid<br><i>Open Access</i> | Zhang, Y., Thangavelu, L., Taban, T.Z., (...), Zwawi, M., Algarni, M. | 2022 | Environmental Technology and Innovation<br>27,102417 | 1 |
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Separation and capture of CO<sub>2</sub> from gas mixtures is of great importance from environmental point of view which can be effectively achieved using amino acids as new class of chemical absorbents. However, screening the proper absorbent with desired separation properties using experimental measurements is tedious and costly. The predictive computational techniques can be employed to overcome this problem. In this study, for estimating and analyzing CO<sub>2</sub> solubility in chemical solvents based on amino acid salt solutions, we created two regression models from different classes of machine learning methods. The main aim is to analyze the effect of physico-chemical parameters on the CO<sub>2</sub> dissolution in solvent which can be carried out in chemical reactors for separation/conversion of CO<sub>2</sub> for environmental applications. A number of CO<sub>2</sub> solubility data are collected from resources and used for training and validation of machine learning computations. Several inputs were considered for the developed machine learning models. Inputs in this regression task are T (temperature), weight% (overall mass percentage of solvent), PCO<sub>2</sub> (partial pressure of CO<sub>2</sub> in the gas), MW-am (molecular weight of amino acid salt), MPC (melting point of amino acid salt), MWC (molecular mass of cation). In this task, we must predict alpha (CO<sub>2</sub> loading in the amino acid solution) as the only output of the developed models. The models studied in this research are the Gaussian process and the decision tree boosted with Gradient boosting. With the R<sup>2</sup> criterion, the scores of the two Gradient boosting and Gaussian process models were obtained 0.985 and 0.993, respectively. As the third efficiency metric of the models, the Gradient boosting and regression of the Gaussian process with the RMSE criterion is the error rates of 1.10E-01 and 1.44E-01. The models developed in this work indicated to be reliable and robust enough for screening the solvents for a particular application and to save time and cost of experimental measurements.

 19

The Reasons Behind the Salubrious of Colostrum on the Cognitive Functions: A Systematic Review

Al-Nimer, M.S.M., Al-Basri, A.Kh., Satrmbekova, D., Datkhayev, U.M.

2022 Tropical Journal of Natural Product Research 6(7), pp. 1057-1066

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Bovine colostrum (BC) is rich in many vitamins, minerals, and antioxidant substances. Its supplementation provides health benefits, particularly for athletes. This systematic review was carried out to update on the benefit of BC or its formulations (e.g., colostrinin) on the cognitive functions or their related biomarkers in experimental and human studies. Full texts or abstracts of 219 articles as reports of narrative or systematic reviews, randomized controlled clinical trials, observational studies, and experimental studies (in vitro, ex vivo, and in vivo) were included after searches in PubMed, Europe PMC, Google scholar databases. The full texts of eligible articles (25 articles) were assessed and their results were summarized in different categories according to the study design. Bovine colostrum or its related formulations have been shown to be useful as they improve cognitive functions and their biomarkers. Compatible results were observed in experimental and human studies. Further studies are mandatory to elucidate the rationale for using (BC) in healthy subjects and patients with impaired of cognitive functions.

 20

THE NATURAL AND COMMERCIAL SOURCES OF HYDROXYAPATITE/COLLAGEN COMPOSITES FOR BIOMEDICAL APPLICATIONS: A REVIEW STUDY  
*Open Access*

Mudhafar, M., Alsailawi, H.A., Zainol, I., (...), Dhahi, S.J., Mohammed, R.K.

2022 International Journal of Applied Pharmaceutics 14(4), pp. 77-87

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Bone is considered the core unit that forms the human body's skeleton, consisting primarily of hydroxyapatite (HA) and collagen (Col). The composites of hydroxyapatite/collagen had been prepared through different fabricated techniques and were used in many bone defects as biomaterials for bone tissue engineering. The incorporation of HA and collagen is possible due to the biocompatibility of collagen and the high mechanical properties of the HA. HA/Col composites have been used in many medical and biological fields. Current study have been discussed the synthesis and characterization techniques of HA/Col composites; the study have been included to study the cytotoxicity and cell attachment of the composites, along with their applications, as well as barriers that still remain to their successful development for clinical application.

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| □ 21 | Novel Gd <sub>2</sub> O <sub>3</sub> /SrFe <sub>12</sub> O <sub>19</sub> @Schiff base chitosan (Gd/SrFe@SBCs) nanocomposite as a novel magnetic sorbent for the removal of Pb(II) and Cd(II) ions from aqueous solution | Jasim, S.A.,<br>Abdelbasset, W.K.,<br>Hachem, K., (...),<br>Mustafa, Y.F.,<br>Mahmoud, Z.H. | 2022<br>Journal of the Chinese<br>Chemical Society<br>69(7), pp. 1079-1087 | 0 |
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In this work, novel Gd<sub>2</sub>O<sub>3</sub>/SrFe<sub>12</sub>O<sub>19</sub>@Schiff base chitosan (Gd/SrFe@SBCs) nanocomposite was prepared, and characterized using FT-IR, XRD, DSC, VSM, FE-SEM, X-ray energy dispersive spectrum (EDS), and map analyses. All results confirm that the Gd<sub>2</sub>O<sub>3</sub>/SrFe<sub>12</sub>O<sub>19</sub> nanocomposite/Schiff base chitosan was successfully prepared. EDS and map analyses predict that all elements are well distributed to the compound. VSM shows that the title compound has high saturation magnetic of 17.35 emu/g with high coercivity of 4,664 Oe. In addition, Gd/SrFe@SBCs were used as new adsorbents to the removal of Pb(II) and Cd(II) ions from aqueous solution, and results confirm that the removal efficiency of Pb(II) (98%) is higher than Cd(II) (78%) ion. At best conditions, the maximum adsorption capacity for Pb(II) is 183.7 and for Cd(II) is 146.2 mg/g. Reusability results show that the adsorption efficiency of Gd/SrFe@SBCs remained above 93% for Pb(II) and 71% for Cd(II) after five adsorption/desorption cycles. The effect of coexisting cation and anions was studied and confirm that the Gd/SrFe@SBCs had selective adsorption toward Pb(II). According to these results, we proposed that Gd/SrFe@SBCs studied as a sorbent to removal of other heavy metal ions.

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|------|---|--|---|---|
| □ 22 | Investigation of boiling process of different fluids in microchannels and nanochannels in the presence of external electric field and external magnetic field using molecular dynamics simulation<br><i>Open Access</i> | Abdulhussein, W.A.,<br>Abed, A.M.,<br>Mohammed, D.B.,<br>Smiasim, G.F.,<br>Baghaei, S. | 2022<br>Case Studies in<br>Thermal Engineering<br>35,102105 | 2 |
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The microfluidic systems' thermal performance in various industries is affected by the fluid flow within their micro/nanochannels. This study aimed to investigate the boiling process of samples simulated in micro/nanochannel by molecular dynamics simulation. In the present study, the boiling time inside the micro/nanochannel is investigated at different types of base fluid (Helium, oxygen (air), and water), different types of channels walls particles (copper, platinum, and copper/platinum), number of atomic curvatures (1, 2, and 3), external electric field (1, 2, and 5 V/m), and external magnetic fields (1, 2, and 5 T). Numerically, the phase change rate in Helium base fluid samples is higher than other fluids. Its boiling time in micro/nanochannels was 3.88 and 3.54 ns, respectively. This indicates an increase in these structures' efficiency in constructing heat transfer processes. In addition, the boiling time of the base fluid in the platinum atomic micro/nanochannels occurs in a shorter time of 3.61 and 3.52 ns. By increasing the number of curves from 1 to 3 complete curvatures, the micro/nanochannel's boiling time decreases from 3.88/3.54 to 3.07/2.89 ns. Also, by increasing the intensity of the external electric field from 0 to 5 V/m, the boiling time in the micro/nanochannel decreases from 3.88/3.84 ns to 3.21/3.16 ns. Finally, increasing the intensity of the external magnetic field from 0 to 5 T leads to a decrease in boiling time in the micro/nanochannel to 3.10/3.02 ns. This phenomenon indicates an increase in mobility and kinetic energy of the base fluid by applying the external field.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/>	23 Oxygen reduction reaction on metal-doped nanotubes and nanocages for fuel cells	Salahdin, O.D., Majdi, A., Oplencia, M.J.C., (...), Hammid, A.T., Zhao, X.	2022	Ionics 28(7), pp. 3409-3419	1

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The ORR on surfaces of Ni-SiNT, Ni<sub>2</sub>-SiNT, Pt<sub>2</sub>-CNT, and Pt<sub>2</sub>-Si<sub>82</sub> catalysts are investigated and compared with platinum metal catalysts. The structure–activity parameters for Ni-SiNT, Ni<sub>2</sub>-SiNT, Pt<sub>2</sub>-CNT, and Pt<sub>2</sub>-Si<sub>82</sub> and their complexes with species are calculated and compared. The \*OOH-nano-compounds can perform the pathway 1 which includes the reactions c, d, and e and pathway 2 which contains the reactions f, g, and h. When the amounts of U for ORR on Ni-SiNT, Ni<sub>2</sub>-SiNT, Pt<sub>2</sub>-CNT, and Pt<sub>2</sub>-Si<sub>82</sub> are reached to 0.82, 0.85, 0.80, and 0.78 V, the reactions are downhill. Over-potential for ORR on Ni-SiNT, Ni<sub>2</sub>-SiNT, Pt<sub>2</sub>-CNT, and Pt<sub>2</sub>-Si<sub>82</sub> are 0.41, 0.38, 0.43, and 0.45 V, respectively. The Ni<sub>2</sub>-SiNT can better catalyze the ORR than Ni-SiNT, Pt<sub>2</sub>-CNT, and Pt<sub>2</sub>-Si<sub>82</sub> by lower over-potential.

<input type="checkbox"/>	24 Removal of Cibacron Blue P-6B dye from aqueous solution using synthesized anatase titanium dioxide nanoparticles: Thermodynamic, kinetic, and theoretical investigations	Rheima, A.M., Khadom, A.A., Kadhim, M.M.	2022	Journal of Molecular Liquids 357,119102	0
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Dye pollution is a serious issue in the water, especially since textile mills are the primary source. Nanomaterials have been used to solve this problem in many ways, resulting in several researches. Titanium dioxide nanoparticles (TiO<sub>2</sub> NPs) are successfully produced in this study using ultraviolet (UV) irradiation process with a maximum intensity wavelength of 365 nm. Transmission electron microscopy (TEM) and scanning electron microscope (SEM) measurements are used to examine the morphology and form of nano-synthesized. The anatase phase crystal structure was proved by X-ray diffraction (XRD). The uptake of Cibacron Blue P-6B dye was improved when TiO<sub>2</sub> NPs were added. At a contact duration of 70 min, Cibacron Blue P-6B dye adsorption onto TiO<sub>2</sub> nanoparticles was faster. The adsorption process was best described by Freundlich isotherm (R<sup>2</sup> > 0.981) and pseudo-second-order (R<sup>2</sup> > 0.9866) models. The thermodynamic parameters were calculated using the experimental van't Hoff equation. The TiO<sub>2</sub>-Dye adsorption process was simulated theoretically by the principles of the Density Functional Theory (DFT) using the Gaussian 09 package software. Furthermore, the regeneration process of TiO<sub>2</sub> was addressed. It was found that the breaking bond energy was lower than the activation energy required for TiO<sub>2</sub> recovery.

<input type="checkbox"/>	25 Combined Systemic Intake of K-ATP Opener (Nicorandil) and Mesenchymal Stem Cells Preconditioned With Nicorandil Alleviates Pancreatic Insufficiency in a Model of Bilateral Renal Ischemia/Reperfusion Injury <i>Open Access</i>	ShamsEldeen, A.M., El-Aal, S.A.A., Aboulhoda, B.E., (...), Mostafa, A., Sadek, N.B.	2022	Frontiers in Physiology 13,934597	0
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We used nicorandil, a K-ATP channel opener, to study the role of these channels in the amelioration of renal ischemia/reperfusion (I/R)-induced pancreatic injury, and the possible involvement of PI3K/Akt/mTOR signaling pathway. Forty-two male Wistar rats were included in this study, six were sacrificed for extraction of bone marrow mesenchymal stem cells (BM-MSCs) and conducting the in-vitro work, the others were included in vivo study and equally divided into six groups. Group 1 (sham control), but groups 2–6 were subjected to bilateral renal I/R: Group 2 (I/R); Group 3 (I/R-NC), treated with nicorandil; Group 4 (I/R-MSCs), treated with BM-MSCs; Group 5 (I/R-MSCC), treated with nicorandil-preconditioned BM-MSCs; Group 6 (I/R-NC-MSCC), treated with both systemic nicorandil and preconditioned BM-MSCC. Renal injury and subsequent pancreatic damage were detected in the I/R group by a significant increase in serum urea, creatinine, fasting glucose, and pancreatic enzymes. The pancreatic tissues showed a reduction in cellularity and a significant decrease in the expression of the cell survival pathway, PI3K/Akt/mTOR, in the I/R group compared to the control. Preconditioning MSCs with nicorandil significantly enhanced the proliferation assay and decreased their apoptotic markers. Indeed, combined systemic nicorandil and nicorandil-preconditioning maintained survival of MSC in the pancreatic tissue and amelioration of apoptotic markers and pancreatic TNF- $\alpha$  production. Histologically, all treated groups revealed better pancreatic architecture, and increased area % of anti-insulin antibody and CD31, which were all best observed in the NC-MSCC group. Thus, using K-ATP channel opener was efficient to enhance PI3K/Akt/mTOR expression levels (in vivo and in vitro).

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|------|---|--|------|---|---|
| □ 26 | Comparison of Emotion Regulation Strategies in Individuals with Migraine, Tension, and Normal Headaches | Jasim, S.A., Kzar, H.H., Alwan, A.S., (...), Al-Gazallv, M.E., Mustafa, Y.F. | 2022 | International Journal of Body, Mind and Culture<br>9(2) | 0 |
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Background: Headaches are a major focus of public health efforts. As stress and emotional disturbances play a role in various forms of headaches, emotion regulation can be thought of as a factor in adaptation and successful management of this illness. The effectiveness of cognitive emotion management strategies in women and men with migraine headaches and tension headaches, and healthy people was investigated in this study. Methods: This research was a causal-comparative research. In the first 6 months of 2020, 60 patients with migraine tension headaches were studied in the neurology clinic of the Abdi Waluyo Hospital in Jakarta. Positive techniques (vision formation, positive refocus, positive appraisal, and planning) and negative strategies (self-blame, blaming others, rumination, and catastrophic perception and acceptance) in emotion regulation were obtained using the Emotion Regulation Questionnaire. In addition, multivariate analysis of variance (MANOVA) and Tukey's range test were used. Results: According to the findings, individuals with migraines employ fewer positive techniques in the cognitive management of their emotions than people without migraines (group factor effect:  $P = 0.36$ ). Moreover, the findings revealed a significant difference in the usage of positive methods by women and men in both groups, with women employing more positive tactics (gender\*group effect:  $P < 0.05$ ). Conclusion: In conclusion, the findings of this study suggest that self-regulation is a component that can cause headaches in patients. The clinical applications of this study include how people with headaches use cognitive emotion regulation strategies in the etiology and design of therapeutic interventions.

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| □ 27 | The Effects of Maternal Intake of EPA and DHA Enriched Diet During Pregnancy and Lactation on Offspring's Muscle Development and Energy Homeostasis<br><i>Open Access</i> | Ghnaimawi, S., Zhang, S., Baum, J.L., Huang, Y. | 2022 | Frontiers in Physiology<br>13,881624 | 0 |
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EPA and DHA are n-3 long-chain polyunsaturated fatty acids with a diversity of health benefits on offspring. The objective of this study was to test the in vivo effect of maternal ingestion of EPA and DHA on fetal and offspring muscle development and energy balance. Two groups of female C57BL/6 mice were fed EPA and DHA enriched diet (FA) and diet devoid of EPA and DHA (CON) respectively throughout the entire period of gestation and lactation. Embryos at E13 and offspring at age of D1 and D21 were selected for sample collection and processing. No change in birth number and body weight were observed between groups at D1 and D21. Transient increase in the expression levels of myogenesis regulating genes was detected at D1 ( $p < 0.05$ ) in FA group. Most of the expression of muscle protein synthesis regulating genes were comparable ( $p > 0.05$ ) between FA and CON groups at D1 and D21. The significant increase in MHC4, and IGF-1 was not linked to increased muscle mass. A persistent increase in ISR expression ( $p < 0.05$ ) but not in GLUT-4 ( $p > 0.05$ ) was detected in offspring. Up-regulation of adipogenesis regulating genes was accompanied by increasing intramuscular fat accumulation in the offspring of FA group. Considerable increase in transcripts of genes regulating lipid catabolism and thermogenesis in liver ( $p < 0.05$ ) was noticed in FA group at D21; whereas, only the levels of carnitine palmitoyl transferase 1A (Cpt1 $\alpha$ ) and Enoyl-CoA Hydratase And 3-Hydroxyacyl CoA Dehydrogenase (Ehhadh) increased at D1. Similarly, genes regulating lipolysis were highly expressed at D21 in FA group. EPA and DHA treatment promoted BAT development and activity by increasing the expression of BAT signature genes ( $p < 0.05$ ). Also, maternal intake of EPA and DHA enriched diet enhanced browning of sWAT. Taken together, maternal ingestion of EPA/DHA may be suggested as a therapeutic option to improve body composition and counteract childhood obesity- related metabolic disorders and confer lifelong positive metabolic impact on offspring.

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| <input type="checkbox"/> | 28 | Bone morphogenetic protein (BMP)-modified graphene oxide-reinforced polycaprolactone–gelatin nanofiber scaffolds for application in bone tissue engineering | Kadhim, M.M., Bokov, D.O., Ansari, M.J., (...), Fenjan, M.N., Kazemnejadi, M. | 2022 | Bioprocess and Biosystems Engineering<br>45(6), pp. 981-997 | 0 |
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In this study, blend nanofibrous scaffolds were electrospun from polycaprolactone/gelatin (PCL/Gel) blend solutions reinforced by bone morphogenetic protein (BMP)-modified graphene oxide (GO). SEM results showed that uniform and bead-less nanofibers with 270 nm average diameter were obtained from electrospun of PCL/Gel blend solutions. Tensile strength test and contact angle measurement demonstrated that addition of PCL led to higher mechanical and physical properties of the resulting nanofibers. The addition of PCL as well as GO in the blend supports the suitable mechanical strength in the body media. The loading of BMP-modified graphene in the Gel/PCL structure caused the formation of nanofibrous substrate with great resemblance to bone tissue. Gel/PCL-G hybrid nanofibers revealed good biocompatibility in the presence of human osteosarcoma cells, and no trace of cellular toxicity was observed. The cells grown on the scaffolds exhibited a spindle-like and broad morphology and almost uniformly covered the entire nanofiber scaffold. Graphical abstract: [Figure not available: see fulltext.] Gel/PCL nanofibers reinforced by graphene oxide-immobilized bone morphogenetic protein was prepared as a promising safe and biocompatible nanofiber with high antibacterial activity for bone tissue engineering.

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| <input type="checkbox"/> | 29 | The characterization of cold welding process in CuZr metallic glasses with dissimilar alloying compositions | Abed, A.M., Jasim, S.A., Lashin, M.M.A., (...), Mustafa, Y.F., Jabbar, A.H. | 2022 | Materials Today Communications<br>31,103471 | 2 |
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This work aimed to investigate the cold welding process of dissimilar Cu<sub>60</sub>Zr<sub>40</sub>/Cu<sub>50</sub>Zr<sub>50</sub> metallic glass (MG) system through the molecular dynamics (MD) simulation. The mechanical properties and plasticity behavior of the joint zone were also studied with the consideration of stress variations and shear atomic strains under the nanoindentation. The results indicated that the joining evolution was accompanied by the accumulation of shear events in the joint zone. However, one side of the joint was more affected by the atomic rearrangements, which were due to the dissimilar mechanical features of Cu<sub>60</sub>Zr<sub>40</sub> and Cu<sub>50</sub>Zr<sub>50</sub> alloys. The nanoindentation results also showed that the joint zone was considerably softer than the base alloys; however, no sudden shear propagation appeared in this part of the assembly. The strain maps of shear atomic strain under the nanoindentation indicated that the atomic rearrangement and shear band interactions were unsymmetrical in the joint zone so that the Cu<sub>50</sub>Zr<sub>50</sub> side tended to form finer shear bands with more interactive features. Finally, it was concluded that a sound metallurgical bond was attained in the Cu<sub>60</sub>Zr<sub>40</sub>/Cu<sub>50</sub>Zr<sub>50</sub> system; however, the good plasticity may come at the expense of strength in the joint zone.

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| <input type="checkbox"/> 30 | Cytotoxicity evaluation of environmentally friendly synthesis Copper/Zinc bimetallic nanoparticles on MCF-7 cancer cells<br><i>Open Access</i> | Zadeh, F.A., Bokov, D.O., Salahdin, O.D., (...), Mustafa, Y.F., Khatami, M. | 2022 | Rendiconti Lincei 33(2), pp. 441-447 | 2 |
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Bimetallic nanoparticles offer unique chemical, physical and optical properties that are not available for monometallic nanoparticles. Bimetallic nanoparticles play a major role in various therapeutic, industrial and energy fields. Recently, nanoparticles of Copper/Zinc bimetallic nanoparticles have attracted attention in various fields, especially medicine. In this study, bimetallic CuO/ZnO nanostructures were biosynthesized using plant extracts. The plant-mediated synthesis nanoparticles were characterized by Transmission electron microscopy (TEM), X-ray diffraction analysis (XRD), Field Emission Scanning Electron Microscopy (FESEM) and Energy-Dispersive Spectroscopy (EDAX). The cytotoxicity of plant-mediated synthesis bimetallic nanoparticles and the synergistic effects of these nanoparticles in combination with the anticancer drug doxorubicin on MCF-7 cancer cells were evaluated by MTT assay.

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| <input type="checkbox"/> 31 | Dietary <i>Dracocephalum kotschy</i> essential oil improved growth, haematology, immunity and resistance to <i>Aeromonas hydrophila</i> in rainbow trout ( <i>Oncorhynchus mykiss</i> ) | Hafsan, H., Bokov, D., Abdelbasset, W.K., (...), Qasim, M.T., Balvardi, M. | 2022 | Aquaculture Research 53(8), pp. 3164-3175 | 9 |
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In the present study, the effect of *Dracocephalum kotschy* essential oil (DKE) was investigated on growth, haematology, immune and antioxidant defence system and resistance of rainbow trout juveniles to bacterial infection (*Aeromonas hydrophila*). For this purpose, the fish were fed a diet containing different concentrations of DKE including 0 (control), 0.2, 0.25 and 0.3 mg/kg diet in three replicates for 60 days. After feeding trial, the fish were challenged with a pathogenic dose of *A. hydrophila*. Based on the results, immune components in plasma (alternative complement activity [ACH50], IgM content, lysozyme activity, total protein and total albumin) and mucus (protease activity, IgM content and lysozyme activity) significantly elevated in fish fed diet containing 0.2 and 0.25 mg DKE/kg diet compared with other groups ( $p < 0.01$ ). The plasma bactericidal activity increased in all DKE-supplemented fish. Supplementation of fish with 0.3 mg DKE/kg diet depressed the mucosal lysozyme activity and IgM content. The liver antioxidant enzymes, glutathione peroxidase (GPx), catalase (CAT) and superoxide dismutase (SOD) showed increased activity in response to 0.25 and 0.3 mg DKE/kg diet compared with other experimental diets ( $p < 0.01$ ). Dietary DKE changed the haematology of the fish. The haematocrit, red blood cell count (RBC), white blood cell (WBC), haemoglobin content and mean erythrocyte cell haemoglobin content (MCHC) increased in response to DKE. In contrast, the mean corpuscular haemoglobin (MCH) decreased in fish fed 0.2 and 0.25 mg DKE/kg diet compared with other diets ( $p < 0.01$ ). The supplementation of fish with 0.2 and 0.25 mg DKE/kg diet decreased the expression of cytokine-related genes, TNF- $\alpha$  and IL-8. In contrast, the DKE up-regulated the expression of the immune-related genes, C3 and lysozyme. DKE at concentration of 0.3 mg/kg diet depressed the C3 and lysozyme gene expressions. The DKE supplementation decreased the mortality rate of the fish after bacterial challenge compared with non-supplemented ones ( $p < 0.01$ ). In conclusion, the findings of this study revealed the immune-stimulating effects of DKE at optimized dietary concentrations. In addition, DKE decreased the mortality induced by *A. hydrophila* infection.

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| □ 32 | Sensing of Acetaminophen Drug Using Zn-Doped Boron Nitride Nanocones: a DFT Inspection | Khaki, N., Fosshat, S., Pourhakkak, P., (...), Jalil, A.T., Wu, L. | 2022 | Applied Biochemistry and Biotechnology 194(6), pp. 2481-2491 | 2 |
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During environmental testing, scientists face the problem of developing and designing a new type of sensor electrode with distinguished stability, high activity, and cost-effectiveness to detect acetaminophen (ACE). Density functional theory (DFT) calculations were used to investigate the interaction and electrical response of Zn-doped and pristine boron nitride nanocones (BNNCs) with and to ACE with the disclination angle of 240°. The adsorption energy for ACE in the Zn-doped was  $-56.94 \text{ kJ.mol}^{-1}$ . This value for BNNCs was approximately  $-26.11 \text{ kJ.mol}^{-1}$ . Furthermore, after the adsorption of ACE, the value of band gap ( $E_g$ ) for Zn-doped BNNCs decreased significantly (from 4.01 to 3.10 eV), thereby increasing the electrical conductivity. However,  $E_g$  value of the pristine BNNCs decreased marginally after the adsorption of ACE. Compared with the pristine BNNCs, the Zn-doped BNNCs could be considered promising materials for the detection of ACE and could be employed in electronic sensors. In the Zn-doped BNNCs, the molecular and electrostatic interactions and the creation of Zn-O bond played key roles in the adsorption of ACE. The Zn-doped BNNCs had other merits such as slight recovery time which was approximately 7.09 ms for the desorption of ACE at ambient temperature.

