
Objective

As an educator, I seek to inspire curiosity and deepen understanding in electrical and energy engineering, equipping students with critical thinking and problem-solving skills. As a researcher, I advance the frontiers of power electronics, smart grids, and sustainable energy through quality research and international collaboration, particularly with German partners. As an engineer, I apply expertise and ethics to design and manage innovative, efficient, and sustainable solutions that address real-world energy challenges and contribute to societal progress.

Experience

Sept 2017 – Present, German Jordanian University

Professor Rank (2025), Energy Engineering

- **Dean** of Scientific Research, since Sept 2025.
- **Acting Dean** of School of Natural Resources Engineering and Management, (July 2025 - Sept 2025).
- **President's Advisor** for Sustainability and Technology Integration (Sept 2023 - Sept 2025).
- **Vice Dean** of School of Natural Resources Engineering and Management (Sept 2022 - Sept 2023).

Academic & Professional Duties

- Teaching undergraduate and graduate courses in Energy Engineering, Renewable Energy, Electrical Engineering, Power Systems, and Sustainable Technologies.
- Supervising undergraduate and graduate research projects and thesis with strong applied and international dimension.
- Leading and contributing to several internationally funded research initiatives in renewable energy, hydrogen, and sustainability.

German Dimension & International Engagement

- Hosted Programs: Actively engaged in the development, management, and accreditation of hosted German programs at GJU, including:
 - THWS GATE (Campus GATE with Technische Hochschule Würzburg-Schweinfurt)
 - Online GATE initiative for international blended learning.
 - Joint Teaching & Exchange: Regularly involved in exchange teaching modules, guest lectures, and curriculum harmonization with German partner universities including: THWS and TH Trier.
-

-
- Research & Innovation Projects: Partner in multi-year German and EU-funded projects (DAAD, GIZ, AICS, ENI CBC MED, etc.) on hydrogen, sustainable energy systems, digitalization, and technology transfer.
 - Capacity Building & Mobility: Coordinating student and staff mobility programs with German universities (THWS, TH Trier, and other partner institutions).
 - Committees & Steering Roles: Member of multiple joint steering committees for international programs and research projects, ensuring alignment between GJU and German partners.
 - Delegations & Networking: Organizing and participating in high-level visits and academic exchanges between GJU and German institutions to strengthen the applied German dimension of the university.

Institutional Service

- Active member of key university and national committees, including:
 - Member of the National Scientific Research Fund (SRF) Steering and Management Committee.
 - University ranking and international visibility.
 - Technology integration and e-learning strategy
 - Curriculum development and laboratory modernization.
 - Graduate studies, research council, and senior design supervision.
 - Hiring, tendering, and international projects oversight.

Sept 2011 – Sept 2017, Jordan University of Science and Technology

Assistant Professor, Electrical Engineering

- **Energy Center Director:** Manage and direct energy policy and research at the university (Sept 2014- Sept 2016).
 - Duties include teaching undergraduate and graduate classes, supervising undergraduate and graduate research projects, engaging in research, and evaluating some of the teaching laboratory needs.
 - On several departmental committees, including ABET, curriculum development, laboratory upgrade, hiring and senior design committees.
 - On several university-wide committees, including Sustainability and Quality Assurance.
-

Education	<u>University of Arkansas, Fayetteville, Arkansas, USA</u>	
	PhD in Electrical Engineering (2011)	
	Dissertation Title: " <i>Modeling and Characterization of P-Type Silicon Carbide Gate Turn off Thyristors</i> "	
	MS in Electrical Engineering (2007)	
	Thesis Title: " <i>Modeling of p-type SiC Thyristors</i> "	
	▪ Research Assistant at the National Center for Reliable Electric Power Transmission (NCREPT) and the GRid-connected Advanced Power Electronics Systems (GRAPES) research centers. ▪ Research in the areas of power electronics, power system applications, protective devices, and semiconductor device modeling. ▪ Interned for 4 months at <i>General Electric's Global Research Semiconductor Technology Lab</i>. Duties included modeling, characterization, and testing of state of the art, next generation power semiconductor devices for power grid and medical applications.	
	<u>Jordan University of Science & Technology, Irbid-Jordan</u>	
	BS in Electrical Engineering (2004)	
	<u>Fayetteville High School, Fayetteville, Arkansas, USA</u>	
	High School Diploma (with Honors) (1999)	
Professional Memberships	2024-present	Arkansas Academy of Electrical Engineers
	2022-present	CIGRE – Jordan Technical Committee
	2018-present	International Solar Energy Society
	2008-present	Member of The National Electrical and Computer Engineering Honor Society "Eta Kappa Nu" (HKN)
	2004-present	Member of the Jordan Engineers Association
	2001-present	Member of the Institute of Electrical & Electronic Engineers (IEEE) (Senior Member 2020)
	2023-2025	Jordan Chapter Vice Chair IEEE IAS
	2015-2017	JUST IEEE IAS student section counselor
	2015-2017	JUST IEEE student Women-in-Engineering section Counselor
	2012-2016	JUST IEEE student branch academic advisor
Current Research Interest	Modeling and characterization of power semiconductor devices, wide bandgap semiconductors, power electronic interfaces and grid applications, inverters, converters, resonant converters, wireless power transfer, LED lighting, power system protection, power quality, three phase power recirculation, renewable energy, smart grid applications, electric vehicles, distributed energy resources and energy-economic modeling.	

