

Publications

Chemical and Petroleum Engineering

Year 2023

Journals

1. S. Al-Mardeai, M. Aldhaheri, A. AlHashmi, M. Qassem, **S. Al-Zuhair** (2023) Complete Utilization of Date Seeds for Biofuel Production. *Cleaner Engineering and Technology* (Elsevier) 17, 100698
2. E. Sowan, H. Taher, M.S. Mozumder, **S. Al-Zuhair** (2023) Innovative Approaches to Enhanced Enzymatic Microalgae-to-Biodiesel Production. *ChemBioEng Reviews* (Wiley) 167, 110243
3. B. Ogunbadejo, **S. Al-Zuhair** (2023) Cyclodextrin using Cyclodextrin Glycosyltransferase Immobilized on Metal Organic Framework. *Biocatalysis and Agricultural Biotechnology* Elsevier) 53, 102878
4. P.-L Show, Y.-K. Park, **S. Al-Zuhair**, V. Ashokkumar (2023) Guest editorial: special issue on “Microalgae biorefinery: current bottlenecks, challenges, and future directions”. *Phytochemistry Reviews*, 2023, 22(4), pp. 829–831
5. E. Sowan, H. Taher, M.S. Mozumder, **S. Al-Zuhair** (2023) ZIF-8 as support for enhanced stability of immobilized lipase used with a thermoresponsive switchable solvent to simplify the microalgae-to-biodiesel process. *Enzyme and Microbial Technology* (Elsevier) 167, 110243
6. S. Al-Mardeai, E. Elnajjar, R. Hashaikeh, B. Kruczak, B. Van der Bruggen, **S. Al-Zuhair** (2023) Radial Flow Tubular Membrane Bioreactor for Enhanced Enzymatic Hydrolysis of Lignocellulosic Waste Biomass. *FUEL* (Elsevier) 341, 127648
7. Mlhem, A., Abu-Jdayil, B., & Iqbal, M. Z. (2023). High-performance, renewable thermal insulators based on silylated date palm fiber-reinforced poly (β -hydroxybutyrate) composites. *Developments in the Built Environment*, 16, 100240. <https://doi.org/10.1016/j.dibe.2023.100240>
8. Raza, M., Al Abdallah, H., Kozal, M., Al Khaldi, A., Ammar, T., & Abu-Jdayil, B. (2023). Development and characterization of Polystyrene–Date palm surface fibers composites for sustainable heat insulation in construction. *Journal of Building Engineering*, 106982. <https://doi.org/10.1016/j.jobe.2023.106982>
9. Husain, A., & Abu-Jdayil, B. (2023). Recent advances in synthesis techniques for layered double hydroxide composites and hybrids for use in separation of oilfield water-flooding emulsions and wastewater. *International Journal of Thermofluids*, 100520. <https://doi.org/10.1016/j.ijft.2023.100520>
10. Ali, A.H., Alsalmi, M., Alshamsi, R., Tarique, M., Bamigbade, G., Zahid, I., Nazir, M.H., Waseem, M., Abu-Jdayil, B., Kamal-Eldin, A. and Huppertz, T., 2023. Effect of whey protein isolate addition on set-type camel milk yogurt: Rheological properties and biological activities of the bioaccessible fraction. *Journal of Dairy Science*. 106 (12), 8221-8238. <https://doi.org/10.3168/jds.2023-23421>
11. Ali, A. H., Abu-Jdayil, B., Al Nabulsi, A., Osaili, T., Liu, S. Q., Kamal-Eldin, A., & Ayyash, M. (2023). Fermented camel milk influenced by soy extract: Apparent viscosity, viscoelastic properties, thixotropic behavior, and biological activities. *Journal of Dairy Science*, 106(10), 6671-6687. <https://doi.org/10.3168/jds.2023-23294>
12. Bamigbade, G., Ali, A.H., Subhash, A., Tamiello-Rosa, C., Al Qudsi, F.R., Esposito, G., Hamed, F., Liu, S.Q., Gan, R.Y., Abu-Jdayil, B. and Ayyash, M., 2023. Structural characterization, biofunctionality, and environmental factors impacting rheological properties of exopolysaccharide produced by probiotic *Lactococcus lactis* C15. *Scientific reports*, 13(1), p.17888. <https://doi.org/10.1038/s41598-023-44728-w>
13. Raza, M., Abu-Jdayil, B., & Inayat, A. (2023). Pyrolytic kinetics and thermodynamic analyses of date seeds at different heating rates using the Coats–Redfern method. *Fuel*, 342, 127799. <https://doi.org/10.1016/j.fuel.2023.127799>
14. Al-Hamayda, A., Abu-Jdayil, B., & Ayyash, M. (2023). Utilizing date pits in microencapsulation: Effect of different variations on Probiotic survivability under in-vitro digestion. *LWT*, 114917. <https://doi.org/10.1016/j.lwt.2023.114917>