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| □ 33 | Synthesis and Stability of Magnetic Nanoparticles | Ansari, M.J., Kadhim, M.M., Hussein, B.A., Lafta, H.A., Kianfar, E. | 2022 | BioNanoScience 12(2), pp. 627-638 | 5 |
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Magnetic nanoparticles are a class of nanoparticle that can be manipulated using magnetic fields. Such particles commonly consist of two components, a magnetic material, often iron, nickel, and cobalt, and a chemical component that has functionality. While nanoparticles are smaller than 1  $\mu\text{m}$  in diameter (typically 1–100 nm), the larger microbeads are 0.5–500  $\mu\text{m}$  in diameter. Magnetic nanoparticle clusters that are composed of a number of individual magnetic nanoparticles are known as magnetic nanobeads with a diameter of 50–200 nm. Magnetic nanoparticle clusters are a basis for their further magnetic assembly into magnetic nanochains. The magnetic nanoparticles have been the focus of much research recently because they possess attractive properties which could see potential use in catalysis including nanomaterial-based catalysts, biomedicine and tissue-specific targeting, magnetically tunable colloidal photonic crystals, microfluidics, magnetic resonance imaging, magnetic particle imaging, data storage, environmental remediation, nanofluids, optical filters, defect sensor, magnetic cooling, and cation sensors.

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| <input type="checkbox"/> | 34 | Synthesis of a new nanocomposite with the core $\text{TiO}_2$ /hydrogel: Brilliant green dye adsorption, isotherms, kinetics, and DFT studies | Aljeboree, A.M., Radia, N.D., Jasim, L.S., (...), Washeel Salman, A., Alkaim, A.F. | 2022 | Journal of Industrial and Engineering Chemistry<br>109, pp. 475-485 | 1 |
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New SA-g-P(AAc-co-MA)/ $\text{TiO}_2$  nanocomposite was synthesized using the free radical graft copolymerization technique. The synthesized nanocomposite was characterized using FTIR, FE-SEM, XRD, TEM, TGA, and BET techniques. It was then utilized as an adsorbent for removing the Brilliant green (BG) dye from an aqueous solution. The effect of different factors like the initial concentration of the BG dye, pH of the solution, and temperature have been studied. The experimental results were analyzed via the isotherm Freundlich and Langmuir adsorption models. To have deep insight into the adsorption mechanism, the density functional theory (DFT) method was used. According to the analyses, the equilibrium results fitted completely with Freundlich isotherm; thus, the pseudo-first-order and pseudo-second-order kinetics and intra-particle diffusion models were utilized to determine the adsorption kinetic result. The optimal conditions for the studied parameters which revealed the highest adsorption were:  $T = 30\text{ }^\circ\text{C}$ ,  $\text{pH} = 3$ ,  $\Delta G_0 = -6.87\text{ kJ.mol}^{-1}$ ,  $\Delta H_0 = 15.788\text{ kJ.mol}^{-1}$ , and  $\Delta S_0 = 93.92\text{ J.mol}^{-1}\text{K}^{-1}$ . The kinetics adsorption was consistent with the pseudo-second-order kinetic model, and the above-mentioned thermo-dynamics variables,  $\Delta G_0$ ,  $\Delta H_0$ , and  $\Delta S_0$ , suggested that the adsorption of Brilliant green dye on synthesized nanocomposite was spontaneous and endothermic.

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| <input type="checkbox"/> | 35 | Significance of the Estrogen Hormone and Single Nucleotide Polymorphisms in the Progression of Breast Cancer among Female | Alwan, M.A., Afshari, T.J., Afzaljavan, F. | 2022 | Archives of Razi Institute<br>77(3), pp. 943-958 | 2 |
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Breast cancer is one of the most frequent types of malignancies among women and is internationally recognized as the main reason for cancer-caused mortality. Most breast tumors are heterogeneous and genetically complicated due to the involvement of several genes. Therefore, it is clinically important to study genetic variants that increase the risk of breast cancer. It is identified that the presence of polymorphisms in genes encoding regulatory hormones is linked to a higher risk of breast cancer. Additionally, circulating estrogen levels are connected to aromatase (CYP19A1) genes, which is a recognized risk factor for breast cancer progression. In this paper, the authors present a review study on the effect of estrogen and its Single Nucleotide Polymorphisms (SNPs) in the occurrence of breast cancer. This review mainly aimed to find out the connection between CYP19A1 gene variations and the risk of breast cancer, as well as its clinical characteristics and prognosis. Due to the highly special activity of the CYP19A1 enzyme in steroid production, suppression of the targeted CYP19A1 is a focused medication for breast cancer patients, which has only minor adverse effects. Numerous clinical trials over the last decade have shown that Aromatase inhibitors (AIs) not only outperform tamoxifen in terms of effectiveness but also have a lower adverse effect profile. The AI is now widely accepted as a routine therapy option for postmenopausal females with Estrogen receptor-positive (ER+) breast cancer. Furthermore, not only dysregulation of gene expression in different genes related to distinguished pathways, such as estrogen metabolism, is essential in the progression of breast cancer but also particular SNPs can play an essential role in particular genes, such as CYP19A1. Different studies have demonstrated that these SNPs can be located in different sites of these genes, which are collected in this review. In a nutshell, more specific clinical trials are required to demonstrate the precise meditative role of anti-estrogen drugs in the treatment of ER+ breast cancer patients. Furthermore, more genotype analyses are needed to confirm the role of SNPs in the progression of breast cancer.

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| □ 36 | The effects of initial rejuvenation on the cold joining behavior of Cu <sub>60</sub> Zr <sub>40</sub> metallic glass | Bokov, D.O., Suksatan, W., Widjaja, G., (...), Surendar, A., Mustafa, Y.F. | 2022 | Applied Physics A: Materials Science and Processing<br>128(5),455 | 1 |
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In this work, the cold joining of Cu<sub>60</sub>Zr<sub>40</sub> metallic glass (MG) was performed by the molecular dynamics (MD) simulation, and the effects of temperature (200–600 K) and joining velocity (6–18 m/s) on the plasticity and mechanical properties of the joint zone were evaluated. Moreover, an initial rejuvenation process was carried out to manipulate the atomic structure of MG to find the role of structural variations on the joining performance. The results indicated that the increase of velocity led to the sharp decline of ultimate strength in the raw-MG joints, while the rejuvenated MG experienced a slight decrease of strength under the rise of velocity. This was due to the fact that the presence of a more defective structure in the rejuvenated sample inhibited the accumulation of local strained regions at the interface in higher velocities. On the other side, the rejuvenated sample was more sensitive to the increase in bonding temperature. At the higher temperatures (500–600 K), the more softening events appeared in the rejuvenated structure, leading to extreme convexity and misalignment in the assemblies. As a result, the strength and plasticity sharply deteriorated in the high temperatures. Finally, it is concluded that the rejuvenated sample is more reliable in the joining process with high velocity; however, it is very sensitive to the bonding temperature.

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| □ 37 | Optimization of a high-temperature recuperator equipped with corrugated helical heat exchanger for improvement of thermal-hydraulic performance<br><i>Open Access</i> | Zhang, G., Li, Y., Mohammed, D.B., Toghraie, D. | 2022 | Case Studies in Thermal Engineering<br>33,101956 | 1 |
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The main aim of present study is to optimize a high-temperature recuperator equipped with corrugated helical heat exchanger numerically. This heat exchanger has inner corrugations and/or outer blades. Different geometrical parameters are analyzed according to thermal-hydraulic performance (THP) of the studied helical heat exchanger. The model with the maximum THP evaluation criteria index is introduced as the optimum model. Moreover, the effects of ash fouling characteristics on THP of recuperator are presented. The ash particles material is chosen  $K_2SO_4$  with the density of  $2665 \text{ kg/m}^3$ . As it is realized in this paper, in case of simulating the problem in steady-state condition, employing the two-phase model achieves to higher average Nusselt number (Nu) values versus all considered mass flow rates. However, it should be noted that in these two approaches the ash fouling characteristics are not determined. By transient solving, the ash fouling characteristics are applied on the outer wall of helical heat exchanger and therefore the convective heat transfer coefficient is reduced. Hence, in case of employing two phase approach (with ash fouling characteristics) model, lower average Nu values are achieved and it is clear that these values are more validated than attained values from two other approaches. Usage of inner and/or outer corrugations has a substantial influence on THP of recuperator and increases the PEC index values versus all considered mass flow rates sharply. The recuperator equipped with finned helical heat exchanger with  $a = 3 \text{ mm}$ ,  $b = 7 \text{ mm}$ ,  $H = 8 \text{ mm}$ ,  $g = 2 \text{ mm}$  and  $f = 3 \text{ mm}$  is introduced as the optimum model in present work.

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| <input type="checkbox"/> | 38 | Synthesis and characterization of $Co_3O_4$ nanoparticles: Application as performing anode in Li-ion batteries | Mahmood, Z.H., Jarosova, M., Kzar, H.H., (...), Mustafa, Y.F., Kadhim, M.M. | 2022 | Journal of the Chinese Chemical Society<br>69(4), pp. 657-662 | 0 |
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A simple, rapid, and low-cost method for preparation of  $Co_3O_4$  nanoparticles ( $Co_3O_4$ -1 and  $Co_3O_4$ -2) using solid-state calcination of mixture of  $Co(NO_3)_2 \cdot 6H_2O$  and salicylic acid (1:1 weight ratio) at two different temperatures of 500 and 600°C is reported. The morphologies and structure of the as-prepared  $Co_3O_4$  nanoparticles were characterized using X-ray diffraction (XRD) and transmission electron microscope (TEM). In addition, we tested them as an anode material for lithium-ion batteries. The cycling stability and electrochemical performance of the as-prepared  $Co_3O_4$  nanoparticles were excellent. A capacity of  $\approx 1,100 \text{ mAh/g}$  was obtained after 50 cycles at 100 mA/g and exhibited stable discharge behavior up to 50 cycles with high rate capability.

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| <input type="checkbox"/> | 39 | Green-synthesis of Platinum Nanoparticles using Olive Leaves Extracts and its Effect on Aspartate Aminotransferase Activity<br><i>Open Access</i> | Mohammed, S.H., Rheima, A.M., Aljaafari, F.M.D., Al Marjani, M.F., Abbas, Z.S. | 2022 | Egyptian Journal of Chemistry<br>65(4), pp. 377-382 | 0 |
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This study aims to synthesize Platinum nanoparticles (Pt NPs) using Olive leaves extract's environmentally friendly approach. UV-Visible spectroscopy has been used to follow the turning of  $Pt^{+4}$  ions to  $Pt^0$  NPs. X-ray diffraction (XRD) has been used to investigate the as-synthesized Pt NPs and its cubic face-centered structure crystallinity. The average size of nanoparticles was 9.2 nm, calculated by transmission electron microscopy (TEM). The activity of as-synthesized Pt NPs has been examined by inhibition of Serum Aspartate Aminotransferase (AST) level in patients with chronic liver disease and control group, The AST (mean= 12.8051.642) demonstrate a very significant rise ( $p < 0.01$ ) in the results. In chronic liver patients with Pt NPs, serum AST activity was significantly lower ( $p < 0.01$ ) than in patients without Pt NPs (mean=13.4582.360). The present study concluded that Platinum nanoparticles play a great role in inhibition of AST.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/>	40 Metal complexes of a new azo ligand 2-[2'-(5-nitrothiazolyl) azo]-4-methoxyphenol (NTAMP): Synthesis, spectral characterization, and theoretical calculation	Waheeb, A.S., Kadhim Kyhoiesh, H.A., Salman, A.W., Al-Adilee, K.J., Kadhim, M.M.	2022	Inorganic Chemistry Communications 138,109267	0

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A new ligand 2-[2'-(5-Nitrothiazolyl) azo]-4-methoxyphenol (NTAMP) was synthesized using the coupling reaction between 2-amino-5-nitrothiazole and 4-methoxyphenol in an alkaline solution. The complexes of Co(II), Ni(II), and Cu(II) were synthesized by the direct reaction of the ligand with the appropriate metal salt. The ligand (NTAMP) and its metal complexes were characterized using different techniques including UV-vis, FT-IR, mass spectroscopy, <sup>1</sup>H NMR, TGA-DTG, elemental analysis CHNS, and magnetic moment. Based on the results, the molar ratio of metal to ligand [M:L] of each metal complex was [2:1]. Molar conductance measurements for the synthesized complexes revealed an electrolytic nature of Co(II) complex with the ratio of 1:1 and non-electrolytic for the remaining complexes. Further, the ligand and its complexes were tested for their in-vitro activity against *Staphylococcus aureus* (gram-positive), *Escherichia coli* (gram-negative), and the fungus *Penicillium* spp. In general, all the tested compounds showed activity against the examined microorganisms, particularly Ni(II) complex, which was more active than others. In addition, Density Functional Theory (DFT) was used to discuss the optimization energy, HOMO, LUMO, and some physical properties of the studied complexes.

<input type="checkbox"/>	41 Mesenchymal stromal/stem cells and their exosomes application in the treatment of intervertebral disc disease: A promising frontier	Widjaja, G., Jalil, A.T., Budi, H.S., (...), Shalaby, M.N., Yumashev, A.V.	2022	International Immunopharmacology 105,108537	3
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Today, the application of mesenchymal stromal/stem cells (MSCs) and their exosomes to treat degenerative diseases has received attention. Due to the characteristics of these cells, such as self-renewability, differentiative and immunomodulatory effects, their use in laboratory and clinical studies shows promising results. However, the allogeneic transplantation problems of MSCs limit the use of these cells in the clinic. Scientists propose the application of exosomes to use from the therapeutic effect of MSCs and overcome their defects. These vesicles change the target cell behaviour and transcription profile by transferring various cargo such as proteins, mi-RNAs, and lipids. One of the degenerative tissue diseases in which MSCs and their exosomes are used in their treatment is intervertebral disc disease (IDD). Different factors such as genetics, nutrition, ageing, and environmental factors play a significant role in the onset and progression of this disease. These factors affect the cellular and molecular properties of the disc, leading to tissue destruction. Nucleus pulposus cells (NPCs) are among the most important cells involved in the pathogenesis of disc degeneration. MSCs exert their therapeutic effects by differentiating, reducing apoptosis, increasing proliferation, and decreasing senescence in NPCs. In addition, the use of MSCs and their exosomes also affects the annulus fibrosus and cartilaginous endplate cells in disc tissue and prevents disc degeneration progression.

<input type="checkbox"/>	42 Molecular Junctions: Introduction and Physical Foundations, Nanoelectrical Conductivity and Electronic Structure and Charge Transfer in Organic Molecular Junctions	Jasim, S.A., Kadhim, M.M., Kn, V., (...), Ali, M.H., kianfar, E.	2022	Brazilian Journal of Physics 52(2),31	10
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There are fewer components in the nanoelectronics industry that do not use some kind of molecular junctions or interface. In general, many nanoelectronic devices have layered structures, and the behavior of the electron at the interface affects the electron properties of the final component, because the electron transfer mechanisms at the interface and multiple junctions are significantly different from the bulk material. Their junctions were studied. It was shown that to study the mechanisms of electron transfer and parameters affecting the conductivity of the junctions, various molecular junctions such as broken junctions can be used. It has been suggested that the solution temperature, shape, material, and spatial arrangement of the molecule used, the material, properties and surface nature of the metal electrodes, and the band structure of the junction's components can affect the conductivity of these systems. Attempts have been made to introduce the salient features of each of these junctions and to discuss examples of real Nano electronic components and molecular junctions used in them. We will see that the conventional mechanisms for electron transfer in these devices strongly depend on the electronic structure of the molecules used and generally include direct tunneling, fullerene tunneling. Molecularly deals with the effects of various factors on it. controlling the conductivity of a molecular bond by changing its physical, chemical and mechanical properties and optimizing the electrical properties of the final nanoelectronic component. Organic molecular junctions, as a special form of molecular junction, are used in many organic nanoelectronic devices. Therefore, it is very important to study the nature of the interface between these junctions and their electron transfer mechanisms. Conductivity of junctions is analyzed based on the band structure of their components. Therefore, in this paper, organic molecular compounds are introduced and their electronic structure is discussed. As you will see, certain phenomena also occur in these junctions, the most important of which are the formation of organic dipoles at the interface of the organic molecule/metal and the CNL parameter. Attempts have been made to put these phenomena into plain language without addressing mathematical models and the heavy concepts of quantum physics, and to discuss their effect on charge transfer and the electronic structure of organic junctions.

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| <input type="checkbox"/> | 43 | The effects of hydrogen doping on energy state of shear bands in a Zr-Based metallic glass | Widjaja, G., Ershov, K., Chupradit, S., (...), Kadhim, M.M., Sajjadifar, S. | 2022 | Vacuum<br>198,110882 | 2 |
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In this work, the role of the hydrogenation process on the energy state of shear bands and plastic deformation of a Zr-based bulk metallic glass (BMG) was studied. For this purpose, the compression loading and the atomic force microscopy (AFM) tests were carried out. The results indicated that the minor addition of hydrogen changed the morphology of shear bands on the side of the loaded sample. Moreover, the population of shear bands increased in the structure, leading to higher plastic deformation in the hydrogen-induced sample. The characterization of shear bands also showed that the fluctuation of energy dissipation at the shear core was intensified in the hydrogenated sample; while the shear affected zone was wider in the hydrogen-free sample. On the other side, the evaluation of serrations in the stress-strain curves exhibited that the hydrogenated sample included the shear events with lower dissipated energy, implying the formation of finer shear bands in the material.

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| <input type="checkbox"/> | 44 | Inhibitive performance of 4-Methoxyphenethylamine on low-carbon steel in 1M hydrochloric acid: Kinetics, theoretical, and mathematical views | Al-Uqaily, R.A.H., Al-Bayaty, S.A.H., Khadom, A.A., Kadhim, M.M. | 2022 | Journal of Molecular Liquids<br>350,118523 | 0 |
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The current study looked at the inhibition performance of 4-Methoxyphenethylamine (MPTA) in 1 M HCl. Besides the experimental investigation, a theoretical and mathematical attempt to correlate some chemical characteristics and inhibitor efficacy was also made. The inhibiting effect was investigated by potentiodynamic polarization, electrochemical impedance spectroscopy, and weight loss techniques. Corrosion rate was evaluated as function of time, MPTA concentration, and temperature. The results show that MPTA suppressed both cathodic and anodic processes of low-carbon steel corrosion in acidic solution by adsorption on the surface, which followed a Langmuir adsorption isotherm. Maximum corrosion inhibition efficiency was 91% at 30 °C and 200 ppm. Kinetics studies revealed that the corrosion reaction was behaved according to the first order mechanism. Mathematical studies showed a high correlation coefficient was obtained between predicated and experimental corrosion rate. The 6-311G (d, p) base set and Density Functional Theory (DFT) were employed. MPTA's inhibitory capabilities were discovered to be connected to the charge on the nitrogen atom as well as the total of the net charges of the six atoms in the cyclic ring. MPTA was studied in a three states, ground state (1), oxygen protonated state (2), nitrogen protonated state (3). Physical characteristics such as dipole moment, hardness, ionization energy, and softness of MPTA and its protonated states were computed. Theoretical order of inhibitor efficiency was  $2 > 3 > 1$ . It is concerned with an experimental, theoretical, and mathematical explanations between electronic and structural characteristics of MPTA and its inhibitor efficiency.

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| <input type="checkbox"/> | 45 | Promising bio-active complexes of platinum(II) and palladium(II) derived from heterocyclic thiourea: Synthesis, characterization, DFT, molecular docking, and anti-cancer studies | Faihan, A.S., Hatshan, M.R., Kadhim, M.M., (...), Al-Jibori, S.A., Al-Janabi, A.S. | 2022 | Journal of Molecular Structure<br>1252,132198 | 1 |
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Four Platinum(II) and Palladium(II) heterocyclic thiourea complexes have been prepared; [Pt(CPPT)<sub>2</sub>](1), [Pd(CPPT)<sub>2</sub>](2), [Pt(MPPT)<sub>2</sub>](3), and [Pd(MPPT)<sub>2</sub>](4) (Where HCPPT=1-(5-chloropyridin-2-yl)-3-phenylthiourea, HMPPT=1-(3-methylpyridin-2-yl)-3-phenylthiourea). Both the ligands and the complexes were characterized by different spectroscopic techniques including: FT-IR, <sup>1</sup>H, <sup>13</sup>C-{<sup>1</sup>H} NMR and Mass spectroscopy. The spectroscopic data analysis suggested that the complexes (1–4) adopt a square planar geometry with cis-configuration of platinum and trans- configuration of Palladium complexes. Antiproliferative data indicated that palladium(II) complexes exerted a potent cytotoxic activity in comparison with platinum(II) complexes. Among all tested complexes, [Pd(MPPT)<sub>2</sub>] exhibited a promising activity with an IC<sub>50</sub> value of 10.44 and 17.7 μM against colon cancer cell lines (LoVo) and breast cancer cell lines (MCF-7) respectively. Theoretical calculations were applied to estimate the physical properties and the inhibition activity of cancer cells by docking. Gaussian 09 software with 6-311G (d, p) basis set was used for theoretical study. Furthermore, quantum chemical parameters of highest occupied molecular orbital (HOMO), lowest unoccupied molecular orbital (LUMO), dipole moment, energy gap and other parameters were used to evaluate the complexes activity. MGL tools and DSV software were used to test the complexes inhibitions of breast cancer by blocking the damage cells.

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| <input type="checkbox"/> | 46 | Spectroscopic, antibacterial and anti-cancer studies of new platinum(II)-diethyldithiocarbamate mixed ligand complexes with phosphine or amine ligands | Al-Janabi, E.M.A., Hatshan, M.R., Adil, S.F., (...), Faihan, A.S., Al-Janabi, A.S. | 2022 | Journal of Molecular Structure<br>1252,132227 | 0 |
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A series of new platinum(II) mixed ligand complexes of diethyldithiocarbamate (Et<sub>2</sub>DT) and phosphine or amine ligands of the type [Pt(Et<sub>2</sub>DT)<sub>2</sub>(diphosphine)] (3–6), [Pt(Et<sub>2</sub>DT)<sub>2</sub>(diamine)](7–8), [Pt(Et<sub>2</sub>DT)<sub>2</sub>(PPh<sub>3</sub>)<sub>2</sub>] (9) and [Pt(Et<sub>2</sub>DT)<sub>2</sub>(SPPPh<sub>3</sub>)<sub>2</sub>](10) have been prepared in good yield and fully characterized by elemental analysis, conductivity measurements and spectroscopic data (i.e., <sup>1</sup>H, <sup>31</sup>P-<sup>1</sup>H} nmr. Our interest in these types of complexes are based on the fact that these complexes are known for their promising biological activity, and could possess interesting coordination modes, which are poorly represented in the literature. Therefore, the prepared complexes were tested for their anti-bacterial against three types of pathogenic bacteria namely *S. aureus*, *E. coli*, and *p. aeruginosa*. In addition, four of the prepared complexes were screened for their anti-cancer activity against lung cancer cell lines, and that the [Pt(Et<sub>2</sub>DT)<sub>2</sub>(bipy)] was significantly more potent with IC<sub>50</sub> value is 1.0 ± 0.2 μM, but the [Pt(Et<sub>2</sub>DT)<sub>2</sub>(dppf)] was practically inactive in the selected dose range with IC<sub>50</sub> value is 32.0 ± 3.0 μM.

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| <input type="checkbox"/> | 47 | Repositioning of Ticagrelor: Renoprotection mediated by modulating renin-angiotensin system, inflammation, autophagy and galectin-3 | Mansour, S.M., Abd El-Aal, S.A., El-Abhar, H.S., Ahmed, K.A., Awny, M.M. | 2022 | European Journal of Pharmacology<br>918,174793 | 1 |
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Aside from being an antiplatelet, ample studies revealed the anti-ischemic cardioprotective effect of Ticagrelor (Tica) mediated via different mechanisms; however, its protective potential against renal ischemia reperfusion (I/R) has been rarely investigated, which is the aim of the current study. Animals were divided into sham, I/R (45 min/24 h) and I/R pretreated with Tica (30 mg/kg) for one week, after a pilot study using 30 and 150 mg/kg of Tica. The pre-administration of Tica (30 mg/kg) guarded against the harmful impact of I/R insult and improved renal histological structure and function validated by reducing cystatin-C, neutrophil gelatinase-associated lipocalin, interleukin-18 and the classical markers, blood urea nitrogen and creatinine. On the molecular level, Tica signified its anti-inflammatory capacity by inhibiting nuclear factor κB and tumor necrosis factor-α, while it enhanced the autophagy process evidenced by increasing the protein expression of Beclin-1 and microtubule-associated protein light chain 3 II and abating the lysosomal marker cathepsin-D. Besides, Tica augmented cell survival by inhibiting galectin-3 and caspase-3 activity. Additionally, Tica modulated the renin-angiotensin system (RAS), where it decreased angiotensin II and downregulated the gene expression of prorenin and endothelin-1A receptors, but increased the activity of angiotensin converting enzyme-2 and the renal content of angiotensin 1-7. Our study is the first to highlight the renal anti-ischemic potential of Tica via enhancing autophagy, modulating the RAS, and decreasing both inflammation and cell demise.

