

Publications

Chemical and Petroleum Engineering

Year 2021

Journals

1. S. Al-Mardeai, E. Elnajjar, R. Hashaikheh, B. Kruczek, **S. Al-Zuhair** (2021) Dynamic model of simultaneous enzymatic cellulose hydrolysis and product separation in a membrane bioreactor. *Biochemical Engineering Journal* 174, 108107
2. R. Shomal, B. Ogubadejo, T. Shittu, E. Mahmoud, W. Du, **S. Al-Zuhair** (2021) Advances in Enzyme and Ionic Liquid Immobilization for Enhanced in MOFs for Biodiesel Production. *Molecules (MDPI)* 26, 3512.
3. B. Ogubadejo, **S. Al-Zuhair** (2021) MOFs as Potential Matrices for Cyclodextrin glycosyltransferase Immobilization. *Molecules (MDPI)* 26, 680
4. Y. Hu, H. Zhou, L. Dai, D. Liu, **S. Al-Zuhair**, W. Du (2021) Lipase immobilization on macroporous ZIF-8 for enhanced enzymatic biodiesel production. *ACS Omega (ACS)* 6, 2143–2148
5. S. Rouf, Y.E. Greish and **S. Al-Zuhair** (2021) Immobilization of Formate Dehydrogenase in Metal Organic Frameworks for Enhanced Conversion of Carbon Dioxide to Formate. *Chemosphere (Elsevier)* 267: 128921
6. M.S. Kuttiyathil, M.M. Mohamed, **S. Al-Zuhair** (2021) Using Microalgae for Remediation of Crude Petroleum Oil-Water Emulsions. *Biotechnology Progress (Wiley)* – 37, e3098
7. Basim Abu-Jdayil, Mohamed Barkhad, Abdel-Hamid Mourad, Muhammad Z. Iqbal “Date palm wood waste-based composites for green thermal insulation boards” *Journal of Building Materials*, 103224, 2021
8. Muhammed Kallumottakkala, Mousa Hussein, Muhammad Iqbal “Recent progress of 2D nanomaterials for applications on microwave absorption: A comprehensive review” *Frontiers in Materials* 8, 633079, 2021
9. Carmen Abuoudah, Yaser Greish, Basim Abu-Jdayil, Ehad El-said, Muhammad Iqbal “Graphene/polypropylene nanocomposites with improved thermal and mechanical properties” *Journal of Applied Polymer Science* 138 (11), 50024, 2021
10. Recent advances in the design of metal–organic frameworks for methane storage and delivery. E Mahmoud. *Journal of Porous Materials* 28, 213–230
11. Advances in Enzyme and Ionic Liquid Immobilization for Enhanced in MOFs for Biodiesel Production. R Shomal, B Ogubadejo, T Shittu, E Mahmoud, W Du, S Al-Zuhair. *Molecules* 26 (12), 3512
12. Development of catalysts for sulfuric acid decomposition in the sulfur–iodine cycle: a review. HA Khan, A Jaleel, E Mahmoud, S Ahmed, UH Bhatti, M Bilal. *Catalysis Reviews - Science and Engineering*
13. **Mamdouh T. Ghannam** and Mohamed Y.E. Selim, “Rheological Properties of the Jojoba Biofuel”, *Sustainability* 13, 6047 (2021).
14. Basim Abu-Jdayil, **Mamdouh T. Ghannam**, K Alsayed Ahmed and M Djama, “The Effect of Biopolymer Chitosan on the Rheology and Stability of Na-Bentonite Drilling Mud”, *Polymers* 13 (19), 3361 (2021).
15. Nayef Ghasem and **Mamdouh T. Ghannam**, “Challenges, benefits & drawbacks of chemical engineering on-line teaching during Covid-19 pandemic”, *Education for Chemical Engineers* 36, 107-114 (2021).