Publications

- Z. Dalala and **O. Saadeh** "Quantifying the Energy Security for oil-dependent Countries under Geopolitical and Decarbonization Constraints: A Long-Term Optimization Study for Kuwait", 4th International Conference on Power and Renewable Energy Engineering (PREE), 2026.
 - I. Al-Darabi, A. Bashaireh, O. Saadeh, Z. Dalala "Sensorless Model Predictive Current Control of Totem-Pole Power Factor Correction Converter", 4th International Conference on Power and Renewable Energy Engineering (PREE), 2026.
 - **O. Saadeh**, I. Al Qudah, O. Albatayneh, K. Kanaan, A. Al-Halhouli "Integrated Sustainability Performance at the German Jordanian University: A Multi-Criteria Assessment" International Workshop on UI GreenMetric (IWGM), 2026.
 - **O. Saadeh**, K. Suleiman, Z. Dalala "Unlocking the Potential of Hydropower by integrating Floating PV Systems" 2026 *International Conference on Energy Futures (ICEF'26)*
 - **O. Saadeh**, A. Alswaeer, Z. Dalala "Utilizing Second Life Batteries in Islanded DC Microgrids: Enhanced Droop Control Approach" 2025 *IEEE ECCE*.
 - Z. Dalala, A. Alkhalifim Z. Zahid, **O. Saadeh** "Modeling, Design, and Control of Modular Second Life Batteries Storage Converter" 2025 *IEEE ECCE*.
 - M. Saadeh, M. Hamdan, **O. Saadeh** "Modelling and control of LCL voltage source converter-based hybrid high voltage alternating current/high voltage direct current system" *International Journal of Electrical and Computer Engineering (IJECE)*, V. 15, April 2025. DOI: [10.11591/ijece.v15i2.pp1297-1321](https://doi.org/10.11591/ijece.v15i2.pp1297-1321)
 - F. Alawneh, A. Bashaireh and **O. Saadeh** "Investigation of A Decision Tree Approach for Charge Balancing in Lithium-Ion Batteries" 2025 *Texas Power and Energy Conference (TPEC)*.
 - **O. Saadeh** "Hydrogen Technology Engineering Hosted Program: a new international approach to engineering education" 15th *International Conference on Hydrogen Production (ICH2P)*.
 - **O. Saadeh**, B. Abu Sba, B. Alqbai, Z. Dalala "Utilizing HVDC link for Cross-Border Grids Interconnection: System Level Assessment" 2024 *IEEE ECCE*.
 - F. Zghoul, **O. Saadeh**, Z. Dalala, A. Bushaireh "A Voltage Controlled Oscillator (VCO) Based Controller and Feedback for a Single Switch SiC Class-E Resonant Inverter" 22nd *International Conference on Research and Education in Mechatronics (REM 2024)*.
-

