Fahad Bin Sultan University
Faculty of Engineering
Electrical Engineering Department

Ali Q. Al-Shetwi

Education

Degree	Discipline	Institution	Year
Ph.D.	Electrical Engineering	University Malaysia Pahang	2019
MSC	Electrical Power Engineering	Yarmouk University	2013
BSC	Electrical and Computer Engineering	The Hashemite University	2009

Academic experience

Institution	Rank	Title	Dates	Full Time or Part Time
Fahad Bin Sultan University	Assistant professor		2021-Now	Full time

Non-Academic Experience

Company or Entity	Title	Brief Description of Position	Dates	Full Time or Part Time
General Electricity Corporation	Grid Operations Engineer	Monitoring the electrical grid, ensuring its stability, reliability, and efficient operation within the National Control Center.	2013-2015	Full time

Subjects taught over the past two academic years

Course code	Course Name	Institution	Credits
ELEE 250	Electric Circuits II	Fahad Bin Sultan university	3 c.h
ELEE 360	Electric Machines	Fahad Bin Sultan university	3 c.h
ELEE 461	Fundamentals of Power Systems Analysis	Fahad Bin Sultan university	3 c.h
ELEE 468	Renewable Energy Systems	Fahad Bin Sultan university	3 c.h
ELEE 469	Power System Protection	Fahad Bin Sultan university	3 c.h
ELEE 462	Power Electronics	Fahad Bin Sultan university	3 c.h
ELEE 460L	Machines Lab	Fahad Bin Sultan university	1 c.h
ELEE 399L	MATLAB for Engineers	Fahad Bin Sultan university	1 c.h
ELEE 504	Advanced Power System Analysis	Fahad Bin Sultan university	3 c.h
ELEE 503	Advanced Control Systems	Fahad Bin Sultan university	3 c.h

Certifications or professional registrations

-Professional Engineer, Sana'a 2014

Current membership in professional organizations

- Member of Board of Engineers Malaysia, BEM
- Member of the Yemeni Society of Electrical Engineers, YSEE

Honors and Awards

- Best paper award, 2023 IEEE Industry Applications Society Annual Meeting (IAS), Nashville, TN, USA. Coauthor.
- Best Researcher award, Fahad bin Sultan University, May 2022.
- Best Researcher award, College of Engineering, Fahad bin Sultan University, March 2022
- Sliver Prize, UNITEN postdoctoral hangout day (UPhD), September 30, 2019.
- Second Place, Three-Minute Thesis (3-MT) Competition, University Malaysia Pahang (UMP), 2018.

- Ph.D. Fellowship Awards: Doctoral Research Scheme (DRS), University Malaysia Pahang (UMP), October 2015.

Service Activities

- Guest Editor for the special issue titled "High-frequency Converters: Design, Control, and Applications" in the International Transactions on Electrical Energy Systems journal, published by Wiley. 2022-2023
- Guest Associate Editor for Frontiers in Energy Efficiency. 2022-2023.
- Project Leader for the Fence wall and Front yard lighting of the FBSU campus using a solar photovoltaic (PV) system, FBSU, Saudi Arabia, 2022.

Principal Publications and Presentations of the Last Five Years

1- Design of a wind-PV system integrated with a hybrid energy storage system considering economic and reliability assessment. Atawi, I. E., Abuelrub, A., Al-Shetwi, A. Q., & Albalawi, O. H. *Journal of Energy Storage*, 81, 110405, 2024.

2- Performance Analysis of Photovoltaic and Wind Turbine Grid-Connected Systems under LVRT Conditions." Sujod, M. Z., Rahim, M. M. A., Dagang, A. N., & Al-Shetwi, A. Q. *Journal of Advanced Research in Fluid Mechanics and Thermal Sciences* 115.1, 143-155, 2024.

3- Modeling Approach for Hybrid Integration of Renewable Energy Sources with Vehicle-to-Grid Technology, Al-Shetwi, A. Q., *SAE International Journal of Electrified Vehicles*, 13 (14-13-02-0013), 2024.

4- Techno-economic assessment and optimal design of hybrid power generation-based renewable energy systems. Al-Shetwi, A. Q., Atawi, I. E., Abuelrub, A., & Hannan, M. A. Technology in Society, 75, 102352, 2023.

5- Recent advancement of energy internet for emerging energy management technologies: Key features, potential applications, methods and open issues. Hannan, M. A., Pin Jern Ker, M. Mansor, MS Hossain Lipu, Ali Q. Al-Shetwi, R. A. Begum, and S. K. Tiong. *Energy Reports* 10, 3970-3992, 2023.

6- Municipal Solid Waste Fueled Power Generation: A Case Study of Waste-to-Energy. Akter, S., Mohandas, Y., Muttaqi, K. M., Al-Shetwi, A. Q., & Hannan, M. A. (2023, October). *In 2023 IEEE Industry Applications Society Annual Meeting (IAS)* (pp. 1-8). IEEE.

7- Particle Swarm Optimization Algorithm based Fuzzy Controller for Solid-State Transfer Switch Towards Fast Power Transfer and Power Quality Mitigation. Hannan, M. A., Sebastian, G., Al-Shetwi, A. Q., & Uddin, M. N. *IEEE Transactions on Industry Applications.* 58, 2, 1888 – 1898, 2023.

8- A New Cuk-Based DC-DC Converter with Improved Efficiency and Lower Rated Voltage of Coupling Capacitor. Mahafzah, K. A., Al-Shetwi, A. Q., Hannan, M. A., Babu, T. S., & Nwulu, N. *Sustainability*, 15(11), 8515, 2023.

9- The performance of chitosan-based activated carbon for supercapacitor applications towards sustainable energy technologies. Abu, S. M., Ansari, M. N. M., Al-Shetwi, A. Q., Muttaqi, K. M., & Hannan, M. A. *IEEE Transactions on Industry Applications*. 59, 3, 3133 – 3141, 2023.

10- An investigation of a photovoltaic system under distinguished thermal environment conditions. Koushal, A., Chauhan, Y. K., Pachauri, R. K., Babu, T. S., & Al-Shetwi, A. Q. *In Green Energy Systems* (pp. 1-23). Academic Press. 2023.

11- A novel synchronized multiple output DC-DC converter based on hybrid flyback-cuk topologies. Mahafzah, K. A., Obeidat, M. A., Al-Shetwi, A. Q., & Ustun, T. S. *Batteries*, 8(8), 93.2022.

12- Sustainable development of renewable energy integrated power sector: Trends, environmental impacts, and recent challenges. Al-Shetwi, A. Q. *Science of The Total Environment,* 822, 153645. 2022.

13- Hydrogen energy storage integrated hybrid renewable energy systems: A review analysis for future research directions. Arsad, A. Z., Hannan, M. A., Al-Shetwi, A. Q., Mansur, M., Muttaqi, K. M.,

Dong, Z. Y., & Blaabjerg, F. *International Journal of Hydrogen Energy*, 47(39), 17285-17312. 2022.

14- New voltage sensitivity analysis for smart distribution grids using analytical derivation: ABCD model. Alzaareer, K., Saad, M., Al-Shetwi, A. Q., Asber, D., & Lefebvre, S., *International Journal of Electrical Power & Energy Systems,* 137, 107799. 2022.

Most Recent Professional Development Activities

- 2023 IEEE Industry Applications Society Annual Meeting (IAS). Nashville, TN, USA. Virtual attendance.
- 2021 International Conference in Advances in Power, Signal, and Information Technology (APSIT). Bhubaneswar, India. Virtual attendance.