



College of Engineering



Razzaqul Ahshan
Associate Professor

CONTACT:

Phone: 24141314

Email: razzaqul@squ.edu.om

LinkedIn:

<https://www.linkedin.com/in/razzaqul-ahshan-3ba45b153/>

Pure:

<https://squ.elsevierpure.com/en/persons/razzaqul-ahshan>

Scopus:

<https://www.scopus.com/authid/detail.uri?authorId=23096981600>

ORCID:

<https://orcid.org/0000-0001-8047-1125>

QUALIFICATION SPECIALIZATION:

- **PhD in Electrical Engineering:** Memorial University of Newfoundland (MUN), Canada, 2013.
- **Master's in Electrical Engineering:** Memorial University of Newfoundland (MUN), Canada, 2008.

HONORS & WARDS:

- **Top 2% Scientists Worldwide, Stanford University (2024, 2023)**
- **SQU's Distinguished Researcher Award (2024)**
- **SQU's Distinguished Academician Award (2021)**
- **Best Paper Award-IEEE Oman Section (2021 and 2023)**

PROFILE

Razzaqul Ahshan is an Associate Professor at Sultan Qaboos University, Oman, with a Ph.D. degree in Electrical Engineering from Memorial University of Newfoundland (MUN), Canada. Razzaqul has more than 22 years of academic and research experience. His research spans renewable energy, microgrids, smart grid, energy management, engineering optimization, and AI for intelligent grid systems. He is a Senior Member of IEEE, USA, and Chair for DEI in IEEE Oman Section, Oman.

Ahshan has received several prestigious awards, including the Distinguished Researcher Award, SQU, Distinguished Academician Award, SQU, Best Paper Award-IEEE Oman Section, and Fellow of the School of Graduate Studies, MUN, Canada. He is an Associate Editor and Guest Editors for several high-impact journals and has authored numerous acclaimed research papers.

WORK EXPERIENCE

- **2022 - Present**
Associate Professor, Department of Electrical & Computer Engineering (SQU)
- **2016-2022**
Assistant Professor, Department of Electrical & Computer Engineering (SQU).
- **2013-2016**
Faculty Member, Electrical (Instrumentation) Engineering Technology, University of Doha Science and Technology (UDST), Qatar.
- **2011-2013**
Faculty Member, Electrical (Instrumentation) Engineering Technology, College of the North Atlantic (CNA), NL, Canada.
- **2006-2013**
Graduate Researcher, Department of Electrical and Computer Engineering, Memorial University of Newfoundland, NL, Canada.
- **2006-2011**
Graduate Teaching Assistant, Department of Electrical and Computer Engineering, Memorial University of Newfoundland, St. John's, NL, Canada.
- **2002-2005**
Lecturer, Department of Electrical and Electronic Engineering, Khulna University of Engineering & Technology, Khulna, Bangladesh.

RESEARCH INTERESTS

- **Microgrids and Smart Grids**
- **Renewable Energy Integration and Power Electronics**
- **Energy Management and Optimization, and Electric Machines**
- **AI for Intelligent Power Systems**

Professional Credentials, Certifications, or licensing

- Energy Manager Certificate

Membership in Professional Organization

- Senior Member, Institute of Electrical and Electronics Engineers, USA, 2006 - present
- Senior Member, IEEE Education Society, January 2021 – present
- Senior Member, IEEE Industry Applications Society, 2020 - present.
- Senior Member, IEEE Education Society, January 2021 – present.

Professional Development Activities

- Attended workshop on “AI in Education”, Centre for Excellence in Teaching and Learning, Sultan Qaboos University, Muscat, Oman, April 17, 2025.
- Attended workshop on “AI in Research”, Centre for Excellence in Teaching and Learning, Sultan Qaboos University, Muscat, Oman, April 17, 2025.
- Deliver Invited Talk on “Power-to-Green Hydrogen (P2GH): A Step Towards Net-Zero Emission”- on IEEE PES Day 2023, IEEE Young Professional Power & Energy Society, 27 May 2023.
- Attended in a Session on “The Awareness Raising Sessions about the Strategies Used for Implementing SQU Teaching Philosophy and Teaching and Learning Methodologies, Centre for Excellence in Teaching and Learning, Sultan Qaboos University, Muscat, Oman, November 9, 2023.

