

List of Publication (2021-2022)

1. R Renuga, A Manikandan, J Arul Mary, A Muthukrishnaraj, Anish Khan, S Srinivasan, Basem Abdullah M Al Alwan, Khalid Mohamed Khedher. Enhanced Magneto-Optical, Morphological, and Photocatalytic Properties of Nickel-Substituted SnO₂ Nanoparticles. *Journal of Superconductivity and Novel Magnetism*. 2021. 34. 825-836.
2. Tahir Khan, Zi-Shan Qian, Roman Ullah, Basem Al Alwan, Gul Zaman, Qasem M Al-Mdallal, Youssef El Khatib, Khaled Kheder. The transmission dynamics of hepatitis B virus via the fractional-order epidemiological model. *Complexity*. 2021. 2021. 1-18.
3. Lei Zhang, Saif Ullah, Basem Al Alwan, Ahmed Alshehri, Wojciech Sumelka. Mathematical assessment of constant and time-dependent control measures on the dynamics of the novel coronavirus: An application of optimal control theory. *Results in Physics*. 2021. 31. 104971.
4. Mohammed K Al Mesfer, Abdelfattah Amari, Mohd Danish, Basem Abdullah Al Alwan, Mumtaj Shah. Simulation study of fixed-bed CO₂ adsorption from CO₂/N₂ mixture using activated carbon. *Chemical Engineering Communications*. 2021. 208. 1358-1367.
5. MK Al Mesfer, M Danish, BA Al Alwan, NS Awwad. CO₂ sorption from a mixture of N₂/CO₂ using an activated carbon and silica gel: equilibrium, breakthrough, column efficiency and mass transfer zone. *GLOBAL NEST JOURNAL*. 2021. 23. 1-12.
6. T Salahuddin, Nazim Siddique, Mair Khan, Basem Al Alwan, Mohammed Almesfer. Outlining the influence of thermal and solutal stratifications on mixed convection second grade fluid flow near an irregular cylinder with induced magnetic field. *Waves in Random and Complex Media*. 2021. 1-22.
7. K.B. Ansari, B. Kamal, S. Beg, M.A.W. Khan, M.S. Khan, M. K. Al Mesfer, M. Danish, Recent developments in investigating reaction chemistry and transport effects in biomass fast pyrolysis: a review, *Renewable and Sustainable Energy Reviews*, 150, 111454, 2021
8. M. K. Al Mesfer, M. Danish, B.A.Alwan, N.S. Awwad, CO₂ sorption from a mixture of N₂/CO₂ using an activated carbon and silica gel: equilibrium, breakthrough, column efficiency and mass transfer zone, *Global Nest Journal*, 23, 2, 1-12, 2021
9. M. Danish, M.K. Al Mesfer, K.B.Ansari, M.Hasan, A.Amari, B.Azeem, Predicting conduction heat flux through macrolayer in nucleate pool boiling, *Energies*, 14, 13, 3893, 2021
10. Mohammed K. Al Mesfer, Abdelfattah Amari, Mohd Danish, Basem Abdulla Al Alwan and Mumtaj Shah, Simulation study of fixed-bed CO₂ adsorption study from CO₂/N₂ mixture using activated carbon, *Chemical Engineering Communications*, 208, 9, 1358-1367, 2021
11. M. Danish, V. Parthasarthy, M.K.Al Mesfer, CO₂ capture by low-cost date pits-based activated carbon and silica gel, *Materials*, 14,14, 3885, 2021

12. M. Danish, V. Parthasarthy, M.K. Al Mesfer, Comparative study of CO₂ capture by adsorption in sustainable date pits-derived porous activated carbon and molecular sieve, International Journal of Environmental Research and Public Health, 18,16, 8497, 2021.
13. M. K. Al Mesfer, M. Danish, M. Shah, Synthesis and optimization of hydrotalcite derived Ni-Fe-Cu based catalysts for catalytic methane decomposition process using the design of experiment approach, Journal of Taiwan Institute of Chemical Engineers, 2021
14. M.Danish, V. Parthasarthy, M.K. Al Mesfer, CO₂ capture using activated carbon synthesized from date stone: breakthrough, equilibrium, and mass transfer zone, Carbon Letters, 2021.
15. M.K.Al Mesfer, M. Danish, M.Shah, Optimization of fluoride adsorption from aqueous solution over mesoporous titania-alumina composites using Taguchi method, Water Environment Research, 94 (1), 2022
16. K.B. Ansari, V.G.Gaikar, Q.T.Trinh, M.S. Khan, A.Banerjee, D.R.Kanchan, M.K.Al Mesfer, M.Danish, Carbon dioxide capture over amine functionalized styrene divinylbenzene copolymer: An experimental batch and continuous studies, Journal of Environmental Chemical Engineering, 10, 106910, 2022.
17. M.K. Al Mesfer, M. Danish, M. Shah, Synthesis, evaluation, and kinetic assessment of Co-based catalyst for enhanced methane decomposition reaction for hydrogen production, International Journal of Chemical Kinetics, Available online, 54, 2, 90-103, 2022
18. M.Shah, M. Danish, M.K.Al Mesfer, Effect of titania synthesis conditions on the catalytic performance of mesoporous Ni/TiO₂ catalysts for carbon dioxide reforming of methane, International Journal of Hydrogen Energy, 47, 1, 2022
19. Javed Mallick, Vijay P Singh, Mohammed K Almesfer, Swapan Talukdar, Majed Alsubhi, Mohd Ahmed, Roohul Abad Khan, Spatio-temporal analysis and simulation of land cover changes and their impacts on land surface temperature in urban agglomeration of Bisha Watershed, Saudi Arabia, Geocarto International, 1-27, 2021.
20. Javed Mallick, Swapan Talukdar, Nabil Ben Kahla, Mohd Ahmed, Majed Alsubih, Mohammed K Almesfer, Abu Reza Md Towfiqul Islam, A Novel Hybrid Model for Developing Groundwater Potentiality Model Using High Resolution Digital Elevation Model (DEM) Derived Factors, Water, 13,19, 2632, 2021
21. Bushra Fatima, Basem Al Alwan, Sharf Ilahi Siddiqui, Rabia Ahmad, Mohammed Almesfer, Manoj Kumar Khanna, Ruby Mishra, Rangnath Ravi, Seungdae Oh, Facile Synthesis of Cu-Zn Binary Oxide Coupled Cadmium Tungstate (Cu-ZnBO-Cp-CT) with Enhanced Performance of Dye Adsorption, Water, 13,22, 3287, 2021.
22. Ahmed Tawfik, Marwa H Bakr, Mahmoud Nasr, Junaid Haider, Hankwon Lim, Muhammad Abdul Qyum, Su Shiung Lam, Economic and environmental sustainability for anaerobic biological treatment of wastewater from paper and cardboard manufacturing industry, Chemosphere, 289, 133166, 2022.

