

# Research Publications 2019

- 1) Amjad, U.-E.-S., Sherin, L., Zafar, M.F., Mustafa, M. Comparative Study on the Catalytic Degradation of Methyl Orange by Silver Nanoparticles Synthesized by Solution Combustion and Green Synthesis Method (2019) *Arabian Journal for Science and Engineering*, 44 (12), pp. 9851-9857
- 2) 1) Amjad, U.-E.-S., Sherin, L., Zafar, M.F., Mustafa, M. Comparative Study on the Catalytic Degradation of Methyl Orange by Silver Nanoparticles Synthesized by Solution Combustion and Green Synthesis Method (2019) *Arabian Journal for Science and Engineering*, 44 (12), pp. 9851-9857
- 3) Yang, P., Tan, G.-Y.A., Aslam, M., Kim, J., Lee, P.-H. Metatranscriptomic evidence for classical and RuBisCO-mediated CO<sub>2</sub> reduction to methane facilitated by direct interspecies electron transfer in a methanogenic system (2019) *Scientific Reports*, 9 (1), art. no. 4116,
- 4) Shezad, N., Maafa, I.M., Johari, K., Hafeez, A., Akhter, P., Shabir, M., Raza, A., Anjum, H., Hussain, M., Tahir, M. Carbon nanotubes incorporated Z-Scheme assembly of agbr/tio<sub>2</sub> for photocatalytic hydrogen production under visible light irradiations (2019) *Nanomaterials*, 9 (12), art. no. 1767
- 5) Sajjad, Z., Gilani, M.A., Nizami, A.-S., Bilad, M.R., Khan, A.L. Development of novel hydrophilic ionic liquid membranes for the recovery of biobutanol through pervaporation (2019) *Journal of Environmental Management*, 251, art. no. 109618.
- 6) Rafiq, M.I., Farid, T., Zhou, J., Ali, A., Tang, J., Tang, W. Carbonized wood-supported hollow NiCo<sub>2</sub>S<sub>4</sub> eccentric spheres for high-performance hybrid supercapacitors (2019) *Journal of Alloys and Compounds*, 811, art. no. 151858,
- 7) Chaniago, Y.D., Hussain, A., Andika, R., Lee, M. Reactive Pressure-Swing Distillation toward Sustainable Process of Novel Continuous Ultra-High-Purity Electronic-Grade Propylene Glycol Monomethyl Ether Acetate Manufacture (2019) *ACS Sustainable Chemistry and Engineering*, 7 (22), pp. 18677-18689.
- 8) Fazal, T., Saif ur Rehman, M., Mushtaq, A., Hafeez, A., Javed, F., Aslam, M., Fatima, M., Faisal, A., Iqbal, J., Rehman, F., Farooq, R. Simultaneous production of bioelectricity and biogas from chicken droppings and dairy industry wastewater employing bioelectrochemical system (2019) *Fuel*, 256, art. no. 115902
- 9) Ahmad, N., Abnisa, F., Daud, W.M.A.W. Synthesis of liquid fuel through hydrothermal conversion of natural rubber (2019) *AIP Conference Proceedings*, 2168, art. no. 020058
- 10) Muhammad Imran, S., Kim, Y.A., Choa, Y.-H., Hussain, M., Yang, K.S. Pressure-sensitive polymer nanocomposites: Carbon nanofiber-reinforced MWCNT-coated PMMA microbeads (2019) *Polymer-Plastics Technology and Materials*, 58 (16), pp. 1793-1801.
- 11) Tibi, F., Guo, J., Ahmad, R., Lim, M., Kim, M., Kim, J. Membrane distillation as post-treatment for anaerobic fluidized bed membrane bioreactor for organic and nitrogen removal (2019) *Chemosphere*, 234, pp. 756-762
- 12) Javed, F., Aslam, M., Rashid, N., Shamair, Z., Khan, A.L., Yasin, M., Fazal, T., Hafeez, A., Rehman, F., Rehman, M.S.U., Khan, Z., Iqbal, J., Bazmi, A.A. Microalgae-based biofuels, resource recovery and wastewater treatment: A pathway towards sustainable biorefinery (2019) *Fuel*, 255, art. no. 115826,
- 13) Haider, M.S., Shao, G., Ahmad, A., Imran, S.M., Abbas, N., Abbas, G., Hussain, M., Kim, H.T. Facile, single-pot preparation of nanoporous SiO<sub>2</sub> particles (carrier) with AgNPs at core and crust for controlled disinfectant release (2019) *Journal of Saudi Chemical Society*, 23 (7), pp. 828-835.