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| <input type="checkbox"/> | 48 | ZnMoO <sub>4</sub> Nanoparticles: Novel and Facile Synthesis, Characterization, and Photocatalytic Performance | Raya, I., Al Sarraf, A.A.M., Widjaja, G., (...), Kadhim, M.M., Aravindhan, S. | 2022 | Journal of Nanostructures<br>12(2), pp. 446-454 | 0 |
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In this research, ZnMoO<sub>4</sub> nanoparticles was synthesized through novel and fast chemical method. The products were prepared under different irradiation time and power. The shape, size, and crystalline structure have been investigated through Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), and X-ray diffraction (XRD) analysis respectively. The optical properties of samples were prepared via UV-Vis analysis. Results confirmed that shape and size of ZnMoO<sub>4</sub> nanoparticles could be changed under different synthesis condition. The obtained results from optical properties of prepared ZnMoO<sub>4</sub> nanoparticles approved that the prepared nanoparticles have high potential for the photodegradation of organic pollutants. Methylene blue and rhodamine B were applied for investigation photocatalytic properties of ZnMoO<sub>4</sub> nanoparticles. Results showed that methylene blue and rhodamine B were photodegraded under UV irradiation after 90 minutes 92.6% and 82.4% respectively. This excellent performance was due to the suitable band structure of synthesized ZnMoO<sub>4</sub> nanoparticles which led to prevention recombination of photo-generated electrons and holes. This work introduces ZnMoO<sub>4</sub> nanoparticles as an attractive photocatalyst for removal of organic pollutants from water.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/>	49 Application of Ca <sub>12</sub> O <sub>12</sub> nanocage for detection of aluminum phosphide molecule: First-principles investigation	Abdalkareem Jasim, S., Suliman Maashi, M., Kadhim, M.M., (...), Riadi, Y., Mohamadi, A.	2022	Computational and Theoretical Chemistry 1209,113615	0

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In this paper, the reactivity and sensitivity of a pristine calcium oxide (CaO) nanocage are scrutinized towards aluminum phosphide (AP) molecule through calculations based on density functional theory (DFT). The AP molecule is strongly adsorbed onto the CaO nanocage through its P atom with an adsorption energy of approximately -39.75 kcal/mol. Band gap (E<sub>g</sub>) of the CaO nanocage decreases from 4.67 to 3.39 eV following the adsorption of the AP molecule, which increased the electrical conductivity. Moreover, the work function of the CaO nanocage is impacted to a great extent, which causes a change in the field electron emission. Finally, it is anticipated that the recovery time will be approximately 573 ms for desorption of the AP molecule from the CaO nanocage surface. The results indicate that the CaO nanocage might be employed as an encouraging sensor in detecting the AP molecule.

<input type="checkbox"/>	50 Quantum chemical study the interaction between thiotepa drug and silicon doped graphdiyne	Shahali, A., Farahmand, M., Hussein, H.A., (...), Ebadi, A.G., Wu, L.	2022	Computational and Theoretical Chemistry 1209,113612	1
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By using the calculation of the first principles, we examined the electronic features of pristine graphdiyne nanosheet (GDY) and Si-doped graphdiyne (SiGDY). Moreover, the adsorption of thiotepa (TPA) drug at both GDY and SiGDY sheet surfaces by energy of adsorption, charge transfer (CT), and change electrical conductivity have been investigated. It is proved, the inclination of pristine GDY to TPA drug is insignificant. In addition, the bandwidth energy has changed only about 7.85%, after adsorbing TPA on the GDY surface. Whereas, in the gaseous and aqueous phase, the energy value of TPA adsorption on the SiGDY has been determined about -18.75 and -49.39 kcal/mol, respectively. The solvation energy value exhibits the solubility of the recommended medicines in water phase. Also, the prerequisite for adsorption of the TPA with appropriate binding energies is a noticeable charge transfer between the TPA and SiGDY sheet, which delivers silicon with a considerable positive charge. Further, SiGDY is an electronic sensor for TPA detection unlike pristine GDY, because the electrical conductivity of SiGDY has been increased by about 20.62% after TPA adsorption.

<input type="checkbox"/>	51 Role of thermal history on atomic structure and ductility of ion-irradiated metallic glasses	Chen, T.-C., Raya, I., Shafik, S.S., (...), Sajjadifar, S., Replikov, N.I.	2022	Modelling and Simulation in Materials Science and Engineering 30(2),025002	0
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Maximizing the structural rejuvenation and ductility is one of the most heated debates in the field of metallic glasses (MGs). In this work, molecular dynamics simulation was implemented to model the ion irradiation effects on the Cu<sub>60</sub>Zr<sub>40</sub> MG with different thermal histories and varied structural heterogeneities. The initial results indicated that the performance of an annealing-quench treatment on the MG induces the atomic configurations with different heterogeneities and potential energy values. The subsequent ion irradiation process also demonstrated that an optimized atomic structure was occurred for achieving maximum rejuvenation and ductility in the CuZr glassy alloy. It was unveiled that the intermediate initial heterogeneity provides an efficient pathway for maximizing the atomic rearrangements under the ion irradiation. It was also suggested that the medium population of Cu-centered clusters in the initial state facilitated the atomic rearrangements during the ion irradiation process. The structural characteristics and atomic reconstructions for attaining the optimum ductility is discussed in details.

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| <input type="checkbox"/> 52 | Ca <sub>12</sub> O <sub>12</sub> nanocluster as highly sensitive material for the detection of hazardous mustard gas: Density-functional theory | Kartika, R., Alsultany, F.H., Turki Jalil, A., (...), Fenjan, M.N., Rajabzadeh, H. | 2022<br>Inorganic Chemistry Communications<br>137,109174 | 5 |
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Through density functional theory (DFT) computations, the adsorption behavior and electronic sensitivity of the mustard gas are scrutinized towards a Ca<sub>12</sub>O<sub>12</sub> nanocluster. To further investigate the influence of the molecules mentioned above over the chemical and electronic characteristics of this nanocluster, we calculate the binding energies (BEs), natural bond orbital (NBO) charge transport, the frontier molecular orbitals (FMOs), as well as molecular electrostatic potential (MEP). The interaction of the mustard molecule with the Ca atoms of the cluster through the Cl-side is slightly strong, and there is a large transport of charge from the mustard to the nanocluster. Following the adsorption of the mustard gas, there is a 2.28 eV reduction in the energy gap of the HOMO as well as the LUMO of this nanocluster. This shows that the dissociation process increases the electrical conductivity of this nanocluster to a great extent. The electrical signal which is generated is conducive to the detection of the mustard molecule. Moreover, this nanocluster has a short recovery time as a sensor. In addition, the electronic characteristics and the geometry parameters of the mustard/ Ca<sub>12</sub>O<sub>12</sub> nanocluster complexes are impacted by the solvent to a great extent. Finally, in comparison with the vacuum, the interaction among components is significantly weaker in the aqueous phase.

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| <input type="checkbox"/> 53 | The role of amino acid functionalization for improvement of adsorption Thioguanine anticancer drugs on the boron nitride nanotubes for drug delivery | Atia, Y.A., Bokov, D.O., Zinnatullovi, K.R., (...), Mustafa, Y.F., Cao, Y. | 2022<br>Materials Chemistry and Physics<br>278,125664 | 10 |
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Herein, density functional theory (DFT) calculations were employed to evaluate the performance of a drug delivery system for cysteine amino acid functionalized carbon nitride nanotubes (f-C3NNTs) for Thioguanine (TG) anticancer drugs. Moreover, to compare better, pristine C3NNTs were considered for the calculations. According to acquired results, one can realize that the process of drugs adsorption on the nanostructure has occurred spontaneously with the release of heat. It should be mentioned that f-C3NNTs/TG complexes have interactions with the highest strength. Based on our calculations, compared with unfunctionalized C3NNTs, f-C3NNTs have a shorter distance of adsorption, higher adsorption capability, and higher solubility upon the adsorption of TG. Due to the polarity of all complexes, they are soluble in aqueous environments. According to the quantum molecular descriptors, f-C3NNTs have higher reactivity compared with pristine C3NNTs. According to thermodynamic investigations, TG molecule's interactions with f-C3NNTs are exothermic and spontaneous. Thus, f-C3NNTs can be considered a potential candidate for the adsorption of TG drugs as a drug delivery system.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/>	54 Targeting oxidative stress, apoptosis, and autophagy by galangin mitigates cadmium-induced renal damage: Role of SIRT1/Nrf2 and AMPK/mTOR pathways	Arab, H.H., Ashour, A.M., Eid, A.H., (...), Al Khabbaz, H.J., Abd El-Aal, S.A.	2022	Life Sciences 291,120300	5

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Background: Galangin, a bioactive flavonoid with remarkable antioxidant and anti-apoptotic actions, has demonstrated promising amelioration of experimental hepatotoxicity, cardiomyopathy, and colitis. Yet, its impact on cadmium-induced renal injury has not been explored. Herein, we aimed at exploring the potential of galangin to attenuate cadmium-induced nephrotoxicity in rats, focusing on oxidative stress, apoptosis, and autophagy. Methodology: Cadmium chloride (5 mg/kg/day) and galangin (15 mg/kg/day) were received by oral gavage and the kidney tissues were inspected using ELISA, biochemical measurements, histology, and immunohistochemistry. Key findings: Galangin attenuated cadmium-induced renal damage by diminishing the histopathological alterations alongside KIM-1, BUN, and creatinine. At the molecular level, galangin attenuated the oxidative insult by significantly lowering the lipid peroxides and NOX-1 and augmenting GSH and GPx antioxidants. It also activated the cytoprotective SIRT1/Nrf2/HO-1 pathway by significantly upregulating the protein expression of SIRT1, Nrf2, and HO-1. Consistently, galangin suppressed renal apoptotic cell death by significantly lowering the protein expression of Bax and cytochrome C and activity of caspase-3 alongside upregulating the protein expression of the anti-apoptotic Bcl-2. Additionally, galangin activated the impaired autophagy flux as seen by diminishing the accumulation of SQSTM1/p62 and increasing the protein expression of Beclin 1. Meanwhile, galangin stimulated the autophagy-linked AMPK/mTOR pathway by significantly increasing the p-AMPK/total AMPK and lowering p-mTOR/total mTOR ratios. Conclusion: Galangin mitigated cadmium-induced nephrotoxicity thanks to its promising antioxidant, anti-apoptotic, and pro-autophagic effects. In perspective, galangin stimulated the SIRT1/Nrf2/HO-1 and AMPK/mTOR pathways. Hence, it may act as a complementary tool for the management of cadmium-induced renal injury.

<input type="checkbox"/>	55 Recent advances in the synthesis of zirconium complexes and their catalytic applications	Asim, W., Waheeb, A.S., Awad, M.A., (...), Iqbal, M.A., Kadhim, M.M.	2022	Journal of Molecular Structure 1250,131925	0
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Due to the increasing demand for polymers, selecting an appropriate catalytic system is essential to achieve desirable properties in the resulting polymers, which encouraged us to compile this review. The review deals with various strategies for synthesising organometallic complexes of zirconium involving bonding through carbon and their catalytic applications in homo- and heterogeneous polymerization of olefins and lactides, spanning 2011 to 2019. We classified these complexes into three categories, i.e. ansa-type zirconocenes. Non-bridged zirconocenes and pentalene complexes. These zirconium complexes have been synthesized under an inert atmosphere by treating zirconium precursors with suitable ligands at a particular temperature, choosing appropriate solvents.

<input type="checkbox"/>	56 Kinetic, isotherm, and thermodynamic studies on Cr(VI) adsorption using cellulose acetate/graphene oxide composite nanofibers	Raya, I., Widjaja, G., Mahmood, Z.H., (...), Husein, I., Kafi-Ahmadi, L.	2022	Applied Physics A: Materials Science and Processing 128(2),167	1
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In the present study, cellulose acetate/graphene oxide (CA/GO) composite nanofibers were prepared via the electrospinning method to remove Cr(VI) ions from aqueous solution via adsorption process in a batch mode. The impact of adsorption parameters, including contact time, pH, Cr(VI) concentration, and temperature was investigated to obtain the optimum conditions for the uptake of maximum Cr(VI) ions from water within a short time. The kinetic data of Cr(VI) adsorption were well fitted by pseudo-first-order and pseudo-second-order kinetic models, whereas Redlich-Peterson, Langmuir and Freundlich, isotherm models were used to describe the equilibrium data of Cr(VI) adsorption by the CA/GO nanofibers. The effect of temperature on the adsorption capacity of Cr(VI) ions using the nanofibers indicated that the higher temperatures were favorable for higher adsorption of Cr(VI) ions using the nanofibers. The thermodynamic parameters results indicated the spontaneous and endothermic of Cr(VI) sorption nature using the CA/GO nanofibrous adsorbent. The maximum monolayer adsorption capacity of nanofibers toward Cr(VI) ions sorption was 422.3 mgg<sup>-1</sup> which was comparable with other adsorbents. The reusability of composite nanofibers was carried out for five adsorption-desorption cycles. The obtained results exhibited the high capability of CA/GO nanofibrous adsorbents for Cr(VI) ions sorption from actual wastewater. Graphical abstract: [Figure not available: see fulltext.]

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|------|---|---|------|---|---|
| □ 57 | Targeting inflammation, autophagy, and apoptosis by troxerutin attenuates methotrexate-induced renal injury in rats | Arab, H.H., Abd El-Aal, S.A., Eid, A.H., (...), Mahmoud, A.M., Ashour, A.M. | 2022 | International Immunopharmacology 103,108284 | 4 |
|------|---|---|------|---|---|

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Background: Troxerutin, a bioflavonoid with marked immune-modulatory and antioxidant features, has been proven to ameliorate experimental cardiotoxicity, hepatotoxicity, and neurodegeneration. However, its impact on methotrexate (MTX)-induced nephrotoxicity has not been investigated. In the current work, we aimed to investigate the potential of troxerutin to combat MTX-triggered renal injury, exploring immune cell infiltration, inflammation, autophagy, and apoptosis, with emphasis on the HMGB1/RAGE/NF-κB, AMPK/mTOR, and Nrf2/HO-1 pathways. Methodology: Troxerutin (150 mg/kg/day) was administered by oral gavage and the renal tissues were examined with the aid of biochemical assays, ELISA, histology, and immunohistochemistry. Key findings: Troxerutin mitigated MTX-induced renal dysfunction by significantly lowering creatinine, BUN, and KIM-1 alongside immune-cell infiltration and histopathologic aberrations. These favorable effects were mediated by inhibition of HMGB1/RAGE/NF-κB cascade via downregulating the protein expression of HMGB1, RAGE, and nuclear NF-κBp65 alongside its downstream signals, including COX-2 and TNF-α. Moreover, troxerutin activated the autophagy flux as evidenced by upregulating renal Beclin 1, lowering p62 SQSTM1 accumulation, and activation of AMPK/mTOR pathway, seen by increasing p-AMPK/total AMPK and lowering p-mTOR/total mTOR signals. In tandem, troxerutin combated renal apoptotic changes as proven with lowering caspase-3 activity, Bax expression, and Bax/Bcl-2 ratio and upregulating the proliferation signal PCNA. Additionally, the oxidative insult was attenuated by troxerutin, as evidenced by lowering NOX-1 and lipid peroxides, replenishing GSH, GPx, and SOD antioxidants, and activating Nrf2/HO-1 pathway. Conclusion: Troxerutin attenuated MTX-triggered renal injury via inhibition of inflammation and apoptosis alongside activation of autophagy. Thus, it may serve as an adjunct modality for the management of MTX-linked nephrotoxicity.

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|------|---|--|------|--|---|
| □ 58 | Methylene blue photodegradation using as-synthesized CeO <sub>2</sub> nanoparticles | Saadoon, S.J., Jarosova, M., Machek, P., (...), Ali, M.H., Khalaji, A.D. | 2022 | Journal of the Chinese Chemical Society 69(2), pp. 280-288 | 3 |
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Cerium oxide (CeO<sub>2</sub>) nanoparticles via solution combustion technique using Ce(NO<sub>3</sub>)<sub>3</sub> as an oxidizer and benzoic acid as fuel were prepared at two different temperatures (500 and 600°C). The as-synthesized CeO<sub>2</sub> nanoparticles were characterized using FT-IR, PL, BET, XRD, VSM, and TEM techniques. The results of FT-IR and XRD techniques show that cerium oxide nanoparticles have been successfully synthesized. The absence of other peaks in the XRD pattern indicates that there are no impurities in these compounds. TEM images also confirm the synthesis of nanoparticles smaller than 20 nm. VSM results of CeO<sub>2</sub> nanoparticles show weak ferromagnetic properties. Furthermore, the as-synthesized CeO<sub>2</sub> nanoparticles were used for the photocatalytic degradation of methylene blue (MB). The effect of various parameters such as irradiation time, amount of catalyst dosage, initial MB concentration, and solution pH was investigated. The results show that the best conditions for photocatalytic removal are pH solution of 10, 0.02 g of catalyst dose, initial MB concentration of 40 ppm, and UV irradiation time of 90 min. Therefore, the as-synthesized CeO<sub>2</sub> nanoparticles have a good performance as a catalyst and can be used for other organic dyes.

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|--------------------------|----|--|--|------|--|---|
| <input type="checkbox"/> | 59 | Effect of Sr/Mg co-substitution on corrosion resistance properties of hydroxyapatite coated on Ti-6Al-4V dental alloys | Kadhim, M.M., AlMashhadani, H.A., Hashim, R.D., (...), Salih, K.A., Salman, A.W. | 2022 | Journal of Physics and Chemistry of Solids<br>161,110450 | 3 |
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This study assessed the effect of co-substitution of strontium (Sr) and magnesium (Mg) ions into the hydroxyapatite (HA) coating which was deposited on Ti-6Al-4V dental alloys by an electrochemical deposition process. The deposited layers were examined using energy-dispersive X-ray spectroscopy, scanning electron microscopy, Fourier transform infrared spectroscopy, atomic force microscopy and X-ray diffraction. The corrosion behavior of Ti-6Al-4V alloys in an artificial saliva environment was studied through potentiodynamic polarization technique and electrochemical impedance spectroscopy. The results indicated that the substituted Sr and Mg ions in HA improved the HA coating, where the protection efficiency percentage (PE%) for Ti-6Al-4V alloys coated with Sr/Mg-HA was higher than for those coated with HA only. Maximum PE% was 74.19% for Ti-6Al-4V alloys coated with Sr/Mg-HA. Coating of the dental Ti-6Al-4V alloys with co-substituted bioactive Sr and Mg ions in HA improved the corrosion resistance properties of the alloys in the saliva environment.

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| <input type="checkbox"/> | 60 | Influence of apricot constituents as eco-friendly corrosion inhibitor for mild steel in acidic medium: A theoretical approach | Khadom, A.A., Jassim, S.A., Kadhim, M.M., Ali, N.B. | 2022 | Journal of Molecular Liquids<br>347,117984 | 2 |
|--------------------------|----|---|---|------|--|---|

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The corrosion prevention mechanism of steel by apricot juice as green chemicals was better understood using molecular dynamics and quantum chemistry simulations. Furthermore, mathematical and statistical analysis were a powerful tool for building a relationship between inhibitor performance and independent variables. Eighteen main compounds of apricot juice were investigated using quantum chemical calculations. HOMO energy, LUMO energy, energy gap, chemical hardness, electrophilicity index, softness, and back donation were calculated as identifications parameters. Caffeic acid, beta-cyclocitral and gallic acid were observed as the most potent inhibitors between all the studied components. In addition, docking studies were applied to present the interactions with A.ferrooxidans bacteria that caused the corrosion. Mathematical model, with good correlation coefficient, was designed to link quantum chemical characteristics to theoretical inhibitory efficiency (%I<sub>ecal</sub>). Theoretical data were compared with experimental one (%I<sub>exp</sub>). %I<sub>exp</sub> was ranged from 53 to 75%, while the %I<sub>ecal</sub> was ranged from 61 to 73%.

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| <input type="checkbox"/> | 61 | Assessment of Knowledge Preparedness Nurses for Disaster Management in Primary Health-Care Centers in Al-Hilla, Iraq | Abdul Hussein, A.F., Khalaf Awad, A. | 2022 | Health Education and Health Promotion<br>10(2), pp. 227-231 | 0 |
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Aims Being diagnosed with cancer is a stressful event that may have negative effects on the quality of life of the patient. The purpose of this study was to determine the quality of life of cancer patients in knowledge and preparedness for disaster management. Instrument & Methods This descriptive-cross-sectional study was conducted from June to October 2021, to investigate the knowledge preparedness of nurses for disaster management in primary healthcare clinics. The instruments were constructed by the researcher to fulfill the study's goals using non-probability sampling. The purposive sample was chosen from 200 people who worked in emergency departments of primary health care institutions, and data was collected using two study tools (questionnaire and demographic data). The instrument's reliability was confirmed by test and retest, and the instrument's validity was determined by a panel of specialists. Graphic information (frequency, percentages, arithmetic mean, and standard deviation), as well as illative information, were employed to interpret the data (sufficiency in a relative). Findings In terms of gender, most of the participants were male, 31-41 years old, married, and had no prior experience of a real disaster. The subjects had a strong knowledge of all studied items. The overall assessment of the preparedness of Nurses' compliance in disaster management was high. Conclusion The majority of nurses had a strong awareness of disaster preparedness.

<input type="checkbox"/>	62	COVID-19 vaccine hesitancy in Sana'a, Yemen <i>Open Access</i>	Al-Naggar, R.A., Alshaiikli, H., Al- Rashidi, R.R., Murtagh, S.	2022	International Journal of One Health 8(1), pp. 58-69	0
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Background and Aim: The development of a coronavirus disease 2019 (COVID-19) vaccine is ongoing. This study aimed to prepare for public acceptance of the vaccine. There is a need to identify the current acceptance and potential barriers to receiving a COVID-19 vaccine in Yemen. Understanding the hesitancy and acceptance of a COVID-19 vaccine are crucial to develop local evidence-based interventions. Materials and Methods: Twenty students were interviewed in this study. An interview guide was developed and it addressed the willingness to accept a future COVID-19 vaccine. In-depth interviews were conducted, transcribed, and manually analyzed. Results: The majority of participants agreed that they would take a COVID-19 vaccine for several reasons, including protection for themselves, their families, and others and to stop the spread of COVID-19, for which the vaccine is important, as in other routine vaccinations. However, some participants shared that they would not take the COVID-19 vaccine due to the following reasons: Concerns regarding the safety of the vaccine; feeling fit and healthy, and thus considering themselves to have strong immunity; feeling that the vaccine was manufactured in a rushed manner and thus it would require approval by the World Health Organization; being previously infected with COVID-19 and considering themselves protected, and placing their trust in God and believing no vaccine was needed. Conclusion: The willingness to receive a future COVID-19 vaccine was high among medical students. However, some students hesitated to take the vaccine. Therefore, mass media interventions are required to maximize vaccine uptake.

<input type="checkbox"/>	63	Exploring the application of AIN graphyne in calcium ion batteries	Kadhim, M.M., Shadhar, M.H., Nathir, I., (...), Rheima, A.M., Ebadi, A.G.	2022	International Journal of Hydrogen Energy  Article in Press	0
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Destiny functional theory (DFT) calculations are undertaken in order to scrutinize the electrochemical and calcium (Ca) storage characteristics of a graphyne-like aluminum nitride monolayer (G-AlN<sub>ny</sub>) as an electrode material for Ca-ion batteries (CIBs). The results show that the change in internal energy as well as the cell voltage values for the CIB with the G-AlN<sub>ny</sub> anode are comparable to others with two-dimensional 2D nano-materials. It is shown that Ca is adsorbed primarily onto the center of a hexagonal and triangular ring of G-AlN<sub>ny</sub> with absorption energies of -2.06 and -0.42 eV. After increasing the concentration of Ca atoms on G-AlN<sub>ny</sub>, the adsorption energy as well as the cell voltage decreases. Lower values of 0.15–0.32 eV related to the diffusion barrier confirm that the diffusion of Ca in the 2D nano-sheets is rapid. G-AlN<sub>ny</sub> shows a maximum theoretical capacity of approximately 869.23 mAh g<sup>-1</sup>. The results are evaluated in terms of charge transfer, structure, energy as well as electronic characteristics and provide insight into the construction of better anode materials with higher capacity for the CIB.

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| <input type="checkbox"/> | 64 | Curcumin-Loaded Mesenchymal Stem Cell-Derived Exosomes Efficiently Attenuate Proliferation and Inflammatory Response in Rheumatoid Arthritis Fibroblast-Like Synoviocytes | He, X., Zhang, C., Amirsaadat, S., (...), Abasi, M., Pilehvar, Y. | 2022 | Applied Biochemistry and Biotechnology<br><br>Article in Press | 0 |
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This study aimed to evaluate the potential of mesenchymal stem cell-derived exosomes loaded with curcumin (Curc-Exos) as an effective therapeutic strategy for rheumatoid arthritis through modulation of proliferation and inflammatory response in HIG-82 synovial cells. For this purpose, Exos were isolated and characterized with BCA protein assay, DLS, FE-SEM, and TEM. The Curc was embedded by mixing it with Exos in a 1:4 ratio. It was found that the Curc stability has improved after loading on Exos compared to the free Curc. Besides, the in vitro studies using LPS-stimulated HIG-82 synovial cells indicated the efficiency of Curc-Exos in enhancing cytotoxicity and apoptosis compared to the free Curc treatment. It was also revealed that Curc-Exos significantly could reduce the expression levels of anti-apoptotic proteins IAP1 and IAP2 and inflammatory mediators including IL-6, TNF- $\alpha$ , MMP1, and PGE2. This preliminary study confirmed the suitability of Curc-Exos in counteracting the proliferation and inflammatory response of rheumatoid arthritis synovial fibroblasts in vitro.

