



Mukarram Zubair , PhD

Lecturer

Personal Data

Nationality | Pakistan

Department | Environmental Engineering

Official IAU Email | mzzubair@iau.edu.sa

Office Phone No. | +966562149458

Language Proficiency

Language	Read	Write	Speak
Arabic	Good	Beginner	Beginner
English	Very good	Very good	Very good
Urdu	Very good	Very good	Very good

Academic Qualifications (Beginning with the most recent)

Date	Academic Degree	Place of Issue	Address
2022	PhD-Water and Wastewater Treatment	Universiti Sains Malaysia	Malaysia
2013	MS-Chemical Engineering	King Fahd University of Petroleum and Minerals	Saudi Arabia
2009	PGD-Petroleum Technology	University of Teesside	United Kingdom
2007	MSc-Applied Chemistry	University of Karachi	Pakistan
2006	BSc(H)- Applied Chemistry	University of Karachi	Pakistan

PhD, Master or Fellowship Research Title: (Academic Honors or Distinctions)

PhD	Layered double hydroxides biochar biocomposites for the adsorption of Eriochrome Black T from water
MS-Chem Eng	Modification of styrene-methyl methacrylate copolymer using microwave radiation in the presence of neat and functionalized graphene
PGD- Pet Tech	Investigation of Oil Manager in Aspen HYSYS and interpretation of results using pseudo components in distillation column



Professional Record:

Job Rank	Place and Address of Work	Date
Lecturer	Environmental Engineering Department, College of Engineering, University of Dammam	September 2014-Onwards
Engineer II	Centre of Environment and Water, RI, King Fahd University of Petroleum and Minerals	October 2013-July 2014
Research Assistant	Chemical Engineering Department, King Fahd University of Petroleum and Minerals	September 2011-Oct 2013

Administrative Positions Held: (Beginning with the most recent)

Administrative Position	Office	Date
SDP Coordinator	College of Engineering and Environmental Engineering Department	Sep 2022-onwards
Laboratory Supervisor	Environmental Engineering Department	Sep 2014-onwards
Community Service (Member)	College of Engineering and Environmental Engineering Department	Sep 2020-onwards
Student academic advisor	Environmental Engineering Department	Sep 2020-onwards

Scientific Achievements

Published Refereed Scientific Researches

Name of Investigator(s)	Research Title	Publisher and Date of Publication
Salman Ahmad, Ghulam Mujtaba, Mukarram Zubair, Mansoor Ul Hassan Shah, Muhammad Daud, Nuhu Dalhat Mu'azu, Mamdouh A Al-Harhi	A review of performance, mechanism, and challenges of layered double hydroxide-based biocomposites for the adsorptive removal of dye contaminants from water and wastewater	Journal of Water Process Engineering, 2025
MS Manzar, T Ahmad, M Zubair, M Nasir, HA Alqahtani, M Imran, ND Mu'azu, L Meili, IU Ahmed, ML Firmansyah, N Ullah	Comparative adsorption of tetracycline by acid-modified silicomanganese fumes: kinetic and process modelling	International Journal of Environmental Analytical Chemistry, 2025



M Zubair, MS Manzar, SA Khan, MA Suleiman, M Nawaz, TA Khan, OY Bakather, BMV da Gama, M Yasir, L Melli, G Khan	Enhanced adsorption of anionic dyes onto NaOH modified green coffee waste biochar: characteristics and performance evaluation	International Journal of Environmental Science and Technology, 2024
Muhammad Yasir, Hamza Ul Haq, Muhammad Nouman Aslam Khan, Jawad Gul, Mukarram Zubair, Vladimír Sedlařík	Adsorption Capacity Prediction and Optimization of Electrospun Nanofiber Membranes for Estrogenic Hormone Removal Using Machine Learning Algorithms	Polymers for Advanced Technologies, 2024
Mukarram Zubair, Muhammad Yasir, Michal Machovsky, Nadeem Baig, Mohammad Saood Manzar, Jehad Abdulfatah Sadeq Odeh, Mohamed K Hassan, Alaa Hawari, Jehad Odeh, Emre Cevik, Maryam Al-Ejji	Photocatalytically active layered double hydroxide-PVDF composite membranes for effective remediation of dyes contaminated water	Chemosphere, 2024
Muhammad Yasir, Hassan Ali, Milan Masar, Fahanwi Asabuwa Ngwabebhoh, Mukarram Zubair, Tomas Sopik, Michal Machovsky, Ivo Kuritka, Vladimir Sedlarik	Design and fabrication of TiO ₂ /Nd polyurethane nanofibers based photoreactor: A continuous flow kinetics study for Estriol degradation and mechanism	Journal of Water Process Engineering, 2023
Maryam Al-Ejji, Deepalekshmi Ponnamma, Khadija Zadeh, Mukarram Zubair, Ahmed Yasir, Mohamed Hassan, Noura Abdelhadi, Kenan Song, Alaa H Hawari	Advanced Membrane Technology to Remove Boron from Water and Wastewater: A Comprehensive Study	ACS Applied Polymer Materials, 2023
Mukarram Zubair, Mohammad Saood Manzar, Amjad El-Qanni, Hajira Haroon, Hissah A Alqahtani, Dana Al-Hashim, Nuhu Dalhat Mu'azu, Jwahr M	Biochar-layered double hydroxide composites for the adsorption of tetracycline from water. Synthesis, Process Modeling and Mechanism	Environmental Science and Pollution Research, 2023