15. Al-Hamayda, A., Abu-Jdayil, B., Ayash, M., & Tannous, J. (2023). Advances in microencapsulation techniques using Arabic gum: A comprehensive review. *Industrial Crops and Products*, 205, 117556. <https://doi.org/10.1016/j.indcrop.2023.117556>
16. Raza, M., & Abu-Jdayil, B. (2023). Synergic interactions, kinetic and thermodynamic analyses of date palm seeds and cashew shell waste co-pyrolysis using Coats–Redfern method. *Case Studies in Thermal Engineering*, 103118. <https://doi.org/10.1016/j.csite.2023.103118>
17. Ali, A. H., Bamigbade, G., Tarique, M., Esposito, G., Obaid, R., Abu-Jdayil, B., & Ayyash, M. (2023). Physicochemical, rheological, and bioactive properties of exopolysaccharide produced by a potential probiotic *Enterococcus faecalis* 84B. *International Journal of Biological Macromolecules*, 240, 124425. <https://doi.org/10.1016/j.ijbiomac.2023.124425>
18. Mbye, M., Ayyash, M., Mohamed, H., Abu-Jdayil, B., Kamleh, R., & Kamal-Eldin, A. (2023). Effects of ultrafiltration followed by heat or high-pressure treatment on camel and bovine milk cheeses. *NFS Journal*, 31, 123-132. <https://doi.org/10.1016/j.nfs.2023.04.004>
19. AlHarmoodi, K., Idrisi, A. H., Mourad, A. H. I., & Abu-Jdayil, B. (2023). Utilization of Mechanically Recycled Carbon Fibers in Vinyl Ester Composites. *Polymers*, 15(4), 1016. <https://doi.org/10.3390/polym15041016>
20. Olaimat, A., Tarique, M., Al Nabulsi, A., Bamigbade, G., Ali, L., MinAllah, S., Kuttyathil, M.S., Abu-Jdayil, B., Liu, S.Q., Kamal-Eldin, A. and Ayyash, M., 2023. Enhancing the Rheological, Gelation, and Functional Properties of Camel Milk Yogurt with Pea Extract. *ACS Food Science & Technology*. 3(11), pp. 1988–2000. <https://doi.org/10.1021/acsfoodscitech.3c00366>
21. Ghannam, M. T., Abu-Jdayil, B., Selim, M. Y., & Esmail, N. (2023). Comparison of synthetic and natural polymers-oil emulsions in terms of viscous and elastic behaviors. *Petroleum Science and Technology*, 1-19. <https://doi.org/10.1080/10916466.2022.2072332>
22. Othman, I., Pal, P., Abu Haija, M., Hassan, S. W., Abu-Jdayil, B., AlKhateeb, B., & Banat, F. (2023). Extraction of crystalline nanocellulose from palm tree date seeds (*Phoenix dactylifera* L.). *Chemical Engineering Communications*, 210(1), pp. 61–73. <https://doi.org/10.1080/00986445.2021.2001458>
23. Yañez Jaramillo, L. M., Tannous, J. H., & de Clerk, A. (2023). Persistent Free Radicals in Petroleum. *Processes*, 11(7), 2067.
24. Sivaramakrishnan, K., Tannous, J. H., & Chandrasekaran, V. (2023). Prediction of Thermogravimetric Data for Asphaltenes Extracted from Deasphalted Oil Using Machine Learning Techniques. *Industrial & Engineering Chemistry Research*, 62(43), 17787-17804.
25. Chauhan, S., Shaik, M.A. (2023). Simultaneous scheduling and synthesis of water allocation networks, *Water*, 15, 210-245.
26. Anil Kumar, Y.; Kooyada, G.; Kumar Kulurumotlakatla, D.; Kim, J.H.; Moniruzzaman, M.; **Alzahmi, S.**; Obaidat, I.M. In Situ Grown Mesoporous Structure of Fe-Dopant@NiCoO_x@NF Nanoneedles as an Efficient Supercapacitor Electrode Material. *Nanomaterials* **2023**, 13, 292.
27. Sajid, S.; **Alzahmi, S.**; Wei, D.; Salem, I.B.; Park, J.; Obaidat, I.M. Diethanolamine Modified Perovskite-Substrate Interface for Realizing Efficient ESL-Free PSCs. *Nanomaterials* **2023**, 13, 250.
28. Sajid, S.; **Alzahmi, S.**; Salem, I.B.; Park, J.; Obaidat, I.M. Lead-Free Perovskite Homojunction-Based HTM-Free Perovskite Solar Cells: Theoretical and Experimental Viewpoints. *Nanomaterials* **2023**, 13, 983.
29. Anil Kumar, Y.; Kooyada, G.; Ramachandran, T.; Kim, J.H.; Sajid, S.; Moniruzzaman, M.; **Alzahmi, S.**; Obaidat, I.M. Carbon Materials as a Conductive Skeleton for Supercapacitor Electrode Applications: A Review. *Nanomaterials* **2023**, 13, 1049.
30. Gopi, C.V.V.M.; Ramesh, R.; Vinodh, R.; **Alzahmi, S.**; Obaidat, I.M. Facile Synthesis of Battery-Type CuMn₂O₄ Nanosheet Arrays on Ni Foam as an Efficient Binder-Free Electrode Material for High-Rate Supercapacitors. *Nanomaterials* **2023**, 13, 1125.
31. Arbi, H.M.; Kooyada, G.; Anil Kumar, Y.; Kumar Kulurumotlakatla, D.; Kim, J.H.; Moniruzzaman, M.; **Alzahmi, S.**; Obaidat, I.M. Hierarchically Developed Ni(OH)₂@MgCo₂O₄ Nanosheet Composites for Boosting Supercapacitor Performance. *Nanomaterials* **2023**, 13, 1414.

