

Dr. Engr. Mansoor Ul Hassan Shah

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AWARDS & HONORS

- Graduate Research Assistant (GRA) Scholarship winner, given by Universiti Teknologi PETRONAS, Malaysia for PhD studies.
- Winner (*First Position*) of the Three Minute Thesis (3MT) competition (**PhD, Engineering Category**), organized by Universiti Teknologi, PETRONAS, Malaysia.
- Senior Member of the *International Association for Carbon Capture (IACC)*. Membership No. 202310020197 (Since 2023)
- Paper on UN (*Sustainable Development Goal*) SDG 06 is included in *Elsevier* special collection of journal articles on *World Water Day 2024*, under the theme “*Water for Peace*”.
- Life time member of the *Pakistan Engineering Council (PEC)*. ID CHEM/6667
- Position holder (**overall 3rd position**) of BSc Chemical Engineering with honors (**80.56% aggregate marks**).
- Obtained **3rd position** in third year of BSc Chemical Engineering and secured Merit Scholarship.
- Got **2nd position** in second year of BSc Chemical Engineering and secured Merit Scholarship.
- Worked as a team member in writing and winning several research grants during my stay at Universiti Teknologi PETRONAS (UTP), Malaysia.

ACADEMIC QUALIFICATION

June, 2020	Ph.D., Chemical Engineering, Centre of Research in Ionic Liquids (CORIL), <i>Universiti Teknologi PETRONAS, Malaysia.</i>
Title of Ph.D. Thesis:	<i>Development of new formulations composed of biosurfactant and ionic liquid surfactants as non-toxic dispersants for oil spill remediation.</i>
April, 2011	M.S., Advanced Chemical Engineering, University of Engineering & Technology, Peshawar, Pakistan. <i>CGPA 3.74 out of 4.00</i>
Title of M.S Thesis:	<i>Estimation of heat transfer coefficient in evaporators for sugar industry.</i>
November, 2007	B.S., (Hons) Chemical Engineering, University of Engineering & Technology, Peshawar, Pakistan. 1 st class with honors (<i>80.56% aggregate marks</i>).

RSEARCH INTEREST

- *Ionic liquids; Wastewater treatment; Green formulations for environmental remediations; Energy storage and conversion materials; CO₂ capture*

RSEARCH STATISTICS

- Peered Peer-reviewed papers (Published): **36**
- Cumulative impact factor: More than **236**
- Patents (US): **01**
- Conference papers: **06**
- Book chapters: **07**
- Citations (Google Scholar): *1192, h-index: 17, i10-index: 25*

PROFESSIONAL EXPERIENCE

Aug. 2013 – Till date	Lecturer , Department of Chemical Engineering, <i>University of Engineering & Technology (UET)</i> Peshawar, Pakistan.
Aug. 2012 - Jul. 2013	Lecturer , Department of Chemical Engineering, College of Engineering, <i>Al-Imam Muhammad Ibn Saud Islamic University, Riyadh, Saudi Arabia.</i>
Dec. 2007- Jul. 2012	Lecturer , Department of Chemical Engineering, <i>University of Engineering & Technology</i> Peshawar, Pakistan.

Academic and Administrative Responsibilities

- ❖ **OBE SAR Team Member:** Self-Assessment Report (SAR) committee for Outcome Based Education (OBE) *as per guidelines of Washington Accord* at Chemical Engineering Department, UET Peshawar (**October 2020- till date**).
- ❖ **Department Accreditation:** Actively organized all department activities as OBE committee member to get four (4) years accreditation for Chemical Engineering Department, UET Peshawar (**Batch 2020- Batch 2023**)
- ❖ **Curriculum Development:** Involved in the OBE based curriculum development of the BSc Chemical Engineering program at UET Peshawar, Pakistan (**October 2020- till date**).
- ❖ **Member Organizing Committee:** Member of the organizing & publication committee of international conference, *Sustainability in Process Industries (SPI-2020 & SPI-2022)*.
- ❖ **Member Scholarship Award Committee:** Evaluate and shortlist the students for different scholarships at Chemical Engineering Department, UET Peshawar (**September. 2021- till date**).
- ❖ **Courses Taught at MSc & PhD level:** Transport Phenomena, Mathematical Methods in Chemical Engineering, Process Dynamics and Control, Process System Engineering, Mini Projects.
- ❖ **Courses Taught at BSc level:** Separation Processes, Heat Transfer, Mass Transfer, Environmental Engineering, Chemical Reaction Engineering, Instrumentation and Process Control.
- ❖ **Projects:** Supervising postgraduate research projects and undergraduate Final Year Design Projects (FYDP) at UET Peshawar.
- ❖ **Internship Advisor:** Worked as an undergraduate student's internship advisor at the Al-Imam Muhammad Ibn Saud Islamic University, Riyadh, Saudi Arabia (**September 2012 - June 2013**).
- ❖ **Semester Coordinator:** Supervised all undergraduate academic activities at UET Peshawar (**June 2011- August 2012**).