AlGhamdi, Shamsuddeen A Haladu, Syed Z Ahmed		
Muhammad Arif Aziz, Mukarram Zubair, Khalid Saqer Alotaibi, Muhammad Nasir, Mohammad Saood Manzar, Tag Nasreldin Hussein, Yasir M Alharthi	Development and Evaluation of Engineered Nanocellulose-Based Mortar Synthesized Using Hydrolysis of Strong and Weak Acids	Arabian Journal for Science and Engineering, 2023
Mohammad Saood Manzar, Tauqir Ahmad, Mukarram Zubair, Nisar Ullah, Hissah A Alqahtani, Brigida Maria V da Gama, Jordana Georjin, Muhammad Nasir, Nuhu Dalhat Mu'azu, Jwahr M Al Ghamdi, Hamidi Abdul Aziz, Lucas Meil	Comparative adsorption of tetracycline onto unmodified and NaOH-modified silicomanganese fumes: Kinetic and process modeling	Chemical Engineering Research and Design, 2023
Muhammad Arif Aziz, Mukarram Zubair, Muhammad Saleem, Yasir M Alharthi, Noman Ashraf, Khalid Saqer Alotaibi, Omer Aga, Ammar Ali A Al Eid	Mechanical, non-destructive, and thermal characterization of biochar-based mortar composite	Biomass Conversion and Biorefinery, 2023
Mukarram Zubair, Hamidi Abdul Aziz, Ihsanullah Ihsanullah, Mohd Azmier Ahmad, Mamdouh A Al-Harhi	Engineered biochar supported layered double hydroxide-cellulose nanocrystals composite-: Synthesis, characterization and azo dye removal performance	Chemosphere, 2022
Mukarram Zubair, Mohammad Saood Manzar, Mohammed Awwal Suleiman, Daniel Pinto Fernandes, Lucas Meili, Waad Al Bin Essa, Hawra Al-Adam, Jwahr M AlGhamdi, Nuhu Dalhat Mu'azu, Shamsuddeen A Haladu, Gulraiz Khan	Production of magnetic biochar-steel dust composites for enhanced phosphate adsorption	Journal of Water Process Engineering, 2022
Enhanced removal of Eriochrome Black T from	Mukarram Zubair, Hamidi Abdul Aziz, Ihsanullah	Environmental Research, 2022



water using biochar/layered double hydroxide/chitosan hybrid composite: Performance evaluation and optimization using BBD-RSM approach	Ihsanullah, Mohd Azmier Ahmad, Mamdouh A Al-Harhi	
Cellulose nanocrystals from office paper waste for green mortar: process optimization modeling, characterization, and mechanical properties	Mukarram Zubair, Nuhu Dalhat Mu'azu, Muhammad Nasir, Mohammad Saood Manzar, Muhammad Arif Aziz, Muhammad Saleem, Mamdouh A Al-Harhi	Arabian Journal for Science and Engineering, 2022
RSM-CCD optimization approach for the adsorptive removal of Eriochrome Black T from aqueous system using steel slag-based adsorbent: Characterization, Isotherm, Kinetic ...	Mohammad Saood Manzar, Gulraiz Khan, Pollyanna Vanessa dos Santos Lins, Mukarram Zubair, Saif Ullah Khan, Rangabhashiyam Selvasembian, Lucas Meili, Nawaf I Blaisi, Muhammad Nawaz, Hamidi Abdul Aziz, TS Kayed	Journal of Molecular Liquids, 2021
Ihsanullah Ihsanullah, Arshad Jamal, Muhammad Ilyas, Mukarram Zubair, Gulraiz Khan, Muataz Ali Atieh	Bioremediation of dyes: Current status and prospects	Journal of Water Process Engineering, 2020
Mohammad Saood Manzar, Shamsuddeen A Haladu, Mukarram Zubair, Nuhu Dalhat Mu'azu, Aleem Qureshi, Nawaf I Blaisi, Thomas F Garrison, Othman Charles S Al Hamouz	Synthesis and characterization of a series of cross-linked polyamines for removal of Eriochrome Black T from aqueous solution	Chinese Journal of Chemical Engineering, 2020
Mukarram Zubair, Rebecca Ferrari, Omar Alagha, Nuhu Dalhat Mu'azu, Nawaf I Blaisi, Ijlal Shahrukh Ateeq, Mohammad Saood Manzar	Microwave Foaming of Materials: An Emerging Field	Polymers, 2020