32. Arbi, H.M.; Vijayalakshmi, L.; Anil Kumar, Y.; **Alzahmi, S.**; Gopi, C.V.V.M.; Rusydi, A.; Obaidat, I.M. A Facile Two-Step Hydrothermal Synthesis of Co(OH)2@NiCo2O4 Nanosheet Nanocomposites for Supercapacitor Electrodes. *Nanomaterials* 2023, 13, 1981.
33. Almahri, G.; Madi, K.; Alkaabi, F.; Badran, Y.; Shehadeh, K.; ElHassan, A.; Ahmed, W.; **Alzahmi, S.** Characterization of Hybrid FRP Composite Produced from Recycled PET and CFRP. *Polymers* 2023, 15, 2946.
34. Sajid, S., **Alzahmi, S.**, Salem, I., Park, I., Obaidat, I., Inorganic Hole Transport Materials in Perovskite Solar Cells are Catching Up, *Materials Today Energy*, 2023, 101378
35. N. Ghasem, Efficient CO₂ absorption through wet and falling film membrane contactors: insights from modeling and simulation, *Sci. Rep.* 13 (2023) 10994. <https://doi.org/10.1038/s41598-023-38249-9>.
36. N. Ghasem, Modeling the Effectiveness of Hollow Fiber Membrane Contactors for CO₂ Capture Using Ionic Liquids: A Comparative Study, *J. Membr. Sci. Res.* 9 (2023). <https://doi.org/10.22079/JMSR.2023.2005926.1617>.
37. N. Ghasem, Modeling and Simulation of a Multizone Circulating Reactor for Polyethylene Production with Internal Cooling, *Polymers (Basel)*. 15 (2023). <https://doi.org/10.3390/polym15183741>.
38. M. Waseem, M. Al-Marzouqi, N. Ghasem, A review of catalytically enhanced CO₂-rich amine solutions regeneration, *J. Environ. Chem. Eng.* 11 (2023). <https://doi.org/10.1016/j.jece.2023.110188>.
39. J. Mustafa, A.H. Al-Marzouqi, N. Ghasem, M.H. El-Naas, B. Van der Bruggen, Electrodialysis process for carbon dioxide capture coupled with salinity reduction: A statistical and quantitative investigation, *Desalination*. 548 (2023). <https://doi.org/10.1016/j.desal.2022.116263>.
40. Usman Saeed, Aqeel Ahmad Taimoor, Sami Ullah Rathur, Hesham Alhumade, Hamad AlTuraif, Hisham S Bamufleh, Ehtisham Siddiqui and Al Zaitone, B., Sustainable jute fiber reinforced polylactic acid composite: Thermochemical and thermomechanical characteristics. *Journal of Composite Materials*, 57(7):1363-1376, **2023**.
41. Abdulrazag Y. Zekri , Hala K. Alshadafan, **Mamdouh T. Ghannam**, Essa G. Lwisa , Fathi H. Boukadi (2023), "Design of low salinity waterflooding for oil-wet and water-wet carbonate reservoirs", *World Journal of Engineering and Technology* 9 (10), 93-114 (2023).