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| <input type="checkbox"/> | 65 | Evaluating the hydrophilic antioxidant capacity in different citrus genotypes<br><i>Open Access</i> | Mahmudiono, T., Bokov, D.O., Saleh, M.M., (...), Al-Mawlawi, Z.S., Kadhim, M.M. | 2022 | Food Science and Technology (Brazil)<br>42,e03722 | 0 |
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Antioxidants are the body's defense system against the damage caused by reactive oxygen species, formed naturally during many physiological activities. In vegetables and fruits, various antioxidant compounds such as vitamin C, polyphenols, flavonoids, and carotenoids have been identified. Because fruits and vegetables are the primary antioxidant sources in our daily diet, it is necessary to determine their antioxidant capacity. Citrus fruit consumption per capita has steadily increased over the world over the last 30 years. Citrus fruits are high in vitamin C as well as other active ingredients like phenols and flavonoids that are beneficial to human health. Using carotenoid complement and pigmentation genetic diversity, the objective of this research was to see how vitamin C and carotenoids contributed to the capacity of hydrophilic antioxidants of the citrus fruits' pulp. Six citrus cultivars were chosen for this purpose: two sweet orange genotypes, Valencia Ruby and Valencia Late; two grapefruit genotypes, Star Ruby and Marsh; and two mandarin genotypes, Nadorcott and Clemenules. In proportion to their color singularity, total carotenoid composition and content in fruit pulp differed dramatically. A good and clear connection was found between hydrophilic antioxidant capacity and vitamin C concentration in the pulp of various fruit species, as measured by DPPH and ABTS tests. The proportion of vitamin C to the total HAC was calculated to be between 15% and 30%.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 66	Application of Vortex Generators to Remove Heat Trapped in Closed Channels <i>Open Access</i>	Ahmed, A.A.A., Mezan, S.O., Binyamin, (...), Kadhim, M.M., Jalil, A.T.	2022	Fluid Dynamics and Materials Processing 19(1), pp. 15-24	0

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The utilization of vortex generators to increase heat transfer from cylinders installed inside a duct is investigated. In particular, a channel containing eight cylinders with volumetric heat sources is considered for different values of the Reynolds number. The effective possibility to use vortex generators with different sizes to increase heat transfer and, consequently, reduce the surface temperature of the cylinders is examined. Also, the amount of pressure drop inside the channel due to the presence of vortex generators is considered and compared with the cases without vortex generators. The results show that although the addition of generators increases the pressure drop, it strongly contributes to increase the heat transfer coefficient inside the duct (up to 80-90%).

<input type="checkbox"/> 67	Nose to brain delivery of melatonin lipidic nanocapsules as a promising post-ischemic neuroprotective therapeutic modality <i>Open Access</i>	Bseiso, E.A., AbdEl-Aal, S.A., Nasr, M., Sammour, O.A., El Gawad, N.A.A.	2022	Drug Delivery 29(1), pp. 2469-2480	0
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Ischemic stroke accounts for about 87% of all strokes, causing long-term disability in adults, and is the second leading cause of death worldwide. In search of new therapeutic modalities, the use of neuroprotective agents loaded in nanocarriers to be delivered by noninvasive means (i.e. via intranasal route) became a popular approach. In the current study, melatonin (MEL) was loaded in lipidic nanocapsules (LNCs) prepared using the phase inversion method, and characterized in terms of size, polydispersity, zeta potential, in vitro drug release, viscosity, storage stability, and ex vivo permeation across sheep nasal mucosa. Moreover, MEL-LNCs were tested for efficacy in cerebral ischemia/reperfusion (I/R) injury model through histopathological assessment, and analysis of oxidative stress markers, pro-inflammatory cytokines, and apoptotic markers. Results showed that LNCs exhibited particle size ranging from 18.26 to 109.8 nm, negative zeta potential, good storage stability, spherical morphology, and a burst release followed by a sustained release pattern. LNCs exhibited 10.35 folds higher permeation of MEL than the drug solution across sheep nasal mucosa. Post-ischemic intranasal administration of MEL-LNCs revealed lowering of oxidative stress manifested by a decrease in malondialdehyde levels, and elevation of glutathione and superoxide dismutase levels, lowering of the inflammatory markers tumor necrosis factor- $\alpha$ , NO, myeloperoxidase, and significant inhibition of Caspase-3 activity as an apoptotic marker. Western blot analysis delineated a recovery of protein expression Nrf-2 and HO-1 with downregulation in the parent inflammatory markers nuclear factor kappa B p65, inducible nitric oxide synthase, Bax, and Cytochrome C expressions, and upregulation of B-cell lymphoma-2 Bcl-2, hence promoting neuronal survival. This was supported by histological evidence, revealing significant restoration of hippocampal neurons. In light of the above, it can be concluded that MEL-LNCs could be a promising delivery system for nose to brain delivery for treatment of cerebral ischemia.

<input type="checkbox"/> 68	Effect of the Volatility of the Crypto Currency and Its Effect on the Market Returns	Almagsoosi, L.Q.K., Abadi, M.T.E., Hasan, H.F., Sharaf, H.K.	2022	Industrial Engineering and Management Systems 21(2), pp. 238-243	0
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In this study, cryptocurrency is a type of digital money that uses cryptography to protect transactions, limit the production of new units, and verify asset transfers. The focus of this research is to see how volatile Bitcoin exchange rates and returns. The standard deviation of logarithmic returns is calculated to gauge volatility. The finding of the results was based on the Shapiro-Wilk test that was employed to predict normality in this investigation. In addition, the box-whisker plot and statistical process control chart were used to find high volatility. Volatility is now regarded to be a high value. Eventually, Because of the current high level of volatility, investing in Bitcoin is seen as a high-risk endeavor. The purpose of this study is to assist investors in developing a strategy that maximizes returns while minimizing risk.

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| <input type="checkbox"/> | 69 | Application of Experimental Design in Optimizing Fuel Station Queuing System | Dwijendra, N.K.A., Vaslavskaya, I., Skvortsova, N.V., (...), Thangavelu, L., Kadhim, M.M. | 2022 | Industrial Engineering and Management Systems 21(2), pp. 381-389 | 0 |
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This paper investigates the 224 active fuel stations to find the optimal distribution system. This research aims to design a model based on simulation to optimize the queuing system and fuel station sales. This study combines simulations and experimental design techniques that lead to a predictable and experimental model for optimizing the system and performance of a fuel station by considering two perspectives of queue length and sales rate. Initially, the fuel station was simulated using Arena software. After simulating the fuel station system, we tried to optimize the station's performance using the design of experiments and response level methodology (RSM). The results obtained from the optimal model indicate that the results lead to improved system performance. The fuel station queue is studied.

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| <input type="checkbox"/> | 70 | DFT investigation of BN, AlN, and SiC fullerene sensors for arsine gas detection and removal | Jasim, S.A., Kzar, H.H., Jalil, A.T., (...), Ali Nasser, H., Ahmadi, Z. | 2022 | Main Group Chemistry 21(2), pp. 513-521 | 0 |
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Quantum chemical density functional theory (DFT) calculations were performed to investigate the adsorption of arsine (AsH<sub>3</sub>) gaseous substance at the surface of representative models of boron nitride (B<sub>16</sub>N<sub>16</sub>), aluminum nitride (Al<sub>16</sub>N<sub>16</sub>), and silicon carbide (Si<sub>16</sub>C<sub>16</sub>) fullerene-like nanocages. The results indicated that the adsorption processes of AsH<sub>3</sub> could be taken place by each of B<sub>16</sub>N<sub>16</sub>, Al<sub>16</sub>N<sub>16</sub>, and Si<sub>16</sub>C<sub>16</sub> nanocages. Moreover, the electronic molecular orbital properties indicated that the electrical conductivity of nanocages were changed after the adsorption processes enabling them to be used for sensor applications. To analyze the strength of interacting models, the quantum theory of atoms in molecules (QTAIM) was employed. As a typical achievement of this work, it could be mentioned that the investigated Si<sub>16</sub>C<sub>16</sub> fullerene-like nanocage could work as a suitable adsorbent for the AsH<sub>3</sub> gaseous substance proposing gas-sensor role for the Si<sub>16</sub>C<sub>16</sub> fullerene-like nanocage.

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| <input type="checkbox"/> | 71 | The effects of alloying composition on plasticity and strength of notched metallic glasses | Abdalkareem Jasim, S., Ismailov, B., Jade Catalan Opulencia, M., (...), Thaeer Hammid, A., Fakri Mustafa, Y. | 2022 | Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications | 0 |
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Article in Press

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Using notch geometry in the metallic glass (MG) samples, it is possible to improve the homogeneous plasticity and mechanical properties. In this work, the molecular dynamics (MD) simulation was performed to indicate how the alloying composition of MGs can tune the mechanical properties of notched samples. For this purpose, CuZr MGs were constructed through atomic-scale simulation with alloying compositions of Cu<sub>64</sub>Zr<sub>36</sub>, Cu<sub>60</sub>Zr<sub>40</sub>, Cu<sub>54</sub>Zr<sub>46</sub>, and Cu<sub>50</sub>Zr<sub>50</sub>, while a symmetrical surface notch was produced at the waistline of samples by removing certain atoms and relaxing the new free surfaces. The tensile loading was also carried out to characterize the plastic deformation and strength in the CuZr MGs. According to the results, Cu<sub>64</sub>Zr<sub>36</sub> and Cu<sub>60</sub>Zr<sub>40</sub> alloys exhibited a localized plastic deformation in the notch region, while the decrease in Cu content, i.e. Cu<sub>54</sub>Zr<sub>46</sub>, led to the generation of nanoscale shear events outside the notch region and extended the deformation area in the body of the sample. The results also indicated that the change in the mechanism of plastic deformation in the notched samples strongly depended on the type and population of polyhedrons rearranged in the backbone structure. Moreover, it was found that the Voronoi volume in the Cu<sub>54</sub>Zr<sub>46</sub> alloy exhibited a gentle increment under the tensile loading in both the notched and un-notched regions, while the Cu-rich MGs, i.e. Cu<sub>64</sub>Zr<sub>36</sub> and Cu<sub>60</sub>Zr<sub>40</sub>, showed a sudden increment of Voronoi volume at the center of the notch region, which was indicative of strain localization in the atomic system.

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| <input type="checkbox"/> | 72 | The effect of various irrigation technologies and strategies on water resources management | Dwijendra, N.K.A., Abbas, Z., Salih, S.M., (...), Kadhim, M.M., Kavitha, M. | 2022 | Journal of Water and Land Development 53, pp. 143-147 | 0 |
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Today, the uncontrolled abstraction of surface water and groundwater resources has created adverse consequences, which include: extinction of living organisms, land subsidence, salinity of coastal aquifers, increased pumping energy. Therefore, the need to manage available water resources is felt more than ever. Among the various water uses (agriculture, drinking, and industry), agriculture accounts for the bulk of water consumption. Due to the climate change and the growing population, determining the appropriate strategy and technology for irrigation is necessary. In the current study, a simulation model is used to numerically simulate the dynamics of daily soil moisture during the potato crop growing season and to estimate crop production and economic benefits. For climatic data, daily observations of a meteorological station have been used. Results and analyses have been presented for all cases of micro and traditional irrigation methods and agricultural management strategies of non-stress irrigation, low irrigation, and rainfed cultivation. The results showed that in the non-stress irrigation method, crop production and net profit are almost equal in both traditional and micro methods. In the low irrigation method, microtechnology has made crop production and net profit 1.75 times more than traditional technology, which indicates the impact of irrigation technology on crop production.

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| <input type="checkbox"/> | 73 | Design of a web laboratory interface for ECG signal analysis using MATLAB builder NE <i>Open Access</i> | Jaber, H.A., Aljobouri, H.K., Çankaya, I. | 2022 | Open Computer Science 12(1), pp. 227-237 | 0 |
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An electrocardiogram (ECG) is a noninvasive test, determining any defect in the heart rate or rhythm or changes in the shape of the QRS complex is very significant to detect cardiac arrhythmia. In this study, novel web-ECG simulation tools were proposed using MATLAB Builder NE with WebFigure and ASP.NET platform. The proposed web-ECG simulation tools consisted of two components. First, involved the analyses of normal real ECG signals by calculating the P, Q, R, S, and T values and detecting heart rate, while the second part related to extracting the futures of several types of abnormality real ECG. For calculating the PQRST values, simple and new mathematical equations are proposed in the current study using MATLAB. The Web ECG is capable to plot normal ECG signals and five arrhythmia cases, so the users are able to calculate PQRST easily using the proposed simple method. ECG simulation tools have been tested for validity and educational contributions with 62 undergraduate and graduate students at the Al-Nahrain University-Biomedical Engineering Department, Iraq. The proposed ECG simulation tools have been designed for academic learning to be run easily by a student using only any web browsers without the need for installing MATLAB or any extra programs. The proposed tools could provide a laboratory course for ECG signal analysis using a few buttons, as well as increase and develop the educational skills of students and researchers.

<input type="checkbox"/>	74	Nanofluids: properties and applications	Smaisim, G.F., mohammed, D.B., Abdulhadi, A.M., (...), Al-Gazally, M.E., Kianfar, E.	2022	Journal of Sol-Gel Science and Technology  Article in Press	1
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Abstract: Nanofluids are liquid suspensions of hard nanometer-sized particles suspended in a base fluid. The suspension of small solid particles in energy transmission fluids enhances their thermal conductivity and provides an inexpensive and creative way to greatly boost their heat transfer (HT) properties. It is possible to add nanofluids to various industrial and technical issues, such as heat exchangers, electrical equipment cooling, and chemical processes. In comparison to traditional fluids utilized for HT, which include water, oil, ethylene glycol, and single nanoparticles (NPs) involving nanofluids, hybrid nanofluids are new forms of fluids that display strong HT efficiency. In terms of cooling, hybrid nanofluids function well where temperature scales are high and have a wide variety of thermal applications. In general, hybrid nanofluids are developed by diffusing two distinct forms of NPs in base fluids, which has emerged as a novel nanotechnology. [Figure not available: see fulltext.]

<input type="checkbox"/>	75	NURSES' KNOWLEDGE ABOUT INFECTION CONTROL AT PRIMARY HEALTH CARE CENTERS IN AL-HILLA CITY, IRAQ	Hussein, A.F.A., Awad, A.K., Hadi, B.	2022	Wiadomosci lekarskie (Warsaw, Poland : 1960) 75(5), pp. 1305-1308	0
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OBJECTIVE: The aim: To assess nurses' infection control knowledge at basic health care clinics and knowledge in practices nurses on infection control. PATIENTS AND METHODS: Materials and methods: This is cross-sectional study, conducted in primary health care centers within descriptive research in Al-Hilla City, from 17th May, 2021 to 2nd October, 2021. The researcher created the instruments to achieve the study's objectives through non-probability sampling: the purposive sample is made from of 140 searched, who worked in the dressing and immunization units of primary health care centers were chosen, and two study instruments [questionnaire and demographic data] were used for proper data collection. RESULTS: Results: In this study revealed that (47.1%) at age groups (35-39) ages, the current study's findings revealed that (69.8%) of Males made up the sample and (60.7%) graduated from a nursing school (50%) have Training courses and (42.1%) consume (16-20) years of experience. And The nurses' general knowledge levels about infection control were good. CONCLUSION: Conclusions: The majority of health-care personnel' knowledge, attitude, and practice regarding basic precautions were adequate, favorable, and safe by the expected standard.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/>	76 Targeting inflammation and redox perturbations by lisinopril mitigates Freund's adjuvant-induced arthritis in rats: role of JAK-2/STAT-3/RANKL axis, MMPs, and VEGF	Arab, H.H., Abd El-Aal, S.A., Ashour, A.M., (...), Mahmoud, A.M., Kabel, A.M.	2022	Inflammopharmacology Article in Press	0

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Background: Cardiovascular disorders are major complications of rheumatoid arthritis (RA). Hence, finding effective agents that can target RA progression and its cardiovascular consequences is demanding. The present work aimed to explore the potential of lisinopril, an angiotensin-converting enzyme inhibitor, to mitigate adjuvant's-induced arthritis with emphasis on the pro-inflammatory signals, articular degradation cues, and angiogenesis alongside JAK-2/STAT-3 and Nrf2/HO-1 pathways. Methods: Lisinopril (10 mg/kg/day) was administered by oral gavage for 3 weeks and the target signals were examined by biochemical assays, ELISA, histopathology, immunoblotting, and immunohistochemistry. Results: Lisinopril attenuated the progression of arthritis as proven by lowering paw edema, arthritic index, and gait scores alongside diminishing the immune-cell infiltration/aberrant histopathology in the dorsal pouch lining. These favorable actions were associated with curtailing the production of inflammatory cytokines (TNF- $\alpha$ , IL-6, IL-1 $\beta$ , and IL-17) and the pro-inflammatory angiotensin II alongside upregulating the anti-inflammatory angiotensin-(1-7) in the hind paw of arthritic rats. At the molecular level, lisinopril inhibited the upstream JAK-2/STAT-3 pathway by downregulating the protein expression of p-JAK-2/total JAK-2 and p-STAT-3/total STAT-3 ratio and the nuclear levels of NF- $\kappa$ Bp65. Meanwhile, lisinopril curbed the downstream cartilage degradation signals matrix metalloproteinases (MMP-3 and MMP-9) and the bone erosion cue RANKL. Equally important, the protein expression of the angiogenesis signal VEGF was downregulated in the hind paw/dorsal lining. With respect to oxidative stress, lisinopril suppressed the paw lipid peroxides and boosted GSH and Nrf-2/HO-1 pathway. Conclusion: Lisinopril attenuated adjuvant-induced arthritis via inhibition of inflammation, articular degradation cues, and angiogenesis.

<input type="checkbox"/>	77 Fabrication and Characterization of Copper (II) Complex Supported on Magnetic Nanoparticles as a Green and Efficient Nanomagnetic Catalyst for Synthesis of Diaryl Sulfones	Abdelbasset, W.K., Mohsen, A.M., Kadhim, M.M., Alkaim, A.F., Fakri Mustafa, Y.	2022	Polycyclic Aromatic Compounds Article in Press	0
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A novel magnetically recoverable copper catalyst was successfully fabricated through the immobilization of Cu(OAc)<sub>2</sub> on the surface of silica-coated magnetic Fe<sub>3</sub>O<sub>4</sub> nanoparticles (Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub>) functionalized with amine and thiol groups as ligand. The as-fabricated Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub>-Imine/Thio-Cu(II) nanocomposite was fully characterized by FT-IR spectroscopy, SEM, EDX, TEM, XRD, VSM, ASS and ICP-OES techniques. The Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub>-Imine/Thio-Cu(II) nanocomposite exhibited high catalytic activity in the synthesis of biologically active diaryl sulfones. According to our research on the literature, this is the first report in the use of magnetic copper nanocatalyst for the synthesis of diaryl sulfones via sulfonylative Suzuki–Miyaura cross-coupling reactions. This method gives notable advantages such as easy separation of the catalyst by external magnetic field; excellent yields, short reaction times, nontoxic metal catalyst, and simplicity of operation make this method a facile tool for the synthesis of diaryl sulfones.

<input type="checkbox"/>	78 Prediction of the corrosion inhibition efficiency and antibacterial activity of 1,2,4-oxadiazole derivatives using DFT and docking analysis: effect of alkoxy chain length	Kadhim, M.M., Tomi, I.H.R., Khadom, A.A.	2022	Journal of Adhesion Science and Technology Article in Press	0
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Synthesis of newly organic corrosion inhibitors may be costly and needs an experimental procedure to evaluate the inhibition efficiency. Therefore, pre-designing and theoretical calculations may be a powerful tool for initial inhibition performance. In the present work, the Density Functional Theory (DFT), Hartree-Fock (HF), and docking were performed on twelve new substituted oxadiazole derivatives. The calculated quantum chemical parameters were correlated to the inhibition efficiency. In addition, some physical values are studied, such as heat of formation and total energy. It is seen that disruption of electron density occurred due to increasing the alkyl length. Among the twelve studied inhibitors, the compound (12) named (4-(5-(p-tolyl)-1, 2, 4-oxadiazol-3-yl) phenyl-4-(dodecyloxy)benzoate) was recorded as an inhibitor against corrosion, while the compound 1 named (4-(5-(p-tolyl)-1, 2, 4-oxadiazol-3-yl) phenyl-4-methoxybenzoate) showed opposite effect towards bacterial and autodock calculations where it was better than other derivatives.

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| <input type="checkbox"/> | 79 | Cytotoxicity, genotoxicity and efficacy evaluation of the quercus infectoria in HepG2 and WRL68 cell lines | Abdulrahman, A.Y., Kadhum, W.R., Shamikh Al-Saedi, H.F., (...), Al-Zuhairy, S.A.S., Teoh, T.C. | 2022 | Materials Today: Proceedings<br><br>Article in Press | 0 |
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Human has relied on plants for centuries as prescription drugs, as a source to cure a wide variety of health problems. The cytotoxicity and genotoxicity in human WRL68 and HepG2 cells was studied by the standardized *Quercus infectoria* (*Q. infectoria*) extract. To determine the cytotoxicity of *Q. infectoria* extract, a colorimetric method (MTS assay) and a lactated dehydrogenase test (LDH) were used. In order to determine the genotoxicity of *Q. infectoria* extract, a single cell gel electrophoresis (comet test) was evaluated. The protection effect of *Q. infectoria* was also investigated against menadion-induced cytotoxicity. The results of this research show that aqueous extract of *Q. infectoria* is relatively safe and could be developed to identify new pharmacological applications. Caution should be taken, however, as a higher dose with 1 mg/mL may cause significant cell death.

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| <input type="checkbox"/> | 80 | A case study of Tigris river next to Wasit University; example on the Iraqi environmental pollution | Khazaal, F.A., Hamed, A.H., Abbas, Z.M., (...), Kadhim, M.M., Alkaim, A.F. | 2022 | Materials Today: Proceedings<br><br>Article in Press | 0 |
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A human being causes extensive destruction to the environment, water, land, various elements of the environment, and the ecosystem itself. There are so much human-made pollution and environmental degradation that the nightmare that awaits us is enough to shake us all. Looking at the overall scenario, there are a few trends underway. Earth atmosphere is excessively polluted at the global and regional levels. The accumulation of greenhouse gases will lead to significant changes in weather patterns in the near future leading to global warming. The destruction of the ozone layer and the further warming of the earth's surface leading to a tragic consequences such as outbreaks of cancerous and tropical diseases, disruption of the ocean food chain, sea level rise, the submersion of many islands and the melting of small landmasses. In Iraq, there are many environmental violations that threaten human life, which leads to making Iraq an inappropriate country to live in the near future due to outbreaks of incurable diseases and the difficulty of environmental adaptation to massive environmental disasters. In this paper, we are aiming to present a case study about Wasit-Iraq regarding environmental violations and environmental pollution threatening human life.

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| <input type="checkbox"/> | 81 | Experience of Land Use Development Planning at the Local (Municipal) Level in the European Union | Olena, R., Kadhim, I.H., Muhammad, A.D., (...), Nataliia, P., Lyudmila, B. | 2022 | Journal of Information Technology Management<br>14(2), pp. 56-69 | 0 |
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The article examines the development of theoretical and methodological approaches and practical recommendations for improving the ecological and economic foundations of land management and land management at the local level in the example of the European Union. In practice, regional, spatial, strategic, landscape, and integrated types of land use development planning are most often used in the European Union. With the development of the market economy of European society, environmental problems arose, which prompted the development of landscape planning, both landscape-ecological and socio-economic aspects of territorial development. The experience of landscape planning was introduced in Germany, which later became used in almost all European countries. The study and direct comparison of existing landscape planning systems in different European countries, and their reduction to several basic features are not possible and impractical because these systems are very different. This is due to a number of reasons: history, features of political systems, cultural traditions, level of economic development, the nature of legal systems and property relations. Landscape planning in the European Union is going to be one of the tensest areas of activity in the future, and Ukraine must take an active part in this process.

<input type="checkbox"/>	82	Interaction of the Home and the Economic Free Related	Deineka, A., Kotik, V., Al-Qusi, S.J.N., Kadhim, I.H., Al- Obaidi, N.	2022	Journal of Information Technology Management 14(2), pp. 70-79	0
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The article is devoted to solving the problems of internal economic relations in Ukraine in modern conditions in order to increase the efficiency of their functioning. Studied, systematized and generalized theoretical approaches regarding the features of the interaction of internal and external economic relations, which significantly complement the theory and methodology of the scientific principles of the branch economy. In Ukraine, during the period of restoration of trade and economic relations with the CIS countries and active integration processes in the world economy, the volumes and structure of exports and imports undergo significant changes. In this regard, it is advisable to forecast the export and import in the near future. Conceptual provisions regarding the formation of a national strategy, a mechanism for managing the development of Ukraine's integration processes on the principles of improving the current legislative and regulatory regulation in the country are proposed. In addition to the convenience for calculations, the hierarchical model also has other significant advantages. So, a high degree of independence of groups from each other makes it extremely flexible.

<input type="checkbox"/>	83	The role of fat-producing yeasts in reducing food industry waste <i>Open Access</i>	Huy, D.T.N., Mahmudiono, T., Trung, N.D., (...), Dhamija, A., Kadhim, M.M.	2022	Food Science and Technology (Brazil) 42,e112221	0
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Yeasts are widely used as cellular factors in the production of bread and, more recently, various metabolic products such as vitamins, ethanol, citric acid, and lipids. Lipids synthesized by microorganisms are used in the pharmaceutical industry for technical purposes or as feed. The ability of the superior microorganism to grow on the xylose and the amount of fat production in this area were measured under optimal conditions. Xylose is one of the most abundant 5-carbon sugars in nature, and microorganisms that can grow on it are important. In this paper, the effect of different values of ammonium sulfate concentration, glucose concentration, temperature, aeration, incubation time, and pH are investigated. The results showed that with increasing ammonium sulfate concentration, glucose concentration, Incubation time, and pH, values of production of lipids, dry biomass, and percentage of lipid production by dry weight increased. Also, increasing the values of temperature and aeration has reduced the mentioned values. Finally, it can be said that the values for the studied parameters are: Concentration 1 g/L for ammonium sulfate, concentration 100 g/L for glucose, temperature 2 °C, aeration 150 rpm, incubation time 72 h, and pH equal to 6.5.