23. T Salahuddin, Nazim Siddique, Mair Khan, Basem Al Alwan, Mohammed Almesfer, The role of enthalpy and activation energy on thermophysical properties of third grade fluid near a magnetized radioactive irregular wavy surface, Results in Physics, 34,105063, 2022.
24. Rabia Ahmed, Sharf Ilahi Siddiqui, Basem Al Alwan, Mohammed Almesfer, Manoj Kumar Khanna, Bushra Fatima, Ruby Mishra, Mohammed Afzal Ansari, Seungdae Oh, Biodegradable acid based nanocomposite-CuO-ZnO-Ni(OH)₂/PA: A novel material for water cleansing, Journal of Cleaner Production,341, 130860, 2022.
25. Javed Mallick, Swapan Talukdar, Mohammed K Almesfer, Majed Alsubih, Mohd Ahmed, Abu Reza Md Towfiqul Islam, Identification of rainfall homogenous regions in Saudi Arabia for experimenting and improving trend detection techniques, Environmental and Pollution Reserch, 29,17,25112-25137, 2022.
26. Rajwali Khan, Mohammed Ilyas Khan, Mohammed Khaloufa Almesfer, Abubakr Elkhaleefa, Ismat Hassan Ali, Asad Ullah, Nasir Rahman, Mohammad Sohail, Abid Ali Khan, Aurangzeb Khan, The structural and dilute magnetic properties of (Co, Li) co-doped-ZnO semiconductor nanoparticles, MRS Communications, 12,2, 154-159, 2022.
27. Javed Mallick, Majed Alsubih, Mohd Ahmed, Mohammed K Almesfer, Nabil Ben Kahla, Assessing the Spatiotemporal Heterogeneity of Terrestrial Temperature as a Proxy to Microclimate and Its Relationship With Urban Hydro-Biophysical Parameters, Frontiers in Ecology and Evolution, 10, 878375, 2022.
28. Kebir M, Bourzami R, Nasrallah N, lebouachera S, dergal F, Ladji R, Trari M, Ben Harharah H, El Jery A, Ahmed Amine Azzaz, Pharmaceutical pollutants adsorption on to Activated Carbon: Isotherm, kinetic investigations and DFT modeling approaches, Comptes Rendus Chimie, 15th March 2022, DOI: 10.5802/crchim.16
29. Ramzi H. Harharah, Ghassan M. T. Abdall, Abubakr Elkhaleefa, Ihab Shigidi and Hamed N. Harharah, A Study of Copper (II) Ions Removal by Reverse Osmosis under Various Operating Conditions, Separations 2022, 9, 155. <https://doi.org/10.3390/separations9060155>
30. Salim Boulkhessaim, Amel Gacem , Samreen Heena Khan, Abdelfattah Amari, Virendra Kumar Yadav, Hamed N. Harharah, Abubakr M. Elkhaleefa, Krishna Kumar Yadav, Sami-ullah Rather, Hyun-Jo Ahn 8 and Byong-Hun Jeon, Emerging Trends in the Remediation of Persistent Organic Pollutants Using Nanomaterials and Related, Nanomaterials 2022, 12, 2148. <https://doi.org/10.3390/nano12132148>
31. Ihab Shigidi, Ramzi. Harharah, Ghassan Mohamed Taha Abdalla, Abubakar Elkhaleefa, Norah S. Alsaiari, Hamid Harharah, Abdelfattah Amari, Mohamed Hassan Sayed, Studying Different Operating Conditions on Reverse Osmosis Performance in the Treatment of Wastewater Containing Nickel (II) Ions, Membranes 2022, 12 (11), 1163, <https://doi.org/10.3390/membranes12111163>

32. Haitham Osman, Ihab Shigidi and Abubakr Elkhaleefa, Ismat H. Ali and Eid I. Brima Ni(II) Removal using Date Seeds Powder Biosorbent Process Parameters Classification and RSM Modelling. Journal of the Air & Waste Management Association. 2022, 72:1, 76-84, <https://doi.org/10.1080/10962247.2021.1990160>.
33. M.I. Khan, M.K. Almesfer, A. Alkhalefee, I. Shigidi, M.Z. Shamim, I.H. Ali, M.Rehan. Conductive Polymers and their Nanocomposites as Adsorbents in Environmental Applications, Polymers, 31, (21), 3810. <https://doi.org/10.3390/polym13213810>
34. Ihab Shigidi, et.al., Effect of temperature on reverse osmosis permeate flux in the remediation of Chromium hexavalent under different operating conditions, Water 2022. 14(1),44. <https://doi.org/10.3390/w14010044>
35. S Dalhatou, M Sali, S Tetteh, A Boubakari, B Talami, H Zeghioud, A Kane, Sorbent and Photocatalytic Potentials of Local Clays for the Removal of Organic Xenobiotic: Case of Crystal Violet ...Catalysts 12 (8), 899
36. A El Jery, MF Nassar, A Hassan, MA Saadoon, A Ilhan, H Roy, A C19Ti Cage vehicle for the drug delivery of purinethol Anticancer: Computational assessments, Computational and Theoretical Chemistry 1214, 113760
37. A Imessaoudene, S Cheikh, JC Bollinger, L Belkhiri, A Tiri, A Bouzaza, Zeolite Waste Characterization and Use as Low-Cost, Ecofriendly, and Sustainable Material for Malachite Green and Methylene Blue Dyes Removal: Box–Behnken Design, Kinetics, Applied Sciences 12 (15), 7587
38. A Kane, AA Assadi, A El Jery, AK Badawi, H Kenfoud, O Baaloudj, Advanced photocatalytic treatment of wastewater using immobilized titanium dioxide as a photocatalyst in a pilot-scale reactor: process intensification, Materials 15 (13), 4547
39. AAALK Mohammed Kebir, Riadh Bourzami, Nouredine Nasrallah, Seif El, Pharmaceutical pollutants adsorption onto activated carbon: isotherm, kinetic investigations and DFT modeling approaches, Les Comptes Rendus. Chimie, 1-17
40. R Bouallouch, M Kebir, N Nasrallah, F Saib, A El Jery, L Khezami, M Trari, Synthesis, structural, and opto-electrochemical properties of cobalt aluminate type spinel and its use with ZnO for Cr (VI) photoreduction, Environmental Science and Pollution Research, 1-12
41. SSA Shah, A El Jery, T Najam, MA Nazir, L Wei, E Hussain, S Hussain, Surface engineering of MOF-derived FeCo/NC core-shell nanostructures to enhance alkaline water-splitting, International Journal of Hydrogen Energy 47 (8), 5036-5043
42. Norah Salem Alsaiari, Khadijah Mohammedsaleh Katubi, Fatimah Mohammed Alzahrani, Abdelfattah Amari, Haitham Osman, Faouzi Ben Rebah and Mohamed A. Tahoon. Synthesis, Characterization and Application of Polypyrrole Functionalized Nanocellulose for the Removal of Cr(VI) from Aqueous Solution. Polymers, 13, 3691, 2021.