42. AM Ansari, LA Memon, **Mamdouh T. Ghannam**, MYE Selim, "Impact of Biodiesel Blended fuel with Nanoparticles on Performance and Noise Emission in Compression Ignition Engine", *International Journal of Thermofluids*, 100390 (2023).
43. **Mamdouh T. Ghannam**, Basim Abu-Jdayil, Mohamed Y. E. Selim, and Nabil Esmail, "Comparison of Synthetic and Natural Polymers-Oil-Emulsions in Terms of Viscous and Elastic Behaviors", *Petroleum Science and Technology* 41 (9), 959-977 (2023).
44. **Mamdouh T. Ghannam**, Mohamed Y.E. Selim, Ahmed Taher, Alyazia Binamro, Mayasa Amansoori, Sami Abdallah "Flow Characteristics of Jojoba and Other Oil Blends for Skin Treatment Fluids", *International Journal of Thermofluids* 18, 100362 (2023).
45. **Mamdouh T. Ghannam**, Mohamed Y. E. Selim, Abdulrazag Y. Zekri and Nabil Esmail, "Rheological Assessment of Oil-Xanthan Emulsions in Terms of Complex, Storage, and Loss Moduli", *Polymers* 15 (2), 470 (2023).
46. Alabedkhilil, A.; **Sivaramakrishnan, K.***; Ali, L.; Shittu, T.; Kuttiyathil, M. S.; Khaleel, A.; Altarawneh, M. Partial hydrogenation of 1, 3-butadiene over nickel with alumina and niobium supported catalysts. *Arabian Journal of Chemistry* 2024, 17 (1), 105406.
47. Ali, L.; **Sivaramakrishnan, K.***; Kuttiyathil, M. S.; Chandrasekaran, V.; Ahmed, O. H.; Al-Harahsheh, M.; Altarawneh, M. Prediction of Thermogravimetric Data in Bromine Captured from Brominated Flame Retardants (BFRs) in e-Waste Treatment Using Machine Learning Approaches. *J. Chemical Information Modelling* 2023, 63 (8), 2305–2320.
48. Ali, L.; **Sivaramakrishnan, K.***; Kuttiyathil, M. S.; Chandrasekaran, V.; Ahmed, O. H.; Al-Harahsheh, M.; Altarawneh, M. Prediction of Thermogravimetric Data in the Thermal Recycling of e-waste Using Machine Learning Techniques: A Data-Driven Approach. *ACS Omega* 2023, 8 (45), 43254 – 43270.
49. **Sivaramakrishnan, K.**; Tannous, J. H.; Chandrasekaran, V. Prediction of Thermogravimetric Data for Asphaltenes Extracted from DE asphalted Oil Using Machine Learning Techniques. *Ind. Eng. Chem. Res.* 2023, 62 (43), 17787 – 17804.

