

Dr. Zaid Al Muala

Summary

I am an Assistant Professor in the Renewable Energy Engineering. I earned my PhD in Renewable Energy and Energy Sustainability from the University of Santiago de Compostela, Spain, in 2024. I have several published articles in international journals and I have actively participated in international conferences. I specialize in smart grids and demand side management. My research interests include renewable energy sector development, energy management and optimization, energy storage, and smart grids.



Contact

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Research

[Google Scholar](#)

[ORCID](#)

Citations: 29 (since 2023)

H-index: 3

Software

Matlab

PVsyst

AutoCAD

HOMER

Skills

Academic research

Classroom management

Curriculum development

Scientific communication

Work Experience

10-2024 – Present:

Assistant professor

Department of Renewable Energy Engineering,
Philadelphia University, Jordan

01-2021 – 06-2021:

Lecturer

Queen Noor Technical College of Civil Aviation
Jordan

Education

Ph.D.: Renewable Energy Engineering: 02-2021 - 07-2024

The University of Santiago de Compostela
Spain

MSc: Renewable Energy Engineering: 09-2017 - 08-2019

Mutah University
Jordan

BSc: Electrical Engineering: 09-2009 - 09-2014

Yarmouk University
Jordan

Interests

Renewable energy, Sustainability, Optimization, Energy management,
Smart grids, Energy storage

Languages

Arabic: Native

English: Upper intermediate (B2)

Spanish: Intermediate (A2)

Activities

- Participating in several international conferences as a speaker and chairman.
- Research stay for three months at the University of Porto.
- Supervising master's students during my PhD. journey.

Publications

1. Al Dala'een, A., Gomaa, M., Ammari, H., **Al Mualala, Z. A.** (2025). Theoretical modelling of solar-powered refrigeration system for highway truck transportation. *International Review on Modelling and Simulations*, 18, 4. (Accepted)
2. Hussein, H., **Al Mualala, Z. A.** Fuzzy control of processes with long transportation delay – A comparative study. The 12th International Conference on Information Technology (ICIT 2025). IEEE Xplore Digital Library.
3. Bany Issa, M. A., García, L. B., **Al Mualala, Z. A.**, Costa, R., Bello Bugallo, P. M. The impact of grid-connected battery storage systems on electrical grid variables. In EESAP15 International Conference 2024, 22-23 October Donostia-San Sebastián: Proceedings book (pp. 10-17).
4. **Al Mualala, Z. A.**, Bany Issa, M. A., Bello Bugallo, P. M. (2024). Integrating Life Cycle Principles in Home Energy Management Systems: Optimal Load PV–Battery–Electric Vehicle Scheduling. *Batteries*, 10(4), 138.
5. **Al Mualala, Z. A.**, Bany Issa, M. A., Rodríguez, J. J. F., & Bugallo, P. M. B. (2024). Antecedents of energy consumption intention to usage by home energy management system: a case study of Galicia's homes in Spain. *Renewable Energy and Environmental Sustainability*, 9, 3.
6. **Al Mualala, Z. A.**, Bany Issa, M. A., Sansó-Rubert Pascual, D., & Bello Bugallo, P. M. (2023). Realistic home energy management system considering the life cycle of photovoltaic and energy storage systems. *Sustainability*, 15(14), 11205.
7. Bany Issa, M. A., **Al Mualala, Z. A.**, & Bugallo, P. M. B. (2024). Simple solution of DC-offset rejection based phase-locked loop for single-phase grid-connected converters. *Renewable Energy and Environmental Sustainability*, 9, 4.
8. Bany Issa, M. A., **Al Mualala, Z. A.**, & Bello Bugallo, P. M. (2023). Grid-connected renewable energy sources: a new approach for phase-locked loop with DC-offset removal. *Sustainability*, 15, 12, 9550.

Conferences

1. Hussein, H., **Al Mualala, Z. A.** Fuzzy control of processes with long transportation delay – A comparative study. The 12th International Conference on Information Technology (ICIT 2025), Al-Zaytoonah University of Jordan, Jordan, May, 27-30, 2025 (Oral).
2. **Al Mualala, Z. A.**, Bello Bugallo, P.M. Advancing Sustainability with Lithium-ion Batteries: Economic and Environmental Impact in Residential Energy Systems. XXVIII Galician-Portuguese International Conference on Chemistry, Universidade de Vigo, Spain, November, 13-15, 2024 (Poster).
3. Bany Issa, M. A., García, L. B., **Al Mualala, Z. A.**, Costa, R., Bello Bugallo, P. M. The Impact of Grid-Connected Battery Storage Systems on Electrical Grid Variables. The EESAP15 International Conference, The University of the Basque Country, Spain, October, 22-23, 2024 (Oral).
4. Laura, B., G., Fernández, V. C., **Al Mualala, Z. A.**, Bello Bugallo, P.M. The Impact of Battery Size and Depth of Discharge in Battery's Sustainable Use and Carbon Emission: Energy Management According to Spanish Electricity Tariff. XXVIII Galician-Portuguese International Conference on Chemistry, Universidade de Vigo, Spain, November, 13-15, 2024 (Poster).
5. Costa, R., Brandão, A. T., **Al Mualala, Z. A.**, Parajó, J. J., Bello Bugallo, P.M, Silva, A. F., Pereira, C. M. Re-thinking Circularity of Electrified Interfaces for Sustainable Energy Storage Devices. The 29th EUCHEM Conference on Molten Salts and Ionic Liquids, Universidade de Santiago de Compostela, Spain, April, 22-26, 2024 (Oral).
6. **Al Mualala, Z. A.**, Sansó-Rubert Pascual, D., Bello Bugallo, P.M. Social Awareness about Energy Transition and Sustainability: The Role of Video Games. The 54th edition of the International Simulation and Gaming Conference, La Rochelle University, France, July, 4-7, 2023 (Oral).
7. **Al Mualala, Z. A.**, Bello, H. J., Bello Bugallo, P.M. Realistic Home Energy Management System Considering the Life Cycle of Photovoltaic and Energy Storage Systems. World Renewable Energy Congress XXI, Murdoch University, Australia, December, 4-9, 2022 (Oral).
8. **Al Mualala, Z. A.**, Rodriguez, J., Bello Bugallo, P.M. Antecedents of Energy Consumption Intention to Usage by Home Energy Management System: A Case Study of Galicia. World Renewable Energy Congress XXI, Murdoch University, Australia, December, 4-9, 2022 (Poster).
9. Lage-Díaz, M., **Al Mualala, Z. A.**, Sansó-Rubert, D., Salgado, J., Bello Bugallo, P.M. Sustainable Use of Batteries According to the Electricity Prices: Energy Management and Lifespan. XXVI Galician-Portuguese Chemistry Meeting, Universidade de Santiago de Compostela, Spain, November, 16-18, 2022 (Poster & Chairman).
10. Bello Bugallo, P.M, **Al Mualala, Z. A.**, Yesodharan, Y. Renewable Energy, Climate Change and Sustainable Development: Training Professionals and Researchers for a Sustainable Future. International Conference on Sustainable Energy Education (ICSEE), University of Kerala, India, January, 10-12, 2022 (Oral).