43. Khurram Shahzad, Muhammad Imran Khan, Abdallah Shanableh, Nouredine Elboughdiri, Shazia Jabeen, Muhammad Altaf Nazir, Nosheen Farooq, Hassan Ali, Amari Abdelfattah and Aziz Ur Rehman. Silver supported-Ag@PMOS onto thumb structured porous organosilica materials with efficient heterojunction active sites for photo-degradation of methyl orange dye. *Inorganic and Nano-Metal Chemistry* 51(9), 1147-1296, (2021)
44. Nouredine Mahdhi, Norah Salem Alsaari, Fatimah Mohammed Alzahrani, Khadijah Mohammedsaleh Katubi, Abdelfattah Amari and Saber Hammami. Theoretical Investigation of the Adsorption of Cadmium Iodide from Water using Polyaniline Polymer Filled with TiO₂ and ZnO Nanoparticles. *Water* 13(18), 2591, (2021).
45. Norah Salem Alsaari, Abdelfattah Amari, Khadijah Mohammedsaleh Katubi, Fatimah Mohammed Alzahrani, Hamed N. Harharah, Faouzi Ben Rebah and Mohamed A. Tahoon. The Biocatalytic Degradation of Organic Dyes Using Laccase Immobilized Magnetic Nanoparticles. *Applied Sciences*, 11(17), 8216, 2021.
46. T. Salahuddin, Muhammad Habib Ullah Khan, Mair Khan, Basem Al Alwan, Abdelfattah Amari. An analysis on the flow behavior of MHD nanofluid with heat generation. *Fuel* 311, 122548, 2022.
47. Norah Salem Alsaari, Abdelfattah Amari, Khadijah Mohammedsaleh Katubi, Fatimah Mohammed Alzahrani, Faouzi Ben Rebah and Mohamed A. Tahoon. The Synthesis of Magnetic Nitrogen-Doped Graphene Oxide Nanocomposite for the Removal of Reactive Orange 12 Dye. *Adsorption Science & Technology*, 2022, 9417542, 2022.
48. Chaari Leila, Alsaari Norah Salem, Amari Abdelfattah, Ben Rebah Faouzi, Kallel Monem, Mechichi Tahar. Soil Responses to High Olive Mill Wastewater Spreading. *Agronomy-Basel*, 12, 4, 972, 2022.
49. Rai Ashita, Amari Abdelfattah, Yadav Virendra Kumar, Ismail Mohamed A., Elboughdiri Nouredine, Fulekar, M. H., Basnet Anup. A Synergistic Effect of Moringa oleifera-Based Coagulant and Ultrafiltration for the Wastewater Treatment Collected from Final ETP. *Adsorption science & technology*, 1285011, 2022.
50. Dammak Islem, Alsaari, Norah Salem, Fhoula Imene, Amari Abdelfattah, Hamdi Zohra, Hassouna Mnasser, Ben Rebah Faouzi, Mechichi Tahar, Lasram Salma. Comparative Evaluation of the Capacity of Commercial and Autochthonous *Saccharomyces cerevisiae* Strains to Remove Ochratoxin A from Natural and Synthetic Grape Juices. *Toxins*, 14, 7, 465, 2022
51. Mahdhi Nouredine, Alsaari, Norah Salem, Amari, Abdelfattah, Chakhoum, Mohamed Ali. Effect of TiO₂ Nanoparticles on Capillary-Driven Flow in Water Nanofilters Based on Chitosan Cellulose and Polyvinylidene Fluoride Nanocomposites: A Theoretical Study. *Polymers*, 14, 14, 2908, 2022
52. Copper and Zinc Removal from Wastewater Using Alum Sludge Recovered from Water Treatment Plant Aloe vera as Promising Material for Water Treatment, *Processes* 2021, 9, 782, MDPI