-
- M. Saadeh, **O. Saadeh**, B. Abu Sba, M. Hamdan, Z. Dalala “Comparative Analysis of HVAC and HVDC Green Corridors for Photovoltaic Integration Overcoming Geographical Constraints” 2024 IEEE Energy Conference (ENERGYCON).
 - **O. Saadeh**, B. Abu Sba, Z. Dalala “Power System Analysis of Moving from HVAC to HVDC in the Presence of Renewable Energy Resources”, *Journal of Electrical and Computer Engineering*, V. 2023, November 2023. DOI:10.1155/2023/8527308
 - Z. Dalala, **O. Saadeh**, Z. Zahid “DC link stability analysis of a multi-input single-output (MISO) power distribution system utilizing second life batteries” 2023 IEEE ECCE.
 - M. Saadeh, R. McCann, M. Alsarray, **O. Saadeh** “Power System Steady State Model Validation Using Synchrophasors” 12th International Conference on Power Science & Engineering (ICPSE 2023).
 - M. Saadeh, Z. Dalala, **O. Saadeh**, T. Niet “A baseline long term Technoeconomic electricity supply model for highly regulated fuel importing countries prone to shortages: Case of Jordan”, *Energy*, V. 281, June 2023. DOI: 10.1016/j.energy.2023.128237
 - **O. Saadeh**, B. Abu Sba, Z. Dalala, A. Bashaireh “Comparative Performance Analysis of HVDC and HVAC Transmission Systems in the Presence of PV Generation: A Case Study using IEEE-5-Bus Network” 2023 AEIT HVDC conference.
 - G. Tashtoush, **O. Saadeh** and A. Dawagreh “Environmental Life Cycle Assessment of using Electric Vehicles Compared to Conventional Internal Combustion Vehicles: A Case Study in Jordan”, *Journal of Energy and Development*, V. 48, Nov. 2023.
 - **O. Saadeh**, W. Al-Hanaineh and Z. Dalala “Islanding mode operation of a PV supplied network in the presence of G59 protection” *IEEE 13th International Symposium on Power Electronics for Distributed Generation Systems (PEDG)*, 2022.
 - Z. Dalala, **O. Saadeh**, and Z. Zahid “Second Life Battery Energy Storage System: Modular Interface and Control” *IEEE 13th International Symposium on Power Electronics for Distributed Generation Systems (PEDG)*, 2022.
 - Z. Dalala, T. Alwahsh, **O. Saadeh** “Energy Recovery Control in Elevators with Automatic Rescue Application” *Journal of Energy Storage*, Vol. 43, August 2021. DOI: 10.1016/j.est.2021.103168
 - **O. Saadeh**, S. Al-Tamimi and F. Amoura “A Hybrid Battery / Ultracapacitor Energy Storage Solution for PV Systems” 6th IEEE International Energy Conference (ENERGYCON), 2020.
-

-
- A. Abuelrub, F. Hamed, **O. Saadeh** "Microgrid integrated electric vehicle charging algorithm with photovoltaic generation" *Journal of Energy Storage*, Vol. 32, September 2020. DOI: [10.1016/j.est.2020.101858](https://doi.org/10.1016/j.est.2020.101858)
 - **O. Saadeh**, G. Tashtoush, E. Al-Maghrabi "PV Plant Connection and Sizing Design Methodology" *Journal of Engineering and Applied Sciences*, Vol. 15, September 2020. DOI: [10.36478/jeasci.2020.2950.2958](https://doi.org/10.36478/jeasci.2020.2950.2958)
 - Z. Dalala, M. Alnawafa, **O. Saadeh** and E. Alnawafa "Reducing Commuter CO2 Footprint through Transit PV Electrification" *Sustainability*, Vol. 12, August 2020. DOI: [10.3390/su12166406](https://doi.org/10.3390/su12166406)
 - **O. Saadeh**, A. Al Nawasrah and Z. Dalala "A Bidirectional Electrical Vehicle Charger and Grid Interface for Grid Voltage Dip Mitigation" *Energies*, Vol. 13, July 2020. DOI: [10.3390/en13153784](https://doi.org/10.3390/en13153784)
 - Z. Dalala, O. Al Banna and **O. Saadeh** "The Feasibility and Environmental Impact of Sustainable Public Transportation: A PV Supplied Electric Bus Network" *Applied Sciences*, Vol. 10, June 2020. DOI: [10.3390/app10113987](https://doi.org/10.3390/app10113987)
 - H. Al-Masri, S. Magableh, A. Abuelrub, **O. Saadeh**, M. Ehsani "Impact of Different Photovoltaic Models on the Design of a Combined Solar Array and Pumped Hydro Storage System" *Applied Sciences*, Vol. 10, May 2020. DOI: [10.3390/app10103650](https://doi.org/10.3390/app10103650)
 - **O. Saadeh**, A. Al-Hmoud and Z. Dalala "Characterization Circuit, Gate Driver and Fixture for Wide-Bandgap Power Semiconductor Device Testing" *Electronics*, Vol. 9, April 2020. DOI: [10.3390/electronics9050703](https://doi.org/10.3390/electronics9050703)
 - **O. Saadeh**, Z. Dalala, T. Niet, E. Ramos and M. Howells "Technoeconomic Data Adopted for the Development of a Long-term Electricity Supply Model for the Hashemite Kingdom of Jordan" *Data in Brief*, Vol. 30, June 2020. DOI: [10.1016/j.dib.2020.105391](https://doi.org/10.1016/j.dib.2020.105391)
 - **O. Saadeh**, Z. Dalala and S. Abukhadra "The Modeling and Simulation of Converting HVAC to HVDC Grids: Impact and Feasibility" *54th IEEE Industry Applications Society Annual Meeting, 2019*.
 - Z. Dalala, **O. Saadeh** and Ala Hussein, "A Current Sensorless Coulomb-Counting Method for Enhanced Battery SOC Estimation Accuracy" *2019 IEEE ECCE*.
 - H. Qdais, **O. Saadeh**, M. Al-Widyan, R. Atal and M. Abu-Dalo "Environmental sustainability features in large university campuses: Jordan University of Science and Technology (JUST) as a model of green university", *International Journal of Sustainability in Higher Education*, Vol. 20, June 2019. DOI: [10.1108/IJSHE-06-2018-0102](https://doi.org/10.1108/IJSHE-06-2018-0102)
-

