DR.AISHA JILANI

Email: aishajilani@neduet.edu.pk | Phone: 0330-2855919 / 0332-3252167

Career Objective

To contribute in an environment of growth and excellence by applying my academic knowledge and professional skills in chemical and food engineering, while continuously striving for self-development and organizational success.

Education

- PhD (Chemical Engineering) – 2021 – 2025
  NED University of Engineering and Technology, Pakistan
  CGPA: 3.74
  Thesis: Influence of different morphologies of manganese-based cathode material for lithium-air batteries – An experimental and predictive analysis.
- MS (Thermal Power/Thermo Fluid) – 2012 – 2014
  National University of Science and Technology (NUST), Pakistan
  CGPA: 3.5
- B.E. (Mechanical Engineering) – 2008 – 2012
  National University of Science and Technology (NUST), Pakistan
  CGPA: 3.26
- Intermediate (Pre-Engineering) – 2005 – 2006
  Bahria College Karachi, Karachi Board
  77%
- Matriculation (Science) – 2003 – 2004
  Bahria College Karachi, Federal Board
  71%

Professional Experience

- Lecturer, Department of Food Engineering, NED University of Engineering and Technology – Jan 2019 – Present
- Lab Engineer, National University of Science and Technology (PNEC) – Apr 2013 – Dec 2018

Technical Skills

- Software: MATLAB, Aspen Plus, AutoCAD, SolidWorks, Pro-E, ANSYS, Python
- Modeling & Simulation: Computational Fluid Dynamics, Energy Systems Analysis, AI & ML Applications

Research & Projects

- **PhD Research:** Controlled synthesis of manganese-supported noble metal cathode materials for lithium-air batteries; improvement of cyclic efficiency and reduction of overpotential; development of AI-based predictive models for battery life estimation using statistical performance indices (RMSE, AARE, R^2, MAD).
- **MS Thesis:** Exergetic analysis and parametric optimization of variable flow solar chimney power plant using EES for energy and exergy analysis.
- **B.E. Final Year Project**: Design and fabrication of Hybrid Turbine System (wind-water); fabrication of wind turbine blades using resin infusion; stress and flow analysis using ANSYS and FLUENT.

Courses Studied

- Advanced Machine Learning
- Computational Fluid Dynamics
- Advanced Fluid Mechanics
- Fuzzy Logic
- Energy Storage Systems
- Advanced Chemical Reaction Engineering
- Power Plant Engineering
- Convective Heat Transfer
- Project Management
- Statistical Analysis

Publications & Conferences

- **Jilani,** A., Awan, Z. U. H., & Taqvi, S. A. A. (2025). Predictive modeling of Li-Air batteries using artificial neural network: A comparative study of cathode morphology. Periodica Polytechnica Chemical Engineering, 69(1), 57–66.
- **Jilani**, A., Awan, Z., Taqvi, S. A. A., Khan, F., & Alshahrani, T. (2023). Recent advances in the development of Li-Air batteries, experimental and predictive approaches – prospective, challenges, and opportunities. ChemBioEng Reviews, 11(1), 95–114.
- Qi, W., Ming, P., **Jilani**, A., & Peng, Y. (2019). Modeling diesel spray, combustion and emission with GTEA numerical code. SAE Technical Paper Series, 2019-01-0004.
- Qi, W., Ming, P., Peng, Y., & **Jilani**, A. (2018, December 4). Numerical investigation of the characteristics of spray/wall interaction with hybrid breakup model by considering nozzle exit turbulence. SAE International Journal of Engines, 03-12-01-0003.
- Qi, W., Ming, P., **Jilani,** A., & Peng, Y. (2018). A comparison of spray and combustion characteristics of biodiesel (soy methyl ester, rapeseed methyl ester) with diesel. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 232(1), 10–21.