- 14) Khan, Z., Yusup, S., Aslam, M., Inayat, A., Shahbaz, M., Raza Naqvi, S., Farooq, R., Watson, I. NO and SO<sub>2</sub> emissions in palm kernel shell catalytic steam gasification with in-situ CO<sub>2</sub> adsorption for hydrogen production in a pilot-scale fluidized bed gasification system (2019) *Journal of Cleaner Production*, 236, art. no. 117636.
- 15) Wongso, V., Chen, C.J., Razzaq, A., Kamal, N.A., Sambudi, N.S. Hybrid kaolin/TiO<sub>2</sub> composite: Effect of urea addition towards an efficient photocatalyst for dye abatement under visible light irradiation (2019) *Applied Clay Science*, 180, art. no. 105158
- 16) Rehman, W.U., Merican, Z.M.A., Bhat, A.H., Hoe, B.G., Sulaimon, A.A., Akbarzadeh, O., Khan, M.S., Mukhtar, A., Saqib, S., Hameed, A., Mellon, N., Ullah, H., Ullah, S., Assiri, M.A. Synthesis, characterization, stability and thermal conductivity of multi-walled carbon nanotubes (MWCNTs) and eco-friendly jatropha seed oil based nanofluid: An experimental investigation and modeling approach (2019) *Journal of Molecular Liquids*, 293, art. no. 111534,
- 17) Tahir, K., Miran, W., Nawaz, M., Jang, J., Shahzad, A., Moztahida, M., Kim, B., Azam, M., Jeong, S.E., Jeon, C.O., Lim, S.-R., Lee, D.S. Investigating the role of anodic potential in the biodegradation of carbamazepine in bioelectrochemical systems (2019) *Science of the Total Environment*, 688, pp. 56-64
- 18) Atabani, A.E., Al-Muhtaseb, A.H., Kumar, G., Saratale, G.D., Aslam, M., Khan, H.A., Said, Z., Mahmoud, E. Valorization of spent coffee grounds into biofuels and value-added products: Pathway towards integrated bio-refinery (2019) *Fuel*, 254, art. no. 115640,
- 19) Rashid, N., Nayak, M., Lee, B., Chang, Y.-K. Efficient microalgae harvesting mediated by polysaccharides interaction with residual calcium and phosphate in the growth medium (2019) *Journal of Cleaner Production*, 234, pp. 150-156
- 20) Hussain, A., Chaniago, Y.D., Riaz, A., Lee, M. Design method for the feasibility and technical evaluation of side-reactor column configurations (2019) *Chemical Engineering and Processing - Process Intensification*, 144, art. no. 107648,
- 21) Ahmad, N., Javed, F., Awan, J.A., Ali, S., Fazal, T., Hafeez, A., Aslam, R., Rashid, N., Rehman, M.S.U., Zimmerman, W.B., Rehman, F. Biodiesel production intensification through microbubble mediated esterification (2019) *Fuel*, 253, pp. 25-31
- 22) Hassan, M., Faisal, A., Ali, I., Bhatti, M.M., Yousaf, M. Effects of Cu–Ag hybrid nanoparticles on the momentum and thermal boundary layer flow over the wedge (2019) *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*, 233 (5), pp. 1128-1136.
- 23) Abbas, T., Wadhawan, T., Khan, A., McEvoy, J., Khan, E. Iron turning waste media for treating Endosulfan and Heptachlor contaminated water (2019) *Science of the Total Environment*, 685, pp. 124-133.
- 24) Majeed, K., Ahmed, A., Abu Bakar, M.S., Mahlia, T.M.I., Saba, N., Hassan, A., Jawaid, M., Hussain, M., Iqbal, J., Ali, Z. Mechanical and thermal properties of montmorillonite-reinforced polypropylene/rice husk hybrid nanocomposites (2019) *Polymers*, 11 (10), art. no. 1557
- 25) Bencheikh, K., Atabani, A.E., Shobana, S., Mohammed, M.N., Uğuz, G., Arpa, O., Kumar, G., Ayanoglu, A., Bokhari, A. Fuels properties, characterizations and engine and emission performance analyses of ternary waste cooking oil biodiesel–diesel–propanol blends (2019) *Sustainable Energy Technologies and Assessments*, 35, pp. 321-334.