50. Kuttiyathil, M. S.; **Sivaramakrishnan, K.**; Ali, L.; Shittu, T.; Iqbal, M. Z.; Khaleel, A.; Altarawneh, M. Catalytic Upgrading of Pyrolytic Bio-Oil from Salicornia Bigelovii Seeds for Use as Jet Fuels: Exploring the Ex-Situ Deoxygenation Capabilities of Ni/H-Beta zeolite Catalyst. *Bioresource Technology Reports* 2023, 22, 101437.
51. Ali, L.; **Sivaramakrishnan, K.**; Kuttiyathil, M. S.; Chandrasekaran, V.; Ahmed, O. H.; Al-Harahsheh, M.; Altarawneh, M. Degradation of Tetrabromobisphenol A (TBBA) with calcium hydroxide: A thermo-kinetic analysis. *RSC Advances* 2023, 13, 6966–6982.
52. Ali, L.; Shittu, T.; Kuttiyathil, M. S.; Alam, A.; Iqbal, M. Z.; Khaleel, A.; **Sivaramakrishnan, K.**; Altarawneh, M. Catalytic upgrading of bio-oil from halophyte seeds into transportation fuels. *Journal of Bioresources and Bioproducts* 2023, 8 (4), 444 – 460.
53. Eyad Sowan; **Mohammad Sayem Mozumder**; Hanifa Taher; Sulaiman Al-Zuhair (2023) A Review on new methods for enhancing enzymatic microalgae-to-biodiesel production processes, *ChemBioEng Reviews*, 10, 1-25.
54. Eyad Sowan; Hanifa Taher; **MS Mozumder**; Sulaiman Al-Zuhair (2023) ZIF-8 as support for enhanced stability of immobilized lipase used with a thermoresponsive switchable solvent to simplify the microalgae-to-biodiesel process, *Enzyme and Microbial Technology*, 167, 110243.
55. C Nizamudeen; R Krishnapriya; **MS Mozumder**; AHI Mourad; T. Ramachandran (2023) Photovoltaic performance of MOF-derived transition metal doped titania-based photoanodes for DSSCs, *Scientific Reports*, 13 (1), 6345.
56. AHI Mourad, JV Christy, PK Krishnan, **MS Mozumder** (2023) Production of novel recycled hybrid metal matrix composites using optimized stir squeeze casting technique, *Journal of Manufacturing Processes*, 88, 45-58.
57. Zaid Ahsan Khan; Saidur R. Chowdhury; Bijoy Mitra; **Mohammad Sayem Mozumder**; Alaeldeen Ibrahim Elhaj; Babatunde A. Salami; Muhammad Muhitur Rahman; Syed Masiur Rahman (2023) Analysis of Industrial Symbiosis case studies and its potential in Saudi Arabia, *Journal of Cleaner Production*, 385, 135536.
58. Laghari, M.S., Wahyudie, A., Hassan, A., Alraeesi, A., Haggag, M. (2024). A Course Study Planning Framework – An Engineering Perspective. In: Patel, K.K., Santosh, K., Patel, A., Ghosh, A. (eds) Soft Computing and Its Engineering Applications. icSoftComp 2023. Communications in Computer and Information Science, vol 2031. Springer, Cham. https://doi.org/10.1007/978-3-031-53728-8_17
59. Shah, Ali Hasan, **Abdulrahman Alraeesi**, Ahmed Hassan, and Mohammad Shakeel Laghari. 2023. "A Novel Photovoltaic Panel Cleaning and Cooling Approach through Air Conditioner Condensate Water" *Sustainability* 15, no. 21: 15431. <https://doi.org/10.3390/su152115431>
60. **Alraeesi, Abdulrahman**, Ali Hasan Shah, Ahmed Hassan, and Mohammad Shakeel Laghari. 2023. "Characterisation of Dust Particles Deposited on Photovoltaic Panels in the United Arab Emirates" *Applied Sciences* 13, no. 24: 13162. <https://doi.org/10.3390/app132413162>.
61. Abdulrazag Y. Zekri, Hala K. Alshadafan, Mamdouh T. Ghannam, Essa G. Lwisa , Fathi H. Boukadi (2023), "Design of Low Salinity Waterflooding for Oil-Wet and Water-Wet Carbonate Reservoirs," *World Journal of Engineering and Technology IF:5.924 and ICV: 79.45, 2023, Vol. 9, Issue 10, 93-114.*
62. Sun, L., Sun, X. H., Zhang, Y. C., Xin, J., Sun, H. Y., Li, Y. B., **Tang, J.** & Wei, B. (2023). Stability of High-Salinity-Enhanced Foam: Surface Behavior and Thin-Film Drainage. *Petroleum Science*.
63. Wang, L., Wei, B., You, J., Pu, W., **Tang, J.**, & Lu, J. (2023). Performance of a Tight Reservoir Horizontal Well Induced by Gas Huff-n-Puff Integrating Fracture Geometry, Rock Stress-Sensitivity and Molecular Diffusion: A Case Study Using CO₂, N₂ and Produced Gas. *Energy*, 263, 125696.
64. Wei, B., Wang, L., Mao, R., Yu, G., Wang, D., Lu, J., & **Tang, J.** (2023). Understanding Imbibition Mechanisms of Cationic Surfactant-Stabilized Nanoemulsion for Enhanced Oil Recovery in Tight Sandstone Reservoirs: Experimental and Numerical Assessment. *SPE Journal*, 1-16.
65. Wei, B., Li, Q., Yang, W., Wang, Y., Lu, J., & **Tang, J.** (2023). In-Situ Visualization of Imbibition Process Using a Fracture-Matrix Micromodel: Effect of Surfactant Formulations toward Nanoemulsion and Microemulsion. *SPE Journal*, 1-15.