53. Ismat H. Ali, Mohammad I. Khan, Alhafez M. Alraih, Mohammed K. Almesfer, Abubakr Elkhaleefa, Saif M.Dmour, Mohammad Rehan, Adsorption and Corrosion Inhibition Behaviour of Oil Extracted from Moringa peregrina leaves for Carbon Steel in Acidic Media: Experimental and Computational Studies, *Int. J. Electrochem. Sci.*, 16 (2021) Article ID: 210842
54. Hamayoun Mahmood, Ahmad Shakeel, Ammar Abdullah, Muhammad Ilyas Khan and Muhammad Moniruzzaman , A Comparative Study on Suitability of Model-Free and Model-Fitting Kinetic Methods to Non-Isothermal Degradation of Lignocellulosic Materials, *Polymers* 2021, 13, 2504
55. Abdellatif, M. A., El Baroudy, A. A., Arshad, M., Mahmoud, E. K., Saleh, A. M., Moghanm, F. S., ... & Shokr, M. S. (2021). A GIS-Based Approach for the Quantitative Assessment of Soil Quality and Sustainable Agriculture. *Sustainability*, 13(23), 13438.
56. Farahat, E.A. Mahmoud, W.F. Awad, H.E.A. Farrag, H.F. Arshad, M. Eid, E.M. Fahmy, G.M (2021). Prediction Models for Evaluating the Uptake of Heavy Metals by the Invasive Grass *Vossia cuspidata* (Roxb.) Griff. in the River Nile, Egypt: A Biomonitoring Approach. *Sustainability*,13: <https://doi.org/10.3390/su131910558>.
57. Salah, Dina, Farahat S. Moghanm, Muhammad Arshad, Abdulaziz A. Alanazi, Salman Latif, Maie I. El-Gammal, Elmahdy M. Shimaa, and Salah Elsayed. Polymer-Peptide Modified Gold Nanorods to Improve Cell Conjugation and Cell Labelling for Stem Cells Photoacoustic Imaging. *Diagnostics* 11, no. 7 (2021): 1196.
58. Muhammad Arshad, Khaled M. Khedher, Ebrahim M. Eid, Yusuf A. Aina (2021). Evaluation of the urban heat island over Abha-Khamis Mushait tourist resort due to rapid urbanisation in Asir, Saudi Arabia. *Urban Climate*, Volume 36, 1-14.
59. N Sudhan, SK Rathiha, V Balasubramanian, M Pandiaraman, D Aravind, A study on methylene blue degradation: enhanced photocatalytic activity of Ag-ZnO nanocomposites, *Materials Research Express* 9 (11), 2022, 115505
60. Dhandapani Aravind, Krishnasamy S, Muthukumar C, Thiagamani SK, Ganesh C, Jyotishkumar P, Nagarajan R, Suchart S, Varagunapandiyan Nataranan, A Compendious review on fatigue properties of the bio-nanocomposites, *polymer* 43(10),6803-6816
61. Lu Z, Jafar A, Mahmoud S, Al dadah R, Albaik I, Ismail M., Integration of concentrated multi-junction solar cells with small-scale organic rankine cycle, *International Conference on Applied Energy*, Bangkok, Thailand, December 2021.
62. Alamri A. Yassir, Albaik Ibrahim, Mahmoud Saad, Aldadah, Ismail M. Mohamed, Integration of concentrated multi-junction solar cells with small-scale organic rankine cycle, *Energy Conversion Management*, Volume 239, 114235, July 2021.
63. Albaik I., Aldadah R., Mahmoud S., Almesfer M., Ismail M., A Comparison between the Packed and Coated Finned Tube for Adsorption System using Aluminium Fumarate: Numerical study, *Thermal Science and Engineering Progress*, Volume 22, 100859, May 2021.

64. Muhammad Sohail Ashraf, Mansoor Ul Hassan Shah, Awais Bokhari, Mudassir Hasan, Less is more: Optimising the biocementation of coastal sands by reducing influent urea through response surface method, Journal of Cleaner Production, 2021/9/15, 315, 128208.
65. Basem Abdulla Al Alwan, Mumtaj Shah, Mohammed K. Al Mesfer, Mohd Danish, Mohammed Ilyas Khan, Enhanced methane decomposition over transition metal-based tri-metallic catalysts for the production of CO_x free hydrogen, Journal of the Indian Chemical Society, (2022), 99(4), <https://doi.org/10.1016/j.jics.2022.1003936>.
66. Mumtaj Shah, Mohammed K. Al Mesfer, Mohd Danish, Effect of titania synthesis conditions on the catalytic performance of mesoporous Ni/TiO₂ catalysts for carbon dioxide reforming of methane, International Journal of Hydrogen Energy, <https://doi.org/10.1016/j.ijhydene.2021.12.2467>.
67. Mohammed K. Al Mesfer, Mohd Danish, Mumtaj Shah, Optimization of fluoride adsorption from aqueous solution over mesoporous titania-alumina composites using Taguchi method, Water Environment Research (2022), 94(1), <https://doi.org/10.1002/wer.1663>.
68. Evaluation of the Adsorption Efficiency on the Removal of Lead(II) Ions from Aqueous Solutions Using Azadirachta indica Leaves as Adsorbent A Elkhaleefa, IH Ali, EI Brima, I Shigidi, AB Elhag, B Karama Processes 9 (3), 559.
69. Tribological evaluation of date seed oil and castor oil blends with halloysite nanotube additives as environment friendly bio-lubricants MS Ahmed, KP Nair, V Tirth, A Elkhaleefa, M Rehan Biomass Conversion and Biorefinery, 1-10
70. Temperature impact on reverse osmosis permeate flux in the remediation of hexavalent chromium I Shigidi, AE Anqi, A Elkhaleefa, A Mohamed, IH Ali, EI Brima Water 14 (1), 44.

List of Publication (2022-2023)

1. Sandhya Venkateshalu, G Subashini, Preetam Bhardwaj, George Jacob, Raja Sellappan, Vimala Raghavan, Sagar Jain, Saravanan Pandiaraj, Varagunapandiyam Natarajan, Basem Abdullah M Al Alwan, Mohammed Khaloofah Mola Al Mesfer, Abdullah Alodhayb, Mohamad Khalid, Andrews Nirmala Grace. Phosphorene, antimonene, silicene and siloxene based novel 2D electrode materials for supercapacitors-A brief review. *Journal of Energy Storage*. 2022. 48. 104027.
2. Mair Khan, T Salahuddin, Muhammad Awais, Basem Al Alwan. Thermo-physical properties of fluid and gases near a solar rough rotating disk. *Waves in Random and Complex Media*. 2022. 1-16.
3. Rabia Ahmed, Sharf Ilahi Siddiqui, Basem Al Alwan, Mohammed Almesfer, Manoj Kumar Khanna, Bushra Fatima, Ruby Mishra, Mohammed Afzal Ansari, Seungdae Oh. Biodegradable acid based nanocomposite-CuO-ZnO-Ni (OH) 2/PA: A novel material for water cleansing. *Journal of Cleaner Production*. 2022. 341. 130860.
4. T Salahuddin, Muhammad Habib Ullah Khan, Mair Khan, Basem Al Alwan, Abdelfattah Amari. An analysis on the flow behavior of MHD nanofluid with heat generation. *Fuel*. 2022. 311. 122548.
5. Mair Khan, T Salahuddin, Basem Al Alwan. Significance of binary chemical reaction, enthalpy and variable thermophysical properties over a radioactive heated rotated disk. *Chinese Journal of Physics*. 2022. 77. 511-520.
6. T Salahuddin, Abdul Mosan Bashir, Mair Khan, Basem Al Alwan, Mohammad Almesfer. Hybrid nanofluid analysis for a class of alumina particles. *Chinese Journal of Physics*. 2022. 77. 2550-2560.
7. Xiao-Ping Li, Saif Ullah, Hina Zahir, Ahmed Alshehri, Muhammad Bilal Riaz, Basem Al Alwan. Modeling the dynamics of coronavirus with super-spreader class: A fractal-fractional approach. *Results in Physics*. 2022. 34. 105179.
8. T Salahuddin, Aqib Javed, Mair Khan, Muhammad Awais, Basem Al Alwan. A significant impact of Carreau Yasuda material near a zero velocity region. *Arabian Journal of Chemistry*. 2022. 15. 104166.
9. Adnan Malik, Mushtaq Ahmad, Basem Al Alwan, Zahra Naeem. Bardeen compact stars in modified $f(g)$ gravity. *Canadian Journal of Physics*. 2022. 100. 452-462.
10. Anum Tanveer, Mair Khan, T Salahuddin, Basem Al Alwan, Abdelfattah Amari. Dynamics of Walters' B fluid due to periodic wave in a convectively heated channel with internal heat generation. *Mathematics and Computers in Simulation*. 2022. 199. 374-393.
11. T Salahuddin, Mair Khan, S Sakinder, Basem Al Alwan. A flow analysis of hybrid nanoparticles near a solid sphere. *International Journal of Hydrogen Energy*. 2022. 47. 16640-16648.
12. Mair Khan, T Salahuddin, Moeen Taj, Basem Al Alwan. Numerical solution of Arrhenius activation energy for rotational flow. *Waves in Random and Complex Media*. 2022. 1-18.

