Dr. Amir Muhammad, AFHEA
Assistant Professor
(Faculty of Engineering and Technology / Department of Chemical and Energy Engineering)
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Biography

Dr. Amir is a dedicated and accomplished educator and researcher with a passion for teaching and advancing knowledge in the field of Chemical Engineering. He aims to make a meaningful impact in academia by leveraging his proven track record of effective classroom instruction, impactful research contributions, and commitment to student mentorship. Dr. Amir received his PhD in Chemical Engineering from the University of Engineering and Technology (UET), Peshawar. He has been involved in teaching and research for the last 10 years. Before joining PAF-IAST, he worked as a Lecturer in the Department of Chemical Engineering at UET Peshawar.

Dr. Amir's research focuses on CFD modeling and simulation, membrane contactors, membrane distillation, liquid-liquid extraction, fruit juice concentration, CO_2 capture, and biofuels. He has supervised several Bachelor's and Master's research theses. He has worked closely with international researchers and has published 19 peer reviewed research papers in journals of international repute, along with a book chapter

Education (Last Two Academic Details)

1: Degree Title with Specialization: PhD in Chemical Engineering
University: University of Engineering and Technology, Peshawar
Graduation Year: 2019
2: Degree Title with Specialization: MSc in Chemical Engineering
University: University of Engineering and Technology, Peshawar
Graduation Year: 2014

Experience

1: <u>Teaching Experience:</u>
Assistant Professor **Jan, 2020 to date**

Pak-Austria Fachhochschule: Institute of Applied Sciences & Technology (PAF-IAST), Haripur
Lecturer **Feb, 2015 to Jan, 2020**

Department of Chemical Engineering, University of Engineering & Technology, Peshawar,

2: <u>Research Supervision Experience:</u>
Supervised 6 MS Thesis and 7 FYPs

Patent & Publications

- A. Muhammad, et al. (2024). Electrochemical Approaches Toward CO_2 Capture and Concentration. In: Gupta, R. (eds) Handbook of Energy Materials. Springer, Singapore. https://doi.org/10.1007/978-981-16-4480-1_80-1
- Manoj Kumar Sharma, Amir Muhammad, Ze He, Mohammad Younas, Mohammad Sameti, Mashallah Rezakazemi, Qilin Li, Understanding the phenomena of negative vapor flux in Nanophotonics-Enabled solar membrane distillation, Chemical Engineering Journal, Volume 483, 2024, 149005, ISSN 1385-8947, https://doi.org/10.1016/j.cej.2024.149005 .
- Syed Zia Ullah, Amir Muhammad, Qazi Sohaib, Mohammad Younas, Zhi-Hua Yuan, Mashallah Rezakazemi, CFD simulation of osmotic membrane distillation using hollow fiber membrane contactor: Operating conditions and concentration polarization effects, Chemical Engineering Research and Design 197 (2023) 984–996, https://doi.org/10.1016/j.cherd.2023.08.022 .
- Zahra Madihi, Reza Arefinia, Amir Muhammad, Mohammad Younas, Mashallah Rezakazemi, Investigation of CaCO3 precipitation kinetics using environment-friendly inhibitors based on amide, carboxylic and sulfonic groups in ASTM D1141 standard solution, Chemical Engineering Research and Design, Volume 203, 2024, Pages 492-500, ISSN 0263-8762, https://doi.org/10.1016/j.cherd.2024.01.053.
- Qazi Sohaib, Amir Muhammad, et.al., Rigorous Non-Isothermal Modeling Approach for Mass and Energy Transport during CO_2 Absorption into Aqueous Solution of Amino Acid Ionic Liquids in Hollow Fiber Membrane Contactors, Separation and Purification Technology 254 (2021) 117644, https://doi.org/10.1016/j.seppur.2020.117644