- 26) Tahir, Z., Aslam, M., Gilani, M.A., Bilal, M.R., Anjum, M.W., Zhu, L.-P., Khan, A.L. –SO<sub>3</sub>H functionalized UiO-66 nanocrystals in Polysulfone based mixed matrix membranes: Synthesis and application for efficient CO<sub>2</sub> capture (2019) *Separation and Purification Technology*, 224, pp. 524-533.
- 27) Ullah, S., Assiri, M.A., Al-Sehemi, A.G., Bustam, M.A., Abdul Mannan, H., Abdulkareem, F.A., Irfan, A., Saqib, S. High-temperature CO<sub>2</sub> removal from CH<sub>4</sub> using silica membrane:

- experimental and neural network modeling (2019) *Greenhouse Gases: Science and Technology*, 9 (5), pp. 1010-1026.
- 28) Barambu, N.U., Bilad, M.R., Wibisono, Y., Jaafar, J., Mahlia, T.M.I., Khan, A.L. Membrane surface patterning as a fouling mitigation strategy in liquid filtration: A review (2019) *Polymers*, 11 (10), art. no. 1687.
- 29) Bhutto, A.W., Bazmi, A.A., Karim, S., Abro, R., Mazari, S.A., Nizamuddin, S. Promoting sustainability of use of biomass as energy resource: Pakistan's perspective (2019) *Environmental Science and Pollution Research*, 26 (29), pp. 29606-29619.
- 30) Ahmad, R., Guo, J., Kim, J. Structural characteristics of hazardous organic dyes and relationship between membrane fouling and organic removal efficiency in fluidized ceramic membrane reactor (2019) *Journal of Cleaner Production*, 232, pp. 608-616.
- 31) Rashid, N., Ryu, A.J., Jeong, K.J., Lee, B., Chang, Y.-K. Co-cultivation of two freshwater microalgae species to improve biomass productivity and biodiesel production (2019) *Energy Conversion and Management*, 196, pp. 640-648.
- 32) Amjad, U.-E.-S., Quintero, C.W.M., Ercolino, G., Italiano, C., Vita, A., Specchia, S. Methane Steam Reforming on the Pt/CeO<sub>2</sub> Catalyst: Effect of Daily Start-Up and Shut-Down on Long-Term Stability of the Catalyst (2019) *Industrial and Engineering Chemistry Research*, 58 (36), pp. 16395-16406
- 33) Azam, M.U., Tahir, M., Umer, M., Tahir, B., Shehzad, N., Siraj, M. In-situ synthesis of TiO<sub>2</sub>/La<sub>2</sub>O<sub>3</sub>/rGO composite under acidic/basic treatment with La<sup>3+</sup>/Ti<sup>3+</sup> as mediators for boosting photocatalytic H<sub>2</sub> evolution (2019) *International Journal of Hydrogen Energy*, 44 (42), pp. 23669-23688.
- 34) Yasin, M., Jang, N., Lee, M., Kang, H., Aslam, M., Bazmi, A.A., Chang, I.S. Bioreactors, gas delivery systems and supporting technologies for microbial synthesis gas conversion process (2019) *Bioresource Technology Reports*, 7, art. no. 100207
- 35) Manzoor, T., Javed, T., Mustafa, G., Manzoor Ahmed, H.U., Razzaq, A. Facile synthesis of Cu<sub>x</sub>Zn<sub>1-x</sub>Fe<sub>2</sub>O<sub>4</sub> nanoparticles and their thermo-physical properties evaluation (2019) *Applied Physics A: Materials Science and Processing*, 125 (9), art. no. 626
- 36) Zhao, J., Wang, L., Tang, L., Ren, R., You, W., Farooq, R., Wang, Z., Zhang, Y. Changes in bacterial community structure and humic acid composition in response to enhanced extracellular electron transfer process in coastal sediment (2019) *Archives of Microbiology*, 201 (7), pp. 897-906
- 37) Rashid, N., Nayak, M., Suh, W.I., Lee, B., Chang, Y.-K. Efficient microalgae removal from aqueous medium through auto-flocculation: investigating growth-dependent role of organic matter (2019) *Environmental Science and Pollution Research*, 26 (26), pp. 27396-27406
- 38) Ali, S., Razzaq, A., In, S.-I. Development of graphene based photocatalysts for CO<sub>2</sub> reduction to C<sub>1</sub> chemicals: A brief overview (2019) *Catalysis Today*, 335, pp. 39-54.
