

# 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.



## Work Experience

<b>10-2024 – Present:</b>	<b>Assistant professor</b> Department of Renewable Energy Engineering, Philadelphia University, Jordan
<b>01-2021 – 06-2021:</b>	<b>Lecturer</b> Queen Noor Technical College of Civil Aviation Jordan

## 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

## 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

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1. Al Dala'een, A., Gomaa, M., Ammari, H., **Al Muala, 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 Muala, 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 Muala, 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 Muala, 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 Muala, 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 Muala, 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 Muala, 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 Muala, 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

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1. Hussein, H., **Al Muala, 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 Muala, 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 Muala, 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 Muala, 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 Muala, Z. A.**, Parajó, J. J., Bello Bugallo, P.M, Silva, A. F., Pereira, C. M. Rethinking 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 Muala, 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 Muala, 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 Muala, 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 Muala, 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 Muala, 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).