66. Adi, M.A. and M. Altarawneh, *Formation of perfluorocarboxylic acids (PFCAs) from thermolysis of Teflon model compound*. Environmental Science and Pollution Research, 2023. **30**(8): p. 21360-21367.
67. Adi, M.A. and M. Altarawneh, *Formation of perfluorocarboxylic acids (PFCAs) from thermolysis of Teflon model compound*. Environmental Science and Pollution Research, 2023. **30**(8): p. 21360-21367.
68. Adi, M.A. and M. Altarawneh, *Atmospheric oxidation of unsaturated hydrofluoroethers initiated by OH radicals*. Atmospheric Environment, 2023. **307**.
69. Al-Harahsheh, M., N.A. Olaem, O. Tahat, and M. Altarawneh, *Pressure leaching of aluminum from kaolin by HCl: Experimental and DFT study*. Hydrometallurgy, 2023. **221**.
70. Alhariri, Y., L. Ali, and M. Altarawneh, *Mechanochemical debromination of allyl 2,4,6-tribromophenyl ether (TBP-AE): optimization of the operational conditions*. Environmental Science and Pollution Research, 2023. **30**(37): p. 87118-87128.
71. Ali, L., M.S. Kuttiyathil, O.H. Ahmed, and M. Altarawneh, *Separation of bromine and hydrocarbons from polymeric constituents in e-waste through thermal treatment with calcium hydroxide*. Separation and Purification Technology, 2023. **307**.
72. Ali, L., M.S. Kuttiyathil, M. Al-Harahsheh, and M. Altarawneh, *Kinetic parameters underlying hematite-assisted decomposition of tribromophenol*. Arabian Journal of Chemistry, 2023. **16**(3).
73. Ali, L., T. Shittu, M.S. Kuttiyathil, A. Alam, M.Z. Iqbal, A. Khaleel, K. Sivaramakrishnan, and M. Altarawneh, *Catalytic upgrading of bio-oil from halophyte seeds into transportation fuels*. Journal of Bioresources and Bioproducts, 2023. **8**(4): p. 444-460.
74. Ali, L., K. Sivaramakrishnan, M.S. Kuttiyathil, V. Chandrasekaran, O.H. Ahmed, M. Al-Harahsheh, and M. Altarawneh, *Prediction of Thermogravimetric Data in the Thermal Recycling of e-waste Using Machine Learning Techniques: A Data-driven Approach*. ACS Omega, 2023. **8**(45): p. 43254-43270.
75. Ali, L., K. Sivaramakrishnan, M.S. Kuttiyathil, V. Chandrasekaran, O.H. Ahmed, M. Al-Harahsheh, and M. Altarawneh, *Degradation of tetrabromobisphenol A (TBBA) with calcium hydroxide: a thermo-kinetic analysis*. RSC Advances, 2023. **13**(10): p. 6966-6982.
76. Ali, L., K. Sivaramakrishnan, M.S. Kuttiyathil, V. Chandrasekaran, O.H. Ahmed, M. Al-Harahsheh, and M. Altarawneh, *Prediction of Thermogravimetric Data in Bromine Captured from Brominated Flame Retardants (BFRs) in e-Waste Treatment Using Machine Learning Approaches*. Journal of Chemical Information and Modeling, 2023. **63**(8): p. 2305-2320.
77. Al-Kwadi, M., L. Ali, and M. Altarawneh, *Predicting the Decomposition Mechanism of the Serine α-Amino Acid in the Gas Phase and Condensed Media*. ACS Omega, 2023.
78. Al-Kwadi, M., L. Ali, and M. Altarawneh, *Kinetic parameters for H abstraction from the serine amino acid molecule*. Computational and Theoretical Chemistry, 2023. **1225**.
79. Altarawneh, M., N.W. Assaf, H.M. Hussain, and B.Z. Dlugogorski, *Structural properties of alumina surfaces and their roles in the synthesis of environmentally persistent free radicals (EPFRs)*. Nanotechnology Reviews, 2023. **12**(1).
80. Amri, A., A. Amartya, Y. Ilham, S. Sutikno, S. Reni Yenti, B. Ibrahim, D. Heltina, N. Mondinos, M. Altarawneh, and Z.T. Jiang, *The addition of low-cost few layers graphene (FLG) to improve flexural strength of coal fly ash based geopolymers*. Journal of Materials Research and Technology, 2023. **24**: p. 8849-8855.