13. Parvez Alam, Tabinda Nahid, Basem Al Alwan, Anup Saha. Rotating radial vibrations in human bones (femoral, mandibular and tibia) and crystals (Mg, Co, Cd, Zn and beryl) made cylindrical shell under magnetic field and hydrostatic stress. *Mechanics of Advanced Materials and Structures*. 2022. 1-17.
14. S Sakinder, T Salahuddin, M Taj, M Khan, Basem Al Alwan. A flow analysis of gamma-alumina nanoparticles near a solid sphere. *Waves in Random and Complex Media*. 2022. 1-16.
15. Mair Khan, T Salahuddin, Qaisar Khan, Basem Al Alwan, Mohammad Almesfer. Numerical study of binary mixture and thermal analysis near a solar radiative heated surface. *Solar Energy*. 2022. 231. 161-169.
16. Mair Khan, T Salahuddin, Muhammad Awais, Basem Al Alwan. An entropy analysis in a slip condition flow over a linear stretching sheet. *Chinese Journal of Physics*. 2022.
17. Mair Khan, T Salahuddin, Muhammad Awais, Basem Al Alwan. Thermo-physical properties of liquids and gases over a heated rotating disk. *International Communications in Heat and Mass Transfer*. 2022. 139. 106468.
18. Basem Al Alwan, Ameer A Alameri, Qutaiba A Qasim, Sobir Vaqqosov, Zainab Jawad Kadhim, R Sivaraman, Holya A Lafta, Andrés Alexis Ramirez-Coronel, Raed HC Alfilh, Yasser Fakri Mustafa. Evaluation of Structural and Thermodynamic Parameters of Dibenzothiophene Desulfurization by Carbon Nano-Filter. *Polycyclic Aromatic Compounds*. 2022. 1-13.
19. Mair Khan, T Salahuddin, Basem Al Alwan, Qaisar Khan. A Blasius boundary layer analysis for variable viscosity function near a flat plate. *International Communications in Heat and Mass Transfer*. 2022. 138. 106320.
20. Basem Al Alwan, Zhao Wang, Wissam Fawaz, KY Simon Ng. Transition Metal Carbides Filler-Reinforced Composite Polymer Electrolyte for Solid-State Lithium-Sulfur Batteries at Room Temperature: Breakthrough. *Energies*. 2022. 15. 7827.
21. T Salahuddin, Nazim Siddique, Mair Khan, Basem Al Alwan, Mohammed Almesfer. The role of enthalpy and activation energy on thermophysical properties of third grade fluid near a magnetized radioactive irregular wavy surface. *Results in Physics*. 2022. 34. 105063.
22. Haitham Osman, Ihab Shigidi, Abubakr Elkhaleefa, Ismat Ali, Eid Brima, Basem Al Alwan. Ni (II) removal using date seed powder biosorbent: Process parameters classification and RSM modeling. *Journal of the Air & Waste Management Association*. 2022. 72. 76-84.
23. Ihsan Ullah Khan, Saif Ullah, Ebenezer Bonyah, Basem Al Alwan, Ahmed Alshehri. A State-Dependent Impulsive Nonlinear System with Ratio-Dependent Action Threshold for Investigating the Pest-Natural Enemy Model. *Complexity*. 2022. 2022. 1-18.
24. B.A.Al Alwan, M.Shah , M. Danish, M.K.Al Mesfer, M.I.Khan, V. Natarajan, Enhanced methane decomposition over transition metal-based tri-metallic catalysts for the production of COx free hydrogen, *Journal of Indian Chemical Society*, 99(4), 100393, 2022.

25. I.Siddique, K.Sadiq, F.Jarad, M.K.Al Mesfer, M.Danish, S.Yaqoob, Analysis of Natural Convection in Nanofluid Flow through a Channel with Source/Sink Effect, Journal of Nanomaterials, 2, 1-9, 2022
26. M.Danish, V. Parthasarthy, M.K. Al Mesfer, Evaluating CO₂ capture performance by adsorption using synthesized and commercial activated carbon, Separation Science and Technology, 57, 9, 1392-1407,2022
27. K.B. Ansari, S.S.Ali, S.Raheman, M.A.Qyyum, M.K.Al Mesfer, M.Danish, M.S. Zamir, Current Progress in Thermochemical Conversion of Plastics into Jet-fuel Hydrocarbons and Recommendations for COVID-19 Waste Management, Process Safety and Environmental Protection, 166, 7, 2022
28. M.Shah, M. Danish, M.K.Al Mesfer, Facile synthesis of Co-Rh bimetallic catalysts for methane decomposition: Effect of support morphology, Fuel, 330, 125596, 2022
29. S.Yadav, P.Katiyar, M.K. Al Mesfer, M.Danish, Syngas production from thermochemical conversion of mixed food waste: A review, Energy and Environment, 2023
30. Majed Alsubih, Javed Mallick, Abu Reza Md Towfiqul Islam, Mohammed K Almesfer, Nabil Ben Kahla, Swapan Talukdar, Mohd Ahmed, Assessing Surface Water Quality for Irrigation Purposes in Some Dams of Asir Region, Saudi Arabia Using Multi-Statistical Modeling Approaches, Water, 14,9, 1439, 2022.
31. Ibrahim Albaik, Raya Al-Dadah, Saad Mahmoud, Mohamed A Ismail, Mohammed K Almesfer, Coated, packed and combined wire finned tube adsorption cooling and desalination system using metal-organic framework: Numerical study,Energy, 247,123506, 2022.
32. Javed Mallick, Mohammed K Almesfer, Majed Alsubih, Mohd Ahmed, Nabil Ben Kahla, Estimating Carbon Stocks and Sequestration With Their Valuation Under a Changing Land Use Scenario: A Multi-Temporal Research in Abha City, Saudi Arabia, Frontiers in Ecology and Evolution, 2022.
33. Javed Mallick, Mohammed K Almesfer, Majed Alsubih, Swapan Talukdar, Mohd Ahmed, Nabil Ben Kahla, Developing a new method for future groundwater potentiality mapping under climate change in Bisha watershed, Saudi Arabia, Geocartointernational,1-33, 2022.
34. Javed Mallick, Swapan Talukdar, Majed Alsubih, Mohammed K Almesfer, Shahfahad, Hoang Thi Hang, Atiqur Rahman, Integration of statistical models and ensemble machine learning algorithms (MLAs) for developing the novel hybrid groundwater potentiality models: a case study of semi-arid watershed in Saudi Arabia, Geocarto international, 37,22, 6442-6473, 2022.
35. Mohd Danish, Khursheed B Ansari, Mohammad Danish, Naseem A Khan, Rameez Ahmad Aftab, Sadaf Zaidi, Mohd Shariq Khan, Mohammed K Al Mesfer, Muhammad Abdul Qyyum, Abdul-Sattar Nizami, Developing convective–dispersive transport model to characterize fixed-bed adsorption of lead (II) over activated tea waste biosorbent, Biomass Conversion and Biorefinery, 1-15, 2022.

