

MAJD G. BATARSEH

CONTACT

Electrical Engineering Department
Princess Sumaya University for Technology
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EDUCATION

- **University of Central Florida (UCF), Orlando, Florida - USA**
Doctoral of Philosophy in Electrical Engineering (GPA 3.99/4.00) May, 2010
Dissertation Title: Digital Pulse Width Modulator Techniques for DC–DC Converters.
- Masters of Science in Electrical Engineering (GPA 4.00/4.00) May 2007
Thesis Title: A Non–Isolated Half Bridge Buck Based Converter for VRM Application and Small Signal Modeling of A Non Conventional Two Phase Buck.
- **University of Jordan, Amman – Jordan**
Bachelor of Science in Electrical Engineering (GPA 3.52/4.00) February 2004

RESEARCH INTERESTS

- Power Electronics, Renewable Energy, Smart Grids, Education

TEACHING AND RESEARCH EXPERIENCE

- **Princess Sumaya University for Technology, Amman, Jordan**
 - Associate Professor: September 2020 – at present
 - Assistant Professor: February 2013 – September 2020Full time teaching electrical engineering BSc and MSc courses, supervising graduation projects and conducting research in the fields of Power Electronics, Renewable Energy and Smart Grids and education.

Courses taught:

- Undergraduate Courses
 - Automatic Control
 - Power Systems Analysis
 - Power Electronics
 - Renewable Energy Systems
 - Electronics I
 - Electric Circuits (1)
 - Electric Circuits (2)
 - Supervising Senior Design Projects
 - Electrical Engineering Practical Trainings
 - Computer Engineering Practical Trainings
- Undergraduate Courses
 - Advanced Power Electronics

- **University of Central Florida, School of EECS, Orlando, Florida**
 - Graduate Research Assistant: Spring 2005 – Fall 2009
Working on research funded projects by Intel and Emerson corporations as well as State funded projects.
Research focus: Power Electronics converters, digital control based on FPGA implementation, architectural design, simulation, experimental work.
 - Technical Assistant: Summer 2008 – Fall 2009
Updated the Florida Power Electronics centre (FloridaPEC) website.

MANAGERIAL AND INDUSTRIAL EXPERIENCE

- **Princess Sumaya University for Technology, Amman, Jordan**
 - Head of the Computer Engineering Department: September 2018 – September 2020
Managing the Computer Engineering Department which offers BSc. Degree in:
 - Computer Engineering Program
 - Network and Information Security Engineering Program

Besides running the department and planning for a new MSc program, I was also the coordinator for ABET accreditation for the Network and Information Security Engineering Program.

- **Seajacks UK, a leading owner and operator of purpose-built self-propelled jack-up vessels**
 - Projects Assistance: November 2011 – May 2012
Project involved transferring and installing 80 wind turbines in the North Sea. Preparing technical notes, monitoring Project progress and tracking sub-contractors with deliverables, being responsible about document control.
- **Doummar Technology Services Company, Amman – Jordan**
 - Project Engineer: April 2004 - November 2004
Site Engineer with hands- on experience in electrical sub-contracting work.
Design and installation of low current security systems for residential, commercial and industrial plants.
Installing electric structuring, lighting and low current systems- CCTV, Fire, Intrusion, etc.
- **Institute of Microelectronics, Mechatronics System (IMMS), Germany**
 - International Intern: August 2003 - October 2003
The training involved studying fluorescent lamp ballasts and running simulations on Orcad software.
- **Junior Achievement Program (Injaz), Amman - Jordan**
 - Head of the Human Resources Department: March 2003 - May 2003
The “First Step Company” was a two-month limited liability company established for training purposes for advertising, and was selected the best Students’ company for the year.