POSTGRADUATE RESEARCH SUPERVISION

- *MSc Graduated: 10*
- *MSc Currently Supervising: 05*
- *PhD Currently Supervising: 02*

PUBLICATIONS (SELECTED)

2024

1. Mujtaba, G., **Shah, M. U. H.**, Hai. A., Daud, M., Hayat, M. (2024) "A Holistic Approach to Embracing the United Nation's Sustainable Development Goal (SDG-6) towards water security in Pakistan". *Journal of Water Process Engineering*, 57, 104691. (*I.F = 7.0*)

- Mujtaba, G., Hai, A., **Shah, M. U. H.**, Ullah, A., Anwar, Y., Shah, F., Daud, M., Hussain, A., Ahmed, F., Banat, F. (2024) "Potential of Capparis decidua plant and eggshell composite adsorbent for effective removal of anionic dyes from aqueous medium". *Environmental Research*, 247, 118279. (I.F = 8.3)

2023

- Nazar, M., **Shah, M. U. H.**, Ahmad, A., Yahya, W. Z. N., Goto, M., Moniruzzaman, M. (2023) "Aggregation, toxicity, and biodegradability study of an ionic liquid-based formulation for effective oil spill remediation". *Chemosphere*, 344, 140412. (I.F = 8.8)
- Khan, H., **Shah, M. U. H.** (2023) "Modification Strategies of TiO₂ Based Photocatalysts for Enhanced Visible Light Activity and Energy Storage Ability: A Review", *Journal of Environmental Chemical Engineering*, 11, 111532. (I.F = 7.7)
- Salman, M., Daud, M., Bilal, W., Cheng, C. K., **Shah, M. U. H.**, Harthi, M A. (2023) "Recent advancement in ionic liquid modified layered double hydroxide (IL-LDH): Progress, challenges, and future prospects" *Inorganic Chemistry Communication*, 158, 111591 (I.F = 3.8)
- Ahmad, M. I., Bahtiyar, D., Khan, H. W., **Shah, M. U. H.**, Kiran, L., Aydinol, M. K., Rezanian, S. (2023). "Ionic liquids-assisted electrolytes in aqueous zinc ion batteries". *Journal of Energy Storage*, 72, 108765. (I.F = 9.4)
- Ali, S. A., Mulk, W. U., Khan, H., Shah, S. N., K, Habib, **Shah, M. U. H.**, Saidur, R., (2023) "An Ongoing Futuristic Career of Metal-Organic Frameworks and Ionic Liquids, A Magical Gateway to Capture CO₂; A Critical Review." *ACS, Energy & Fuels*, 37, 20, 15394–15428 (I.F = 5.3)
- Ilyas, M., Younas, M., **Shah, M. U. H.**, Rehman, W. U., Rehman, A. U., Yuan, Z. H., Rezakazemi, M. (2023). "MXene-based 2D Ti₃C₂T_x nanosheets for highly efficient cadmium (Cd²⁺) adsorption". *Journal of Water Process Engineering*, 55, 104131. (I.F = 7.0)
- Mujtaba, G., Ullah, A., Khattak, D., **Shah, M. U. H.**, Daud, M., Ahmad, S., Banat, F. (2023). "Simultaneous adsorption of methylene blue and amoxicillin by starch-impregnated MgAl layered double hydroxide: Parametric optimization, isothermal studies and thermo-kinetic analysis". *Environmental Research*, 235, 116610. (I.F = 8.3)
- Mulk, W. U., Ali, S. A., Shah, S. N., **Shah, M. U. H.**, Zhang, Q. J., Younas, M., Rezakazemi, M. (2023). "Breaking boundaries in CO₂ capture: Ionic liquid-based membrane separation for post-combustion applications". *Journal of CO₂ Utilization*, 75, 102555. (I.F = 7.7)

11. Khan, H. W., Elgharbawy, A. A., **Shah, M. U. H.**, Negash, B. M., Khan, M. K., Khan, K., Yusuf, M. (2023). “Exploring ionic liquids for formaldehyde separation via computational COSMO-RS screening”. *Chemical Engineering Research and Design*, 196, 588-598. (I.F = 3.9)
12. Mulk, W. U., **Shah, M. U. H.**, Shah, S. N., Zhang, Q. J., Khan, A. L., Sheikh, M., Rezakazemi, M. (2023). “Enhancing CO₂ separation from N₂ mixtures using hydrophobic porous supports immobilized with tributyl-tetradecyl-phosphonium chloride [P44414][Cl]”. *Environmental Research*, 116879. (I.F = 8.3)
13. Ali, S. A., Syed., Shah, S. N., **Shah, M. U. H.**, Younas, M., (2023) “Synthesis and performance evaluation of copper and magnesium-based metal organic framework supported ionic liquid membrane for CO₂/N₂ separation”. *Chemosphere*, 311, 136913 (I.F = 8.80).
14. Malik, H., Khan, H. W., **Shah, M. U. H.**, Ahmad, M. I., Khan, I., Al-Kahtani, A. A., Sillanpääf, M., (2023) “Screening of ionic liquids as green entrainers for ethanol water separation by extractive distillation: COSMO-RS prediction and Aspen plus simulation” *Chemosphere*, 311, 136901 (I.F = 8.80).