Mukarram Zubair, Ihsanullah Ihsanullah, Hamidi Abdul Aziz, Mohd Azmier Ahmad, Mamdouh A Al-Harthi	Sustainable wastewater treatment by biochar/layered double hydroxide composites: Progress, challenges, and outlook	Bioresource Technology, 2020
Mukarram Zubair, Mohammad Saood Manzar, Nuhu Dalhat Mu'azu, Ismail Anil, Nawaf I Blaisi, Mamdouh A Al-Harthi	Functionalized MgAl-layered hydroxide intercalated date-palm biochar for Enhanced Uptake of Cationic dye: Kinetics, isotherm and thermodynamic studies	Applied Clay Science, 2020
Nuhu Dalhat Mu'azu, Nabeel Jarrah, Mukarram Zubair, Mohammad Saood Manzar, Taye Saheed Kazeem, Aleem Qureshi, Shamsuddeen A Haladu, Nawaf I Blaisi, Mohammad H Essa, Mamdouh A Al-Harthi	Mechanistic aspects of magnetic MgAlNi barium-ferrite nanocomposites enhanced adsorptive removal of an anionic dye from aqueous phase	Journal of Saudi Chemical Society, 2020
Mohammad Saood Manzar, Mukarram Zubair, Nadeem A Khan, Afzal Husain Khan, Umair Baig, Muhammad Arif Aziz, Nawaf I Blaisi, Hisham IM Abdel-Magid	Adsorption behaviour of green coffee residues for decolourization of hazardous congo red and eriochrome black T dyes from aqueous solutions	International Journal of Environmental Analytical Chemistry, 2020
Omar Alagha, Mohammad Saood Manzar, Mukarram Zubair, Ismail Anil, Nuhu Dalhat Mu'azu, Aleem Qureshi	Comparative Adsorptive Removal of Phosphate and Nitrate from Wastewater Using Biochar-MgAl LDH Nanocomposites: Coexisting Anions Effect and Mechanistic Studies	Nanomaterials, 2020
Omar Alagha, Mohammad Saood Manzar, Mukarram Zubair, Ismail Anil, Nuhu Dalhat Mu'azu, Aleem Qureshi	Magnetic Mg-Fe/LDH Intercalated Activated Carbon Composites for Nitrate and Phosphate Removal from Wastewater: Insight into Behavior and Mechanisms	Nanomaterials, 2020



Nuhu Dalhat Mu'azu, Nabeel Jarrah, Mukarram Zubair, Mohammad Saood Manzar, Taye Saheed Kazeem, Mamdouh Al-Harhi	Evaluation of novel Mg/Al/Ni-BaFe ternary layered hydroxides uptake of methyl orange dye from water	Korean Journal of Chemical Engineering, 2019
Mamdouh A. Al-Harhi Hafiz Muhammad Afzal, Farrukh Shehzad, Mukarram Zubair, Omer Yahya Bakather	Influence of microwave irradiation on thermal properties of PVA and PVA/graphene nanocomposites	Journal of Thermal Analysis and Calorimetry, 2019
Taye Saheed Kazeem, Mukarram Zubair, Muhammad Daud, Nuhu Dalhat Mu'azu, Mamdouh Ahmed Al-Harhi	Graphene/ternary layered double hydroxide composites: Efficient removal of anionic dye from aqueous phase	Korean Journal of Chemical Engineering, 2019
NI Blaisi, M Zubair, S Ali, TS Kazeem, MS Manzar, W Al-Kutti, MA Al Harhi	Date palm ash-MgAl-layered double hydroxide composite: sustainable adsorbent for effective removal of methyl orange and eriochrome black-T from aqueous phase	Environmental Science and Pollution Research, 2018
ND Mu'azu, N Jarrah, TS Kazeem, M Zubair, M Al-Harhi	Bentonite-layered double hydroxide composite for enhanced aqueous adsorption of Eriochrome Black T	Applied Clay Science, 2018
MA Al-Harhi, M Zubair	Exfoliated graphene/p (s-co-mma) nanocomposite	US Patent, 2018
MA Al-Harhi, M Zubair	Method of forming a surface-modified nanocomposite	US Patent 9,976,004, 2018
ND Mu'azu, SA Haladu, N Jarrah, M Zubair, MH Essa, SA Ali	Polyaspartate extraction of cadmium ions from contaminated soil: Evaluation and optimization using central composite design	Journal of Hazardous Materials, 2018



