Dr. Faaz Ahmed Butt Assistant Professor Materials Engineering Department NED University of Engineering and Technology faazbutt@cloud.neduet.edu.pk https://sites.google.com/cloud.neduet.edu.pk/drfaazbutt

Education

PhD (Materials Science and Engineering)	KOC University	Turkey	October 2019
M.Engg. (Materials Engineering)	NED University of Engg. and Tech.	Pakistan	January 2015
B.E. (Metallurgical Engineering)	NED University of Engg. and Tech.	Pakistan	December 2011

Professional Career

Lecture- Materials Engineering Department- April 2012 to November 2019 Assistant Professor- Materials Engineering Department- November 2019 till date.

Current responsibilities

- 1. Teaching courses at undergrad level.
- 2. Lab Incharge- Hydrogen Generation Lab.
- 3. Supervising various graduate and undergraduate level projects.

Honors

Recipient of competitive PhD scholarship under Faculty development program by HEC in September 2015 for four years to pursue doctoral studies at KOC University, Turkey.

Research focus

- 1. Metal air and metal ion batteries.
- 2. Hydrogen evolution reaction.

Publications (Selected)

- Ahmed, Ghadia, Faaz Ahmed Butt, Faizan Raza, Saud Hashmi, G. Gnana Kumar, and Maria Christy. "The study of different redox mediators for competent Li–air batteries." *Journal of Power Sources* 538 (2022): 231379.
- Naqvi, Asad A., Awan Zahoor, Asif Ahmed Shaikh, Faaz Ahmed Butt, Faizan Raza, and Inam Ul Ahad. "Aprotic lithium air batteries with oxygen-selective membranes." *Materials for Renewable and Sustainable Energy* 11, no. 1 (2022): 33-46.
- Asad, Samra, Awan Zahoor, Faaz Ahmed Butt, Saud Hashmi, Faizan Raza, Inam Ul Ahad, Jabir Hakami et al. "Recent Advances in Titanium Carbide MXene (Ti3C2T x) Cathode Material for Lithium–Air Battery." *ACS Applied Energy Materials* 5, no. 10 (2022): 11933-11946.

 Zahoor, Awan, Raza Faizan, Khaled Elsaid, Saud Hashmi, Faaz Ahmed Butt, and Zafar Khan Ghouri. "Synthesis and experimental investigation of δ-MnO2/N-rGO nanocomposite for Li-O2 batteries applications." *Chemical Engineering Journal Advances* 7 (2021): 100115.

Courses Taught

Fall 2022- Surface Engineering and Coating Technologies (MM-531)
Fall 2022- Heat Treatment (MM-304)
Fall 2022- Surface Engineering (MM-412)
Spring 2022- Advanced Materials (MY-402)
Spring 2022- Materials Characterisation and Analytical Techniques (MM-308)
Fall 2021- Environmental Engineering and Solar Energy Systems (MM-605)
Fall 2021- Nanotechnology (MM-534)
Fall 2021- Surface Coatings (MM412)
Spring 2021- Advanced Materials Characterisation Techniques (MM-601)
Spring 2021- Materials Characterisation and analytical techniques (MM-308)

Other Responsibilities

Deputy Director QECII (DDQECI)/Deputy Management Representative (DMR)- Nov 2020 PhD Approved Supervisor- April 2021 Incharge Hydrogen Generation Lab Member Board of Review (UL) Member Board of Review QEC Member Board of Faculties (BOF- CPE, MME)

Supervising following research

- 1. PhD Student on sodium ion batteries
- 2. PhD student on cathodes for hydrogen evolution reaction.
- 3. PhD student on max phase synthesis for metal air batteries.

Research Grants and Projects

- 1. PI- Study of hydrogen evolution reaction on noble metal surfaces- Rs. 1 million , ASRB NEDUET- 2021-2022- Potentiostat CS 150
- 2. CoPI- Development of efficient energy storage devices- Rs. 15.7million, HEC NRPU-2021-2023- Potentiostat CS 310 and small battery tester.
- 3. PI- Development of reference electrodes for electrochemical experiments- Rs. 5.4million, HEC NRPU- 2023-2025 (Upgrade of potentiostat CS 150)
- 4. PI- Development of cathode materials for ion batteries- Rs. 3.2million, Sindh HEC, 2023-2025
- 5. CoPI- Development of cathode materials for air batteries- Rs. 2.4 million, Sindh HEC, 2023-2025
- 6. PI- Development of sodium iron phosphate cathodes for batteries- Rs. 1million, ASRB NEDUET, 2023-2025
- 7. PI- Development of Mo based cathodes for HER, Rs. 1 million, ASRB NEDUET, 2022-2024- tube furnace

- 8. CoPI- Development of Mo based mexenes for air batteries, Rs. 1 million, ASRB NEDUET, 2023-2025- centrifuge
- I have good experience in project management and have skills in managing HR, Procurement and Technical work.
- My vision is to make a sustainable ion battery in the next three-four years and commercialize it.
- My hobbies include chess, piano, cricket, and book reading.