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| <input type="checkbox"/> | 84 | Theoretical, Methodological, Communication and Information Technologies Approaches to Modeling and Forecasting Personnel Education in Covid-19 Conditions | Pozdnyakova, L., Hussein, R.A., Zaida, D.T., (...), Hulai, O., Rybina, O. | 2022 | Journal of Information Technology Management<br>14(2), pp. 41-55 | 0 |
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The article is devoted to solving the problems of predicting the education of Ukrainian staff in the current COVID-2019 conditions in order to improve the efficiency of their work. Theoretical approaches regarding the characteristics of modeling and prediction of education have been studied, systematic and summarized. Factors that significantly complement the theory and methodology of the scientific provisions of the economy have been identified, taking into account the peculiarities of their work in the modern economic environment, structural changes, and new changes. The pros and cons of studying modeling approaches have been identified. The main features of structural change have been studied and it has been established that the modeling and forecasting of staff education has significant features.

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| <input type="checkbox"/> | 85 | Systematic Investigation of two-Phase Flow in Special Channels<br><i>Open Access</i> | Kuzichkin, O.R., Ali, M.H., Alkaim, A.F., (...), Abdullah, L.S., Kadhim, M.M. | 2022 | Fluid Dynamics and Materials Processing<br>18(4), pp. 1039-1048 | 0 |
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A systematic study of two-phase (water-air) currents in open channels (water-air) has been conducted by means of experiments and numerical simulations. A dedicated device has been designed and manufactured on purpose. The numerical simulations have been based on the solution of a system of mass, momentum and energy balance equations for a two-phase fluid. The effect of different influential parameters has been explored, namely, velocity and dimensions of the channel, surface pressure and tension.

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| <input type="checkbox"/> | 86 | The Integration of Reverse Engineering and Characteristics Based Costing Approaches and its Applying in a Manufacturing Company | Alawaed, H.M.A., Almagsoosi, L.Q.K., Al-Kawaz, S.M.J., Alwan, A.S. | 2022 | Journal of Information Technology Management<br>14(2), pp. 90-105 | 0 |
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This research deals with integrating RE and CBC in the product design process. RE improves the product value based on evaluate the competition products, whereas CBC aims to use a process approach to define activities and prelates those activities to products or customers using the product's Characteristics. Integrating RE and CBC together leads to the improvement of product value, an increase of customer satisfaction, and support of competitive advantage. In this study first, a conceptual model of integration of these two approaches is provided and then the implementation procedures in product design cycle are explained, and finally, the results got from implementing it in an Electronic Industries company are discussed.

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|--------------------------|----|--|--|------|--|---|
| <input type="checkbox"/> | 87 | On the Dynamics of a Viscoelastic Fluid-Conveying Nanotube | Ibrahim, O.A., Widjaja, G., Alattabi, A.N., (...), Krovopuskov, P.A., Kadhim, M.M. | 2022 | Fluid Dynamics and Materials Processing 18(4), pp. 1137-1151 | 0 |
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The objective of the presented study is to perform a vibration analysis and investigate the stability of a viscoelastic-fluid conveying pipe with an intermediate support. The mathematical model is elaborated in the framework of the Euler-Bernoulli beam theory in combination with the Kelvin-Voight viscoelastic approach. The resulting differential equation of motion and the related boundary conditions and compatibility conditions in the mid-span support are solved analytically using a power series method. The results show that an intermediate support located at (Formula presented) = 0.1 and (Formula presented) = 0.5 increases the critical velocity up to 35% and 50.15%, respectively. Also, the non-dimensional critical velocity for an intermediate support at (Formula presented) = 0.1 is 4.83.

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| <input type="checkbox"/> | 88 | Copper (II) complex supported on the surface of magnetic nanoparticles modified with S-benzylisothiurea (Fe <sub>3</sub> O <sub>4</sub> @SiO <sub>2</sub> -SMTU-Cu): A new and efficient nanomagnetic catalyst for the synthesis of quinazolines and amides | Riadi, Y., M. Kadhim, M., Jawad Shoja, S., (...), Fakri Mustafa, Y., Sajjadi, A. | 2022 | Synthetic Communications 52(6), pp. 875-887 | 0 |
|--------------------------|----|---|--|------|---|---|

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A novel magnetically recoverable copper catalyst was successfully fabricated through the immobilization of Cu(NO<sub>3</sub>)<sub>2</sub> on the surface of silica-coated magnetic Fe<sub>3</sub>O<sub>4</sub> nanoparticles (Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub>) functionalized with S-benzylisothiurea ligand. The Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub>-SMTU-Cu nanocomposite was fully characterized by FT-IR spectroscopy, SEM, EDX, TGA, XRD, VSM, ASS and ICP-OES techniques. The Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub>-SMTU-Cu nanocomposite exhibited high catalytic activity in the synthesis of biologically active quinazolines and amides. According to our research on the literature, this is the first report in the use of magnetic copper nanocatalyst for the synthesis of quinazolines. In this paper, we also presented tentative mechanisms for the synthesis of quinazolines and amides in the presence of catalytic amount of Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub>-SMTU-Cu nanocomposite. This method gives notable advantages such as easy separation of the catalyst by external magnetic field; excellent yields, short reaction times, nontoxic metal catalyst, and simplicity of operation make this method a facile tool for the synthesis of quinazolines and amides.

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| <input type="checkbox"/> | 89 | A review on material analysis of food safety based on fluorescence spectrum combined with artificial neural network technology<br><i>Open Access</i> | Mahmudiono, T., Saleh, R.O., Widjaja, G., (...), Kadhim, M.M., Marhoon, H.A. | 2022 | Food Science and Technology (Brazil) 42,e118721 | 0 |
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Aiming at the problem that it is difficult to achieve rapid and accurate detection of pesticide residues, the artificial neural network method is used to separate the mixed fluorescence spectra in the measurement of acetamiprid pesticide residues, and a fluorescence spectrum that can quickly detect the pesticide residues of acetamiprid on solid surfaces is designed. According to the back-propagation algorithm, the three-layer artificial neural network principle is used to detect the acetamiprid residue in the mixed system of acetamiprid and filter paper with severely overlapping fluorescence spectra. In the range of 340nm~400nm, using the fluorescence intensity values at 20 characteristic wavelengths as the characteristic network parameters, after network training and testing, the recovery rates of acetamiprid concentrations of 40mg/kg and 90mg/kg are 102% and 97%, respectively. The relative standard deviations of the determination results were 1.4% and 1.9%, respectively. The experimental results show that the BP neural network-assisted fluorescence spectroscopy method for the determination of acetamiprid pesticide residues on filter paper has the characteristics of fast network training, short detection period, and high measurement accuracy.

- 90 A Review of High-Energy Density Lithium-Air Battery Technology: Investigating the Effect of Oxides and Nanocatalysts *Open Access* Suryatna, A., Raya, I., Thangavelu, L., (...), Mustafa, Y.F., Kianfar, E. 2022 Journal of Chemistry 2022,2762647 3

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In vehicles that require a lot of electricity, such as electric vehicles, it is necessary to use high-energy batteries. Among the developed batteries, the lithium-ion battery has shown better performance. This battery has an energy density of 10 equal to that of a lithium-ion battery and uses air oxygen as the active material of the cathode and anode like a lithium-ion battery made of lithium metal. The cathode used in these batteries must have special properties such as strong catalytic activity and high conductivity, and nanotechnology has greatly helped to improve the materials used in the cathode of lithium-air batteries. The importance of proper catalyst distribution and the relationship between the oxide product and the catalyst and the indirect effect of the ORR catalyst on the OER reaction is not present in the fuel cell. The maximum capacity of lithium-air battery theory using graphene under optimal electron conduction conditions and the experimental maximum obtained for graphene by optimizing the structure geometry, examples of structural engineering using carbon fiber and carbon nanotubes in cathode fabrication with the ability to perform the reaction properly while providing space for lithium oxide placement, are examined. This article describes the mechanism of this battery, and its components are examined. The challenges of using this battery and the application of nanotechnology to solve these challenges are also discussed.

- 91 Safety assessment of antimicrobials in food packaging paper based on LC-MS method *Open Access* Al Alnabi, D.I.B., Al-Younis, Z.K., Al-Hatim, R.R., (...), Mustafa, Y.F., Jalil, A.T. 2022 Food Science and Technology (Brazil) 42,e68821 0

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Many difficulties relating to food safety have been solved thanks to the employment of strong mass spectrometric detectors in conjunction with liquid chromatography. In this study, samples were fractionated using gel permeation chromatography and liquid/liquid extraction, and liquid chromatography/mass spectrometry (LC/MS) and gas chromatography/mass spectrometry were used to detect possible genotoxicant(s) in recycled paperboard. As a genotoxicity indicator, the rec-assay was utilized. Abietic acid (AA) and dehydroabietic acid (DHA) and were discovered in the recycled paperboard to be genotoxic. AA and DHA were found in 2 of 5 virgin products and all seven recycled food-contact products. AA and DHA total levels in virgin goods were 990 and 240 mg/g, respectively, whereas recycled products had 200990 mg/g. The total quantity of AA and DHA content in DNA-damaging activity and paper products were shown to have a strong connection. Furthermore, genotoxic effects in paper products matched standard chemicals well, showing that AA and DHA were primarily responsible for the genotoxic effects of these paper products.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 92	Morphological Control: Properties and Applications of Metal Nanostructures <i>Open Access</i>	Chupradit, S., Kavitha, M., Suksatan, W., (...), Shafik, S.S., Kianfar, E.	2022	Advances in Materials Science and Engineering 2022,1971891	4

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Metal nanomaterials with special physicochemical and plasmatic properties have a wide range of applications in various fields including catalysts, plasmon devices, spectroscopy, fuel cell, and various sensors including chemical, colorimetric, and fluorescence sensors. These applications are made possible by controlling the morphology and properties of nanostructures and increasing their selectivity. Various methods have been developed for the synthesis of metal nanostructures, including the use of prefabricated patterns or hard templates such as anodic aluminum oxide and soft molds such as cetyltrimethylammonium bromide (CTAB).

<input type="checkbox"/> 93	Determination of the antioxidant and mineral contents of raspberry varieties <i>Open Access</i>	Shoukat, S., Mahmudiono, T., Al-Shawi, S.G., (...), Kadhim, M.M., Al-rekaby, H.Q.	2022	Food Science and Technology (Brazil) 42,e118521	1
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Humans maintain their health by consuming a variety of vegetables and fruits that contain antioxidants, both enzymatic and non-enzymatic. Raspberry is one of the most diverse genus of true dicotyledonous plants, which includes 12 subspecies and about 429 species. Raspberry fruit is rich in antioxidant compounds, especially polyphenols. Two species of raspberry were studied to determine the amount of antioxidants and phenolic and flavonoid compounds in their fruits at three different stages of fruit ripening: immature, semi-ripe, and mature. Natural samples of *Rubus idaeus* and *Rubus strigosus* were collected. In this study, the fruit extracts of two species were stored at -23 °C for about six months. Free radical scavenging and Ferric reducing antioxidant power methods were used to determine the antioxidant activities of the extracts. The antioxidant activity of both methods revealed a higher mean value in extracts from fully matured fruits compared with immature and semi-ripe fruits. The results showed that the antioxidant activity of *Rubus strigosus* is 9%, 10%, and 8% higher than *Rubus idaeus* in the stages of immature, semi-ripe, and full maturity, respectively.

<input type="checkbox"/> 94	Assessment effects and risk of nosocomial infection and needle sticks injuries among patients and health care worker <i>Open Access</i>	Suksatan, W., Jasim, S.A., Widjaja, G., (...), Hammoodi, H.A., Mohammadi, M.J.	2022	Toxicology Reports 9, pp. 284-292	0
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In medical centers and hospitals one of the most dangers that threaten health care worker and patient are Nosocomial infections (NIs) and Needle stick injuries (NSIs). The aim of this study was to determination the effects of nosocomial infection and needle sticks injuries on patents and health care worker. A review study of literature was conducted to One thousand and fifty manuscripts were retrieved based on various databases: Elsevier, PubMed, Web of Science, Springer, and Google Scholar. Reporting data were used on predetermined consequences nosocomial infection and needle sticks injuries and related to adverse health effects, routes of transmission, control and reduction. The literature signs a notable undesirable affect from potential NIS and NSIs attributed to risk investigated among patents and health care worker. Based on Result this study, the resistance of antibiotics, non-standard personal protective equipment, and Needle recapping can endanger health of human and increase transfer infectious disease risk among exposed patients and health care worker. Useful for health system decision makers and political officials in order to cope with the incidence of nosocomial infections and decrease number of needle stick injuries among patients and health care worker can be the main application the results of this study. Increasing the level of awareness, especially of sensitive groups (patients and HCW), about the ways to prevent nosocomial infections and reduce needle sticks and proper use of personal protective equipment are the main vital managers of the health department actions for decrease the prevalence of NIs. Further research using more sophisticated methodology is warranted. Holding regular and periodic training workshops in connection with standard precautions and prevention of occurrence nosocomial infection and needle sticks injuries can play an important role in increasing the health of patents and health care worker.

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| <input type="checkbox"/> | 95 | Development and Evaluation of Biocompatible Topical Petrolatum-liquid Crystal Formulations with Enhanced Skin Permeation Properties<br><i>Open Access</i> | Al-Zuhairy, S.A.S., Kadhum, W.R., Alhijaj, M., (...), Al-Sharifi, H.K.R., Khadom, A.A. | 2022 | Journal of Oleo Science 71(3), pp. 459-468 | 1 |
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Transdermal administration represents a major advancement over traditional pharmaceutical dosing methods. However, a frequent issue is inadequate penetration of the active medicinal component through the skin. As a result, in the current research, we assessed the utility of newly developed petrolatum-liquid crystal (LC) ointment formulations and characterized their biocompatibility and function in the transdermal drug delivery system. To begin, we made petrolatum-LC formulations using p-aminobenzoic acid (PABA) as a hydrophilic model molecule. The viscosity, small-angle X-ray scattering (SAXS), particle diameters, and z-potential were measured to assess the physicochemical properties of the formulations. A dialysis release technique was used to evaluate medication release from petrolatum-LC formulations. In vitro testing was performed to determine the potential to enhance skin penetration. The biocompatibility of the produced formulations was further tested using the 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-2H-tetrazolium bromide (MTT) assay and single-cell gel electrophoresis. According to the results, the novel petrolatum-LC formulations are biocompatible and effective in forming hexosomes. PABA skin penetration was significantly enhanced by the new petrolatum-LC formulations. According to this study, petroleum-LC formulations are more efficient than commercial petrolatum in terms of skin permeability improvement and PABA skin concentration.

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| <input type="checkbox"/> | 96 | Thermal Conductivity and Dynamic Viscosity of Highly Mineralized Water<br><i>Open Access</i> | Mohamad, D., Jawad, M.A., Guerrero, J.W.G., (...), Hasan, S.Y., Surendar, A. | 2022 | Fluid Dynamics and Materials Processing 18(3), pp. 851-866 | 0 |
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Further development in the field of geothermal energy require reliable reference data on the thermophysical properties of geothermal waters, namely, on the thermal conductivity and viscosity of aqueous salt solutions at temperatures of 293–473 K, pressures  $P_s = 100$  MPa, and concentrations of 0–25 wt.%. Given the lack of data and models, especially for the dynamic viscosity of aqueous salt solutions at a pressure of above 40 MPa, generalized formulas are presented here, by which these gaps can be filled. The article presents a generalized formula for obtaining reliable data on the thermal conductivity of water aqueous solutions of salts for  $P_s = 100$  MPa, temperatures of 293–473 K and concentrations of 0%–25% (wt.%), as well as generalized formulas for the dynamic viscosity of water up to pressures of 500 MPa and aqueous solutions of salts for  $P_s = 100$  MPa, temperatures 333– 473 K, and concentration 0%–25%. The obtained values agree with the experimental data within 1.6%.

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| <input type="checkbox"/> | 97 | Hematological and Serological Parameters for Detection of Covid-19<br><i>Open Access</i> | Jalil, A.T., Shanshool, M.T., Dilfy, S.H., Saleh, M.M., Suleiman, A.A. | 2022 | Journal of Microbiology, Biotechnology and Food Sciences<br>11(4),e4229 | 3 |
|--------------------------|----|--|--|------|---|---|

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Coronavirus disease (COVID-19) appeared as outbreak in 2019 in Wuhan, China. It has been classified as pandemic disease and more severe than predicted; with infections already recorded in a variety of countries. This study aims to confirm the COVID-19 infection through the following tests: hematological, C-reactive protein (CRP). Samples were collected from the infected patients and sent to the National Flu Center (Central Public Health Laboratory) for COVID-19 (positive or negative) diagnosis by the RT-PCR technique. In this study, sixty five of COVID-19 patients and twenty five of healthy control samples male and female were collected in Iraq. There are significant differences in the parameters of the hematological markers for patients in comparing with the control group and no significant differences were observed in Hb when RBC and GRAN percent rise in patients relative to the control group with  $P=0.0395$  and  $P=0.0354$  respectively comparing with the control group. White blood cells (WBC), Lymphocyte (LYM%), Platelets (PIT), monocyte (Mid%), hematocrit (HCT), mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), mean platelet volume (MPV), plateletcrit (PCT) was drop dramatically in patients compared to control group. Fifty-one of patients for whom the test was given exhibited a positive (CRP) result. Likewise, the results showed that few patients were negative to CRP test. The Hematological parameters levels (HCT, MCV, MCH, Pelt, WBC, LYM, Mid, MPV, PCT) decreased, but Hb, RBC, GRAN% increased. C-reactive protein test showed a positive result in 85% of patients which can be considered an indicator for predicting severity infection with COVID-19.

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| <input type="checkbox"/> | 98 | Anticancer Drug-Loading Capacity of Green Synthesized Porous Magnetic Iron Nanocarrier and Cytotoxic Effects Against Human Cancer Cell Line | Ansari, M.J., Jasim, S.A., Taban, T.Z., (...), Mustafa, Y.F., Khatami, M. | 2022 | Journal of Cluster Science<br>Article in Press | 23 |
|--------------------------|----|---|---|------|--|----|

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Porous hematite  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanoparticles (NPs) were synthesized using plant extract. The physicochemical characteristics of resulting porous particles were determined using X-ray diffraction (XRD), Scanning Electron Microscopy (SEM), energy dispersive X-ray (EDS), High-Resolution Transmission Electron Microscopy (HR-TEM), vibrating sample magnetometer (VSM) and N<sub>2</sub> adsorption–desorption isotherms (BET) analyses. The cytotoxicity of porous magnetic  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> (PMA) NPs, free anticancer drug, and anticancer drug-coated PMA NPs was evaluated against melanoma cell line (A375) and normal human cells using MTT and LDH leakage assays. BET results confirmed the presence of porous particles with the mean pore diameter of 18 nm. Porous NPs have spherical surface morphology and rhombohedral crystal structures. It was revealed that both free anticancer drug and anticancer drug-coated PMA NPs could inhibit the cell growth in a concentration-dependent manner. However, anticancer drug-loaded PMA NPs had better cytotoxic effects against melanoma cell line, evidenced via MTT and LDH leakage assays. Additionally, anticancer drug-loaded PMA NPs induced morphological alterations compatible with the occurrence of apoptotic cell death.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 99	Serum level estimation of some biomarkers in diabetic and non-diabetic COVID-19 infected patients <i>Open Access</i>	Khan, M.U.F., Ali, B.R., Mohammed, H.Q., (...), Saleh, M.M., Kadhim, M.M.	2022	Applied Nanoscience (Switzerland)  Article in Press	0

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Diabetes, hypertension, and cardiovascular disease all raise the risk of hospitalization and mortality in individuals infected with coronavirus disease 2019 (COVID-19). Higher levels of flogosis mediators such as TNF, C-reactive protein (CRP), IL-1, IL-6, leptin, and resistin, as well as increased levels of TNF, C-reactive protein (CRP), IL-1, IL-6, leptin, and resistin, define diabetes. The goal of this study is to evaluate the levels of D-dimer, total serum bilirubin (TSB), glutamic-oxaloacetic transaminase (GOT), glutamic pyruvic transaminase (GPT), and CRP in diabetic patients with COVID-19 infection to COVID-19 patients without diabetes. Blood samples were collected from individuals with diabetes who had COVID-19 and non-diabetic COVID patients as control. Moreover, D-dimer and CRP were evaluated by using Min Vidus and Latx, respectively, whereas AccEnT 200 system was used to measure serum level of TSB, GPT, and GOT in the hematology lab. Also demonstrated that the average serum concentration of D-dimer, GOT and CRP was high in diabetic COVID-19-infected patients (980.66 ng/mL, 67.71 U/L, and 27.06 mg/L, respectively) compared with non-diabetic COVID-19-infected patients (791.17 ng/mL, 54.023 U/L and 20.11 mg/L, respectively) ( $p < 0.05$ ), while the situation was inverse for the average concentration of TSB and GTP when their average concentrations were low in diabetic COVID-19-infected patients (12.89 Mmol/L and 59.79 U/L, respectively) ( $p > 0.05$ ). Moreover, the cut-off values for serum D-dimer, TSB, GPT, GOT, and CRP of COVID-19-infected diabetic patients were  $\geq 6500$  ng/mL,  $\geq 350$  Mmol/L,  $\geq 133$  U/L mg/L,  $\geq 150$  U/L, and  $\geq 15.22$  mg/L, respectively, represented a perfect test for predicting COVID-19-infected diabetic patients with 100% sensitivity and specificity. In conclusion, serum D-dimer, TSB, GPT, GOT and CRP increased in diabetic COVID-19-infected patients compared to non-diabetic COVID-19 patients and the D-dimer concentration also increases. TSB and CRP were more pronounced among diabetic patients with corona, while liver enzyme concentrations were decreased.

<input type="checkbox"/> 100	Ir-decorated gallium nitride nanotubes as a chemical sensor for recognition of mesalamine drug: a DFT study	Dmitry Olegovich, B., Jalil, A.T., Alsultany, F.H., (...), Qasim, M.T., Delir Kheirollahi Nezhad, P.	2022	Molecular Simulation 48(5), pp. 438-447	22
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We employed density functional theory to inspect the impact of Ir-decoration on the sensing performance of a GaN nanotube (GaNNNT) in the detection of mesalamine (MA). The interaction of the pristine GaNNNT with MA was found to be weak, and the sensing response was approximately 4.3. Decorating an Ir atom into the GaNNNT surface increased the adsorption energy ( $E_{ad}$ ) of MA from  $-6.7$  to  $-23.8$  kcal/mol. The sensing response significantly increased to 89.4 after decorating the Ir atom. A short recovery time of 22.0 s was found for the desorption of MA from the surface of the Ir-decorated GaNNNT at 298 K. The water solvent reduced  $E_{ad}$  of MA to  $-19.8$  kcal/mol. Thus, we concluded that the Ir-decorated GaNNNT might be a highly sensitive MA sensor with a short recovery time.

<input type="checkbox"/> 101	Combined influence of iodide ions and Xanthium Strumarium leaves extract as eco-friendly corrosion inhibitor for low-carbon steel in hydrochloric acid <i>Open Access</i>	Khodom, A.A., Abd, A.N., Ahmed, N.A., Kadhim, M.M., Fadhil, A.A.	2022	Current Research in Green and Sustainable Chemistry 5,100278	2
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The behaviour of potassium iodide (KI) as an inorganic corrosion inhibitor and Xanthium Strumarium leaves (XSL) as a green corrosion inhibitor on low-carbon steel surface in 1 M HCl was investigated. The mechanism of corrosion control is studied using weight loss technique, FTIR, SEM, and quantum chemical analysis. The inhibition efficiency of XSL-KI increased with temperature and blend concentration. Inhibition efficiency approached a maximum value of 97.02% at 5 ml/l XSL, 1.25 ml/l KI, and 60 °C. The adsorption followed the Langmuir isotherm and was based on physical and chemical mechanisms and it was discovered that the synergism parameter was less than one, indicating antagonistic adsorption. Moreover, the increased XSL inhibition was confirmed by theoretical quantum chemistry computations and the structure of XSL was confirmed by FTIR analysis. Furthermore, mathematical and statistical analysis was used for the construction of a powerful relationship between independent and dependent variables with high correlation coefficient.

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| <input type="checkbox"/> | 102 | Role of compositional changes on thermal, magnetic, and mechanical properties of Fe-P-C-based amorphous alloys | Raya, I., Chupradit, S., Kadhim, M.M., (...), Mustafa, Y.F., Bochar, A.N. | 2022 | Chinese Physics B 31(1),016401 | 7 |
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This work aimed to tune the comprehensive properties of Fe-P-C-based amorphous system through investigating the role of microalloying process on the crystallization behavior, glass forming ability (GFA), soft magnetic features, and mechanical properties. Considering minor addition of elements into the system, it was found that the simultaneous microalloying of Ni and Co leads to the highest GFA, which was due to the optimization of compositional heterogeneity and creation of near-eutectic composition. Moreover, the FeCoNiCuPC amorphous alloy exhibited the best anelastic/viscoplastic behavior under the nanoindentation test, which was owing to the intensified structural fluctuations in the system. However, the improved plasticity by the extra Cu addition comes at the expense of magnetic properties, so that the saturation magnetization of this alloying system is significantly decreased compared to the FeCoPC amorphous alloy with the highest soft magnetic properties. In total, the results indicated that a combination of added elemental constituents, i.e., Fe<sub>69</sub>Co<sub>5</sub>Ni<sub>5</sub>Cu<sub>1</sub>P<sub>13</sub>C<sub>7</sub> composition, provides an optimized state for the comprehensive properties in the alloying system.