HONORS AND AWARDS

- Recipient of Teaching Incentives by PSUT for 2021.
- Senior Design Project Competition at Jordan Engineering Association – Second Place for the year of 2020 – Supervisor Recognition
- Recipient of Research Incentives by PSUT for the years 2018, 2019 and 2020
- Distinguished Researcher Award at Princess Sumaya University for Technology for academic year 2018/2019
- Senior Design Project Competition at Jordan Engineering Association – Second Place for the year of 2018– Supervisor Recognition
- University of Central Florida, Orlando, Florida the most prestigious Presidential Scholarship 2005 – 2009.
- Science Judge, Florida Engineering and Science Fair, 2008 representing UCF.
- Graduate Committee Chair of UCF Chapter of Women in Engineering and EECS
- Google at Mountview, CA: Google Workshop for Women Engineers 2008
- GraceHopper at Denver, CO: Workshop for Women Engineers 2008
- USENIX at San Diego, CA: Workshop for Women Engineers 2008
- IEEE Jordan branch: First Place, Senior Design Award 2004

MS.C THESES SUPERVISION

- Mohammad Massad, “Optimal Sizing of Battery Storage System in a microgrid in Terms of cost and Reliability Constraint.”, Fall 2018 – Spring 2020.
- Hussam Sawalha, “Improved Bidirectional Converter for Electric Vehicles to Grid Applications.”, Fall 2018 – Spring 2020.

LANGUAGES

- English and Arabic: Excellent spoken and written
- French: Second Foreign Language, received two Diplomas; (Diplôme d'études en langue française) DELF A1, A2, A3 and A4

PUBLICATIONS

- “A Non-Isolated Half Bridge Buck- Based Converter for VRM Application and Small Signal Modeling of a Non-Conventional Two Phase Buck.” **MS Thesis**, Majd G. Batarseh, University of Central Florida, 2006.
- “Digital Pulse Width Modulator Techniques for DC–DC Converter.” **PhD Dissertation**, Majd G. Batarseh, University of Central Florida, 2010.

• Papers in refereed journals

1. **Batarseh, MG; Za'ter, ME** “A *MATLAB* Based Comparative Study Between Single and Hybrid MPPT Techniques for Photovoltaic Systems” International Journal of Renewable Energy Research (IJRER), 9, 2019, Pages 2023 – 2039.
2. El-Faouri, FS; Alzahlan, MW; **Batarseh, MG**; Mohammad, A; Za'ter, ME “Modeling of a microgrid's power generation cost function in real-time operation for a highly fluctuating load” Simulation Modelling Practice and Theory Vol. no. 94, 2019, Pages 118-133.
3. **Batarseh, MG; Za'ter, ME**; “Hybrid maximum power point tracking techniques: A comparative survey, suggested classification and uninvestigated combinations” Solar Energy Vol. no. 169, 2018, Pages 535-555.
4. Faza, A.; **Batarseh, MG**; Abu-Elhaija, W.; “Upgrading power and energy engineering curricula in Jordanian universities: A case study at PSUT”, International Journal of Electrical Engineering Education, Vol. no. 54 (1), 2016, Pages 57-81.
5. **Batarseh, M.G.**; Al-Hoor, W.; Huang, L.; Iannello, C.; Batarseh, I., “Window-Masked Segmented Digital Clock Manager- FPGA Based Digital Pulse Width Modulator Technique”, IEEE Trans. on Power Electronics, Vol. no. 24, Issue 11, 2009 Page(s): 2649 – 2660.

• Books and Book Chapters

1. Batarseh, M G, “Components of Electric Energy Systems” in Raquel Zanol (Ed), “Electric Renewable Energy Systems”, 2015, Pages 21 – 39. London: ELSEVIER
2. Abu Aisheh, A; **Batarseh, M G**; “DC – DC Converters” in Raquel Zanol (Ed), “Electric Renewable Energy Systems”, 2015, Pages 337 – 352. London: ELSEVIER

• Conference Presentations

1. Sawalha, H.F., **Batarseh, M.G.**, “An Improved Two-Stage Bidirectional Converter for Electric Vehicles to Grid Applications” Proc. of the International Conference on Electrical, Computer and Energy Technologies (ICECET 2022).
2. Alzahlan, M.W.; El-Faouri, F.S.; **Batarseh, M.G.**; Mohammad, A.; Za'ter, M.E “Particle Swarm Optimization of a Microgrid's Cost Function Involving Distributed Generation and Highly Fluctuating Load” . IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), 2019, pages 319 – 324.
3. Za'ter, M.E; **Batarseh, M.G.**; “A New Multiplexed–First–Stage Sequential Hybrid

