

Dr. Badr Lami

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EDUCATION

PhD, Electrical and Computer Engineering
University of Waterloo, Waterloo, Ontario,
Canada (2017),

MSc, Electrical and Computer Engineering
University of Waterloo, Waterloo, Ontario,
Canada (2012),

BASc, Electrical and Computer Engineering
King Abdulaziz University, Jeddah, Saudi
Arabia (2006).



ACADEMIC EXPERIENCE

Chair,
Department of Electrical Engineering, College
of Engineering, Taibah University (2018 - 2020)
– Led the department in academic,
research, and administrative activities.

Associate Professor,
Department of Electrical Engineering,
College of Engineering, Taibah University
(2025 - present).

Assistant Professor,
Department of Electrical Engineering,
College of Engineering, Taibah University
(2017 - 2025).

Teaching Assistant,
Department of Electrical Engineering, College
of Engineering, Taibah University (2007).



TEACHING EXPERIENCE

Courses Taught:
Electric Circuits, Electrical Machines,
Electromechanical Devices, Power Systems,
and related laboratories.



RESEARCH INTERESTS

- ❖ Power System Reliability and Adequacy
- ❖ Renewable Energy Integration and Energy Storage - Operations and Planning
- ❖ Smart Grid Technologies, Demand Response, and Microgrids
- ❖ Artificial Intelligence and Optimization in Power Systems
- ❖ Electric Vehicles Integration and Smart Charging



UNIVERSITY AND COMMUNITY SERVICE

- ❖ Served as Chair of the Department of Electrical Engineering (2018-2020), leading program accreditation (e.g., ABET), curriculum development, and departmental committees.
- ❖ Oversaw faculty and student affairs, quality assurance, and representation in college and university councils.
- ❖ Member of various academic and departmental committees.
- ❖ Reviewer for international journals (IEEE, Elsevier, Springer).
- ❖ Active participation in workshops and community engagement activities.



AWARDS AND HONORS

- ❖ Research Excellence Award, University of Waterloo, 2014
- ❖ Award of Excellence, University of Waterloo, Winter 2010
- ❖ Award of Excellence, University of Waterloo, Fall 2009



PROFESSIONAL MEMBERSHIPS

- ❖ Professional Engineer, Saudi Council of Engineers
- ❖ Member, IEEE Power & Energy Society



SIMULATION AND PROGRAMMING SKILLS

- ❖ Optimization and Simulation (GAMS, MATLAB, PowerWorld)
- ❖ Programming (C++, LaTeX, Python)



SELECTED PROFESSIONAL DEVELOPMENT

- ❖ ABET Accreditation Preparation
- ❖ Professionalism and Belonging to the University Community
- ❖ Writing the Course Report
- ❖ Collaborative Learning on Blackboard
- ❖ Workshop on Outcome-Based Education
- ❖ Artificial Intelligence in Scientific Research and Academic Publishing
- ❖ Hands-On Data Analysis Using R Programming