81. Hamid, A.H., L. Ali, T. Shittu, M.S. Kuttyathil, O. Ismail, A. Khaleel, and M. Altarawneh, *Transformation of levoglucosan into liquid fuel via catalytic upgrading over Ni-CeO₂ catalysts*. Molecular Catalysis, 2023. **547**.
82. Ismail, O., L. Ali, M. Shafi Kuttyathil, M.Z. Iqbal, A. Khaleel, and M. Altarawneh, *Formation of value-added products from the pyrolysis of date pits: A combined experimental-DFT approach*. Biomass and Bioenergy, 2023. **174**.
83. Ismail, O., A. Hamid, L. Ali, T. Shittu, M.S. Kuttyathil, M.Z. Iqbal, A. Khaleel, and M. Altarawneh, *Selective formation of fuel BXT compounds from catalytic hydrodeoxygenation of waste biomass over Ni-decorated beta-zeolite*. Bioresource Technology Reports, 2023. **24**.
84. Jabeen, S., X. Gao, J.I. Hayashi, M. Altarawneh, and B.Z. Dlugogorski, *Effects of product recovery methods on the yields and properties of hydrochars from hydrothermal carbonization of algal biomass*. Fuel, 2023. **332**.
85. Jaf, Z.N., H.A. Miran, Z.T. Jiang, and M. Altarawneh, *Molybdenum nitrides from structures to industrial applications*. Reviews in Chemical Engineering, 2023. **39**(3): p. 329-361.
86. Kuttyathil, M.S., L. Ali, O.H. Ahmed, and M. Altarawneh, *Combating toxic emissions from thermal recycling of polymeric fractions laden with novel brominated flame retardants (NBFRs) in e-waste: an in-situ approach using Ca(OH)₂*. Environmental Science and Pollution Research, 2023. **30**(43): p. 98300-98313.
87. Kuttyathil, M.S., K. Sivaramakrishnan, L. Ali, T. Shittu, M. Z.Iqbal, A. Khaleel, and M. Altarawneh, *Catalytic upgrading of pyrolytic bio-oil from Salicornia bigelovii seeds for use as jet fuels: Exploring the ex-situ deoxygenation capabilities of Ni/Ze catalyst*. Bioresource Technology Reports, 2023. **22**.
88. Miran, H.A., Z.N. Jaf, M. Al Tarawneh, M.M. Rahman, A.T. Al-Bayati, and E. M-T. Salman, *First-Principles Analysis of Cr-Doped SrTiO₃ Perovskite as Optoelectronic Materials*. Iranian Journal of Materials Science and Engineering, 2023. **20**(1).
89. Mondinos, N., M. Altarawneh, A. Amri, W.Y. Hsien Liew, G.E. Jai Poinern, and Z.T. Jiang, *Monatomic reactions with single vacancy monolayer h-BN: DFT studies*. RSC Advances, 2023. **13**(43): p. 30346-30357.
90. Mulwanda, J., G. Senanayake, H.C. Oskierski, M. Altarawneh, and B.Z. Dlugogorski, *Extraction of lithium from lepidolite by sodium bisulphate roasting, water leaching and precipitation as lithium phosphate from purified leach liquors*. Hydrometallurgy, 2023. **222**.
91. Razmgar, K., T. Shittu, I. Oluwoye, A. Khaleel, G. Senanayake, and M. Altarawneh, *Thermochemical activation of CO₂into syngas over ceria-supported niobium oxide catalyst: An integrated experimental-DFT study*. Journal of CO₂ Utilization, 2023. **67**.