2022

15. Bilal, M., Ihsanullah, I., **Shah, M. U. H.**, Reddy, V.B. (2022) “Recent advances in the removal of dyes from wastewater using low-cost adsorbents”. *Journal of Environmental Management*, 321, 115981 (I.F = 8.7).
16. Shah, S. N., **Shah, M. U. H.**, Mutalib. M., Chellappan, L. K., Jean-Marc, L., Ullah, N., Suleman, H., (2022) “Ultrasonic assisted extraction of toxic acidic components from acidic oil using 1, 8-diazobicyclo [5. 4. 0] undec-7-ene based ionic liquids” *ACS Omega*, 7, 31, 27479–27489 (I.F = 4.10).
17. Mukhtar, A., Saqib, S., Lin, H., **Shah, M. U. H.**, Ullah, S., Younas, M., Rezakazemi, M., Ibrahim M, (2022). “Current status and challenges in the heterogeneous catalysis for biodiesel production” *Renewable and Sustainable Energy Review*, 157,112012 (I.F = 15.90).
18. Rizwan, M., Ahmad, S., Shah, S. N., Ali, M., **Shah, M. U. H.**, Zaman, M., Krzywanski, J. (2022). “Optimizing the Air Conditioning Layouts of an Indoor Built Environment: Towards the Energy and Environmental Benefits of a Clean Room”. *Buildings*, 12(12), 2158. (I.F = 3.8)
19. Nazar, M., **Shah, M. U. H.**, Yahya, W. Z. N., Goto, M., Moniruzzaman, M. (2022). “Ionic liquid and Tween 80 mixture as an effective dispersant for oil spills: Toxicity, biodegradability, and optimization evaluation”. *ACS Omega* (I.F = 4.10).
20. Ali, S. A., Mulk, W. U., Ullah, Z., Khan, H., Zahid, A., **Shah, M. U. H.**, Shah, S. N. (2022). “Recent Advances

in the Synthesis, Application and Economic Feasibility of Ionic Liquids and Deep Eutectic Solvents for CO₂ Capture: A Review”. *Energies*, 15(23), 9098. (I.F = 3.2)

2021

21. Shah, M. U. H., M., Moniruzzamana, Reddy, V.B., Yusup, S. (2021) “Ionic liquid-biosurfactant blends as an effective dispersant for oil spills: Effect of carbon chain length and degree of saturation”. *Environmental Pollution*, 284, 117119 (I.F = 9.90).
22. Nazar, M., Shah, M. U. H., Yahya, W. Z. N., Goto, M., & Moniruzzaman, M. (2021). “Surface active ionic liquid and Tween-80 blend as an effective dispersant for crude oil spill remediation”. *Environmental Technology & Innovation*, 24, 101868 (I.F = 7.10).
23. Bilal, M., Ihsanullah, I., Younas, M., Shah, M. U. H. (2021). “Recent advances in applications of low-cost adsorbents for the removal of heavy metals from water: A critical review”. *Separation and Purification Technology*, 278, 119510. (I.F = 8.60).
24. Bilal, M., Ihsanullah, I., Shah, M. U. H., Younas, M. (2021). “Enhanced removal of cadmium from water using bio-sorbents synthesized from branches and leaves of *Capparis decidua* and *Ziziphus mauritiana*”. *Environmental Technology & Innovation*, 24, 101922. (I.F = 7.10).
25. Ashraf, M. S., Shah, M. U. H., Bokhari, A., & Hasan, M. (2021). Less is more: Optimising the biocementation of coastal sands by reducing influent urea through response surface method. *Journal of Cleaner Production*, 315, 128208. (I.F = 11.10).
26. Mukhtar, A., Saqib, S., Amen, R., Shah, M. U. H., Ibrahim, M., Mahmood, A., (2021) “Modeling the higher heating value of municipal solid waste for assessment of waste-to-energy potential: A sustainable case study”. *Journal of Cleaner Production*, 287, 1-9, (I.F = 11.10).
27. Ahmad, S., Shah, M. U. H., Shah, N., Ullah, A., Ahmad M, I., (2021) “Sustainable Use of Marble Waste in Industrial Production of Fired Clay Bricks and Its Employment for Treatment of Flue Gases” 6, 35, 22559–22569, *ACS Omega*, (I.F = 4.10).

INTERNATIONAL JOURNAL REVIEWER & GUEST EDITOR

- Biomass Conversion and Biorefinery (*Springer Nature*)
- Journal of the Taiwan Institute of Chemical Engineers (*Elsevier*)
- Cogent Engineering (*Taylor & Francis*)
- Process Safety and Environmental Protection (*Elsevier*)

- Colloid and Polymer Science (*Springer*)

Guest Editor (2023): Frontiers in Chemistry (I.F = 5.54)

Research Topic: Application of Ionic Liquids and Deep Eutectic Solvents in Extraction/Separation and Energy Storage Applications

DECLARATION

I hereby declare that the information and facts stated above are true and correct to the best of my knowledge and belief.