-
- Z. Dalala and **O. Saadeh**, "A Novel Reduced Voltage Sensor-Count Control of a DC/DC Converter" *2018 IEEE Energy Conversion Congress & Exposition (ECCE)*, 2018.
 - Z. Dalala, **O. Saadeh**, M. Bdour and Z. Zahid, "A New Maximum Power Point Tracking (MPPT) Algorithm for Thermoelectric Generators with Reduced Voltage Sensors Count Control" *Energies*, Vol. 11, July 2018, pp. 1826-1842. DOI: [10.3390/en11071826](https://doi.org/10.3390/en11071826)
 - **O. Saadeh**, Z. Dalalah, F. Nessir Zghoul, A. Abuelrub and M. Saadeh, "A 500 kHz Silicon Carbide (SiC) Single Switch Class-E Inverter" *International Journal of Electrical and Electronic Engineering & Telecommunications*, Vol. 7, July 2018, pp. 103-107. DOI: [10.18178/ijeetc.7.3.103-107](https://doi.org/10.18178/ijeetc.7.3.103-107)
 - **O. Saadeh**, M. Dalbah and Z. Dalala "Control of two Five-Phase Parallel Connected Single Source Motor Drives under Balanced and Unbalanced Conditions" *IEEE 9th International Symposium on Power Electronics for Distributed Generation Systems (PEDG)*, 2018.
 - Z. Dalala and **O. Saadeh**, "A New Robust Control Strategy for Multistage PV Battery Chargers" *IEEE PEDG*, 2018.
 - **O. Saadeh**, R. Rabady and M. Bani Melhem, "New effective PV battery charging algorithms" *Solar Energy*, Vol. 166, May 2018, pp. 509-518. DOI: [10.1016/j.solener.2018.03.075](https://doi.org/10.1016/j.solener.2018.03.075)
 - Z. Dalalah, Z. Zahid, **O. Saadeh**, J. Lai "Modeling and Controller Design of a Bidirectional Resonant Converter Battery Charger" *IEEE Access*, Vol. 6, April 2018, pp. 23338-23350. DOI: [10.1109/ACCESS.2018.2830321](https://doi.org/10.1109/ACCESS.2018.2830321)
 - A. Abuelrub, **O. Saadeh** and H. Al-Masri, "Scenario Aggregation-Based Grid-Connected Photovoltaic Plant Design" *Sustainability*, Vol. 10(4), April 2018, pp. 1275-1288. DOI: [10.3390/su10041275](https://doi.org/10.3390/su10041275)
 - A. Abuelrub, H. Al-Masri and **O. Saadeh** "Grid-connected photovoltaic plant design at Jordan University of Science and Technology using scenario aggregation" *2018 International Conference on Power, Energy and Mechanical Engineering (ICPEME)*, 2018.
 - **O. S. Saadeh** and M. M. Dalbah, "Control of Five Phase Two-Motor Series Connected Single Source Drive Systems under Balanced and Unbalanced Conditions". *Journal of Engineering and Applied Sciences*, Vol. 12, December 2017, pp. 7098-7103. DOI: [10.3923/jeasci.2017.7098.7103](https://doi.org/10.3923/jeasci.2017.7098.7103)
 - F. Nessir Zghoul, S. Ay and **O. S. Saadeh**, "Protraction of Bartlett Bisection Theorem to Cross Coupled Circuits". *Journal of Engineering and Applied Sciences*, Vol. 12, December 2017, pp. 7104-7111. DOI: [10.3923/jeasci.2017.7104.7111](https://doi.org/10.3923/jeasci.2017.7104.7111)
-