Selected Journal Publications

- Abid, Md Shadman, Razzaqul Ahshan, Mohammed Al-Abri, and Rashid Al Abri. "Spatiotemporal Forecasting of Solar and Wind Energy Production: A Robust Deep Learning Model with Attention Framework." *Energy Conversion and Management*: X 26 (2025): 100919
- Ahshan, Razzaqul, Md Shadman Abid, and Mohammed Al-Abri. "Geospatial Mapping of Large-Scale Electric Power Grids: A Residual Graph Convolutional Network-Based Approach with Attention Mechanism." *Energy and AI* 20 (2025): 100486.
- Apon, Hasan Jamil, Ashik Ahmed, Asif Ur Rahman Adib, and Razzaqul Ahshan. "Integrated planning of emission reduction-based unit commitment and generation dispatch solution for sustainable power system." *Electric Power Systems Research* 244 (2025): 111535.
- Alireza Zakariazadeh, Razzaqul Ahshan, Rashid Al Abri, Mohammed Al-Abri, Renewable energy integration in sustainable water systems: A review, *Cleaner Engineering and Technology*, Volume 18, 2024, 100722.
- Md. Shadman Abid, Razzaqul Ahshan, Rashid Al Abri, Abdullah Al-Badi, Mohammed Albadi: Techno-economic and environmental assessment of renewable energy sources, virtual synchronous generators, and electric vehicle charging stations in microgrids, *Applied Energy*, Volume 353, Part A, 1 January 2024, 122029.
- S. A. Saleh, O. Betancourt, E. Ozokop, R. Ahshan, E. Zundel, Z. Sanchez, J. Meng, The Analysis and Modeling of Voltage Survivability in Power Systems, in *IEEE Transactions on Industry Applications*, Volume: 60, Issue: 3, May-June 2024.
- Md. Shadman Abid, Hasan Jamil Apon, Salman Hossain, Ashik Ahmed, Razzaqul Ahshan, M.S. Hossain Lipu, A novel multi-objective optimization based multi-agent deep reinforcement learning approach for microgrid resources planning, *Applied Energy*, Volume 353, Part A, 1 January 2024, 122028.

Selected Conference Participations

- S. Saleh, J. Meng, M. Haj-Ahmed, R. Ahshan, and E. Castillo-Guerra, "Application and Advantages of the Power-Based Categorization Method in Micro-Grid Systems", In Proc. of the 61-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2025), Montreal, QC, Canada, May 2025.
- Asif Ur Rahman Adib, Md Shadman Abid, Ahshan, Razzaqul. "Hybrid DenseRefine U-Net: A Novel Deep Learning Based Framework for Solar Panel Segmentation." In 2025 IEEE International Conference for Artificial Intelligence: Applications, Innovation and Ethics (AI)²E Muscat, Oman, February 3rd-5th, 2025.
- Ahshan, Razzaqul, Md Shadman Abid, and Mohammed Al-Abri. "Deep Learning-based Prediction of Renewable Energy Resources in Jebel Akhdar, Oman." In 2024 IEEE Sustainable Power and Energy Conference, iSPEC 2024. Institute of Electrical and Electronics Engineers Inc., 2024.
- Soheli, Fardin, Shahriar Tarvir Nushin, Md Monir Uddin Ananda, Md Shadman Abid, and Razzaqul Ahshan. "Optimal Planning of Renewable Energy Resources Under Islanding Condition." In 2024 International Conference on Sustainable Power and Energy, ICSPE 2024. Institute of Electrical and Electronics Engineers Inc., 2024.
- Munira, Sidratum, Razzaqul Ahshan, Md Shadman Abid, and Mohammed Al-Abri. "Solar Panel Dust Detection Using Deep Learning Model." In 2024 IEEE Sustainable Power and Energy Conference, iSPEC 2024, pp. 379-384. Institute of Electrical and Electronics Engineers Inc., 2024.
- Alireza Zakariazadeh, Razzaqul Ahshan, Mohammed Al-Abri, Rashid Al Abri: Optimal placement and sizing of photovoltaics to supply water pumping stations. Presented in the 2024 The 21st International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology, 27-30 May, Khonkaen, Thailand, pp. 1-6.
- S. A. Saleh, M. Haj-Ahmed, P. Sutherland, R. Ahshan, A. Al-Durra and M. E. Valdes, "Detecting Arcing Current Faults in Medium-to-Low Voltage Transformers," 2024 IEEE/IAS 60th Industrial and Commercial Power Systems Technical Conference (I&CPS), Las Vegas, NV, USA, 2024, pp. 1-8.
- R. Ahshan, M. Shadoul, R. Al Abri, M. Albadi, A. Al-Badi: Interval Type-2 Fuzzy logic virtual inertia control, Presented in the 2023 IEEE International Conference on Energy Technologies for Future Grids, 3-6 December, Wollongong, Australia, 2023, pp. 1-6.

Service Activities

- Chair, DEI, IEEE Oman Section, 2022-present.
- Served as an Associated Editor, a Guest Editor, and an Editorial Member.
- Reviewer of High-Impact Journals.
- Served as a Session Chair in the IEEE International Conferences.
- Served as a Technical Committee Member (TPC) for various IEEE International Conferences.