



Mishal E. AlSharidah

For Empowering Minds & Elevating Standards

Education

- 1989–1995 **B.Sci.**, *University of Arizona*, Tucson, AZ, USA, *GPA: 3.04*
Communication & Signal Processing
- 1997–1999 **M.Sci.**, *Portland State University*, Portland, OR, USA, *GPA: 3.79*
Power Electronics (Low power DC-DC Converters)
- 2004–2013 **Ph.D.**, *University of British Columbia*, Vancouver, BC, Canada, *GPA: 3.7*
Power Electronics (IEEE 1547/UL1741 Grid-Interconnection and Anti-Islanding)

Ph.D. Thesis

Title *"An active method for implementing the unintentional islanding test in distributed generation systems"*

Supervisors William G. Dunford

Summary A novel approach to the IEEE 1547 unintentional islanding test using a proposed island stabilizing element (ISE) in place of the traditional elements in the standard test. While the simulated test-island within IEEE 1547 has been widely used for its reproducibility, scalability, and short setup time, it can become cost-prohibitive and cumbersome as inverter power ratings increase. The proposed ISE serves as a substitute for the resonant part of the test island and can also compensate for dynamic changes in power during the test. This advancement improves the unintentional islanding test and provides near worst-case scenarios for assessing inverter performance. Test cases validate the successful application of the ISE as a replacement for the traditional elements in the standard unintentional islanding test.

Academic Experience

2013–Current **Assistant Professor**, *Electrical Engineering Tech. Dept.*, College of Technological Studies (CTS), Public Authority for Applied Education & Training (PAAET), Shuwaikh, Kuwait.

Administrative duties:

- Head of research committee (multiple terms).
- Head of curriculum committee (multiple terms).
- Head of accreditation committee (ABET)(multiple terms).
- Head of tables & Conference affairs committee (multiple terms).
- Head of bachelor program committee (multiple terms).
- Head of scientific committee for the green building symposium (2016).

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- Secretary of college research committee (CTS).
- Secretary of college research committee College of Basic Education (CBE).

Member of:

- KNPC Green Initiative committee.
- PAAET-GUST Ministry of Defense joint committee.
- ISO CTS Committee.
- Accreditation Committee @ College of Tech. Studies (CTS).
- Accreditation committee @ College of Basic Education (CBE).

Academic duties:

- **Courses taught include:** Circuits, machines, power system transmission & distribution, power electronics, electric drives, automatic control, and advanced computer applications.
- **Supervised:** Senior projects, sabbatical of engineer at The higher institute of telecommunication and navigation.

2007–2013 **Lecturer, Electrical Engineering Tech. Dept.,** College of Technological Studies (CTS), Public Authority for Applied Education & Training (PAAET), Shuwaikh, Kuwait.

- **Courses taught include:** Circuits, machines, power system transmission & distribution, power electronics, electric drives, automatic control, and advanced computer applications.
- **Supervised:** Senior projects, sabbatical of engineer at The higher institute of telecommunication and navigation.
- Coordinator of the ABET certification committee for the department of electrical engineering technology.
- Head of research committee.
- Member of the college research committee.

(3–6) 2012 **Lecturer, Kuwait University, Khaldiya, Kuwait.**

Academic duties:

- Developed material, program, and lectures for the intensified orientation course for under development engineers at the ministry of electricity and water (MEW).
- Presented lectures in the following topics:
 - Smart grid.
 - Power line carrier communication.
 - Power electronics.
 - Synchronous generators.
 - Installations.
 - Induction machines.

1999–2002 **Instructor, Electrical Engineering Tech. Dept.,** College of Technological Studies (CTS), Public Authority for Applied Education & Training (PAAET), Shuwaikh, Kuwait.

Academic duties:

- Taught courses in
 - Electric power.
 - Electric machines.

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- Electronics and digital systems.
- Basic electronics.
- Electronic devices.
- Digital Systems.
- Electronic Circuits I.
- Introduction to computers.
- Electric instruments-Measurement.
- Circuits I
- Installations (Kuwait Code).
- Power electronics.
- Electric Machines I.
- Electric Machines II.
- Designed and taught special courses for:
 - Ministry of energy.
 - Ministry of transportation.
 - Ministry of public works.
 - Kuwait National Petroleum Company.