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16. **Mamdouh T. Ghannam**, Mohamed Y.E. Selim, Noor Taleb, Norah Kaalan, Mona Khedr, "Experimental Flow Characteristics Investigation of Waste and Pure Lube Oils", *Fuel* 298, 120774 (2021).
17. **Mamdouh T. Ghannam** and Mohamed Y.E. Selim, "The flow behavior of raw Jojoba oil in comparison with some traditional lube oils", *Industrial Crops & Products* 161, 113164 (2021).
18. Busahmin Bashir, Marek Piaskowy and **Gamal Alusta** "Overview on directional drilling wells" *ARNP Journal of Engineering and Applied Sciences*, Vol. 16, No. 22, Nov. 2021- ISSN 1819-6608.
19. K. Azmat Ali, **M. Tahir** (2021), Well-designed 2D/2D Ti_3C_2TA/R MXene coupled g- C_3N_4 heterojunction with in-situ growth of anatase/rutile TiO_2 nucleates to boost photocatalytic dry-reforming of methane (DRM) for syngas production under visible light, *Appl. Catal., B* 285. 10.1016/j.apcatb.2020.119777
20. **M. Tahir** (2021), Investigating the Influential Effect of Etchant Time in Constructing 2D/2D HCN/MXene Heterojunction with Controlled Growth of TiO_2 NPs for Stimulating Photocatalytic H_2 Production, *Energy & Fuels* 35(8) (2021) 6807-6822. 10.1021/acs.energyfuels.1c00204
21. **M. Tahir** (2021), Binary Ni_2P/Ti_3C_2 Multilayer Cocatalyst Anchored TiO_2 Nanocomposite with Etchant/Oxidation Grown TiO_2 NPs for Enhancing Photocatalytic H_2 Production, *Energy & Fuels* 35(17) (2021) 14197-14211. 10.1021/acs.energyfuels.1c01340
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27. W.K. Fan, **M. Tahir** (2021), Current Trends and Approaches to Boost the Performance of Metal Organic Frameworks for Carbon Dioxide Methanation through Photo/Thermal Hydrogenation: A Review, *Industrial & Engineering Chemistry Research* 60(36) (2021) 13149-13179. 10.1021/acs.iecr.1c02058
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100. A review of automated and data-driven approaches for pathway determination and reaction monitoring in complex chemical systems - Anjana Puliyaanda, Karthik Srinivasan, Kaushik Sivaramakrishnan, Vinay Prasad - <https://doi.org/10.1016/j.dche.2021.100009>

Conferences

1. **S. Al-Zuhair**, W. Du (2021) Biodiesel production from inedible oils using immobilized lipase on rationally synthesized metal-organic frameworks. UAEU-AUA Research Symposium, 2021
2. S. AlMardeai and **S. Al-Zuhair** (2021) Dynamic Model of Glucose Diffusion in a Novel Membrane Bioreactor. The Canadian Chemical Engineering Conference (CCEC), October 24th -27th, 2021

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3. Muhammad Iqbal “Boosting student involvement during e-learning for engineering courses” 5th International Conference on Advanced Research in Education, teaching, and Learning (ARETL), Netherlands, 2021
4. Muhammad Iqbal, Carmen Abuoudah “New Insights into Graphene/Polypropylene nanocomposites” Invited Talk in Online Conference on Emerging and Enabling Materials, Qatar University, 2021
5. Metal-organic frameworks for photocatalytic carbon dioxide reduction and hydrogen production. E Mahmoud. Catalight Young Scientist Symposium: Artificial Photosynthesis
6. Enhanced Methane Capture by Metal-Organic Frameworks for Atmospheric Restoration. E Mahmoud 2021 AUA and ICSGS Academic Conference.
7. Utilization of Spent Coffee Grounds for Biogas Production in a Biorefinery: A Circular Bioeconomy Approach. Eyas Mahmoud, Abdulaziz Atabani. The 5th International Conference on Alternative Fuels, Energy and Environment (ICAFEE): Future and Challenges
8. Show and Tell - Blended Learning. E Mahmoud. EduTech Asia
9. Advancement of flipped and blended learning to adapt to the post COVID-19 world. E Mahmoud ADEK Higher Education Excellence
10. Chemical Vapor Deposition Growth of MoS₂ and its Application in Supercapacitors E Mahmoud, R Deghles. UAEU-AUA Research Symposium
11. A. Zekri, **Mamdouh T Ghannam**, H.B Zekri, “Interfacial Tension of Hydrocarbon/Water System with Mixed Anionic Surfactants at High Pressures and Temperatures: Optimization of Alkane Number and Salinity”, Vietnam Symposium on Advances in Offshore Engineering, 467-474 (2021).
12. **Gamal Alusta**, Hossein Algdamsi, Ahmed Amtereg, Ammar Agnia, Ahmed Alkouh, Bacem Kcharem “Consultant Integration of Self Organizing Map and Date Driven Methods to Predict Oil Formation Volume Factor: North Africa Crude Oil Examples” This paper was prepared for presentation at the SPE/IATMI Asia Pacific Oil & Gas Conference and Exhibition held virtually on 12 - 14 October, 2021. SPE-205782-MS
13. Ammar Agnia; Hossein Algdamsi; Ahmed Amtereg; Ahmed Alkouh; **Gamal Alusta** “Monte Carlo Simulation for Uncertainty Quantification of Probabilistic Original Hydrocarbon in Place Estimation a Convergence Study How Many Samples with a Particular Sampler are Needed" Paper Number: SPE-207241-MS. SPE. the Abu Dhabi International Petroleum Exhibition & Conference to be held in Abu Dhabi, UAE, 15 – 18 November 2021. The official proceedings were published online on 9 December 2021.
14. **M. Tahir.**, Areen Sherryana, Z.Y. Zakaria, Facile Synthesis of MAX Modified Graphitic Carbon Nitride Nanocomposite for Stimulating Hydrogen Production Through Photocatalytic Water Splitting, 7th International Conference of Low Carbon Asia and Beyonds, 18-19 October 2021, Johor Bahru, Johor Malaysia.
15. Ali Hasan Shah Shah, Ahmed Hassan, Mohammad Shakeel Laghari, Abdulrahman Alraeesi. “Assessment of Atmospheric Water Generation System for Photovoltaic Module Cleaning”. 8th Zero Energy Mass Custom Home (ZEMCH 2021) International Conference. Pages 541-551. ISBN: 978-9948-31-000-6
16. Shaik, M.A., Invited Keynote Speaker, “Optimal Process Operations for Batch & Continuous Plants: Selected Case Studies”, Virtual International Conference on Green Technologies for Sustainable Development (ICON-GTSD), 9-11 Mar 2021, Dharmsinh Desai University (DDU), Nadiad, India.