JOURNAL PAPERS

- [1] Y Gu, Z Ullah, P Wang, A Alferidi, M Alsolami, B Lami, HM Hasanien, "Decision-dependent spatiotemporal co-optimization of PV-battery-hydrogen urban EV charging networks under mobility and renewable uncertainty," *Applied Energy*, Volume 422, 128336.
- [2] P Wang, Z Ullah, Y Gu, A Alferidi, M Alsolami, B Lami, HM Hasanien, "Real-time coordination of electric vehicle charging networks with renewable electricity and hydrogen energy storage," *Journal of Energy Storage*, Volume 166, July 2026, 122452.
- [3] Zia Ullah, Li Ning, Yan Laiqing, Ahmad Alferidi, Mohammed Alsolami, Badr Lami, Wahab Ali Shah, "Hybrid metaheuristic optimization-based solution for reactive power dispatch in dynamic power systems," *Ain Shams Engineering Journal*, Volume 17, Issue 4, April 2026, 104054.
- [4] Mohamed Shaheen, Zia Ullah, Ahmad Alferidi, Mohammed Alsolami, Badr Lami, "Hybrid osprey-parrot optimization algorithm for enhanced parameter identification of supercapacitor model," *Journal of Energy Storage*, Volume 137, November 2025, 118604.
- [5] Mohammed Alsolami, Ahmad Alferidi, Badr Lami, "Real-time Energy Management of a Microgrid Using MPC-DDQN Controlled V2H and H2V with Renewable Energy Integration," *Energies*, Volume 18, Issue 17, August 2025, 4622.
- [6] Badr Lami, Mohammed Alsolami, Ahmad Alferidi, Sami Ben Slama "A Smart Microgrid Platform Integrating AI and Deep Reinforcement Learning for Sustainable Energy Management," *Energies*, Volume 18, Issue 5, February 2025, 1157.
- [7] Zia Ullah, Hasan Saeed Qazi, Ahmad Alferidi, Mohammed Alsolami, Badr Lami, Hany M Hasanien "Advanced optimization of renewables and energy storage in power networks using metaheuristic technique with voltage collapse proximity and dynamic thermal rating technology," *Journal of Energy Storage*, Volume 108, February 2025, 115005.
- [8] Ahmad Alferidi, Mohammed Alsolami, Badr Lami, Sami Ben Slama "AI-Powered Microgrid Networks: Multi-Agent Deep Reinforcement Learning for Optimized Energy Trading in Interconnected Systems," *Arabian Journal for Science and Engineering*, December 2024, 1-23.
- [9] Hasan Saeed Qazi, Zia Ullah, Ahmad Alferidi, Mohammed Alsolami, Badr Lami, Syed Muhammad Abrar Akber "Stability analysis and voltage improvement in DG-integrated distribution networks using VCPD-based critical buses and lines detection considering uncertain power factor," *Ain Shams Engineering Journal*, Volume 15, Issue 12, December 2024, 103142.
- [10] Zia Ullah, Hasan Saeed Qazi, Ahmad Alferidi, Mohammed Alsolami, Badr Lami, Hany M Hasanien "Optimal energy trading in cooperative microgrids considering hybrid renewable energy systems," *Alexandria Engineering Journal*, Volume 86, January 2024, 23-33.

- [11] Mohammed Alsolami, Ahmad Alferidi, Badr Lami, Sami Ben Slama "Peer-to-peer trading in smart grid with demand response and grid outage using deep reinforcement learning," Ain Shams Engineering Journal, Volume 14, Issue 12, December 2023, 102466.
- [12] Badr Lami, Ahmad Alferidi, Mohammed Alsolami, Sami Ben Slama "Peer-to-peer energy exchange, autonomy goals, and financial rewards in Saudi Arabia households," Ain Shams Engineering Journal, Volume 14, Issue 12, December 2023, 102376.
- [13] Ahmad Alferidi, Mohammed Alsolami, Badr Lami, Sami Ben Slama "Design and implementation of an indoor environment management system using a deep reinforcement learning approach," Ain Shams Engineering Journal, Volume 14, Issue 11, November 2023, 102534.
- [14] B. Lami and K. Bhattacharya, "Clustering Technique Applied to Nodal Reliability Indices for Optimal Planning of Energy Resources," IEEE Transactions on Power Systems, vol. 31, no. 6, pp. 4679-4690, Nov. 2016.
- [4] B. Lami and K. Bhattacharya, "Identification of critical components of composite power systems using minimal cut sets," in Proc. of Innovative Smart Grid Technologies (ISGT) Conference, 2015, Washington D.C., USA, pp.1-5, Feb. 2015.
- [5] B. Lami and K. Bhattacharya, "Power system reliability and operational risk evaluation using minimal cut sets," CIGRÉ Canada Conference-Modernizing the Grid to Better Serve Evolving Customer Needs, Sept 2013.



CONFERENCE PAPERS

- [1] Badr Lami, "Optimal Energy Management and Scheduling of EV Charging Stations using Hybrid Integrated Energy System," 13th International Conference on Smart Grid (icSmartGrid), Glasgow, United Kingdom, IEEE, pp. 527 - 533, July 2025.
- [2] S. B. Humayd, B. Lami and K. Bhattacharya, "The effect of PEV uncontrolled and smart charging on distribution system planning," in Proc. of IEEE Electrical Power and Energy Conference (EPEC), 2016, Ottawa, ON, Canada, pp. 1-6, Oct. 2016.
- [3] B. Lami, A. B. Humayd and K. Bhattacharya, "Adequacy Assessment of Power Systems with PEV Charging Loads Considering Customer Behaviour," in Proc. of IEEE PES General Meeting, Boston, MA, USA, pp. 1-5, July. 2016.