-
- M. Saadeh, R. McCann, M. Alsarray, **O. Saadeh**, "A new approach for evaluation of the bus admittance matrix from synchrophasors: (A statistical Ybus estimation approach)". *International Journal of Electrical Power & Energy Systems*, Vol. 93, December 2017, pp. 395–405. DOI: [10.1016/j.ijepes.2017.06.021](https://doi.org/10.1016/j.ijepes.2017.06.021)
 - **O. S. Saadeh** and M. R. Al-Mothafar, "Power Electronics Laboratory Education: the JUST Experience". *IEEE Ukraine Conference on Electrical and Computer Engineering (UKRCON)*, 2017.
 - **O. S. Saadeh**, H. A. Mantooth, J. C. Balda, "The Modeling and Characterization of Silicon Carbide Gate Turn Off Thyristors" *2012 IEEE ECCE*.
 - **O. S. Saadeh**, E. D. Johnson, M. S. Saadeh, A. E. Mejia, C. Schirmer, B. Rowden, A. Mantooth, J. Balda, S. Ang, "A 4 kV Silicon Carbide Solid-State Fault Current Limiter" *2012 IEEE Energy Conversion Congress & Exposition (ECCE)*, 2012.
 - Z. Stum, A.V. Bolotnikov, P. A. Losee, K. Matocha, S. Arthur, J. Nasadoski, R. R. Rao, **O. S. Saadeh**, L. Stevanovic, R. L. Myers-Ward, C. R. Eddy Jr., D. K. Gaskill, "4kV Silicon Carbide MOSFETs" *Material and Science Forum*, Vol. 637, March 2011, pp. 679-680.
 - Y. Feng, E. Johnson, **O. Saadeh**, J. C. Balda, H. A. Mantooth, and M. Schupbach, "Impact of solid-state fault current limiters on protection equipment in transmission and distribution systems" *2010 IEEE PES T&D Conference & Exposition*, 2010.
 - S.S. Ang, T. Tao, **O. S. Saadeh**, E. Johnson, B. Rowden, J.C. Balda, A. Mantooth, "Packaging and characterization of silicon carbide thyristor power modules" *Power Electronics and Motion Control Conference*, 2009.
 - **O. S. Saadeh**, H. A. Mantooth, J. C. Balda, A. K. Agarwal, A. S. Kashyap, "The Modeling and Characterization of Silicon Carbide Thyristors" *39th IEEE Power Electronics Specialists Conf (PESC)*, 2008.
 - H. A. Mantooth, **O. Saadeh**, E. Johnson, J.C. Balda, S.S. Ang, A.B. Lostetter, R. M. Schupbach, "Solid-State Fault Current Limiters: Silicon versus Silicon Carbide" *2008 PES General meeting(PESGM)*.
 - E. Johnson, **O. S. Saadeh**, J.C. Balda, H. A. Mantooth, S. S. Ang, "An Analysis of Paralleled SiC Bipolar Devices" *39th IEEE Power Electronics Specialists Conf (PESC)*, 2008.
-

**Supervised
MS Theses**

1. "Evaluating the Applicability of the GHG Protocol for Academic Institutions and Designing a Customized Reporting Model", Omar AlHalleeq, GJU, August 2026.
 2. "Energy Security for Fuel Importing Countries Prone to Shortage: The Technoeconomic of Green Hydrogen", Amaal Alkhatabeh, GJU, January 2026.
 3. "Water electrolysis technologies for the mass production of green hydrogen", Mustafa Gablan, June 2025.
 4. "Power Sharing in DC Microgrids With Integrated Second Life Batteries", Anas Alswaer, GJU, January 2025.
 5. "Electrochemical Modeling and Evaluation of Hydrogen Fuel Cell", Faisal Saleh, GJU, January 2025.
 6. "High Voltage DC Transmission as a Solution for Grid Level Interconnection Stability Issues", Bushra AlQbai, GJU, January 2024.
 7. "High Voltage DC Transmission as a Solution for Renewable Energy Stability Issues", Baher Abu Sba', GJU, June 2021.
 8. "The Environmental Life Cycle Assessment for Using Electric Vehicle Technology Compared to Conventional Vehicle in Jordan", Ashraf Dawaghreh, JUST, June 2020.
 9. "Quantifying Electric Grid limiting Factors for PV integration", Abedallah Alkhresheh, GJU, January 2020.
 10. "PV System Islanding Mode Operation with G59 Protection", Wael Al-Hanainah, GJU, January 2020.
 11. "Charging / Discharging Algorithm for Electric Vehicle Integrated with Photovoltaic Generation", Fadi Hamed, JUST, December 2019.
 12. "An Intelligent Electrical Vehicle-Grid Interface for Mitigation of Power Quality Issues", Anwar Al-Nawasrah, GJU, Nov. 2019.
 13. "Characterization of wide-Bandgap Power Semiconductors Devices", Ahmad Al-Hmoud, GJU, Aug. 2019.
 14. "The Feasibility and Environmental Impact of Green Streets as a Sustainable Alternative: Amman Bus Rapid Transit Project as a Case Study", Omar Al Banna, GJU, March 2019.
 15. "A Photovoltaic System Connection and Sizing Design Methodology Based on System Modeling and Simulation", Eman Al-Maghrabi, JUST, January 2019.
 16. "Impact Assessment of Integrating Renewable Energy Systems on the National Grid of Yemen", Waleed Ali, JUST Dec 2017.
-