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| <input type="checkbox"/> | 103 | Analyzing the factorial experiments variances with the repeated values in a practical application | Romani, S.K., Yousif, R.R., Matrood, H.H. | 2022 | International Journal of Nonlinear Analysis and Applications 13(1), pp. 921-936 | 1 |
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With the repeated values, that the factorial experiments will be in three nested factors. And, the third factor is presented by experimental units (subjects). The repeated values or the experimental unit treatments definitely can be taken. These treatments can be dealt with as a fourth factor. Actually, these kinds of experiments have been analyzed in factorial ways, which are presented by the F test. That can be taken place in the condition of variance analysis to the repeated values experiments and in case there is no condition fitting in, we may use non-factorial ways which are presented by shifting into ranks. Therefore, the aim of this research is to make an analyzed study for this kind of factorial ways or non-factorial. This kind of experiment can be applied to Thalassemia in Thi-Qar province.

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| <input type="checkbox"/> | 104 | PREPARATION AND CHARACTERIZATION OF BEADS OF FISH SCALES HYDROXYAPATITE/COLLAGEN /SILVER NANOPARTICLES BY USING INFILTRATION METHOD | Mudhafar, M., Zainol, I., Alsailawi, H.A., (...), Hamzah, M.S., Dhahi, S.J. | 2021 | Malaysian Journal of Microscopy 17(2), pp. 239-250 | 1 |
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The composites of hydroxyapatite/collagen (HA/Col) were seen to be the most encouraging bone graft because of the likenesses with the natural bones. The aim of the present study was to prepared the fish scales hydroxyapatite/collagen /silver nanoparticles (FsHA/FsCol/AgNPs) as a beads by using infiltration method. FsHA/FsCol/AgNPs composites beads were prepared by using new method (infiltration), including to infiltrated of FsHA beads in the FsCol-AgNPs solution. The composites beads of the FsHA/FsCol have been modified by incorporated with AgNPs. The chemical-physical properties for the prepared beads have been evaluated by using fourier-transform infrared spectroscopy (FTIR), scanning electron microscopy (SEM), energy dispersive x-ray analysis (EDX) and x ray diffraction analysis (XRD). The results had revealed that by using XRD and FTIR analysis, the peaks of functional groups of FsCol and AgNPs were observed in the matrix of the beads. FESEM had shown the morphology of beads with intact to the availability of AgNPs on the surface of porous structure. The beads morphology demonstrated a homogeneous surface with AgNPs scattered in the matrix.

- 105 New Ag(I) and Pd(II) complexes derived from symmetrical and asymmetrical NHC precursors: Synthesis, Characterization, Antibacterial activity, and Theoretical calculations
- Ghdhayeb, M.Z., Sabah, K.J., Salman, A.W., Kadhim, M.M.
- 2021 Journal of Molecular Structure 1245,131254
- 1

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New symmetric and asymmetric imidazolium salts namely 1-methyl-3-(2,5-dimethylphenyl)-acetamideimidazolium chloride (2), 1-benzyl-3-(2,5-dimethylphenyl)-acetamideimidazolium chloride (3) and 1,3-bis-(2,5-dimethylphenyl)-acetamideimidazolium chloride (4) were synthesized. In situ deprotonation technique was employed to synthesize Ag(I)-NHC complexes (5-7) from the reaction of Ag<sub>2</sub>O with the abovementioned ligand precursors. Subsequent reactions of Ag(I)-NHC complexes with [PdCl<sub>2</sub>(MeCN)<sub>2</sub>] resulted the Pd(II)-NHC complexes (8-10) via transmetalation method. All the synthesized compounds were characterized using various techniques such as <sup>1</sup>H and <sup>13</sup>C NMR, FTIR and CHN analysis. The antibacterial activity of all the compounds was evaluated against bacterial strains E. coli as gram-negative and S. aureus as gram-positive bacteria using azithromycin as a standard antibiotic. The density functional theory (DFT) method was used to optimize the structures of the synthesized compounds using Gaussian 09 and Molecular Graphic Laboratory (MGL). Electronic energy, HOMO, LUMO, and dipole moment were calculated as well. Further, the estimated anticancer activity of the compounds was determined using docking calculations.

- 106 A Multi-Objective Optimization Model for Relief Facility Location in Crisis Conditions
- Al Ayub Ahmed, A., Jaenudin, Widjaja, G., (...), Kadhim, M.M., Kolyazov, K.
- 2021 Industrial Engineering and Management Systems 20(4), pp. 588-595
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This research was conducted to study the issue of relief facility location hierarchically by consideration of possible road closure during the crisis conditions, road safety, and arrival time of relief facilities under disaster circumstances. High costs are allocated for facilities deployment in a suitable location to meet the demands of injured people. Therefore, location-allocation of emergency facility should be considered in a way to use them for long-term periods. To this end, the extant research designed a multi-objective optimization model to minimize the pre-disaster costs including costs of facilities deployment and road use, and to minimize the post-disaster costs such as cost transportation in-network roads. Moreover, the innovative part of the studied model in this research examined the road safety and reduction in time taken to have critical facilities in affected areas. To investigate the functional accuracy of the mathematical model, a numerical example with small dimensions was solved using CPLEX Solver, and required sensitivity analysis was described. As the facility location-allocation is an NP-hard issue, two meta-heuristic algorithms were used to solve numerical representations in real dimensions to examine numerical analyses effectively. Results showed that the dragonfly algorithm had the highest efficiency compared to other developed algorithms. The obtained results can be considered as an efficient managerial tool in management organizations involved in the crisis.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/>	107 An Integrated Multi-Objective Approach to Managing Supply Risks in a Flexible Supply Chain	Mirfani, A.M., Kurniady, D.A., Al Ayub Ahmed, A., (...), Hasan, A.Y., Ghaffari, M.	2021	Industrial Engineering and Management Systems 20(4), pp. 596-603	1

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Nowadays, it is necessary to paying attention to the opportunities and threats in the field of industry and trade, and evaluate the ability of industries and companies in dealing with uncertainties and existing risks, and it is very important to manage supply chain risk. The main purpose of this study is to be careful against risky suppliers and reducing the injury rate in the event of a disruption. Therefore, in this regard, a multi-stage mixed integer programming model with a proactive approach has been used; that in the first stage, the model reports the amount of supply from suppliers without considering the risk criterion, and at the same time, it seeks to optimal state of minimization the supply chain costs (including purchase cost, shipping, maintenance, supplier selection and return goods). In the second stage, after the suppliers which supplying the parts, have been identified, the model seeks to minimize the identified risks of suppliers under different scenarios. In the third stage, the model tries to achieve an optimal state of supplying the parts from less risky suppliers. In the continuation of this study, an integrated multi-objective programming model has been designed, which will be solved by the epsilon constraint method, and the best output will be reported from the Pareto's optimal set of answers; Finally the results of the model will be compared in two multi-stage and integrated multi-objective modes and the correctness of the performance is confirmed.

<input type="checkbox"/>	108 Ultra-sensitive biosensor with simultaneous detection (Of cancer and diabetes) and analysis of deformation effects on dielectric rods in optical microstructure <i>Open Access</i>	Chupradit, S., Ashfaq, S., Bokov, D., (...), Alanazi, A.M., Sillanpaa, M.	2021	Coatings 11(12),1564	8
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This study proposes a refractive index sensor for the simultaneous detection of cancer and diabetes based on photonic crystals (PhC). The proposed PhC composed of silicon rods in the air bed arranged in a hexagonal lattice forms the fundamental structure. Two tubes are used to place the cancerous or diabetic samples for measurement. The sensor's transmission characteristics are simulated and analyzed by solving Maxwell's electromagnetic equations using the finite-difference time-domain approach for samples being studied. Therefore, diabetes and cancer are detected according to the changes in the refractive index of the samples using the laser source centered at 1550 nm. Considering the findings, the sensor's geometry changes to adjust the suggested sensitivity and quality factor of structure. According to the results, transmission power ranges between 91 and 100% based on the sample. Moreover, sensitivity ranges from 1294 to 3080 nm/RIU and the maximum Figure of Merit is nearly  $FOM = 1550.11 \pm 150.11$  RIU<sup>-1</sup> with the detection in range  $31 \times 10^{-6}$  RIU. In addition, the small area ( $61.56 \mu m^2$ ) of biosensor results in its appropriateness for different uses in compact photonic integrated circuits. Next, we changed the shape of the dielectric rods and investigated their effects on the sensitivity parameter. The sensitivity and figure of merit after changes in the shape of dielectric rods and nanocavities are at best  $S = 20,393$  nm/RIU and  $FOM = 9104.017 \pm 606.93$  RIU<sup>-1</sup>, respectively. In addition, the resolution detection range is  $203.93 \times 10^{-6}$  RIU.

<input type="checkbox"/>	109 High-sensitivity biosensor based on glass resonance PhC cavities for detection of blood component and glucose concentration in human urine <i>Open Access</i>	Jalil, A.T., Ashfaq, S., Bokov, D.O., (...), Suksatan, W., Sillanpää, M.	2021	Coatings 11(12),1555	4
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In this work, a novel structure of an all-optical biosensor based on glass resonance cavities with high detection accuracy and sensitivity in two-dimensional photon crystal is designed and simulated. The free spectral range in which the structure performs well is about  $FSR = 630$  nm. This sensor measures the concentration of glucose in human urine. Analyses to determine the glucose concentration in urine for a normal range (0–15 mg/dL) and urine despite glucose concentrations of 0.625, 1.25, 2.5, 5 and 10 g/dL in the wavelength range 1.326404–1.326426  $\mu\text{m}$  have been conducted. The detection range is  $RIU = 0.2 \times 10^{-7}$ . The average bandwidth of the output resonance wavelengths is 0.34 nm in the lowest case. In the worst case, the percentage of optical signal power transmission is 77% with an amplitude of 1.303241 and, in the best case, 100% with an amplitude of 1.326404. The overall dimensions of the biosensor are 102.6  $\mu\text{m}^2$  and the sensitivity is equal to  $S = 1360.02$  nm/RIU and the important parameter of the Figure of Merit (FOM) for the proposed biosensor structure is equal to  $FOM = 1320.23$  RIU $^{-1}$ .

<input type="checkbox"/> 110	Reinforcing the mechanical properties of windshield with interlayer-polycarbonates glass composite	AFLUQ, S.G., HACHIM, M.F., IBRAHIM, Z.K., ALALWAN, H.A.	2021	Journal of Engineering Science and Technology 16(5), pp. 4192-4204	3
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The safety of automobiles has been the concern of billions of people who used cars for various purposes. The windshield is probably the first issue that automobiles companies must keep into consideration. This research provides very important insight information regarding enhancing the mechanical properties of the windshield while monitoring transparency. The glass used in this research and the subsequent preparation and testing were performed according to the Standard Specification for Laminated Architecture Flat Glass (ASTM C1172) and Glass in Building - Laminated glass and Laminated Safety (ISO 12543). Three groups of a double-layered glass laminated with a resin of polycarbonates at 5%, 10%, and 15% volume fraction were prepared and tested for the mechanical properties of the impact value, compression test, and modulus of elasticity. The results have shown that the 5%-polycarbonates has the maximum effect by enhancing the mechanical properties by 21.9%, 12.6%, and 15.9%, respectively. The mechanical properties of only those samples of the 5% polycarbonates were further investigated after UV exposure at 30 h, 60 h, and 90 h. The results showed that the mechanical properties were deteriorated; yet, showing various effects of exposure time. The impact value was reduced by 3%, 24%, and 35% after exposure of 30 h, 60 h, and 90 h, respectively. The compression strength and modulus of elasticity were enhanced by 17% after 30 h exposure while the modulus enhanced by 16 % after 60 h exposure -both before deteriorating. SEM images have shown that the effect of UV effect has caused better smoothness as the UV radiation increased from 30 h to 90 h.

<input type="checkbox"/> 111	Relationship between Environmental Tax and Production Cost	Sahib, A.S., mhmoood, Z.k., Farag, J.H.	2021	Cuadernos de Economia 44(126), pp. 57-66	1
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Some countries may struggle to levy an environmental tax. Because most polluting projects are industrial, it is critical to match the tax burden to these projects' capability to avoid forcing them to cease, lay off people, or restrict production. We focused our research on the most important methods that some countries have followed to determine the optimal point. Thus, the environmental cost and appropriate tax were determined in proportion to the environmental damage resulting from the pollution caused by those facilities without negatively impacting its production and operational capabilities. There is a link between environmental taxes and production costs. The data was collected from 49 people using AMOS 26v. It found a substantial positive correlation between the factors. The study concluded that environmental taxes alone are not sufficient to reduce pollution; an integrated set of strategies is required.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/>	112 CuO/ZrO <sub>2</sub> Nanocomposites: Facile Synthesis, Characterization and Photocatalytic Degradation of Tetracycline Antibiotic	Jalil, A.T., Qurabiy, H.E.A., Dilly, S.H., (...), Kadhim, M.M., Aljeboree, A.M.	2021	Journal of Nanostructures 11(2), pp. 333-346	7

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Different antibiotic drugs are widely present in the environment for the treatment of bacterial infections. Overuse of antibiotics leads to the accumulation of these drugs in water systems. Removing antibiotics-based pollutants from water is essential. Nanoscience and nanotechnology can be very helpful in this field. In this work, CuO/ZrO<sub>2</sub> nanocomposites was prepared via the simple and facile method. The prepared samples were analyzed X-ray diffraction (XRD), transmission electron microscopy (TEM), scanning electron microscopy (SEM), energy-dispersive X-ray spectroscopy (EDS), Fourier-transform infrared spectroscopy (FTIR) analysis, and UV-Vis analysis. The results indicate the high potential of synthesized nanocomposites made in photocatalytic degradation. The prepared CuO/ZrO<sub>2</sub> Nanocomposites degrades 96.4% of Tetracycline antibiotic under ultraviolet light irradiation after 120 min. The effect of CuO/ZrO<sub>2</sub> nanocomposites dosage and solution pH was studied. It was found that the photocatalytic performance of CuO/ZrO<sub>2</sub> nanocomposites can be improved via increasing concentration until optimal dosage (0.8 g/L) and in a higher dosage than 0.8 g/L no significant improvement was observed. Also, the results confirmed that the photodegradation of tetracycline can be elevated via increasing pH.

<input type="checkbox"/>	113 Novel Carbon Quantum Dots: Green and Facile Synthesis, Characterization and its Application in On-off-on Fluorescent Probes for Ascorbic Acid	Altajer, A.H., Tanjung, F.A., Jabbar, A.H., (...), Kadhim, M.M., Alkaim, A.R.	2021	Journal of Nanostructures 11(2), pp. 236-242	1
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Nanostructures have proved to be a very attractive option for sensor application due to their physical and chemical properties. In recent years, carbon quantum dots as a new member of carbon nanostructures has been widely used in the field of sensors. In this work, carbon quantum dots was synthesized via green precursors using hydrothermal method. The prepared products were characterized via with X-ray diffraction (XRD) analysis, Transmission Electron Microscopy (TEM), FT-IR, UV-Vis, and Photoluminescence (PL) spectroscopy. The results revealed that the prepared carbon quantum dots provide excitation-dependent fluorescence emission. The obtained findings from photoluminescence spectroscopy revealed that as-prepared carbon quantum dots could be applied as a fluorescent probe for detection of ascorbic acid. The PL of carbon quantum dots can be significantly quenched by Cr(VI), which follows a dynamic quenching mechanism. As ascorbic acid enters the solution, Cr(VI) reduced to Cr(III) which cause the turn back the carbon quantum dots fluorescence and a good linearity in range of 0.06–0.18 mM.

<input type="checkbox"/>	114 Effect of Trimethoprim Drug Dose on Corrosion Behavior of Stainless Steel in Simulated Human Body Environment: Experimental and Theoretical Investigations	Khudhair, N.A., Kadhim, M.M., Khadom, A.A.	2021	Journal of Bio- and Tribo-Corrosion 7(3),124	1
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Stainless steel alloy is the most used material as orthopaedic implants. It has an excellent mechanical properties and low costs compared with other metals. It is still one of the most used materials for impermanent and permanent implants, especially in developing countries. Nevertheless, most of researches regarding stainless steel implants focused on the influence of human body fluids on stainless steel anticorrosive and bioactive properties of its surface. Limited researches took into consideration the effect of drugs on stainless steel implants. In this work, the corrosion of stainless-steel implants in human body fluid was investigated using experimental electrochemical technique and theoretical quantum chemical analysis. Gaussian 09 software with 6-311G(d,p) basis set was used during theoretical study. The influence of Trimethoprim (TMP) drug on stainless-steel corrosion behavior was also addressed. The results showed that corrosion current density of stainless steel increased with temperature and decreased with TMP concentration. Maximum inhibition efficiency of TMP was 95% at higher level of temperature and TMP concentration. Density functional theory was used as theoretical tool to predict the inhibition performance of TMP. A comparison between ground and protonated states of TMP was optimized and characterized. Furthermore, quantum chemical parameters of highest occupied molecular orbital (HOMO), lowest occupied molecular orbital, dipole moment, energy gap and other parameters were used to evaluate the inhibition efficiency. Performance of the protonated state (TMP++) was better than the ground state of TMP. Total electron density and FUKUI function were used to demonstration the sites of adsorption centers.

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| □ 115 | Inhibition of SARS-CoV-2 reproduction using <i>Boswellia carterii</i> : A theoretical study<br><i>Open Access</i> | Kadhim, M.M.,<br>Washeel Salman, A.,<br>Mrebee Zarzoor, A.,<br>Kadhum, W.R. | 2021 | Journal of Molecular<br>Liquids<br>337,116440 | 19 |
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This study investigated the possibility of inhibition of the SARS-CoV-2 virus using the compounds alpha-Boswellic acid (ABA) and beta-Boswellic acid (BBA) which are active components in the well-known natural product *Boswellia carterii* (BC). The SARS-CoV-2 virus reproduces in the body by linking its spike with the cell receptor. At the same time, a pH range (4.5–6) of the cell's lysosomes is considered as a perfect environment to release RNA in the cell cytoplasm. In view of these, docking studies were employed to study the interaction between the spikes of the virus and ABA or BBA using Molecular Graphic Laboratory (MGL) tools and AutoDock Vina application. The binding of the ABA and BBA with the spike of the virus could inhibit its reproduction or provide sufficient time for the immune system to recognize the virus and hence, produce suitable antibodies. In addition, the pKa of ABA, BBA and hydroxychloroquine (HCQ) were calculated using HF/6-311G (d,p) method and then they were compared with the experimental pKa of HCQ. The Lethal Concentrations (LC50) of ABA and BBA were also calculated. In addition, molecular electrostatic potential is reported which indicates the active sites of ABA and BBA.

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|-------|---|--|------|--|---|
| □ 116 | Hydrogen sulfide and mesenchymal stem cells-extracted microvesicles attenuate LPS-induced Alzheimer's disease | Aboulhoda, B.E.,<br>Rashed, L.A., Ahmed,<br>H., (...), Abd El-Aal,<br>S.A., ShamsEldeen,<br>A.M. | 2021 | Journal of Cellular<br>Physiology<br>236(8), pp. 5994-6010 | 9 |
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Both hydrogen sulfide (H<sub>2</sub>S) and mesenchymal stem cells (MSCs) extracted microvesicles (MVs) are potent anti-inflammatory molecules. They play an essential role in lowering the production of tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ). The latter could strongly stimulate miR-155 that contributes to neurodegeneration and Alzheimer's disease (AD). miR-155 could repress the expression of inositol 5-phosphatase-1 (SHIP-1) leading eventually to activation of Akt kinase and neurofibrillary development in AD. The current study was conducted to evaluate the role of miR-155 in a rat model of lipopolysaccharide (LPS)-induced AD and to investigate the effect of using MVs and H<sub>2</sub>S that were given either separately or combined in regulating pro-inflammatory signaling. Thirty female Wistar albino rats aged 6 months to 1 year were equally divided into five groups; control group, LPS-induced AD group, LPS + MVs group, LPS + NaHS group, and LPS + MVs and NaHS group. The increased miR-155 level was associated with decreased SHIP-1 level and positively correlated with TNF- $\alpha$ . In addition, treatment with MVs and/or NaHS resulted in attenuation of inflammation, decreasing miR-155, pAkt levels, and downregulation of apoptosis along with improvement of the hippocampal and cortical histopathological alterations. LPS enhanced production of malondialdehyde (MDA) and reduced glutathione (GSH) levels indicating oxidative stress-induced neural damage, whereas MVs and NaHS could mitigate oxidative damage and accelerate antioxidant capacity via increasing catalase enzyme. In conclusion, downregulation of TNF- $\alpha$ , miR-155, and pAkt and increased SHIP-1 could improve the neuro-inflammatory state and cognitive function of LPS-induced Alzheimer's disease.

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| <input type="checkbox"/> | 117 | Synthesis of magnesium oxide layer on the surface of magnesium by the anodizing process for biodegradable implants | Jawad, M.A., Kadhim, A.J., Kadhim, M.M., Alkaim, A.F. | 2021 | International Journal of Pharmaceutical Quality Assurance<br>12(3), pp. 223-228 | 0 |
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Magnesium (Mg) as a biodegradable implant has revolutionized medical field applications, particularly in bone implants and stents. The surface of magnesium alloys used in biomedical applications was treated in this work by "anodizing in 3.5 mol/L sulfuric acids" at room temperature with (8.5V). The magnesium oxide (MgO) layer thus formed was characterized with by scanning electron microscopy (SEM), X-ray diffraction (XRD) and atomic forced spectroscopy (AFM). The morphology and topographic structures for the MgO layer formed on the Mg surface by SEM and AFM techniques show the oxide layer is porous in nature; this porous oxide layer will enable the bone tissue to infiltrate them, healing the bone tissue pretty earlier. The corrosion behavior of the Mg alloy was examined by means of electrochemical techniques and potential polarization curves at temperatures between 298 and 328 K in saline conditions. The alloy was increased corrosion protection with increasing temperatures from 99.93 to 99.97%, indicate the MgO layer formed on the Mg surface was not affected by temperature. The pre-exponential factor "kinetic parameters" and activation energy "kinetic parameters" were discussed calculated. Thermodynamic activation values S and H were also estimated.

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| <input type="checkbox"/> | 118 | Anti-Corrosive Substance as Green Inhibitor for Carbon Steel in Saline and Acidic Media<br><i>Open Access</i> | Al-Mashhadani, H.A., Alshujery, M.K., Khazaal, F.A., (...), Farag, S.K., Hussien, H.F. | 2021 | Journal of Physics: Conference Series<br>1818(1),012128 | 14 |
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Ficus (FIC) leaf extract used as corrosion inhibitor for carbon steel alloy (C.S) in two corrosive environments (saline and acidic) with four concentrations (1, 2, 3 and 4 ppm) at varied temperature range between (298-328 K) using electrochemical polarization measurements. The importance of this work focused on the use the green chemistry that is far from the chemical materials effect. The results of polarization presented the FIC inhibitor consider a mixed type (anodic and cathodic) inhibitor. Tafel curve used to evaluate the corrosion inhibition activity. In a saline medium, the best inhibitor efficiency reaches to (87%) in 2 ppm and IE% reach to (99%) for HCl medium inhibited by 1ppm. Langmuir isotherm obeys the study by thermodynamic parameters and confirms the physical adsorption.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 119	Studying of some biochemical parameters are related to heart diseases patients in Diyala province	Qaddoori, H.T., Majeed, M.I., sachit al-shoky, M.	2021	Materials Today: Proceedings Article in Press	0
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The present descriptive study was conducted between regular and heart disease patients in Diyala City / Iraq. Blood samples were obtained from Diyala Medical Laboratory / Baquba. The result revealed that the percentage of male patients (62.0 percent) was higher than the percentage of male controls (60.0 percent), while the percentage of female patients (38.0 percent) was lower than the percentage of female controls (40.0 percent) with non-significant gender differences ( $P < 0.05$ ). The age of study groups ranged between 20 year and >60 year, where the highest age periods in patients was (40–49 and 50–59 year) and in control was (50–59 and 40–49 year), 20–29 and 30–39 year) and in control was (30–39 and  $\geq 60$  year) with high significant different between groups according to age periods. Cholesterol, LDL, VLDL, triglyceride, and calcium were higher in patients than controls with high significant differences ( $P < 0.05$ ). In contrast, HDL and B12 were lower in patients than controls with highly significant differences ( $P < 0.05$ ). The ROC curve results showed the highest sensitivity for cholesterol, then for triglycerides and VLDL, and finally for LDL. The lowest sensitivity was for HDL and B12. On the other hand, the highest specificity was HDL, then LDL and cholesterol, and eventually Triglycerides. The lowest specificity was for VLDL. Besides, the findings of the current study showed the relationship between the lipid profile, B12 and calcium. The study concluded that higher levels of cholesterol, triglyceride, LDL, VLDL and calcium in cardiac patients relative to healthy subjects. As for B12 and HDL levels, there was a decline in cardiac patients relative to healthy patients. The high sensitivity of cholesterol, triglyceride, LDL and VLDL was concluded in patients with heart disease diagnosis.

<input type="checkbox"/> 120	The effect study of the gender and age on prevalence Giardiasis in Baghdad governorate-Iraq	Alsadoon, Z., Whaeeb, S.T., Abduwahed, T.K.	2021	Materials Today: Proceedings Article in Press	0
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The study aimed to travel around the Giardiasis in 1000 patients (human stool) selected from a private laboratory in Baghdad /Iraq during the period of study in (2018), by using the direct and giemsa stain to identify the cyst or trophozoite stages of parasite in all samples, assess the prevalence of the parasite between males and females and for calculate the relationship of the parasite and age of patients in this study. This study showed that the total number of infected patients is 178 from 1000 taken samples. The result of this study showed no significant differences ( $p < 0.01$ ) appeared between the males and females of the study, the number of infected patients is (83 females out of 456 and 95 males out of 544), and there were significant differences ( $p < 0.01$ ) between the younger ages that was more affected than the older patients (9.7% and 2.9%) Respectively.