ND Mu'azu, N Jarrah, M Zubair, O Alagha	Removal of Phenolic Compounds from Water Using Sewage Sludge-Based Activated Carbon Adsorption: A Review	International Journal of Environmental Research and Public Health, 2017
MA Al-Harhi, M Zubair	Method of covalently bonding a polymer/surface modified graphene nanocomposite	US Patent 9,738,775, 2017
MA Al-Harhi, M Zubair	Method of covalently bonding a polymer/surface modified graphene nanocomposite	US Patent 9,745,429, 2017
M Zubair, M Daud, G McKay, F Shehzad, MA Al-Harhi	Recent progress in layered double hydroxides (LDH)-containing hybrids as adsorbents for water remediation	Applied Clay Science, 2017
MA Al-Harhi, M Zubair	Effect of modified graphene and microwave irradiation on the mechanical and thermal properties of P (S-co-MMA)/graphene nanocomposites	US Patent 9,701,819, 2017
M Zubair, N Jarrah, MS Manzar, MA Al-Harhi, ND Mu'azu	Highly efficient removal of Pb (II) ion from aqueous phase using surface-modified graphene: equilibrium and kinetic study	DESALINATION AND WATER TREATMEN, 2017
MA Al-Harhi, M Zubair	Functionalization of P (S-co-MMA)/graphene nanocomposites through microwave irradiation	US Patent 9,657,148, 2017
A Khalid, M Zubair, Ihsanullah	A Comparative Study on the Adsorption of Eriochrome Black T Dye from Aqueous Solution on Graphene and Acid-Modified Graphene	Arabian Journal for Science and Engineering, 2017
M Zubair, N Jarrah, MS Manzar, M Al-Harhi, M Daud, ND Mu'azu	Adsorption of eriochrome black T from aqueous phase on MgAl-, CoAl-and	Journal of Molecular Liquids



	NiFe-calcined layered double hydroxides: Kinetic, equilibrium and thermodynamic studies	
M Zubair, F Shehzad, MA Al-Harhi	Impact of modified graphene and microwave irradiation on thermal stability and degradation mechanism of poly (styrene-co-methyl methacrylate)	Thermochimica Acta, 2016
M Zubair, J Jose, MA Al-Harhi	Evaluation of mechanical and thermal properties of microwave irradiated poly (styrene-co-methyl methacrylate)/graphene nanocomposites	Composite Interfaces, 2015

Completed Research Projects

#	Name of Investigator(s) (Supported by)	Research Title	Report Date
1	AlGhamdi, Jwahr, Nuhu Dalhat, Shamsuddine, Mukarram Zubair Synthesis of Novel	Cross-Linked Ionic Polymer/Layered Double Hydroxide (LDH) Composites For Antibiotics Removal From Water	Sep 2022
2	Walid Al-Kutti, Arif Aziz, Mukarram Zubair, Omar Aga	Production, characterization, and application of biochar derived date palm frond as cement replacement for improved textural, physical and thermal characteristics of concrete	Sep 2022
3	Mukarram Zubair, Nuhu Dalhat, Nawaf Blaisi, Muhammad	Process optimization of cellulose nanocrystals from office paper waste and its utilization as renewable additive for strong green concrete Nasir, Walid Al-Kutti	April 2022
4	Nuhu Dalhat, Shamsuddin, Mukarram Zubair, Omar Aga	Development and testing of scale and corrosion green inhibitors from natural extracts of sumac, pumpkin and clove oil for potential industrial applications	August 2022
5	Habis, Nawaf I. Blaisi, Mukarram Zubair, Muhammad	Production of Jojoba oil from jojoba seeds and its application of residues for the adsorption removal of anionic dyes.	Sep 2020