	17. "Control of Five Phase Two-Motor Drive System Supplied From a Single Inverter Under Balanced and Unbalanced Conditions", Monther Mahmoud Dalbah, JUST, October 2016. 18. "Design Of an Advanced Controller for Effective Battery Charging from Photovoltaic Cells", Muath Mohammed Bani Melhem, JUST, July 2016.
Attended Workshops	• "Research Management and Leadership Training", IREX, Amman, Jordan, 2026. • "Strategic Planning for Senior Management", Optimal Training and Consulting, Amman, Jordan, 2024. • "Towards a Serious Energy Transition in Educational Establishments", Sousse, Tunis, 2023. • "The economic impacts of substantially increasing the uptake of electric vehicles in Jordan", GiZ, Amman, Jordan, 2022. • "Realizing Opportunities for Sustainable Cooling" Istanbul, Türkiye, 2022. • "High Performance Innovation System Executives Workshop - GJU Innovation Ambassadors", GJU, Amman, Jordan, 2021. • "Water-Energy-Food Nexus (Training of Trainers)", GiZ, Amman, Jordan, 2021. • "Jordan National Energy Hub", ENI CBC Med ESMES Project, Amman, Jordan, 2021. • "Assessing the Socio-Economic Impact of Green Development Policies in the Jordanian Transport Sector", DIAPOL-CE, Webinar, 2021. • "Joint Summer School on Modelling Tools for Sustainable Development – OpTIMUS: Open-Source Energy Modelling System (OSeMOSYS)", International Center for Theoretical Physics (ICTP), Trieste, Italy, 2019. • "Introduction to Biostatistical and Statistical Analysis using JMP Software", JUST ADC, Irbid, Jordan, 2016. • "E-learning: Open Educational Resources", JUST ADC, Irbid, Jordan, 2015. • "Integration of Renewable Energy Resources in the Transmission and Distribution Networks in the Arab Region", ESCWA, Amman, Jordan, 2015. • "Solar Cooling", GiZ and Jordan Ministry of Environment, Irbid, Jordan, 2014. • "Arc Flash/NFPA 70E", Eaton Corporation, Tulsa, OK, 2009.
Research Projects	• PI: "Circularity Knowledge Hub for Electric Vehicle Batteries and Circular Product Development" GiZ Green Action in Enterprises (GAIN) project, 2023-2027. • Consultant: "Energy System Modeling and optimization: State of Kuwait as a case study" Abdullah Al Salem University, Kuwait, 2025-2027.

-
- **Co-PI:** “Sustainable End-of-Life Management of Electric Vehicle Batteries through Remanufacturing” GJU Project ID: SATS 01/2023, 2023-2026.
 - **Co-PI:** “AI-Enhanced Energy Management for Battery Storage in Smart Grids”, GJU-HTU-JUST Matching Fund, 2025-2027.
 - **Co-PI:** “Building Sustainable Futures”, Funded by The German Academic Exchange Service (DAAD), 2024-2028.
 - **Partner:** “Green City – Territorial Partnerships for Sustainable and Resilient Urban Development”, Funded by Agenzia italiana per la cooperazione allo sviluppo (AICS), 2021-2023.
 - **PI:** “Inertia Estimation of Power Grids with High Penetration of Renewable Energy Sources.” GJU Project ID: 18/2021, 21-2023.
 - **Co-Partner:** “Enhancing Online Education Reach for unprivileged Individuals in Rural Communities in Jordan” Paying it Forward (PiF) Alumni Grant managed by Binational Fulbright Commission in Jordan, funded by The Bureau of Educational and Cultural Affairs (ECA) of the U.S. Department of State, 2021.
 - **Member:** CliEEN – the Climate-Economy-ENERgy Modelling Network, Part of DIAPOL-CE “Policy Dialogue and knowledge management on low emission strategies in the MENA Region” Under the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 2020-2023.
 - **Partner:** “Increasing Access and Planning for Efficient Cooling Solutions in Jordan” Kigali Cooling Efficiency Program (K-CEP) NDC Support Facility grant number: 21-1817, 2021-2023.
 - **PI:** “Integrating Energy Economy Modelling Concepts in the Energy Engineering Curriculum at the German Jordanian University (GJU) – Jordan.” GiZ Agreement number: 81262854, 2020-2021.
 - **Partner:** “Energy Smart Mediterranean Schools Network / (ESMES)” ENI CBC MED Reference number: A_B.4.3_0123, 2019-2024.
 - **PI:** “Modeling and Characterization of Wide-bandgap Power Semiconductor Devices.” GJU Project ID: SNRE 02/2018, 2018-2020.
 - **Co-PI:** “A photovoltaic System connection and sizing design methodology based on system modeling and simulation”. JUST Project ID: 9/2018, 2018-2020.
-