- 39) Ali, S., Flores, M.C., Razzaq, A., Sorcar, S., Hiragond, C.B., Kim, H.R., Park, Y.H., Hwang, Y., Kim, H.S., Kim, H., Gong, E.H., Lee, J., Kim, D., In, S.-I. Gas phase photocatalytic CO<sub>2</sub> reduction, "a brief overview for benchmarking" (2019) *Catalysts*, 9 (9), art. no. 727
- 40) Tahir, M., Tahir, B., Nawawi, M.G.M., Hussain, M., Muhammad, A. Cu-NPs embedded 1D/2D CNTs/pCN heterojunction composite towards enhanced and continuous photocatalytic CO<sub>2</sub> reduction to fuels (2019) *Applied Surface Science*, 485, pp. 450-461.
- 41) Ali, S., Rani, A.M.A., Mufti, R.A., Azam, F.I., Hastuty, S., Baig, Z., Hussain, M., Shehzad, N. The influence of nitrogen absorption on microstructure, properties and cytotoxicity assessment of 316L stainless steel alloy reinforced with boron and niobium (2019) *Processes*, 7 (8), art. no. 506, pp. 1-12

- 42) Shafiq, I., Hussain, M., Shehzad, N., Maafa, I.M., Akhter, P., Amjad, U.-E.-S., Shafique, S., Razzaq, A., Yang, W., Tahir, M., Russo, N. The effect of crystal facets and induced porosity on the performance of monoclinic BiVO<sub>4</sub> for the enhanced visible-light driven photocatalytic abatement of methylene blue (2019) *Journal of Environmental Chemical Engineering*, 7 (4), art. no. 103265
- 43) Hamayun, M.H., Hussain, M., Maafa, I.M., Aslam, R. Integration of hydrogenation and dehydrogenation system for hydrogen storage and electricity generation – simulation study (2019) *International Journal of Hydrogen Energy*, 44 (36), pp. 20213-20222.
- 44) Hamid, A., Saleem, W., Yaqub, G., Ghauri, M.U.D. Comparative assessment of respiratory and other occupational health effects among elementary workers (2019) *International Journal of Occupational Safety and Ergonomics*, 25 (3), pp. 394-401.
- 45) Ali, S., Rani, A.M.A., Mufti, R.A., Hastuty, S., Hussain, M., Shehzad, N., Baig, Z., Aliyu, A.A.A. An efficient approach for nitrogen diffusion and surface nitriding of boron-titanium modified stainless steel alloy for biomedical applications (2019) *Metals*, 9 (7), art. no. 755,
- 46) Boulal, A., Atabani, A.E., Mohammed, M.N., Khelafi, M., Uguz, G., Shobana, S., Bokhari, A., Kumar, G. Integrated valorization of *Moringa oleifera* and waste *Phoenix dactylifera* L. dates as potential feedstocks for biofuels production from Algerian Sahara: An experimental perspective (2019) *Biocatalysis and Agricultural Biotechnology*, 20, art. no. 101234,
- 47) Maaz, M., Yasin, M., Aslam, M., Kumar, G., Atabani, A.E., Idrees, M., Anjum, F., Jamil, F., Ahmad, R., Khan, A.L., Lesage, G., Heran, M., Kim, J. Anaerobic membrane bioreactors for wastewater treatment: Novel configurations, fouling control and energy considerations (2019) *Bioresource Technology*, 283, pp. 358-372.