<input type="checkbox"/> 121	MnCo <sub>2</sub> O <sub>4</sub> /Co <sub>3</sub> O <sub>4</sub> Nanocomposites: Microwave-Assisted Synthesis, Characterization and Photocatalytic Performance	Raya, I., Widjaja, G., Hachem, K., (...), Mahmood, Z.H., Aravindhana, S.	2021	Journal of Nanostructures 11(4), pp. 728-735	4
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In this research, MnCo<sub>2</sub>O<sub>4</sub>/Co<sub>3</sub>O<sub>4</sub> nanocomposites were prepared via simple and fast microwave method. The effect of irradiation power and irradiation type (continuous and non-continuous irradiation) on crystalline structure, purity, size and morphological properties of products were investigated via X-ray diffraction (XRD) analysis, energy dispersive spectroscopy (EDS), Transmission Electron Microscopy (TEM), FT-IR and Scanning Electron Microscopy (SEM) respectively. Results revealed that shape and morphological properties of MnCo<sub>2</sub>O<sub>4</sub>/Co<sub>3</sub>O<sub>4</sub> nanocomposites can be affected via power and time of microwave irradiation. In the next step, prepared nanocomposites were applied for photodegradation of rhodamine B and methyl violet as organic pollutants. Findings demonstrated that MnCo<sub>2</sub>O<sub>4</sub>/Co<sub>3</sub>O<sub>4</sub> nanocomposites can degrade rhodamine B and methyl violet via 58% and 61% efficiency.

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| <input type="checkbox"/> | 122 | Analyzing Attacking methods on Wi-Fi wireless networks pertaining (WEP, WPA-WPA2) security protocols<br><i>Open Access</i> | Zaidan, D.T. | 2021 | Periodicals of Engineering and Natural Sciences<br>9(4), pp. 1093-1101 | 0 |
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The technology of wireless network systems has eased the possibility to communicate utilising the electromagnetic waves which leads to eliminating the major barriers in portable communications. Wireless networks have a vital role in the current era that all devices; ranging from local modems to organizational equipment, are using various coding approaches to exchange data on the network. However, since the wireless networks utilise the air, as the communication medium, that results to confront more vulnerabilities. If an attacker penetrates a wireless network, he/she would be capable to attack users connected to the network. Wired Equivalent Privacy (WEP), Wi-Fi Protected Access (WPA) and WPA2 are the common security protocols that play the most significant role in local and organizational wireless communication. Accordingly, this study analysed the attacking methods in WEP, WPA, and WPA2 coding protocols. The main objective of the current study is to identify the security vulnerabilities related to these three protocols and define optimal solutions to improve the security of wireless networks against the attackers. The findings presented in this study would support users to maintain security of their home wireless networks as well as employees to secure the organizational network.

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| <input type="checkbox"/> | 123 | FACTORS AFFECTING TUBERCULOSIS ANALYSIS USING LOGISTIC REGRESSION | Matrood, H.H., Talib, H.R., Ahmed, A.H., Hussein, M.A. | 2021 | International Journal of Agricultural and Statistical Sciences<br>17, pp. 1349-1356 | 0 |
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This research deals with one of the most important nonlinear regression models widely used in the modeling of statistical applications, which is the binary Logistic Regression (LR) model, and then estimating the parameters of this model using the weighted least squares method and the accuracy of WLSE in estimating the model parameters as well as the suitability of the model used. Practical sides were performed for modeling data on patients with TB diseases for a research sample that included 299 patients and studying the most important factors affecting this disease.

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| <input type="checkbox"/> | 124 | Inhibition Effect of Copper (II) Theophylline Nanocomplex on Phosphodiesterase (PDE) Enzyme Activity in Human Serum of Iraqi Patients with Asthma Disease<br><i>Open Access</i> | Abbas, Z.S., Ismail, A.H., Al-Bairmani, H.K., (...), Sultan, A.R., Mohammed, S.H. | 2021 | Nano Biomedicine and Engineering<br>13(4), pp. 364-371 | 1 |
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Copper (II) theophylline [Cu(THP)<sub>2</sub>(H<sub>2</sub>O)<sub>4</sub>] complex in nanoscale has synthesized by ultrasonic sonication method. This method was used in the development of smaller, dispersed, and unaggregated nanoparticles (NPs). The structure of nanocomplex was described and suggested by the molar conductance, Fourier transform infrared spectroscopy (FTIR), ultraviolet-visible spectroscopy (UV-Vis), solubility, atomic force absorption, and C.H.N. elemental analysis as octahedral geometry. The size and morphology of nanocomplex measured by transmission electron microscopy (TEM) were 20 nm. The nanocomplex was studied on phosphodiesterase enzyme activity in human serum of Iraqi patient s asthma disease. The results showed a highly significant ( $p < 0.01$ ) increase in the serum levels of phosphodiesterase enzyme activity in asthma patients (mean =  $14.939 \pm 3.021$  ng/mL) compared with a control group (mean =  $9.974 \pm 2.032$  ng/mL). The result also showed a highly significant ( $p < 0.01$ ) decrease in the serum levels of phosphodiesterase activity in patients of asthma disease with theophylline (mean =  $11.253 \pm 2.479$  ng/mL) compared to serum patients without nano and control groups. It is vital that the result showed a highly significant ( $p < 0.01$ ) decrease in the serum levels of phosphodiesterase activity in patients of asthma disease with copper nano complex (mean =  $9.563 \pm 2.082$  ng/mL) compared in patients of asthma disease with and without theophylline. As for comparing asthma disease with copper nano complex and control group, the result showed there was no significant effect ( $p > 0.05$ ).

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| <input type="checkbox"/> | 125 | Reactivity of O-Drug Bond in some Suggested Voltarine Carriers: Semiempirical and ab Initio Methods<br><i>Open Access</i> | Kubba, R.M., Kadhim, M.M. | 2021 | Baghdad Science Journal<br>18(4), pp. 1249-1260 | 1 |
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In this work, the possibility to use new suggested carriers (D= Aspirin, Ibuprofen, Paracetamol, Tramal) is discussed for diclofenac drug (voltarine) by using quantum mechanics calculations. The calculation methods (PM3) and (DFT) have been used for determination the reaction path of (O-D) bond rupture energies. Different groups of drugs as a carrier for diclofenac prodrugs (in a vacuum) have been used; at their optimized geometries. The calculations included the geometrical structure and some of the physical properties, in addition to the toxicity, biological activity, and NLO properties of the prodrugs, investigated using HF method. The calculations were done by Gaussian 09 program. The comparison was made for total energies of reactants, activation energies, and transition states to final products. The suggested prodrugs aim to improve the diclofenac carrier's properties and obtain new alternatives for the approved carriers theoretically.

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| <input type="checkbox"/> | 126 | Role of Glass Composition on Mechanical Properties of Shape Memory Alloy-Metallic Glass Composites<br><i>Open Access</i> | Chupradit, S., Raya, I., Ngoc Huy, D.T., (...), Mahmood, Z.H., Sajjadifar, S. | 2021 | Advances in Materials Science and Engineering<br>2021,4775793 | 0 |
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In this work, the molecular dynamics (MD) simulation was applied to design a laminated composite structure comprised of the shape memory alloy (SMA) and Cu-Zr metallic glasses (MGs). A wide range of MG compositions was considered to tune the mechanical features and improve the homogenous plastic deformation during the tension loading. The results indicated that the martensitic transformation in the SMA inhibited the sudden shear band propagation in the composite for all the samples. Moreover, it was revealed that the mechanism of plasticity was significantly affected by the change of MG composition. In the Cu-rich MGs, the formation and propagation of thick shear bands occurred at the end of the tension loading; however, the increase in Zr content induced the interaction of multiple shear bands with finer configurations in the system. Nevertheless, the excessive Zr addition in the MG composition facilitated the aggregation of nanopores at the interface of SMA and MGs, which may be due to the softening effect in the Zr-rich MGs. Finally, it is concluded that an optimized MG composition is required for the trade-off between the plasticity and the strength in the SMA-MG composites.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 127	Motives of the Escape from the Reality in Andalusian Poetry in the Era of (Sects and Almoravids) as a Model <i>Open Access</i>	Abdullah, H.J., Muareje, M.Q.	2021	International Journal of Early Childhood Special Education 13(2), pp. 1123-1129	0
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We often think that escaping is the way to alleviate political and social pressures and problems. The immigrant is forced to leave his homeland, desiring to be rid of tyranny, because a society based on political disintegration was naturally for its children to grow up in awe of anxiety and psychological turmoil. This difficult situation is in the psyche of the Andalusian society, where the difficult political conditions that afflicted the country and spread terror and destruction in the souls had its effect in forcing people to leave their countries and seek refuge in other countries where protection and safety are available, so many Andalusians suffered from a life of misery and homelessness, which was reflected these conditions affect social life in the era of the sects and the Almoravids, leaving negative effects such as poverty, deprivation, destitution and a feeling of psychological alienation. Which we will see in this study.

<input type="checkbox"/> 128	Nano and Battery Anode: A Review <i>Open Access</i>	Majdi, H.S., Latipov, Z.A., Borisov, V., (...), Khlewee, I.H., Kianfar, E.	2021	Nanoscale Research Letters 16(1),177	9
Hide abstract ^ <a href="#">Full Text</a> <a href="#">View at Publisher</a> <a href="#">Related documents</a>					

Improving the anode properties, including increasing its capacity, is one of the basic necessities to improve battery performance. In this paper, high-capacity anodes with alloy performance are introduced, then the problem of fragmentation of these anodes and its effect during the cyclic life is stated. Then, the effect of reducing the size to the nanoscale in solving the problem of fragmentation and improving the properties is discussed, and finally the various forms of nanomaterials are examined. In this paper, electrode reduction in the anode, which is a nanoscale phenomenon, is described. The negative effects of this phenomenon on alloy anodes are expressed and how to eliminate these negative effects by preparing suitable nanostructures will be discussed. Also, the anodes of the titanium oxide family are introduced and the effects of Nano on the performance improvement of these anodes are expressed, and finally, the quasi-capacitive behavior, which is specific to Nano, will be introduced. Finally, the third type of anodes, exchange anodes, is introduced and their function is expressed. The effect of Nano on the reversibility of these anodes is mentioned. The advantages of nanotechnology for these electrodes are described. In this paper, it is found that nanotechnology, in addition to the common effects such as reducing the penetration distance and modulating the stress, also creates other interesting effects in this type of anode, such as capacitive quasi-capacitance, changing storage mechanism and lower volume change.

<input type="checkbox"/> 129	Detection of Outdated Sensors in Wireless Network via a New Protocol	Thuwaib, H.A., Abd-Ali, R.S., Altai, S.H.A.A.	2021	Webology 18(Special Issue), pp. 526-539	0
Hide abstract ^ <a href="#">Full Text</a> <a href="#">View at Publisher</a> <a href="#">Related documents</a>					

A novel method is proposed using the nonlinear mapping with kernel functions to correctly locate the outdated sensors in a wireless sensor network (WSN). Such detection system used Cornell regression and solved via the vector support regression (VSR) plus multi-dimensional backup vector regression (MBVSR). The developed method was simplistic and effective without the need of any additional hardware for any measurement. It required only the vicinity and information of location from the anchor nodes to detect the outdated sensors. It was achieved in three stages including the measurements, kernel regression, and stepping stage. First step measured the proximity information from a given grid. The relationships between the proximity and geographic distance among the sensors' nodes were generated in the kernel regression stage. For the stepping phase, every sensor node found its location in the distributed way via the kernel regression. Simulation results showed the robustness and high efficiency of the proposed scheme.

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| <input type="checkbox"/> | 130 | A nanotechnological approach for enhancing the topical drug delivery by newly developed liquid crystal formulations | Kadhum, W.R., Al-Zuhairy, S.A.S., Mohamed, M.B.M., (...), Alsadoon, Z., Teoh, T.C. | 2021 | International Journal of Drug Delivery Technology<br>11(3), pp. 716-720 | 1 |
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Transdermal drug administration is a great substitute to oral medication administration. Inadequate penetration of active pharmaceuticals via the skin, on the other hand, is a common phenomenon. As a result, we investigated the ability of liquid crystal (LC) topical formulations to improve skin penetration in the current study. LC-forming lipids are a significant class of biocompatible amphiphiles with applications in cosmetic, dietary, and medicinal technologies. Just a few experiments have looked into how the concentration of LC-forming lipids affects the ability of drugs to reach the skin following topical application. We initially prepared LC formulations of p-aminobenzoic acid (PABA) as a hydrophilic drug mode (The homogeneity and viscosity of the prepared formulations is determined). Additionally, we used a Zetasizer to determine the zeta potential and particle size of LC formulations. The dialysis procedure was used to determine the liberation of drugs from LC formulations. In-vitro skin penetration tests were conducted to decide if LC formulations could increase skin penetration and concentration. By understanding the influence of the LC-forming lipid concentration used in the LC preparation, researchers might establish LC formulation methods that increase drug skin penetration.

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| <input type="checkbox"/> | 131 | The legal Nature of Petroleum Contracts from the National Point of View | Radhi, H.D.A. | 2021 | Review of International Geographical Education Online<br>11(5), pp. 4798-4808 | 0 |
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It has become necessary to determine the legal nature of the petroleum investing contract in order to determine the legal system that is governed by and assigning it to a certain system to settle any risen conflict because it has been considered as a dual system regarding the National and international points of view. This kind of contract is related to many international entities and interests. Whereas the legal nature from the National point of view, we have found that the petroleum investing contract in the light of its creation and determination is submitted to the National law rules to add the legitimate feature of belonging it to rules of this law as a regulatory action to determine the authorized power to sign it, the rights with others, powers, specializations and the required procedures to be followed in case of failure to comply. Regarding the constitution of each state, does the administrative power has the freedom to sign the petroleum investing contract without any restriction, or are there constitutional and legal restrictions? This conflict had risen in Jurisprudence about determining the legal nature of the petroleum investing contract from the National point of view. Some of them see it as a private law contract, and others see it as a private nature contract.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/>	132 Role of vitamin c in the protection of the gum and implants in the human body: Theoretical and experimental studies <i>Open Access</i>	Abosaooda, M., Majid, W.J., Hussein, E.A., (...), Hamed, A.H., Almashhadani, H.A.	2021	International Journal of Corrosion and Scale Inhibition 10(3), pp. 1213-1229	21
Hide abstract ^ <a href="#">Full Text</a> <a href="#">View at Publisher</a> <a href="#">Related documents</a>					

The article describes a study on the role of vitamin C as a protective agent for the teeth, gum, and implants using quantum chemical calculations and polarization tests. The Density Functional Theory (DFT) at 6-311G (d, p) basis set is used to estimate the ability of vitamin C to inhibit the corrosion of the abovementioned parts. The experimental study was performed in a human body media simulator (Hank's balanced salt solution) at a temperature of 37°C. The compound was optimized for its ground state, physical properties, and corrosion parameters. Further, HOMO, LUMO, energy gap, dipole moment, and other parameters were used to predict the inhibitor's efficiency. Gaussian 09, UCA-FUKUI, MGL tools, DSV, and LigPlus software was used. According to electron density, Electrostatic Surface (ESP), Total Electron Density (TED), FUKUI function, and dual descriptor were used to show the active sites of adsorption. Also, docking studies were applied to predict the effect of vitamin C on *A. ferrooxidans* bacteria, which causes eroding the implants. The Ti6Al4V alloy was tested at three concentrations of the VC inhibitor using the polarization method. A concentration of 55 mg/L is the best in terms of inhibitor efficiency (99.62%).

<input type="checkbox"/>	133 Knowledge, awareness and attitude of an iraqi college undergraduate students towards patient safety particularly hiv <i>Open Access</i>	Al-Rashidi, R.R., Naeem, W., Alsadoon, Z., (...), Alsaray, R.A., Kadhim, M.M.	2021	HIV Nursing 21(1), pp. 15-21	0
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Background: Inadequate dedication has been given to patient safety education of health care professionals, resulting in limited understanding of the nature of risk in health care. Objectives: The aim of this study was to evaluate the personal knowledge, awareness and attitudes toward patient safety among the health professional students of Kut University College. Material and Methods: This was a cross-sectional analysis using a validated WHO (World Health Organization) questionnaire and the results were analyzed using IBM SPSS software. Results: Our data showed that the majority of our participants had a medium level of knowledge and awareness about health care errors and patient safety. Nevertheless, our participant's attitude was positive regarding reporting the error and learning from their mistakes. Conclusions: Reducing patient maltreatment will require long-term continuous efforts to build a good education that can addresses the local difficulties and improves patient safety towards HIV.

<input type="checkbox"/>	134 Direct yellow 8 azo removal by bentonite clay solution: Experimental and theoretical studies	Tareq, S., Awad, M.A., Jasim, K.K., Taher, S.K., Kadhim, M.M.	2021	NeuroQuantology 19(5), pp. 120-131	0
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In the theoretical part, removal of direct yellow 8 (DY8) from water solution was accomplished using Bentonite Clay as an adsorbent. Under batch adsorption, the adsorption was observed as a function of contact time, adsorbent dosage, pH, and temperature. The equilibrium data were fitted with the Langmuir and Freundlich adsorption models, and the linear regression coefficient R<sup>2</sup> was used to determine the best fitting isotherm model. thermodynamic parameters of the ongoing adsorption mechanism, such as Gibb's free energy, enthalpy, and entropy, have also been measured. The batch method was also used for the kinetic calculations, and the day's adsorption assumes first-order rate kinetics. The kinetic studies also show that the intraparticle diffusion process was active. Density Functional Theory (DFT) was used to study the dye structure with Gaussian 09 and predict the active site in a molecule using total electron density (TED) and electrostatic surface potential (ESP).

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/>	135 The legal capability thought and its application at the Civil law	Radhi, H.D.A.	2021	Review of International Geographical Education Online 11(4), pp. 1254-1269	1
Hide abstract ^ <a href="#">Full Text</a> <a href="#">View at Publisher</a> <a href="#">Related documents</a>					

The reason for composing a public theory of the legal ability is to reveal the common rules, that all its dispersed applications contribute to all civil law's items. The ability with its different applications has one origin, determination and one foundation. The importance of composing one public theory relied on many legal patterns, many options, and the granting given by law to specific persons regarding their positions, and they can be called the legal abilities, which made us confronting responsibility in presenting answers for the questions that will be asked: What we mean by legal ability? What is its statutory basic? What are its conditions, content and applications at the civil legislation? And many other general questions. Regarding this study, all the questions will be answered.

<input type="checkbox"/>	136 The legal nature of the COVID-19 pandemic and its impact on contractual obligations applied in human rights	Radhi, H.D.A.	2021	International Journal of Human Rights in Healthcare Article in Press	1
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Purpose: Under international human rights law, states can limit the exercise of most human rights if it is necessary to protect the rights of others or collective interests. The hazards of epidemics and diseases have raised many legal, economic and social issues in their link with global health security, which renew the discussion regarding the effects of the COVID-19 on some civil and commercial transactions and financial and tax obligations. Therefore, the purpose of this paper is to discuss the effects of COVID-19 on contractual obligations. Design/methodology/approach: In this research, we are going to follow the method of the analytical and applied approach at the same time by analyzing the cases in which contractual obligations are affected by the circumstances of the COVID-19 and its legal implications, as well as to apply the theories related to this aspect to different cases. Findings: The result of the study funded that the legal adaptation of the COVID-19 pandemic is limited to the theory of emergency circumstances and the theory of the force majeure, and the matter remains in the hands of the trial judge to attribute the incident imposed on him to one of the two cases according to the circumstances of the case. Originality/value: The effects of the COVID-19 pandemic on contractual obligations should be applied on each contract separately according to the extent of its impact on the contractors because the spread of the virus may have an impact on the obligations of one of the contractors, leading to exhaustion of the debtor, or it may lead to the impossibility of implementing the obligation.

<input type="checkbox"/>	137 Cancer stages and demographical study of HPV16 in gene L2 isolated from cervical cancer in Dhi-Qar province, Iraq	Jalil, A.T., Kadhum, W.R., Faryad Khan, M.U., (...), Awad, M.A., Abdullah, M.M.	2021	Applied Nanoscience (Switzerland) Article in Press	17
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The most carcinogenic form of HPV is the high-risk human papillomavirus 16 (hrHPV16). However, only a few hrHPV16 infections develop into cancer. Demographic variants within the HPV16 genotype have been proposed to give differentiation into carcinogenicity. To investigate the implications of the risk of hrHPV16 variants among women in Dhi-Qar province/Iraq, during the period from 2017 to 2020, a case-control review was done as a control for 93 women with cervical cancer and 60 healthy individuals. The age of patients varied from 32 to 78 years, and the majority of people with cervical cancer ranged from 43–52 years (37%) to 32–42 years (30%) and 63–78 years, respectively (20%). Moreover, most of the cases appeared in 2018 (36%) and 2019 (29%), while the fewest cases appeared in 2017 (17%) and 2020 (18%). Further, this showed a significant difference. Therefore, the present survey detected the highest hrHPV16 infections in 2019 (78%) and 2020 (69%). Lowest infections (47%) were reported in the year 2017. Viral infections were common among young women and the infection rate decreased among older women. On the other hand, the distribution of HPV16 infections according to cervical cancer stages showed that the highest infections appeared in stage IV (70%) followed by III (68%), II (60%), and stage 0 (60%). hrHPV16 infections increased in Dhi-Qar province/Iraq during recent years especially in young women, and are associated with cervical cancer progression.

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| □ 138 | Advanced encryption standard using fpga overnetwork<br><i>Open Access</i> | Hasan, H.A.A.,<br>Mohammed, S.M.,<br>Ameer, N.H.A. | 2021 | EUREKA, Physics and Engineering<br>2021(1), pp. 32-39 | 2 |
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The increase number of eavesdropping or cracker to attack the information and hack the privacy of people. So, the essential issue is making system capable of ciphering information with rapid speed. Due to the advance in computer eavesdropping and cracker that made them to analysis the way of ciphering in rapid speed way. The development in the computer especially in the rapid processor in the last decade create the breaching of any system is a matter of time. Owing to most of breaching ways are based on analysis of system that requires to be breached and to try brute force on that system to crack it. However, the lacking of influential processors that are capable of breaching system since earlier processors are limit to number of instructions. It can be done in second, which was not sufficient trying to break the system using brute force. In addition, the time required is far away from getting valuable messages in the time that needed. So, the research gives the focus on performing rapid system for ciphering the information rapidly and changing the ciphering every few milliseconds. The changing of ciphering in every millisecond helps system form preventing the eavesdropping and cracker from imposing brute force on the system and hacking the messages and images. The system that created is based on Advanced Encryption Standard (AES), which is it very best performing algorithm in ciphering and deciphering since it doesn't need complex mathematical formula. The research is about designing system that capable of performing AES by using high processor designed on Field programmable gate Area (FPGA). The ciphering of AES using FPGA helps minimize the time required to cipher the information. Also, the research will focus on ciphering and deciphering of images by AES using FPGA.

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| □ 139 | The Role of Thymoquinone in Mitigating Carbon Tetrachloride-Induced Hepatocellular Carcinoma in Rats: Targeting the CHOP-1/JNK/P38 MAPK, NF- $\kappa$ B/TNF- $\alpha$ /IL-10, and Bax/Bcl-2/Caspase-3 Signalling Pathways<br><i>Open Access</i> | Hussein, R.E., Rashed, L.A., Aboulhoda, B.E., (...), Khalifa, M.M., Morsi, H. | 2021 | Folia Biologica (Poland)<br>69(1), pp. 1-9 | 1 |
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The present study was conducted to evaluate the effect of thymoquinone (TQ) on hepatocellular carcinoma (HCC) in rats. Our study has reported that TQ treatment of experimentally-induced HCC results in the up-regulation of the Jun-N-terminal kinase and p38 mitogen activated protein kinase pathway (JNK/p38 MAPK) and the enhancement of anti-inflammatory, anti-oxidant, and pro-apoptotic machineries. TQ resulted in a significant decrease in the levels of nuclear factor kappa-light-chain-enhancer of activated B-cells (NFkB), tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ), and a significant increase in the anti-inflammatory interleukin-10 (IL-10). The pro-apoptotic effect of TQ was demonstrated through stimulating the apoptotic Bcl-2-associated X (Bax) gene and inhibiting the anti-apoptotic B-cell lymphoma 2 (Bcl-2) gene together with increasing the level of caspase 3 and up-regulating the C/EBP homologous protein (CHOP-1) gene expression. TQ treatment also enhanced the activity of the ROS scavenger, superoxide dismutase (SOD), and decreased the level of the lipid peroxidation product malondialdehyde (MDA). TQ-dependent suppression of HCC was associated with the up-regulation of JNK/p38 MAPK, enhanced CHOP-1 expression, and subsequently increased Bax gene expression.