-
- **Member:** MENA Network on Climate-Energy-Economy Modelling, Part of DIAPOL-CE “Policy Dialogue and knowledge management on low emission strategies in the MENA Region” Under the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 2017-2020.
 - **Contractor:** “Fostering Renewable Energy (RE) and Energy Efficiency (EE) Initiatives in Jordan Building Sector - REEED”. A project co-funded by the EU, the contracting authority is the Ministry of Energy and Mineral Resources. The project is run by ICU in partnership with the National Centre for Agricultural Research and Extension. Contracted as a “Third Party” to validate energy consumption reduction and estimate CO2 emission reduction and training services, 2015-2017.
 - **Partner:** “Smart Control Systems for Energy Management: New Master Degree/ (SEM-SEM)” Erasmus+ Project Ref Number: 561703-EPP-1-2015-1-UK-EPPKA2-CBHE-JP, 2015-2018.
 - **Partner:** “Modernising Undergraduate Renewable Energy Education: EU Experience for Jordan (MUREE)” TEMPUS project number: 530332-TEMPUS-1-2012-1-JO-TEMPUS-JPCR, 2012-2015.
 - **PI:** “Designing, simulating and building a Silicon Carbide (SiC) - based uninterruptible power supply (UPS) system.” JUST Project ID: 216/2014, 2014-2016.
 - **CO-PI:** “Investigating the effect of integrating simulations with measurements on the course outcomes of the power electronics lab at JUST” JUST Project ID: 182/2012, 2012-2014.
-

**Engineering
Projects /
Technical
Services**

- The German Jordanian University (GJU) 500kWp PV and SCADA systems: head of handover, receiving and operating committee.
 - GJU/GAM joint steering committee member
 - GJU Sustainability Committee: measured current sustainability markers on campus, CO2 emissions, CO2 sink and prepared the university’s sustainability report and action plan.
 - The German Jordanian University (GJU) 2 MW PV system: head of handover, receiving and operating committee.
 - GJU/MEMR joint steering committee member.
 - CIGRE Jordan, Technical Committee Member.
 - American University of Madaba PV system: member of technical, financial evaluation and commissioning committees.
 - National Electric Power Company, Jordan: Industry/Academy Steering Committee
-

-
- The University of Jordan (JU) 16 MW PV system: member of technical and financial evaluation committee.
 - Al - Balqa' Applied University 7 MW and 10 MW PV system: member of technical and financial evaluation committee
 - Mutah University 5 MW PV system: member of technical evaluation committee.
 - Jordan Aircraft Maintenance Limited (JORAMCO): Consultant for CO2 Emission calculations and efficiency measures.
 - Energy Service Provider Accreditation Committee Member, A USAID-funded activity implemented by Deloitte.
 - JUST administrative building LED project: supervised the redesign of the lighting system at the new administrative buildings at JUST.
 - JUST Sustainability Committee: measured current sustainability markers, CO2 emissions, CO2 sink, and part of team that prepared the university's sustainability policy.
 - "Total Jordan" education and outreach steering committee.
 - The University of Jordan (JU) renewable energy advisory board: part of team advising Jordan University on path of power sustainability.
 - Jordan CubeSat Project: Advisor for student team in charge of building power system for the Jordan CubeSat, a project sponsored Crown Prince Foundation (CPF).
 - JUST 33/11 kV substation upgrade: prepared RFP documents
 - Sports City lighting systems: Studied tender documents for several Jordanian sports city lighting upgrades, evaluated submitted proposal, awarded tender.
 - JUST 20 MW PV system: Prepared the ToR documents, member of proposal technical and financial evaluation committee.
 - JUST 5 MW PV system: Prepared the ToR documents, lead the proposal technical evaluation committee, participated in the proposal financial evaluation committee, awarded the tender, supervising purchasing, construction, integration, and complete system commissioning.
-

**Training
Courses
Delivered**

1. Global Green Growth Institute, Amman, Jordan: "Application and Implementation of National EV Charging and Safety Standards", December 2025.
 2. Kuwait Petroleum Corporation, Kuwait: "Advance Motor Drive Systems", September 2024.
 3. The National Center for Security and Crises Management,
-

Amman, Jordan: "Energy Security", August 2024.