Conference

1. B. Ogunbadejo, **S. Al-Zuhair** (2023) Food-waste valorization using cyclodextrin glycosyltransferase immobilized on macroporous metal organic frameworks. Canadian Chemical Engineering Conference, Calgary, Canada.
2. Tannous, J. H. (2023). Free radicals in oil-derived samples: A quantitative analysis. American Chemical Society Spring 2023 Meeting, March, 2023.
3. Kumar, V., Shaik, M.A. (2023). Comparative analysis and improved scheduling model for multi-stage biopharmaceutical processes", 33rd European Symposium on Computer Aided Process Engineering (ESCAPE33), 18-21 June 2023, Athens, Greece.

4. N. Ghasem, M. Al-Marzouqi, Development and evaluation of a hollow fiber membrane contactor for carbon dioxide capture, in: Proc. SPIE - Int. Soc. Opt. Eng., Department of Chemical and petroleum engineering, UAE University, Al-Ain, United Arab Emirates, 2023. <https://doi.org/10.1117/12.3011404>.
5. Al Zaitone, B., Acoustic Levitation: A Novel Experimental Tool to Study Drying Kinetics and Particle Formation of Pharmaceutical Excipients. American Association of Pharmaceutical Scientists 22 Oct. 2023, Orlando, USA.
6. Sivaramakrishnan, K. Investigation of the role of VO²⁺ radicals in the viscosity of Canadian oilsands bitumen. American Chemical Society, Spring 2023 Meeting, March 2023.
7. Mousa, N., Abu-Jdayil, B., Zekri, A.Y., "Outstanding Rheological Performance of Imidazolium-Based Ionic Liquids for Enhanced Oil Recovery," paper presented at the 2023 Advances in Science and Engineering Technology International Conferences (ASET) Feb. 20 - 23, 2023.
8. Zekri, A., Al-Tamimi, S., Ghannam, M. T., "Estimation of Carbon Dioxide Storage Capacity in Saline Aquifer: A New Approach," paper presented (keynote speaker) at the 3rd International Conference on Applied Science & Engineering held during October 23-24, 2023, at Bangkok, Thailand.
9. Mousa, N., Abu-Jdayil, B., Zekri, A.Y., "Rheological Behavior of Imidazolium-Based Ionic Liquids for Enhanced Oil Recovery," paper accepted for Presentation at *st Middle East Chemical Engineering Symposium (MEChES 2023), 18th -19th October 2023, Abu Dhabi, UAE*.
10. Yu, G., Tang, J., Li, L., & Rossen, W. (2023). Mechanistic Investigation of Vertical Sweep Efficiency in Miscible CO₂-Water-Coinjection for EOR and CCUS. In 84th EAGE Annual Conference & Exhibition (Vol. 2023, No. 1, pp. 1-5). *European Association of Geoscientists & Engineers*.
11. Tang, J., Wang, Y., & Rossen, W. R. (2023). Upscaling of Modeling of Thermal Dispersion in Stratified Geothermal Formations. Presented in 2023 *Abu Dhabi International Petroleum Exhibition and Conference* (p. D041S124R005), SPE.

Book Chapters

1. Abu-Jdayil, B. (2023). Application of UPR in thermal insulation systems. In Applications of Unsaturated Polyester Resins (pp. 267-308). Elsevier. <https://doi.org/10.1016/B978-0-323-99466-8.00016-2>
2. A.R. Nihmiya, N. Ghasem, Environmental effects of dust release from oil, gas, and petrochemical units, in: Cris. Oil, Gas Petrochemical Ind. Disasters Environ. Challenges, 2023: pp. 335–354. <https://doi.org/10.1016/B978-0-323-95154-8.00019-0>.
3. A.R. Nihmiya, N. Ghasem, Introduction to safe design and standards, in: Cris. Oil, Gas Petrochemical Ind. Loss Prev. Disaster Manag., 2023: pp. 3–27. <https://doi.org/10.1016/B978-0-323-95163-0.00005-0>.
4. N. Ghasem, Toxicity aspects, disposal, recycling, environmental, safety, and health issues of fluoropolymer nanocomposites, in: Adv. Fluoropolymer Nanocomposites Fabr. Process. Charact. Appl., 2023: pp. 809–820. <https://doi.org/10.1016/B978-0-323-95335-1.00014-1>.

Patents

1. **US Patent 0265374 A1:** Simultaneous Enzymatic Cellulose Hydrolysis and Product Separation in a Radial-Flow Membrane Bioreactor
2. Abu-Jdayil, Basim, and Hyder Al Abdallah. "Methods of making and using a composite material, for dehydration of gases." U.S. Patent 11,759,765, issued September 19, 2023. <https://patents.google.com/patent/US11759765B1/en>
3. Hittini, Waseem, Abdelhamid Ismail Mourad, and Basim Abu-Jdayil. "Buffing dust waste/polystyrene thermal insulator." U.S. Patent 11,814,510, issued November 14, 2023. <https://patents.google.com/patent/US11814510B2/en>