Oil trading experience

1995–1997 **Marketing Officer**, *Independent Petroleum Group (IPG)*, Jabriya, Kuwait
 Duties included drafting contracts, monitoring operations (shipping) and developing breakeven analysis studies for spot and term contracts. Regions covered was Singapore, South Asia, East Africa, and the Mediterranean.

Publications

1. "Optimization Model for EV Charging Stations With PV Farm Transactive Energy," in *IEEE Transactions on Industrial Informatics*, vol. 18, no. 7, pp. 4608-4621, July 2022.
2. "BLDC Motor Drives: A Single Hall Sensor Method and a 160° Commutation Strategy," in *IEEE Transactions on Energy Conversion*, vol. 36, no. 3, pp. 2025-2035, Sept. 2021.
3. "Multilevel Inverters Harmonic Elimination with Non-Equal DC Voltage Sources Using Linear Fuzzy Programming," *European Power Electronics and Drives*, pp. 11-20, 2017.
4. "On-line estimation of transmission line parameters using synchronized measurements," *Electric Power Components and Systems*, vol. 44, no. 2, pp. 233-239, 2016.
5. "Model predictive control for shunt active power filter in synchronous reference frame," *Journal of Electrical Engineering & Technology*, vol. 11, no. 2, pp. 405-415, 2016.
6. "Experimental Implementation of PEM Fuel Cell Powered DC Motor for Vehicle Applications," *Journal of Engineering Research* 4 (3), 2016.
7. "Speed control of electric vehicle," 2016 International Conference on Mechatronics, Control and Automation Engineering, 2016.
8. "Parameter identification of pem fuel cell using quantum- based optimization method," *Arabian Journal for Science and Engineering*, vol. 40, no. 9, pp. 2619-2628, 2015.
9. "Negative sequence injection for islanding detection of grid interconnected distributed generators," in *Electrical Power and Energy Conference (EPEC)*, 2014 IEEE, pp. 267-274, 2014.
10. "A hybrid real coded genetic algorithm – pattern search approach for selective harmonic elimination of PWM ac/ac voltage controller," *International Journal of Electrical Power & Energy Systems*, vol. 44, no. 1, pp. 123 – 133, 2013.

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11. "An active method for implementing the unintentional islanding test in distributed generation systems" Ph.D. dissertation, University of British Columbia, 2012.
12. "A new representation of the unintentional islanding test resonant function," in INTELEC 2009 - 31st International Telecommunications Energy Conference, pp. 1–6, 2009.

HONORS, RECOGNITION

- Elected Secretary of PAAET Applied Colleges Faculty Union
- Global Sustainable Assessment System - Certified Green Professional
- Ministry of Higher Education Award for leadership towards ABET accreditation of Electrical Engineering Department.
- Kuwait University Award for lectures on smart grid, power electronics, synchronous generator, machines AC and DC, power line communication, and installations.
- Dean of College of Technological Studies award for Administration and Guidance towards ABET accreditation.
- Kuwait National Petroleum Company Appreciation Letter for Consulting on Green Building Certification of Mina Abdullah Administration and KNPC Head Office buildings.

Languages

English	Fluent	<i>reading/writing/speaking</i>
Arabic	Fluent	<i>reading/writing/speaking</i>
Spanish	Intermediate	<i>continuing progress</i>
French	beginner	<i>conversational</i>
Turkish	beginner	
Uzbek	beginner	

Computer skills

Simulation	Matlab, Psim, Typhoon-HIL, PSCAD, dSpace, Ti-CCS(2000 series MCUs)
Programing	C, C++, Java Script, Python, R
Publishing	L ^A T _E X, MS Office, Markdown
Op. Sys.	OSX, Windows, Linux

Interests

Tennis	Three times a week when possible
Swimming	Once a week
Programming	Building websites, developing online tools to enhance learning experience
Reading	Fiction novels, history, philosophy
Writing	Diary, fiction, religion and science

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References

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