4. ESCWA and Arab Union of Electricity, "Integration Costs of Wind and Solar Power", July 2024.
 5. Kuwait Petroleum Corporation, Kuwait: "Advance Motor Drive Systems", July 2024.
 6. Four different CSOs, Irbid and Karak, Jordan: "Renewable Energy and Energy Efficiency", June-July 2024.
 7. IEEE Industrial Application Society Jordan Chapter, Amman, Jordan: "The Effect of Non-linear Industrial Loads on Renewable Energy Design", May 2024.
 8. The National Center for Security and Crises Management, Amman, Jordan: "Energy Security", March 2024.
 9. Arab Fertilizer Association Recent Issues in Energy Saving and HSE Seminar, Amman, Jordan: "Energy Consumption, Efficiency & Optimization in the Industrial Sector", Dec 2023.
 10. Huawei Fusion Solar Day, Amman, Jordan: "Modern Trends in Power Electronic Research", August 2023.
 11. ENI CBC Med ESMES Project, The 10th High School, Aqaba, Jordan: "Renewable Energy and Energy Efficiency Measures in Public Buildings", April 2021.
 12. Policy dialogue and knowledge management on low emission development strategies in the MENA region (DIAPOL-CE), German Jordanian University, Amman, Jordan: "Energy Economy Modelling", January 2021.
 13. Istituto per la Cooperazione Universitaria ONLUS Jordan office, National Center for Agricultural Research and Extension, Shoubak, Jordan: "Solar Pumps", March 2017.
 14. Istituto per la Cooperazione Universitaria ONLUS Jordan office, National Center for Agricultural Research and Extension, Mafrq, Jordan: "Solar Pumps", February 2017.
 15. Istituto per la Cooperazione Universitaria ONLUS Jordan office, Jordan University of Science and Technology, Irbid, Jordan: "Introduction to PV System Design, Operation & Maintenance", January 2017.
 16. Istituto per la Cooperazione Universitaria ONLUS Jordan office, National Center for Agricultural Research and Extension, Amman, Jordan: "Energy Efficiency Systems", December 2016.
 17. Energy Center, Jordan University of Science and Technology. Irbid, Jordan: "Intro to PV Systems", Aug. 2016.
 18. Norwegian Refugee Council Jordan office, Ministry of Education Engineers, Irbid, Jordan: "Solar Technology: monitoring and maintenance of PV systems", August 2016.
-

	19. Abu Dhabi Gas Industries Ltd. (GASCO), Abu Dhabi, UAE: "Variable Speed Drives", February 2016. 20. Abu Dhabi Gas Industries Ltd. (GASCO), Abu Dhabi, UAE: "Transformer Maintenance & Testing", January 2015. 21. Abu Dhabi Gas Industries Ltd. (GASCO), Abu Dhabi, UAE: "AC Electric Motors and Drives", September 2014. 22. Management Science Institute, Dubai, UAE: "Operation and Maintenance of High Voltage Switchgear and Transformers", August 2014. 23. Abu Dhabi Gas Industries Ltd. (GASCO), Abu Dhabi, UAE: "MV Variable Speed Motor Drives", April 2014. 24. Abu Dhabi Gas Industries Ltd. (GASCO), Abu Dhabi, UAE: "HV Cables Jointing and Termination", November 2013. 25. Abu Dhabi Gas Industries Ltd. (GASCO), Abu Dhabi, UAE: "Operation & Maintenance of Circuit Breakers and Switchgear", December 2012. 26. Arkansas Power Electronics International (APEI), Arkansas, USA: "Modern Power Electronics and Power Semiconductor Devices", May 2011.
Software Skills	C, C++, Visual Basic, Visual C++, MatLab, OrCAD, MAST, PSPICE, SABER, PSIM, ETAP, PowerWorld, Neplan, DIgSILENT, OSeMOSYS, Mathematica, LTspice, Allegro, Altium Designer.
Hardware Skills	High power-high temperature (500° C) probe station, bench top equipment (power supplies, scopes, function generators ...), curve tracers, microprocessors. MV and HV CB and switch gear. Traditional and Solid-state protective equipment. Next generation Smart Grid technologies. Built high current (5000 A) and high voltage (20 kV) device characterization test circuits. Designed, built, and tested a high power (4160 V, 4000 A) fault current limiter. Renewable energy deployment, and integration, Resonant Converters, and wireless power systems.
Teaching Experience	Electronics II; Circuits I & II; Power Electronics; Power Semiconductor Devices; Switch Mode Power Converters; Power System Analysis; Power System Protection; Power System Quality; Power System Distribution and Transmission; Power System Operation; Smart-Grid Power Systems; Electrical Power Generation, Transmission & Distribution; Modeling and Simulation; Special Topics in Renewable Energy Systems; Advanced Renewable Energy Systems; Circuits Lab; Electronics Lab and Power Electronics Lab.

References

- 1) Prof. Ala'aldeen Al- Halhouli
President
German Jordanian University (GJU)
+962 6 429 4444 ext. 4001
president@gju.edu.jo
 - 2) Prof. Muhammad Al-Widyan
President
Amman Arab University
+962 79 9024000 ext. 201
m.alwidyan@aau.edu.jo
 - 3) Prof. Alan Mantooth
Distinguished Professor, Electrical Engineering
University of Arkansas
+1 479 575 4838
mantooth@uark.edu
-