- 48) Lau, A.K.S., Bilad, M.R., Osman, N.B., Marbelia, L., Putra, Z.A., Nordin, N.A.H.M., Wirzal, M.D.H., Jaafar, J., Khan, A.L. Sequencing batch membrane photobioreactor for simultaneous cultivation of aquaculture feed and polishing of real secondary effluent (2019) *Journal of Water Process Engineering*, 29, art. no. 100779,
- 49) Ayaz, M., Muhammad, A., Younas, M., Khan, A.L., Rezakazemi, M. Enhanced Water Flux by Fabrication of Polysulfone/Alumina Nanocomposite Membrane for Copper(II) Removal (2019) *Macromolecular Research*, 27 (6), pp. 565-571
- 50) Reza, M.S., Ahmed, A., Caesarendra, W., Abu Bakar, M.S., Shams, S., Saidur, R., Aslfattahi, N., Azad, A.K. *Acacia holosericea*: An invasive species for bio-char, bio-oil, and biogas production (2019) *Bioengineering*, 6 (2), art. no. 33,
- 51) Ali, D., Butt, M.Z., Muneer, I., Farrukh, M.A., Aftab, M., Saleem, M., Bashir, F., Khan, A.U. Synthesis and characterization of sol-gel derived La and Sm doped ZnO thin films: A solar light photo catalyst for methylene blue (2019) *Thin Solid Films*, 679, pp. 86-98.
- 52) Atabani, A.E., Shobana, S., Mohammed, M.N., Uğuz, G., Kumar, G., Arvindnarayan, S., Aslam, M., Al-Muhtaseb, A.H. Integrated valorization of waste cooking oil and spent coffee grounds for biodiesel production: Blending with higher alcohols, FT-IR, TGA, DSC and NMR characterizations (2019) *Fuel*, 244, pp. 419-430
- 53) Faisal, A., Holmlund, M., Ginesy, M., Holmgren, A., Enman, J., Hedlund, J., Grahn, M. Recovery of L-Arginine from Model Solutions and Fermentation Broth Using Zeolite-Y Adsorbent (2019) *ACS Sustainable Chemistry and Engineering*, 7 (9), pp. 8900-8907
- 54) Khalid, A., Aslam, M., Qyum, M.A., Faisal, A., Khan, A.L., Ahmed, F., Lee, M., Kim, J., Jang, N., Chang, I.S., Bazmi, A.A., Yasin, M. Membrane separation processes for dehydration of bioethanol from fermentation broths: Recent developments, challenges, and prospects (2019) *Renewable and Sustainable Energy Reviews*, 105, pp. 427-443

- 55) Ahmad, N., Abnisa, F., Wan Daud, W.M.A. Synthesis of valuable intermediate products from natural rubber under supercritical alcohol conditions (2019) *Journal of Analytical and Applied Pyrolysis*, 139, pp. 196-204.
- 56) Razaq, A., In, S.-I. TiO<sub>2</sub> based nanostructures for photocatalytic CO<sub>2</sub> conversion to valuable chemicals (2019) *Micromachines*, 10 (5), art. no. 326,
- 57) Rashid, Z., Wilfred, C.D., Gnanasundaram, N., Arunagiri, A., Murugesan, T. A comprehensive review on the recent advances on the petroleum asphaltene aggregation (2019) *Journal of Petroleum Science and Engineering*, 176, pp. 249-268.
- 58) Rashid, N., Lee, B., Chang, Y.-K. Recent trends in microalgae research for sustainable energy production and biorefinery applications (2019) *Microalgae Biotechnology for Development of Biofuel and Wastewater Treatment*, pp. 3-20
- 59) Hussain, A., Chaniago, Y.D., Riaz, A., Lee, M. Significance of operating pressure on process intensification in a distillation with side-reactor configuration (2019) *Separation and Purification Technology*, 213, pp. 533-544.
- 60) Javed, F., Shamair, Z., Ali, S., Ahmad, N., Hafeez, A., Fazal, T., Saif Ur Rehman, M., Zimmerman, W.B., Rehman, F. "pushing and pulling" the equilibrium through bubble mediated reactive separation for ethyl acetate production (2019) *Reaction Chemistry and Engineering*, 4 (4), pp. 705-714.
- 61) Ahmad, R., Kim, J.K., Kim, J.H., Kim, J. Diethylene glycol-assisted organized TiO<sub>2</sub> nanostructures for photocatalytic wastewater treatment ceramic membranes (2019) *Water (Switzerland)*, 11 (4), art. no. 750,
- 62) Naseer, A., Jamshaid, A., Hamid, A., Muhammad, N., Ghauri, M., Iqbal, J., Rafiq, S., Khuram, S., Shah, N.S. Lignin and lignin based materials for the removal of heavy metals from waste water - An overview (2019) *Zeitschrift fur Physikalische Chemie*, 233 (3), pp. 315-345.