	Saud Manzar, Abdallah Manda		
6	Mukarram Zubair, Ismail Anil, Nawaf Blaisi, Nuhu Dalhat, Saood Manzar,	Production and characterization of engineered biochar for effective recovery of phosphate from wastewater	Sep 2020
7	Mukarram Zubair, Nawaf Blaisi, Mamdouh Al-harhi	Date palm ash and modified date palm ash for efficient removal of dyes	Jan 2019
8	Nabeel Jarrah, Nuhu Dalhat, Omar Aga, Mukarram Zubair, Essa	Granular activated carbon from sewage sludge and its application for phenolic compound removal	Sep 2018
9	Mukarram Zubair, Nabeel Jarrah, Nuhu Dalhat, Mamdouh Al-Harhi, Saood Manzar	Layered double hydroxides nano hybrids for remediation toxic organic pollutants	Jan 2016
10	Mamdouh Al Harthi, Mukarram Zubair, Jobin Jose	Modification of styrene-methyl methacrylate copolymer using microwave radiation in the presence of neat and functionalized graphene	Sep-2015
11	Mukarram Zubair, Nabeel Jarrah, Nuhu Dalhat, Saood Manzar	Synthesis, characterization of surface modified graphene and its application for the adsorption of lead and organic pollutants	Sep 2014

Current Researches

#	Research Title	Name of Investigator(s)
1	Development of nanocomposite membranes for hemodialysis pure water	Nuhu Dalhat, Mukarram Zubair Shamsuddin, Amre
2	Development of new green material for construction industry	Arif Aziz, Mukarram Zubair, Muhammad Nasir
3	Oil spill removal using low cost natural fibers	Mukarram Zubair, Muhmmad Saud Manzar
4	Low cost and sustainable Direct air capture systems	Mukarram Zubair, Ismail Anil, Nuhu Dalhat, Saud Manzar, Ibrahim Al-Jaman

Membership of Scientific and Professional Societies and Organizations

- AICHE-Saudi Chapter
- ACS-Saudi Chapter
- SPE-IAU Chapter



- IBI-USA

Teaching Activities

Undergraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
1	Unit Operation and processes I	ENVEN 411	12-15
2	Environmental Chemistry	ENVEN 311	12-15
3	Air Pollution Control	ENVEN 442	12-15
4	Wastewater Engineering II	ENVEN 422	12-15
5	Summer Training I	ENVEN 333	4-5 weeks
6	Water Supply Engineering	ENVEN 342	12-15 weeks
7	Desalination Technologies	ENVEN 514	12-15
8	Unit Operation and Processes II	ENVEN 432	12-15 weeks
9	Senior Design Project I and II	ENVEN 521-522	30 weeks
10	Special Topics in Environmental Engineering	ENVEN 511	12-15 weeks
11	Unit Operation and processes II	ENVEN 432	12-15

Brief Description of Undergraduate Courses Taught: (Course Title – Code: Description)

1	Unit Operation and processes I (Coagulation flocculation, adsorption, precipitation, filtration, ion-exchange)
2	Unit operation and processes II (SDI, SVI, advanced oxidation, anerobic and aerobic reactor, chlorination, reverse osmosis)
3	Environmental Chemistry (pH, turbidity, color, hardness, alkalinity, acidity, BOD, COD)
4	Air Pollution Control (cyclones, venture scrubber, spray chamber, filter bags, electrostatic precipitator)
5	Wastewater Engineering II (advanced oxidation, aerobic reactor, dissolved air flotation, sewage sludge reactor)

Student Academic Supervision and Mentoring

#	Level	Number of Students	From	To
1	Undergraduate	4	Jan-2015	June-2015
2	Undergraduate	6	Jan-2016	June-2016



3	Master	1	2015	2017
4	Undergraduate	2	June 2017	June 2018
5	Undergraduate	16	Sep 2020	Sep 2021
6	Undergraduate	20	Sep 2022	Sep 2023
7	Undergraduate	12	Sep 2024	Onwards

Administrative Responsibilities, Committee and Community Service

Committee Membership

#	From	To	Position	Organization
1	Sep 2018	Onwards	Member	Environmental Department Lab committee, IAU
2	Sep 2019	Sep 2020	Member	CoE scientific research committee, IAU
3	Sep 2021	Onwards	Member	CoE senior design project committee, IAU
4	Sep 2022	Onwards	Member	CoE community services committee, IAU

Personal Key Competencies and Skills: (Computer, Information technology, technical, etc.)

1	Microsoft Office 2022
2	Origin Lab 8-10
3	Design of Expert 11
3	Material Characterization instruments (SEM, BET, FTIR, DSC, TGA, XRD)
4	Python

Last Update

06/04/2025