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17. Ibraheem Salaudeen, Muhammad Rehan Hashmet, Peyman Pourafshary, “Synergistic effects of engineered water-nanoparticle on oil/brine/rock interactions in carbonates”, Society of Petroleum Engineers - SPE Europec featured at 82nd EAGE Conference and Exhibition, EURO 2021.
18. Rizwan Muneer, Muhammad Rehan Hashmet, Peyman Pourafshary, “Application of DLVO Modeling to Study the Effect of Silica Nanofluid to Reduce Critical Salt Concentration in Sandstones”, 3rd World Symposium in Smart Materials and Applications, Thailand, July, 2021, proceeding published in IOP Conference Series: Materials Science and Engineering 1186 (1), 012001.
19. **Zekri, A. Y.**, Ghannam, M. T., Ben Zekri, H. A., “Interfacial Tension of Hydrocarbon/Water System with Mixed Anionic Surfactants at High Pressures and Temperatures: Optimization of Alkane Number and Salinity,” Accepted for presentation and publication at the 2nd Vietnam Symposium on Advances in Offshore Engineering (VSOE2021-Scopes Indexed), Nov. 1-3, **2021**.
20. Basim Abu-Jdayil. “3D Printing in Food”, 15th Dubai International Food Safety Conference, 18-23 November, 2021. <https://www.foodsafetydubai.com/speaker.aspx>
21. Basim Abu-Jdayil. “DATE PALM SURFACE FIBERS AS A GREEN THERMAL INSULATOR”, ByPalma 2021, 2nd World Conf. on By-products of Palms, 28-30 September, 2021 Online. <https://www.bypalma.com/>

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1. **Abu-Eishah S.I.**, Manal D.M. Raheem, Fatma A.S. Aljasmí, Fatima M.O. Alameri, Amna G.R. Alblooshi, Intesar F.R. Alnahdi. “A Zero-Waste Process for Treatment of Spent Potliner (SPL) Waste.” Chapter in “Current Topics in Recycling” edited by Dr. Dimitris Achilias, published online: **August 2nd, 2021** by IntechOpen Access.
2. **Abu-Eishah, S.I.** Elsuccary, S.A.A., Thikrayat Hazim Hassan Al Attar, Asia A. Sulaiman Lutfi Mohamed Khanji, Hifsa P. Hussain Butt, Nourah M. Rashed Mohamed. “Production of 1-butyl-3-methylimidazolium acetate using 1-Butyl-3-methylimidazolium chloride and Silver Acetate: A Kinetic Study”, Ionic Liquids, Thermophysical Properties Applications" editor: S. M. Sohel Murshed, InTech Online, 2021.
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4. **M. Tahir**, W.K. Fan, B. Tahir, MOF-Based Catalysts for Production of Value-Added Fine Chemicals from Carbon Dioxide, ACS Symposium Series 1393 (2021) 155–171. 10.1021/bk-2021-1393.ch007
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1. S. Al-Zuhair and M. Ismail. US Patent 11,060,120 B1: Methods of Producing Biodiesel from Microalgae using Thermo-Responsive Switchable Solvents
2. **M. Tahir**, S. Tasleem, A.A. Khan, Z.Y. Zakaria (2021). A Max-hase Nanocomposite Catalyst and a Method for Producing and Using Thereof for the Production of Clean Fuel, Patent Application No. PI2021002431.