36. Kiho Park, Ibrahim Albaik, Philip A Davies, Raya Al-Dadah, Saad Mahmoud, Mohamed A Ismail, Mohammed K Almesfer, Batch reverse osmosis (BRO)-adsorption desalination (AD) hybrid system for multipurpose desalination and minimal liquid discharge, *Desalination*, 539, 115945, 2022.
37. Andrew N Aziz, Saad Mahmoud, Raya Al-Dadah, Mohamed A Ismail, Mohammed K Al Mesfer, Numerical and experimental investigation of desiccant cooling system using metal organic framework materials, *Applied Thermal Engineering*, 215, 118945, 2022.
38. Mohammed Ilyas Khan, Mohammed Khaloufa Almesfer, Abubakr Mustafa Elkhaleefa, Abdelfattah Aamary, Ismat Hassan Ali, Mohammed Zubair Shamim, Hamada Shoukry, Mohmmad Rehan, Efficient adsorption of hexavalent chromium ions onto novel ferrochrome slag/polyaniline nanocomposite: ANN modeling, isotherms, kinetics, and thermodynamic studies, *Environmental Science & Pollution Reserach*, 29, 57, 86665-86679, 2022
39. Tanweer A Syed, Khursheed B Ansari, Arghya Banerjee, David A Wood, Mohd Shariq Khan, Mohammed K Al Mesfer, Machine-learning predictions of caffeine co-crystal formation accompanying experimental and molecular validations, *Journal of Food Process Engineering*, 46,2, 14230, 2023
40. Norah Salem Alsaari, Fatimah Mohammed Alzahrani, Abdelfattah Amari, Haitham Osman, Hamed N. Harharah, Nouredine Elboughdiri and Mohamed A. Tahoo N, Plant and Microbial Approaches as Green Methods for the Synthesis of Nanomaterials: Synthesis, Applications, and Future Perspectives, *Molecules* 3 January 2023, 28(1), 463; <https://doi.org/10.3390/molecules28010463>
41. Y.M.Fahmy et.al , physicochemical properties od doping Nikel -Cobalt oxides catalysts supported on SiO₂ and its catalytic activity, *Indian Journal of chemical technology* , vol 29, 2022, pp 436-441.
42. Ramzi H. Harharah, Ghassan M.T. Abdalla, Abubakar Elkhaleefa, Ihab Shigidi and Hamed N. Harharah, Experimental and Numerical Evaluation of Reverse Osmosis Performance in the Removal of Copper (II) Ions Under Different Operating Conditions, *Separations* 2022,9 (6) 155 <https://doi.org/10.3390/separations9060155>
43. Ihab Shigidi, Ramzi H. Harharah, Ghassan M.T. Abdalla, Abubakar Elkhaleefa and Hamed N. Harharah, Mohamed G. Hassan: Studying Different Operating Conditions on Reverse Osmosis Performance in the Treatment of Wastewater Containing Nickel (II) Ions, *Membranes* 2022,12 1163. <https://doi.org/10.3390/membranes12111163>.
44. A Hayat, M Sohail, A El Jery, KM Al-Zaydi, S Raza, H Ali, Y Al-Hadeethi, Recent advances in ground-breaking conjugated microporous polymers-based materials, their synthesis, modification and potential applications, *Materials Today*
45. AE Jery, P Satishkumar, M Abdul Jaleel Maktoof, M Suplata, B Dudic, Sustainable Heat Transfer Management: Modeling of Entropy Generation Minimization and Nusselt Number Development in Internal Flows with Various Shapes of Cross-Sections Using, *Water* 15 (1), 89