- 63) Ullah, Z., Bustam, M.A., Man, Z., Khan, A.S., Sarwono, A., Muhammad, N., Farooq, M., Shah, S.N., Ahmad, P., Haider, S. Phosphonium-based hydrophobic ionic liquids with fluorine anions for biodiesel production from waste cooking oil (2019) *International Journal of Environmental Science and Technology*, 16 (3), pp. 1269-1276.
- 64) Shahbaz, M., Taqvi, S.A., Minh Loy, A.C., Inayat, A., Uddin, F., Bokhari, A., Naqvi, S.R. Artificial neural network approach for the steam gasification of palm oil waste using bottom ash and CaO (2019) *Renewable Energy*, 132, pp. 243-254.
- 65) Tabriz, A., Ur Rehman Alvi, M.A., Khan Niazi, M.B., Batool, M., Bhatti, M.F., Khan, A.L., Khan, A.U., Jamil, T., Ahmad, N.M. Quaternized trimethyl functionalized chitosan based antifungal membranes for drinking water treatment (2019) *Carbohydrate Polymers*, 207, pp. 17-25
- 66) Tan, M., Ma, L., Rehman, M.S.U., Ahmed, M.A., Sajid, M., Xu, X., Sun, Y., Cui, P., Xu, J. Screening of acidic and alkaline pretreatments for walnut shell and corn stover biorefining using two way heterogeneity evaluation (2019) *Renewable Energy*, 132, pp. 950-958
- 67) Hussain, A., Chaniago, Y.D., Riaz, A., Lee, M. Process Design Alternatives for Producing Ultra-high-purity Electronic-Grade Propylene Glycol Monomethyl Ether Acetate (2019) *Industrial and Engineering Chemistry Research*, 58 (6), pp. 2246-2257.
- 68) Lee, S.H., Lee, K.-S., Sorcar, S., Razaq, A., Lee, M.-G., In, S.-I. Novel porous brain electrodes for augmented local field potential signal detection (2019) *Materials*, 12 (3), art. no. 542,
- 69) Ishaq, S., Tamime, R., Bilal, M.R., Khan, A.L. Mixed matrix membranes comprising of polysulfone and microporous Bio-MOF-1: Preparation and gas separation properties (2019) *Separation and Purification Technology*, 210, pp. 442-451.
- 70) Zagho, M.M., AlMaadeed, M.A.A., Majeed, K. Role of TiO<sub>2</sub> and carbon nanotubes on polyethylene, and effect of accelerated weathering on photo oxidation and mechanical properties (2019) *Journal of Vinyl and Additive Technology*, 25 (1), pp. 19-25.

- 71) Tran, X.T., Park, S.S., Song, S., Haider, M.S., Imran, S.M., Hussain, M., Kim, H.T. Electroconductive performance of polypyrrole/reduced graphene oxide/carbon nanotube composites synthesized via in situ oxidative polymerization (2019) *Journal of Materials Science*, 54 (4), pp. 3156-3173.
- 72) Abbas, T., Wadhawan, T., Khan, A., McEvoy, J., Khan, E. A biologically stimulated industrial waste for treating pesticides in water (2019) WEFTEC 2019 - 92nd Annual Water Environment Federation's Technical Exhibition and Conference, pp. 3737-3738.
- 73) Abbas, T., Wadhawan, T., Khan, A., McEvoy, J., Khan, E. A low-cost industrial waste-based point-of-use filter for treating pesticide contaminated water (2019) WEFTEC 2019 - 92nd Annual Water Environment Federation's Technical Exhibition and Conference, pp. 2124-2125.
- 74) Sajid, M., Ayoub, M., Uemura, Y., Yusup, S., Saleem, M., Abdullah, B., Khan, A.U. Comparative study of glycerol conversion to polyglycerol via conventional and microwave irradiation reactor (2019) *Materials Today: Proceedings*, 16, pp. 2101-2107.
- 75) Doggar, M.G., Khurram, M.S., Mirza, S., Ghauri, M., Jamil, F., Muhammad, N., Rafiq, S., Jaffery, M.H. Biomass power generation potential and utilization in Pakistan (2019) *Current Organic Chemistry*, 23 (21), pp. 2350-2365.