- MPPT Approach for Photovoltaic Systems*”, 19th International Conference on Environment and Electrical Engineering, 2019, Pages 1-6.
4. Okkeh, Y; Masoud, B; **Batarseh, MG**; “*Addressing the Design Stages of an Underground Energy Harvesting System from the Unconventional Source of Street Moving Vehicles*” Energy and Sustainability for Small Developing Economies (ES2DE) proceedings, 2018, Pages 1-6.
 5. Gericota, M; Andrieu, G; Dalmay, C; **Batarseh, MG**; Fidalgo, A; Ferreira, P; “*E-Engineering: from concept to reality*”, Proc. 10th Intl. Conf. on Education and New Learning Technologies, 2018, Pages 1256-1261.
 6. Gericota, M; Ferreira, P; Fidalgo, A; Andrieu, G; Al-Zoubi, A; **Batarseh, MG**; Garbi-Zutin, D; “*e-LIVES–Extending e-Engineering Along the South and Eastern Mediterranean Basin*”, International Conference on Remote Engineering and Virtual Instrumentation, 2018, Pages 244-251.
 7. Shboul, A; Safi, I; Alhawamdeh, S; **Batarseh, MG** “*Discussing Single Phase PWM Voltage Source Inverters with Different Frequency Modulation*” in Proc IEEE 4th International Symposium on Environment-Friendly Energies and Applications – EFEA, 2016, Pages 1 – 5.
 8. **Batarseh, M.G.**; Shobaki E.; Batarseh I., “*A Dynamic Linearly–Shifted, Fixed–Slope Digital–Ramp Control Technique for Improved Transient Response in DC – DC Converters*” in Proc IEEE 4th International Conference on Electric Power and Energy Conversion Systems (EPECS), 2015, Pages1-6.
 9. Siri, K.; Chen, F.; **Batarseh, M.G.**; “*Unified maximum power tracking among distributed power sources*”, in Proc IEEE 29th Applied Power Electronics Conference and Exposition (APEC), 2014, Pages 2985 – 2992.
 10. **Batarseh, M.G.**; Shobaki, E.; Xiang, F.; Haibing, H.; Batarseh, I., “*New Digital Control Technique for Improving Transient Response in DC–DC Converters*” in Proc IEEE 13th Euromicro Conference on Digital System Design: Architectures, Methods and Tools (DSD), 2010, Pages 793 – 796.
 11. Zhijun, Q.; Abdel-Rahman, O.; Hamilton, C.; **Batarseh, M.G**; Batarseh, I., “*An integrated four-port converter for compact and efficient hybrid powersystems*”, in Proc IEEE International Symposium on Circuits and Systems (ISCAS), 2010, pp : 2207 – 2210.
 12. **Batarseh, M.G.**; Al-Hoor, W.; Haibing, H.; Huang, L.; Batarseh, I.; “*Dynamic DC Ramp Shift Digital Control Technique for Improved Transient Response*” in Proc. IEEE Energy Conversion Congress and Exposition, ECCE 2009, Pages 3536–3543.
 13. **Batarseh, M.G.**; Al-Hoor, W.; Huang, L.; Iannello, C.; Batarseh, I., “*Segmented Digital Clock Manager- FPGA based Digital Pulse Width Modulator Technique*”, in Proc IEEE Power Electronics Specialists Conference, PESC 2008, Pages 3036–3042.
 14. Abu-Qahouq, J.; **Batarseh, M.G**; Huang, L.; Batarseh, I., “*Analysis and Small Signal Modeling of a Non-Uniform Multiphase Buck Converter*”, in Proc. IEEE Power Electronics Specialists Conference, PESC 2007, Pages 961–967.
 15. **Batarseh, M.G**; Xiangcheng, W.; Batarseh, I.; “*Non-isolated Half Bridge Buck Based Converter for VRM Application*”, in Proc. IEEE Power Electronics Specialists Conference, PESC 2007, pp. 2393–2398, June 2007.
 16. Xiangcheng, W.; Hua, Z.; **Batarseh, M.G**; Batarseh, I.; Chickamenahalli, S.A.; Stanford, E. “*Active transient voltage compensator design for VR load line improvement*”, in Proc. IEEE Applied Power Electronics Conference and Exposition, APEC, 2006, Pages 59 – 64.