46. KMK Atef El Jery, Ahmed Kareem Khudhair, Saad Qasim Abbas, Azher M. Abed, Numerical simulation and artificial neural network prediction of hydrodynamic and heat transfer in a geothermal heat exchanger to obtain the optimal diameter of tubes with , Geothermics 107, 102605
47. Z Ajmal, A Hayat, M Qasim, A Kumar, A El Jery, W Abbas, MB Hussain, Assembly of a novel Fe₂TiO₅-impregnated donor- π -acceptor conjugated carbon nitride for highly efficient solar water splitting, Sustainable Materials and Technologies, e00594
48. S Cheikh, A Imessaoudene, JC Bollinger, A Hadadi, A Manseri, AE Jery, Complete Elimination of the Ciprofloxacin Antibiotic from Water by the Combination of Adsorption-Photocatalysis Process Using Natural Hydroxyapatite and TiO₂, Catalysts 13 (2), 336
49. A El Jery, P Satishkumar, HM Salman, KM Khedher, Comparison of different approaches for numerical modeling of nanofluid subcooled flow boiling and proposing predictive models using artificial neural network, Progress in Nuclear Energy 156, 104540
50. S Sassi, K Trabelsi, A El Jery, M Abidi, A Hajjaji, L Khezami, A Karrech, Synergistic effect of CuxOy-NPs/TiO₂-NTs heterostructure on the photodegradation of amido black staining, Optik 272, 170234
51. A El Jery, HM Salman, RM Al-Khafaji, MF Nassar, M Sillanpää, Thermodynamics Investigation and Artificial Neural Network Prediction of Energy, Exergy, and Hydrogen Production from a Solar Thermochemical Plant using a Polymer Membrane, Molecules 28 (6), 2649
52. A El Jery, M Al-Bahrani, S Rahim Alatba, M Fraga, Simultaneous effect of thermal shock and prebuckling loads on the exact coupled thermoelasticity response of the nanocomposite-reinforced sandwich sector system, Mechanics of Advanced Materials and Structures, 1-19
53. Abdelfattah Amari & Hayder Mahmood Salman. Exact solution of the longitudinally-graded rectangular plate under mixed instantaneous shock loading. Waves in Random and Complex Media. 218,3725, 2023
54. Virendra Kumar Yadav, Abdelfattah Amari, Amel Gacem, Nouredine Elboughdiri Lienda Bashier Eltayeb and M. H. Fulekar. Treatment of Fly-Ash-Contaminated Wastewater Loaded with Heavy Metals by Using Fly-Ash-Synthesized Iron Oxide Nanoparticles. Water,15, 908. 2023
55. Abdelfattah Amari, Ayesha Noreen, Haitham Osman, Saad Sh. Sammen, Nadhir Al-Ansari and Hayder Mahmood Salman. Investigation of the viable role of oil sludge-derived activated carbon for oily wastewater remediation. Frontiers in environmental sciences, 11, 308, 2023
56. Virendra Kumar Yadav, Abdelfattah Amari, Shivraj Gangadhar Wanale, Haitham Osman and M. H. Fulekar. Synthesis of Floral-Shaped Nanosilica from Coal Fly Ash and Its Application for the Remediation of Heavy Metals from Fly Ash Aqueous Solutions. Sustainability, 15, 2612, 2023
57. Abdelfattah Amari, Heba Saed Kariem Alawameleh, Mubeen Isam, Mohammed Abdul Jaleel Maktoof, Haitham Osman, Balamurugan Panneerselvam and Maciej Thomas. Thermodynamic Investigation and Study of Kinetics and Mass Transfer Mechanisms of Oily Wastewater Adsorption on UIO-66-MnFe₂O₄ as a Metal-Organic Framework (MOF). Sustainability, 15, 2488, 2023

58. Shabnam Shahida, Muhammad Imran Khan, Shagufta Zafar, Khizar Hussain Shah, Umar Farooq, Muhammad Hafeez, Nouredine Elboughdiri, Abdallah Shanableh & Amari Abdelfattah. XAD-4 resin impregnated with oxytetracycline for the online preconcentration of zirconium (IV) from environmental and geological samples. *Inorganic and Nano-Metal Chemistry*, 21, 678, 2023
59. Khalid, M., Ahmed, R., Arshad, M., Asghar, M. A., Munawar, K. S., Imran, M., & Braga, A. A. (2022). First theoretical framework for highly efficient photovoltaic parameters by structural modification with benzothiophene-incorporated acceptors in dithiophene based chromophores. *Scientific Reports*, 12(1), 1-15.
60. Roy, A., Datta, S., Luthra, R., Khan, M. A., Gacem, A., Hasan, M. A., ... & Jeon, B. H. (2022). Green synthesis of metalloid nanoparticles and its biological applications: A review. *Frontiers in Chemistry*, 10.
61. Eid, E. M., Arshad, M., Alrumman, S. A., Al-Bakre, D. A., Ahmed, M. T., Almahasheer, H., & Keshta, A. E. (2022). Evaluation of Soil Organic Carbon Stock in Coastal Sabkhas under Different Vegetation Covers. *Journal of Marine Science and Engineering*, 10(9), 1234.
62. Khan, H., Hussain, S., Zahoor, R., Arshad, M., Umar, M., Marwat, M. A., ... & Haleem, M. A. (2023). Novel modeling and optimization framework for Navy Blue adsorption onto eco-friendly magnetic geopolymer composite. *Environmental Research*, 216, 114346.
63. Aslam, S., Haroon, M., Akhtar, T., Arshad, M., Khalid, M., Shafiq, Z., ... & Ullah, A. (2022). Synthesis, Characterization, and DFT-Based Electronic and Nonlinear Optical Properties of Methyl 1-(arylsulfonyl)-2-aryl-1H-benzo [d] imidazole-6-carboxylates. *ACS omega*, 7(35), 31036-31046.
64. Khalid, M., Khan, M., Mahmood, K., Arshad, M., Imran, M., Braga, A. A. C., & Hussain, R. (2022). Theoretical designing of non-fullerene derived organic heterocyclic compounds with enhanced nonlinear optical amplitude: a DFT based prediction. *Scientific Reports*, 12(1), 1-14.
65. Anwar, M. U., Khan, N. B., Arshad, M., Munir, A., Bashir, M. N., Jameel, M., ... & Eldin, S. M. (2022). Variation in Vortex-Induced Vibration Phenomenon Due to Surface Roughness on Low-and High-Mass-Ratio Circular Cylinders: A Numerical Study. *Journal of Marine Science and Engineering*, 10(10), 1465.
66. Meshram, M. A., Meshram, C., Hasan, M. A., and Khan, M.A (2022). Morphometric deterministic model for prediction of sediment yield index for selected watersheds in upper Narmada Basin. *Applied Water Science*, 12(153). <https://doi.org/10.1007/s13201-022-01644-0>.
67. Al-Sodany, Y.M., Saleh, M.A., Arshad, M., Abdel Khalik, K.N., Al-Bakre, D.A., Eid, E.M. Regression Models to Estimate Accumulation Capability of Six Metals by Two Macrophytes, *Typha domingensis* and *Typha elephantina*, Grown in an Arid Climate in the Mountainous Region of Taif, Saudi Arabia. *Sustainability* 2022, 14, 1. <https://doi.org/10.3390/su14010001>.
68. K Palanichamy, M Anandan, S Jayavel, V Natarajan, D Aravind, PVA and PMMA nano-composites: a review on strategies, applications and future prospects, *Materials Research Express*, 10 2023, 022002.