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| □ 140 | 1-Isoquinolinyl phenyl ketone as a corrosion inhibitor: A theoretical study<br><i>Open Access</i> | Abdul Hussein, E.,<br>Fanfoon, D.Y., Al-<br>Uqaily, R.A.H., (...),<br>Salman, A.W., Abbas,<br>Z.M. | 2021 | Materials Today:<br>Proceedings<br>42, pp. 2241-2246 | 16 |
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The compound 1-Isoquinolinyl phenyl ketone (IIPK) was studied theoretically as a corrosion inhibitor by quantum mechanics calculations and docking models. Density functional theory (DFT) of B3LYP/6-311G (d,p) and parameterization model 3 (PM3) using the Gaussian-09 and CASTEP programs was also employed to discuss the inhibition ability. Molecular graphic laboratory (MGL) tools program and discovery studio visualizer (DSV) used to estimate the ability for inhibition Acidithiobacillus Ferrooxidans (AF) bacteria, which is responsible for the corrosion. The calculations of physical properties and quantum chemical parameters correlated to the inhibition efficiency and discussed at the equilibrium geometry. The results indicated that the 1-Isoquinolinyl Phenyl Ketone could be adsorbed on the mild steel surface firmly through the nitrogen atom on the isoquinoline rings and the carbonyl group. Besides, the moderate values of parameters describe the low-efficiency of inhibition in acidic and saline medium. Total electron density (TED) and electrostatic surface potential (ESP) Figures showed the active site that is involved in the inhibition processes. In addition, the adsorption types were studied by different parameters.

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| □ 141 | An analyzing process on wireless protection criteria focusing on (WPA) within computer network security<br><i>Open Access</i> | Neamah, M.R.,<br>Thuwaib, H.A., Farhan,<br>B.I. | 2021 | Periodicals of<br>Engineering and<br>Natural Sciences<br>9(1), pp. 242-252 | 1 |
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Network security from a long ago approaches to cryptography and hash functions which are tremendous and due to the weakness of different vulnerabilities in the networks and obviously there is a significant need for analyzes. In this manuscript, the state-of-the-art wireless environment is focused solely on the sensor technology, in which security needs to be integrated with the Wireless Protected Access (WPA) standards. Wireless networking includes numerous points of view from wireless sensor systems, ad hoc mobile devices, Wi-Max and many more. The authentication and dynamic encryption is modified by system managers so that general communication can be anchored without any sniper effort in order to perform higher degrees of security and overall execution. The key exchange mechanism in wireless systems such as forward cases is accompanied by the sophisticated cryptography so as to anchor the whole computer state. The manuscript carries out a significant audit of test points of view using the methodologies used for the cryptography angle for protection and honesty in the wireless case, stressing Wi-Fi Secure Protected (WPA) needs.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 142	The use of general trend models to predict numbers of patient with asthma in wasit governorate	Abdulhussein, M.A., Matrood, H.H., Romani, S.K.	2021	International Journal of Agricultural and Statistical Sciences 16, pp. 1611-1615	0

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The study aims to analyze the time series using general trend models to find the best model for predicting the number of people with asthma in Wasit Governorate based on the monthly data recorded in Zahraa Teaching Hospital for the period 2015-2018. The results showed that the appropriate model for predicting the number of infected people Asthma is a quadratic model. Based on this model, the number of patients with the disease was predicted for a period of two months and for two years where the predicted values were consistent with the original values and this indicates the efficiency of the model.

<input type="checkbox"/> 143	The effect of business diversity on the relation between profit sustainability, real earnings management and commercial credit in companies of securities and exchange organization of Iraq	Kadhim, S.C., Hasan, H.F., Khalbas, H.N.	2020	Industrial Engineering and Management Systems 19(4), pp. 908-915	2
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The main purpose of this research is to analyze the effect of business diversity on the relation between profit sustainability, real earnings management and commercial credit in companies of Securities and Exchange Organization of Iraq. In this research, dependent variable is business credit which is calculated through dividing trade payable accounts of the company on the total asset (Petersen and Rajan, 1997; Giannetti et al., 2011) the independent variables are profit sustainability and real earnings management; in order to calculate profit sustainability the Kormendi and Lipemodel has been utilized while for calculating real earnings management the model that already has been used. The research data has been gathered by using a sample made up of 35 companies during 2011-2016. The research hypotheses were analyzed by hybrid data in SATA14 application. The results indicate that the modular effect of business diversity on the relation of profit sustainability and business credit is positive and meaningful, and the modular effect of business credit on the relation between real profit management and business credit is not meaningful.

<input type="checkbox"/> 144	An in vitro comparison of the neurotrophic and angiogenic activity of human and canine adipose-derived mesenchymal stem cells (Mscs): Translating msc-based therapies for spinal cord injury <i>Open Access</i>	Al Delfi, I.R.T., Wood, C.R., Johnson, L.D.V., (...), Myint, P., Johnson, W.E.B.	2020	Biomolecules 10(9),1301, pp. 1-13	3
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The majority of research into the effects of mesenchymal stem cell (MSC) transplants on spinal cord injury (SCI) is performed in rodent models, which may help inform on mechanisms of action, but does not represent the scale and wound heterogeneity seen in human SCI. In contrast, SCI in dogs occurs naturally, is more akin to human SCI, and can be used to help address important aspects of the development of human MSC-based therapies. To enable translation to the clinic and comparison across species, we have examined the paracrine, regenerative capacity of human and canine adipose-derived MSCs in vitro. MSCs were initially phenotyped according to tissue culture plastic adherence, cluster of differentiation (CD) immunoprofiling and tri-lineage differentiation potential. Conditioned medium (CM) from MSC cultures was then assessed for its neurotrophic and angiogenic activity using established cell-based assays. MSC CM significantly increased neuronal cell proliferation, neurite outgrowth, and  $\beta$ III tubulin immunopositivity. In addition, MSC CM significantly increased endothelial cell migration, cell proliferation and the formation of tubule-like structures in Matrigel assays. There were no marked or significant differences in the capacity of human or canine MSC CM to stimulate neuronal cell or endothelial cell activity. Hence, this study supports the use of MSC transplants for canine SCI; furthermore, it increases understanding of how this may subsequently provide useful information and translate to MSC transplants for human SCI.

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| <input type="checkbox"/> | 145 | Effect of Citrullus colocynthis Medium on in vitro Oocytes Maturation Rate | Al-Nawab, N.A., Al-Delfi, I.R.T., MuzherHussein, R., Thamer, S.R., Thamer, M.R. | 2020 | Annals of Tropical Medicine and Public Health<br>23(12),SP231204 | 0 |
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The traditional IVF cycles involve ovarian stimulation protocols. Hormones treatment may increase the rate of incidence of Ovarian Hyper-stimulation syndrome (OHSS). In vitro maturation (IVM) of oocytes can be the alternative method. Therefore, this study aimed to investigate the influence of Citrullus colocynthis (C. colocynthis) extract on improving the in vitro maturation rate of oocytes. The result of this study showed that there was an improvement in oocytes maturation after one day treatment. Data showed a significant increases in the percentage of oocytes maturation when they treated with C. Colocynthis extract compared with control group  $P < 0.05$ . In conclusion, this finding recommended that the IVM as an alternative, since it is simple and less stressful procedure for the patient. Add to that, the IVM procedure holds a considerable promises to assisted reproductive technologies (ART).

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| <input type="checkbox"/> | 146 | The effect of programmed cell death of (TRAIL, GLIS3, IGFBP3 and AIF) on development of type 1 diabetes | Gheni, D.A., Ghali, K.H., Al-Maamori, J.A. | 2020 | International Journal of Pharmaceutical Research<br>12, pp. 3949-3957 | 0 |
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Type 1 Diabetes mellitus (T1DM) is auto immunological disease characterized by  $\beta$  cell destruction, leading to totally or partially loss of insulin. Our study involved 80 patients (48 males and 32 females) with ages range from 4 to 46 years and 40 healthy individuals (25 males and 15 females) as a control group. The results revealed TRAIL gene expression was downregulation in patients, while GLIS3 was upregulation in patients comparing to control group. Also, our study showed decrease the level of IGFBP-3 ( $12.22 \pm 1.0 \mu\text{g/L}$ ) comparing to healthy control ( $16.64 \pm 1.7 \mu\text{g/L}$ ) with significant difference ( $p < 0.05$ ). In contrast, AIF level was slightly decrease in T1DM patients than control group without significant difference ( $p > 0.05$ ). Our results concluded that programmed cell death play a key role in development of T1DM in interaction with other immune, genetic and environmental factors.

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| <input type="checkbox"/> | 147 | Glaucoma among the Malaysian Community<br><i>Open Access</i> | Al-Naggar, R.A., Alshaiikli, H., Al-Rashidi, R.R., Saleh, B. | 2020 | Scientific World Journal<br>2020,4859496 | 1 |
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Background. According to the WHO, glaucoma is the second leading cause of blindness worldwide. About 50% of the world's glaucoma cases come from the Asian population, and in Malaysia itself, the prevalence of glaucoma is increasing. However, glaucoma is still a foreign word to our community despite the high prevalence. Therefore, there is an urgent need to determine the awareness of glaucoma among the community and its associated factors. Results. This study showed that only 25.2% of our respondents were aware of glaucoma and it is associated with ethnicity, religion, education, and household income. Besides, among those who were aware, they fall into the group of poor knowledge of glaucoma. On the other hand, the knowledge of glaucoma was associated with occupation and the awareness of glaucoma by definition. The validated questionnaire was distributed and the data were analyzed by SPSS software using t-test, one-way ANOVA, and chi-square test. Conclusion. Awareness and knowledge of glaucoma in this population is low. These findings suggest that there is a need for an efficient information and education strategy to be designed and conducted to increase the awareness and knowledge of glaucoma so that early detection can be made and effective management of individuals with this condition can be delivered.

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| <input type="checkbox"/> | 148 | Preparation and characterization of ZnS: Mn nanoparticles with theoretical analysis | Elttayef, A.K.,<br>Mohammad, R.K.,<br>Hammdi, R.N.,<br>Khudhair, B.A. | 2020 | NeuroQuantology<br>18(6), pp. 17-20 | 1 |
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Zinc sulfide doped manganese (ZnS: Mn) thin films were deposited on glass substrates at temperature of 100 °C by RF magnetron sputtering technique. The physical properties are analyzed using (AFM, EDX and UV-VIS spectrophotometer). The results show that the values of average diameter of grain size and surface roughness for ZnS: Mn was 73.27 nm and 2.85 nm respectively. The transmittance and optical band gap are found to be 71.38% and 3.26 eV respectively. The calculations of spectrum absorption intensity, IR spectra and energy gap for the ZnS: Mn, which obtained from Density Functional Theory (DFT), gave agreement with the practical results.

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| <input type="checkbox"/> | 149 | The impact of prenatal nutritional status on occlusion of primary teeth among Kindergarten Children in Al-Kut City/ Wasit | Jabber, W.M., Diab, B.S. | 2020 | Indian Journal of Forensic Medicine and Toxicology<br>14(1), pp. 593-597 | 0 |
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Background: When malnutrition begins early in life it affects adversely various aspects of growth including dental arch and increase the severity of oral problems in later life. The aim of present study was to assess the effect of prenatal malnutrition on the occlusion of primary teeth. Material and method: This survey was conducted among urban kindergarten children in Al-Kut city of Wasit governorate. The sample 959 children aged 4 and 5 years were randomly selected from different areas of Al-kut city. The assessment of nutritional status was performed using prenatal anthropometric measurements, and primary dentition terminus was used for assessing dental arch relation. Result: According to prenatal anthropometric indices preterm children constitute 23.46%, whereas low birth weight children constitute 13.66%. Flush terminus plane was the more prevalent type of occlusion for the total sample 47.86% while among preterm and low birth weighted children the mesial step terminus was more prevalent type of occlusion. Conclusion: The prenatal malnutrition had some effect on the arch relation among kindergarten children.

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| <input type="checkbox"/> | 150 | Microscopic investigation and molecular phylogeny of trypanosomiasis in cattle of wasit province, Iraq | Shaeel, A.S., Hussein, Z.S., Al-Sadoon, Z.M. | 2020 | Plant Archives<br>20, pp. 963-971 | 0 |
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In Iraq, only limited data are available about bovine trypanosomiasis and its causes. To the best of our knowledge, this is the first-time trypanosomes have been molecular phylogeny identified in relation to cattle sources. Of 150 cattle subjected to present study, blood samples, clinical examination and case history data were collected during of October 2018 to March 2019 at different areas of Wasit province, Iraq. Using the microscopy and molecular polymerase chain reaction (PCR) assay, a totally 3.33% and 9.33% of study cattle were positives, respectively. Positives of PCR assay is considered as the goldstandard for comparison between infected and non-infected animals. Concerned to the animal risk factors (gender, age and breed), significant increases ( $P < 0.05$ ) were observed among the groups of females, 1-4 years and mix breed. Clinically, depression, lymph node enlargement, paleness of mucous membranes, decreasing of milk production and emaciation were the most detected symptoms. For vital signs, significant elevation ( $P < 0.05$ ) was in temperature, pulse and respiratory rates. Among hematological findings, significant decreases ( $P < 0.05$ ) in values of RBCs indices were reported in total RBCs, PCV, and Hb, whereas, no significant variations ( $P \geq 0.05$ ) were showed in values of MCV, MCH and MCHC. For WBCs, significant decreases ( $P < 0.05$ ) were found in total WBCs and lymphocytes and significant increases ( $P < 0.05$ ) in neutrophils, but in values of monocytes, eosinophils, and basophils ( $P \geq 0.05$ ). Phylogenetic analysis of six PCR-positives was revealed on two trypanosomes, *T. theileri* and *Trypanosoma cf. cervi*, species that detected for the first time among cattle of Iraq.

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| <input type="checkbox"/> 151 | An effectual and pragmatic analytics on the impacts of cloud based e-learning in academia | Dueeb, H.A., Kh-Madhloom, J., Al-Saidi, M.M.M. | 2020 | Journal of Advanced Research in Dynamical and Control Systems 12(3 Special Issue), pp. 305-312 | 0 |
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The process of teaching and learning is now days highly advanced with the usage of effective tools and technologies whereby the digital content can be shared to the students with all round and all time availability. There are assorted digital learning platforms and cloud based environments which are used for the performance elevation in the students. In this manuscript, the impact of cloud based e-learning is presented with the performance evaluation in multiple dimensions. With the integration and usage of tools the overall elevation in the performance in teaching and learning for students can be improved on multiple perspectives. In this manuscript, the evaluations of the learning management systems are also depicted with the relative features. The presented work is the cavernous evaluation of the e-learning platforms with reference to the real world based analytics on the usage patterns in the academia.

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| <input type="checkbox"/> 152 | The interfering effects of PD-1 and TIPE2 in bronchial asthma | Mubark, N.N., Ghali, K.H., Al-Maamori, J.A. | 2020 | Systematic Reviews in Pharmacy 11(1), pp. 69-75 | 0 |
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Asthma is a chronic reversible airway disease, results from genetic - environmental interaction. Inflammatory processes may aggravate the severity of asthma and stimulate the airway remodeling. The aim of the current study is to evaluate the association between the negative inflammatory regulators; tumor necrosis factor  $\alpha$  induced protein 8 like 2 (TIPE2) and Programmed cell death-1 (PD-1) with bronchial asthma in Iraqi population, blood samples are collected from 100 patients diagnosed with bronchial asthma (59 females and 41 males), their ages ranged between 2 to 61 years and 30 healthy individuals (14 females and 16 males) with the same age range. DNA extracted and then subjected to real time PCR for detection of gene expression. TIPE2 and PD-1 have low folding change of genes expression in asthmatic patients (0.01 and 0.10 respectively) compared to healthy control (1.00) which is reflect the significant differences ( $p < 0.05$ ). TIPE2 and PD-1 that have down expression (folding mean) in patients with familial asthma and the noted expression of these genes are clearly appeared in females (0.02 and 0.14 respectively). Also the lowest level of PD-1 gene expression was seen in unclassified group and then in moderate persist asthma (0.02, 0.11 respectively). While the lowest level of TIPE2 gene expression was seen in sever persist asthma, then moderate persist asthma and unclassified group (0.005, 0.006 and 0.008 respectively) .PD1 not affected by treatment but TIPE2 affected and increased. There are a significant negative correlation for each one of TIPE2, PD-1 with asthma infection.

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| <input type="checkbox"/> | 153 | Evaluation gene expression of stem cell factor and C-kit among bronchial asthmatic patients | Mubark, N.N., Al-Maamori, J.A., Ghali, K.H. | 2020 | Systematic Reviews in Pharmacy<br>11(1), pp. 51-57 | 0 |
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Background: Mast cells play an essential role in pathology of bronchial asthma. Stem cell factor (SCF) is a major mast cell growth factor, which could be involved in the local increase of mast cell number in the asthmatic airways when bind to its receptor (C-kit). Existing study aimed to evaluate role of gene expression of SCF and their receptor C-kit in development of bronchial asthma in Iraqi population. Methods: present study included 100 patients diagnostic with bronchial asthma (59 females and 41 males) their ages range from 2 to 61 years and 30 healthy individuals (14 females and 16 males) with the same age range as control group DNA extracted from whole blood samples and then subjected to real time PCR for detection of gene expression. Results: current data showed a significant correlation ( $p < 0.05$ ) between SCF, C-kit and asthma when high gene expression (mean of folding change) are appeared in asthmatic patients (5.20 and 4.03 respectively) compared to healthy control groups (1.00) . In present study, the highest gene expression of SCF and its receptor c-kit were appeared in sever persist asthma, moderate persist asthma and mild persist groups. Moreover, SCF and C-kit expression was influenced by treatment (3.54 and 3.63 respectively) in compared with untreated cases (3.78 and 4.97) ( $p > 0.05$ ) . The optimum cut-off values for gene expression of SCF and C-kit are  $\geq 0.55$ ,  $\geq 2.328$  respectively since there are associated with a perfect test for predicting asthma. In conclusion: high gene expression of SCF and C-kit associated with increase severity stage of bronchial asthma without treatment and can be reduced by treatment.

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| <input type="checkbox"/> | 154 | Electronic transfers and (NLO) properties predicted by ab initio methods with prove experimentally | Khazaal, F.A., Kadhim, M.M., Hussein, H.F., (...), Abed, H.H., Saieed, H.S. | 2020 | NeuroQuantology<br>18(1), pp. 46-51 | 17 |
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Hartree-Fock (HF) method relies in the calculations of nonlinear optical properties (NLO) for benzoic acid molecule. Also, another theoretical study is conducted by using the TD-DFT Density Functional Theory through B3LYP/High Base Set 6-311++G (2d,2p) on Gaussian program09. Moreover, an experimental study has been done to obtain the electrons spectrum for benzoic acid with and without ethanol. While the experimental study is done by using UV/VIS. spectrophotometer. Energy gap values of electronic transition between HOMO and LUMO is obtained from theoretical and experimental results. Consequently, the theoretical result for determining the energy gap calculated from EHOMO-LUMO was very close to the results of UV / VIS. spectrum. A theoretical method is considered extremely appropriate towards compounds capable of absorbing in vacuum UV.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 155	Histological study of therapeutic effect of P.ostreatus on gastric ulcer in male rats	Hanawi, M.J., Dilfi, S.H., Al-Bideri, A.W.M.	2020	Systematic Reviews in Pharmacy 11(1), pp. 26-34	1

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Mushrooms extract have wide range of medical activity. Present study goaled to investigate healing role of P.ostreateus on aspirin induced gastric ulcer. This study carried out on rats males of Rattus norvegicus, rats divided into negative control group(C), positive control group (T1), standard drug treated control group (T2), group treated with alcoholic extract of P.ostreateus (T3),group treated with polysaccharide of P.ostreateus (T4) and group treated with chitin and chitosan of p. ostreateus (T5). Histopathological examination of stomach tissue by hematoxylin and eosin. Periodic acid Schiff and Masson's trichrome of P.ostreateus extract treated group (T3) at the end of the 10 day of treatment showed epithelial cell reconstitution and gastric cell repair in gastric mucosa accompanied with marked infiltration of leucocytes and congestion in the walls of the blood vessels of the submucosal layer. At the end of 20 days, it was observed the gastric mucosa was closely no major differences compared with normal group and had better healing effect than that of omeprazole group. Histological observation of the animals treated with Polysaccharide, Chitin and Chitosan of P.ostreateus (T5 and T4) showed moderate disruption of the surface epithelium with leucocyte infiltration and thickening of muscularis mucosae at the first period. At second period there is still mild disruption and the repair is not complete. Present study detected a significant role of P.ostreateus extract in gastric ulcer healing.

<input type="checkbox"/> 156	Study of kidney parameters for patients with hemophilia and von will brand patients infected with hepatitis B and C	Al-Hamadiny, S.Q., Aleiqabi, R.F.J., Al Zamily, K.Y.Z., Faraj, S.A.	2020	Systematic Reviews in Pharmacy 11(1), pp. 23-25	0
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Hemophilia A and Von Willebrand are genetic diseases caused by the deficiency or malfunction of one of the coagulation factors. Hemophilia is caused by the absence of Factor Vili (F.VIII). Von Willebrand is caused by a deficiency or disorder of von Willebrand factor (VWF).This study included 50 patients of both diseases,35 Hemophilia type A from males and 15 Von Willebrand patients from both sexes. The results show significant decrease(P<0.05) in the value of Concentration of calcium ions to each of Hemophilia A and Von Willebrand compared with control. Potassium ions and sodium Na showed no significant differences between hemophilia A and von Wilibrand compared with healthy subjects. From the same table, there was no significant difference between hemophilia A and von Willebrand for all studied mineral parameters (Ca, K and Na).

<input type="checkbox"/> 157	To what extent the system of the occupational safety and health administration ISO 45001: 2018 prevents injury	Al Musawi, A.S.A., Al Sayegh, N.A.J.	2019	International Journal of Innovation, Creativity and Change 9(9), pp. 329-346	0
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<p>This research aims to analyse and study the methods of prevention of work-related injuries. Additionally, it seeks to understand how the use of safety tools, rules and regulation as well as employee's participation and programs occurring within industrial organisations and what is to be followed when implementing them. The research concentrates on the measures taken by the organisation in order to manage and reduce the protection of human resources from occupational diseases as well as the risks related to their work and by standing on the reality of the application of the standard of health and safety management system that focuses. This is crucial for organisations to reduce occupational accidents and diseases and the application of health management systems and occupational safety issues and the integration of standard and requirements and examples of good practices, human resources and good technology. The results of the study are represented in the tool business organisation as it wants to implement or update health and safety management system using the professional tool checklist (Checklists) for the application of the standard 45001 ISO.</p>				

<input type="checkbox"/>	158	Photoluminescence Spectra from the Direct Energy Gap of a-SiQDs <i>Open Access</i>	Abdul-Ameer, N.M., Abdulrida, M.C., Abdul-Hakeem, S.M.	2018	Journal of Physics: Conference Series 1003(1),012105	0
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A theoretical model for radiative recombination in amorphous silicon quantum dots (a-SiQDs) was developed. In this model, for the first time, the coexistence of both spatial and quantum confinements were considered. Also, it is found that the photoluminescence exhibits significant size dependence in the range (1-4) nm of the quantum dots. a-SiQDs show visible light emission peak energies and high radiative quantum efficiency at room temperature, in contrast to bulk a-Si structures. The quantum efficiency is sensitive to any change in defect density (the volume nonradiative centers density and/or the surface nonradiative centers density) but, with small dots sizes, the quantum efficiency is insensitive to such defects. Our analysis shows that the photoluminescence intensity increases or decreases by the effect of radiative quantum efficiency. By controlling the size of a-SiQDs, we note that the energy of emission can be tuned. The blue shift is attributed to quantum confinement effect. Meanwhile, the spatial confinement effect is clearly observed in red shift in emission spectra. we found a good agreement with the experimental published data. Therefore, we assert that a-SiQDs material is a promising candidate for visible, tunable, and high performance devices of light emitting.

<input type="checkbox"/>	159	Secured energy aware projected 5G network architecture for cumulative performance in advance wireless technologies	Azez, H.H., Ansaf, H.S.H., Abdul-Hassan, H.A.	2018	International Journal of Engineering and Technology(UAE) 7(4), pp. 53-56	0
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Wireless Networks are known to be susceptible from different energy consumption issues and enormous algorithms are devised so far to improve the lifetime of sensor networks. Lowenergy adaptive clustering hierarchy (LEACH) is one of the classical approaches that is adopted in many wireless implementations along with the variants of LEACH to escalate the overall life of nodes as well as network. Underwater Sensor Network or Acoustic Network (UWSN / UWAN) is a type of wireless network that is deployed under the ocean to monitor the movements of enemy or specific corporate purposes. The UWSN are having their base stations at the ships to keep and log the signals from underwater sensor nodes (USN). Such nodes are difficult to track physically and once their lifetime is over because of energy depletion, there is need to redeploy these nodes. To improve the lifetime of such underwater network, a novel and energy efficient approach of population based optimization is used in this research work with integration of soft computing. In this approach, the behavior of the bees in selecting their heads is adopted to form the dynamic cluster head in underwater wireless networks. It is found from the results that the bee colony based energy optimization approach is better as compared to the traditional approach in terms of multiple parameters.

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 160	Association of a Disintegrin and Metalloproteinase 33 gene polymorphisms with chronic obstructive pulmonary disease in Iraqi population	Shaheed, O.M., Kazaal, M.A.	2017	Journal of Pharmaceutical Sciences and Research 9(11), pp. 2240-2243	1

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Background: "Chronic obstructive pulmonary disease (COPD) is predisposed by environmental and hereditary factors". A disintegrin and metalloproteinase 33 gene (ADAM33) has been one of the most stimulating gene for asthma since of their first association with the disease in Caucasian population". "Recently, ADAM33 was shown to be associated with decrease of lung function and COPD. The target of this study was to evaluate the potential correlation between polymorphisms of ADAM33 and COPD in Iraqi" population. Methods: This study included, 400 cases of COPD and 400 healthy individuals as control group. "Two polymorphic loci (V4 and Q-1) of ADAM33 were selected for genotyping that determined by using the polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) method. Results: "Statistically significant distinctions in the distribution of the wild and mutant genotypes between patients and control. In addition, significant association ( $P < 0.0001$ ) between COPD and mutant genotypes (V4/GG and Q-1/AA) are detected. Conclusion: The results of this study designate that ADAM33/V1 and Q-1 polymorphisms is a hazard factor for COPD among Iraqi society.

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