- 76) Gardazi, S.M.H., Shah, J.A., Ashfaq, T., Sherazi, T.A., Ali, M.A., Pervez, A., Rashid, N., Iqbal, J., Amin, B.A.Z., Bilal, M. Equilibrium, kinetics and thermodynamic study of the adsorptive removal of methylene blue from industrial wastewater by white cedar sawdust (2019) *Environment Protection Engineering*, 45 (3), pp. 5-22.
- 77) Fazal, T., Faisal, A., Mushtaq, A., Hafeez, A., Javed, F., Alaud Din, A., Rashid, N., Aslam, M., Rehman, M.S.U., Rehman, F. Macroalgae and coal-based biochar as a sustainable bioresource reuse for treatment of textile wastewater (2019) *Biomass Conversion and Biorefinery*, .
- 78) Tabinda, A.B., Fatima, U., Batool, M., Yasar, A., Rasheed, R., Iqbal, A., Mahfooz, Y. A study on recycling and reuse of sugar mill industrial waste (2019) *Energy Sources, Part A: Recovery, Utilization and Environmental Effects*
- 79) Inayat, A., Jamil, F., Raza, M., Khurram, S., Ghenai, C., Al-Muhatseb, A.H. Upgradation of waste cooking oil to biodiesel in the presence of green catalyst derived from date seeds (2019) *Biofuels*
- 80) Aslam, A., Fazal, T., Zaman, Q.U., Shan, A., Rehman, F., Iqbal, J., Rashid, N., Rehman, M.S.U. Biorefinery of microalgae for nonfuel products (2019) *Microalgae Cultivation for Biofuels Production*, pp. 197-209.
- 81) Alvi, M.A.U.R., Khalid, M.W., Ahmad, N.M., Niazi, M.B.K., Anwar, M.N., Batool, M., Cheema, W., Rafiq, S. Polymer concentration and solvent variation correlation with the morphology and water filtration analysis of polyether sulfone microfiltration membrane (2019) *Advances in Polymer Technology*, 2019, art. no. 8074626,
- 82) Ali, M., Saleem, M., Khan, Z., Watson, I.A. The use of crop residues for biofuel production (2019) *Biomass, Biopolymer-Based Materials, and Bioenergy: Construction, Biomedical, and other Industrial Applications*, pp. 369-395
- 83) Kim, J., Aslam, M., Ahmad, R. Alumina membrane bioreactor (2019) *Current Trends and Future Developments on (Bio-) Membranes: Ceramic Membrane Bioreactors*, pp. 115-139.
- 84) Shehzad, N., Tahir, M., Johari, K., Murugesan, T., Hussain, M. Fabrication of highly efficient and stable indirect Z-scheme assembly of AgBr/TiO<sub>2</sub> via graphene as a solid-state electron mediator for visible light induced enhanced photocatalytic H<sub>2</sub> production (2019) *Applied Surface Science*, 463, pp. 445-455.
- 85) Yasin, M., Cha, M., Chang, I.S., Atiyeh, H.K., Munasinghe, P., Khanal, S.K. Syngas fermentation into biofuels and biochemicals (2019) *Biomass, Biofuels, Biochemicals: Bio fuels: Alternative Feedstocks and Conversion Processes for the Production of Liquid and Gaseous Biofuels*, pp. 301-327

- 86) Rashid, N., Selvaratnam, T., Park, W.-K. Resource recovery from waste streams using microalgae: Opportunities and threats (2019) *Microalgae Cultivation for Biofuels Production*, pp. 337-351.
- 87) Saqib, S., Rafiq, S., Chawla, M., Saeed, M., Muhammad, N., Khurram, S., Majeed, K., Khan, A.L., Ghauri, M., Jamil, F., Aslam, M. Facile CO<sub>2</sub> Separation in Composite Membranes (2019) *Chemical Engineering and Technology*, 42 (1), pp. 30-44.
- 88) Abdullah, M.A., Nazir, M.S., Tahir, Z., Abbas, Y., Akhtar, M.N., Raza, M.R., Hussein, H.A. Processing aspects and biomedical and environmental applications of sustainable nanocomposites containing nanofillers (2019) *Sustainable Polymer Composites and Nanocomposites*, pp. 727-757.