69. Andrew A., Al-Dadah R., Mahmoud S., Ismail M., Almesfer M., El-Kady M., Shokry H., MOF-801/Graphene Adsorbent Material for Greenhouse Climate Control System- Numerical Investigation, *Energies*, Volume 16, 3864, May 2023.
70. Suladhan N., Rathiha S., Balasubramanian V., Pandiaraman M., Aravind D., Natarajan V., Ismail M., Vinodhkumar G., A study on methylene blue degradation enhanced photocatalytic Activity of Ag-ZnO nanocomposite, *Materials Research Express*, Volume 2022, 115505, November 2022.
71. Andrew A., Al-Dadah R., Mahmoud S., Ismail M., Almesfer M., Numerical and experimental investigation of the desiccant cooling system using metal-organic framework materials, *Applied Thermal Energy*, Volume 215, 118940, June 2022.
72. Park K., Albaik I., Davies P., Al-Dadah R., Mahmoud S., Ismail M., Almesfer M., Batch reverse osmosis BRO - adsorption desalination AD hybrid system for multipurpose desalination and minimal liquid discharge, *Desalination*, Volume 539, 115945, June 2022.
73. Ashita Rai., Abdelfattah Amari, Virendra Kumar, Ismail M., Nuredine Elboughdiri, Fulekar M., A Synergistic Effect of Moringa oleifera-Based Coagulant and Ultrafiltration for the Wastewater Treatment collected from Final ETP, *Adsorption Science & Technology*, Volume 2022, 1285011, June 2022.
74. Albaik I., Alamri Y., Elshintini M., Al-Dadah R., Mahmoud S., Ismail M., Assessment of a novel multi-generation solar CPV/T system combining adsorption and organic rankine cycle subsystems, *Solar Energy*, Volume 236, pages 455-472, March 2022.
75. Dheyaa J. Jasim, Thamer J. Mohammed, Hamed N. Harharah, Ramzi H. Harharah, Abdelfattah Amari and Mohammed F. Abid, Modeling and Optimal Operating Conditions of Hollow Fiber Membrane for CO₂/CH₄ Separation Published 29 May 2023, *Membranes* 2023, V. 13, Issue 6, PP 557-586, <https://doi.org/10.3390/membranes13060557>.
76. Photocatalytic Degradation of Methylene Blue Dye from Wastewater by Using Doped Zinc Oxide Nanoparticles, Shreya Modi, Virendra Kumar Yadav, Abdelfattah Amari, Abeer Yousef Alyami, Amel Gacem, Hamed N. Harharah, and Madhusudan Hiranman Fulekar 17 June 2023, *Water* 2023, V.15, I. 12, p.p. 2275-2301, <https://doi.org/10.3390/w15122275>.
77. Treatment of Fish Wastewater Using Polyelectrolyte and Palm Anguish, Salam K. Al-Dawery, Ghadeer E. AL-Yaqoubi, Ahoud A. Al-Musharraf, Hamed N. Harharah, Abdelfattah Amari and Ramzi H. Harharah, Published 17 July 2023, *Processes* 2023, V. 11, issue 7, pp. 2124-2139. <https://doi.org/10.3390/pr11072124>
78. Waqar Ahmed Khokhar, Atef El Jery, Adeel Ahmed, Mouataz Aldrery, Danish Ahmed, Muhammad Usman, Muhammad Rafiq, Raza Ullah and Muhammad Khurram Tufail Impact of sintering temperature on the Al₂O₃ electrolyte <https://doi.org/10.1515/zpch-2023-0240>
79. Sasan Zahmatkesh, Melika Karmimian, Ramin Pourhanasa, Iman Ghodrati, Mostafa Hajiaghaei-Keshteli, Ismail M, Wastewater treatment with algal-based membrane bioreactor for future: Removing emerging contaminants, *Chemosphere*, Volume 335, 139134, June 2023

80. Sasan Zahmatkesh, Yousof Rezakhani, Abdoulmohammad Gholamzadeh Chofreh, Melika Karimian, Chongqing Wang, Iman Ghodrati, Mudassir Hasan, Mika Sillanpaa, Hitesh Panchal, Ramsha Khan, SARS-CoV-2 removal by mix matrix membrane: A novel application of artificial neural network based simulation in MATLAB for evaluating wastewater reuse risks, *Chemosphere*, 2023/1/1, 310, 136837.
81. Sasan Zahmatkesh, Yousof Rezakhani, Alireza Arabi, Mudassir Hasan, Zubair Ahmad, Chongqing Wang, Mika Sillanpää, Mohammed Al-Bahrani, Iman Ghodrati, An approach to removing COD and BOD based on polycarbonate mixed matrix membranes that contain hydrous manganese oxide and silver nanoparticles: A novel application of, *Chemosphere*, 2022/12/1, 308, 136304
82. Mumtaj Shah, Mohammed K. Al Mesfer, Mohd Danish, Design and optimization of Ni-Fe-La based catalytic system for CO₂ utilization for sustainable syngas production via dry reforming of methane, *Journal of the Energy Institute*, (2023), 100, <https://doi.org/10.1016/j.joei.2023.1013464>.
83. Mumtaj Shah, Mohammed K. Al Mesfer, Mohd Danish, Facile synthesis of Co-Rh bimetallic catalysts for methane decomposition: Effect of support morphology, *Fuel*, (2022), 330, 125596, <https://doi.org/10.1016/j.fuel.2022.125596.8>.
84. Mohammed K. Al Mesfer, Mohd Danish, Mumtaj Shah, Synthesis, evaluation, and kinetic assessment of Co-based catalyst for enhanced methane decomposition reaction for hydrogen production, *International Journal of Chemical Kinetics* (2022), 54(2), 90-103. <https://doi.org/10.1002/kin.21544>.
85. Ni (II) removal using date seed powder biosorbent: Process parameters classification and RSM modeling H Osman, I Shigidi, A Elkhaleefa, I Ali, E Brima, B Al Alwan *Journal of the Air & Waste Management Association* 72 (1), 76-84
86. MI Khan, MK Almesfer, AM Elkhaleefa, A Aamary, IH Ali, MZ, Efficient adsorption of hexavalent chromium ions onto novel ferrochrome slag/polyaniline nanocomposite: ANN modeling, isotherms, kinetics, and thermodynamic studies *Environmental Science and Pollution Research* 29 (57), 86665-86679 Shamim.

Patent (2021-2022)

1. Mobile medical system based on blockchain and 5G communication (Patent number: 202022105966)

Patent (2022-2023)

1. Artificial intelligence based skin diseases detection medical device (6285566) <https://www.registered-design.service.gov.uk/find/6285566>
2. Glass Fiber Helmet (6329034) <https://www.registered-design.service.gov.uk/find/6329034>
3. solar powered agricultural & horticultural sprayer (6316842) <https://www.registered-design.service.gov.uk/find/6316842>