

Nathan Weise

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Employment

Assistant Professor

Marquette University

Department of Electrical and Computer Engineering

Milwaukee, WI

August 2014 to Present

Assistant Professor

University of Maine

Department of Electrical and Computer Engineering

Orono, ME

Sept. 2011 to June 2014

Graduate Research Intern

GE Global Research

Characterized Hybrid SiC IGBTs, Characterized Highly Interdigitated Silicon Carbide Thyristors, and worked on state of the art MRI Gradient Drivers

Niskayuna, New York

Jun. 2010 to Sept. 2010

Electrical Engineer

Cummins Power Generation

Controls and Electrical Engineering Systems Design

Fridley, MN

2006 to 2007

Education

University of Minnesota

Ph.D. in Electrical Engineering

Dissertation: Universal Utility Interface for Plug-in Hybrid Electric Vehicles with Vehicle-to-Grid Functionality

Advisor: Ned Mohan

Minneapolis, MN

Jan. 2008 to Aug. 2011

University of Minnesota

M.Sc. in Electrical Engineering

Thesis Project: 2.4GHz Low Noise Amplifier and Wilkinson Power Divider

Advisor: Rhonda Franklin

Minneapolis, MN

Sept. 2005 to Dec. 2007

University of Minnesota

B.Sc. in Computer Engineering

Minneapolis, MN

Sept. 2001 to May 2005

Teaching Experience

Instructor

ELEN 4230/EECE 5230 Renewable and Legacy Electric Energy Systems Analysis

3 credits, two 1 hour 15 minute lectures per week

– New Course. Fully designed the course: lecture notes, simulations, homeworks, midterms tests, and final exam.

Marquette University

Fall 2014

Instructor

ECE 450 Power Electronics

3 credits, three 1 hour lectures per week

– New Course. Fully designed the course: lecture notes, simulations, homeworks, midterms tests, and final exam.

University of Maine

Spring 2012, Spring 2013

Instructor

ECE 451 Power Electronics Lab

1 credit, one 2 hour lab session every other week

– New Course. Designed lab experiments and lab reports.

University of Maine

Spring 2012, Spring 2013

Instructor

ECE 455 Electric Drives

3 credits, three 1 hour lectures per week

– New Course. Fully designed the course: lecture notes, simulations, homeworks, midterms tests, and final exam.

University of Maine

Fall 2012, Fall 2013

Instructor

ECE 451 Electric Drives Lab

- 1 credit, one 2 hour lab session every other week
– New Course. Designed lab experiments and lab reports.

University of Maine

Fall 2012, Fall 2013

Instructor

INT 489 Renewable Energy Engineering

- 3 credits, two 1.5 hour lectures per week
– New Course. Fully designed course material and assessments.
– Arranged multiple faculty to present their expertise in the field of renewable energy.

University of Maine

Spring 2013

Teaching Assistant

EE4701 Electric Drives

- 4 credits, three 1 hour lectures per week and one 2 hour lab every other week
– Redesigned experiments and lab manual to better suit students needs.
– Designed course homework problems, online learning modules, and exam problems.

University of Minnesota

Fall 2009

Teaching Assistant

EE3101 Circuits Lab

- 2 credits, one 2 hour lab per week
– Organized and coordinated lab proceedings.
– Developed new learning vessels, quizzes, and supplemental material.

University of Minnesota

Fall 2008

Teaching Assistant

EE2361 Microcontrollers Lab

- 4 credits, one 2 hour lab per week plus three 1 hour lectures per week
– Created new labs with key learning concepts and applied these concepts to current applications.

University of Minnesota

Fall 2007

Professional Service and Activities

Professional Society Memberships

- *Member*, IEEE Power Electronics Society (PES), 2010-Present
- *Member*, IEEE Industrial Electronics Society (IES), 2010-Present
- *Member*, IEEE Vehicular Technology Society (VTS), 2010-Present
- *Member*, IEEE Power and Energy Society (PES), 2010-Present

Peer Review Service

- *Book Reviewer*, Power Electronics: A First Course, Wiley
- *Book Reviewer*, Electric Machines and Drives: A First Course, Wiley
- *Reviewer*, IEEE Transactions on Power Electronics, 2011 - Present
- *Reviewer*, IEEE Transactions on Industrial Electronics, 2011 - Present
- *Reviewer*, IEEE Applied Power Electronics Conference and Exposition, 2011 - Present
- *Reviewer*, IEEE Energy Conversion Congress and Exposition, 2011 - Present
- *Reviewer*, IEEE Transportation Electrification Conference and Exposition, 2011 - Present

Conferences and Meetings Attended

- *Presenter*, IEEE PES General Meeting, Vancouver, BC, Jul. 21-25, 2013.
- *Participant*, Electric Energy Systems Curriculum for Sustainability Workshop, Napa, CA, Feb. 7-9, 2013.
- *Participant*, Energy Conversion Congress and Exposition, Raleigh, NC, Sep. 15-20, 2012.
- *Presenter*, IEEE Vehicle Power and Propulsion Conference Chicago, IL, Sep. 6-9, 2011.
- *Participant*, SMART GRID Consumer and Utility Perspectives, Orono, ME, 2011.
- *Presenter*, Reforming the Electric Energy Systems Curriculum, Tuscon, AZ, 2010.
- *Presenter*, The Initiative for Renewable Energy and the Environment E3, St Paul, MN, 2009.
- *Presenter*, Reforming the Electric Energy Systems Curriculum, Corvallis, OR, 2009.
- *Presenter*, Reforming the Electric Energy Systems Curriculum, Napa, CA, 2009.

Grants

Pre-Tenure Research and Creative Activity Fellowship

Ocean Wave Energy Harvesting 2013
\$25,000

Efficiency of Maine

Energy Efficiency Innovation 2012–2013
\$28,155

UMaine Curriculum Fee 2012

PCB Fabrication Center for Undergraduate Education 2012
\$26,000

UMaine CETA Active Learning Grant 2011

Electric Drive Inverter for Undergraduate Education Lab 2011
\$1,000

Initiative for Renewable Energy & the Environment Seed Grant

Universal Utility Interface for Plug-in Hybrid Electric Vehicles with Vehicle-to-Grid Functionality 2009
\$70,527

Publications

[1]Nathan Weise; Kaushik Basu; Gysler Castelino; Ned Mohan, "A single-stage dual active bridge based soft switched ac-dc converter with open-loop power factor correction and other advanced features," *IEEE Trans. Power Electron.*, 2014.

[2]Lance Doiron; Nathan Weise, "Dq current control of a bidirectional, isolated single-stage ac-dc converter," in *Proc. IEEE Applied Power Electronics Conference and Exposition (APEC)*, Mar. 2014.

[3]Nathan Weise, "Dq current control of a bidirectional, isolated, single-stage ac-dc converter for vehicle-to-grid applications," in *Proc. IEEE Power and Energy Society General Meeting July 21-25, 2013*.

[4]Nathan Reimensnyder and Nathan Weise, "Voltage control of a single phase, single-stage, isolated ac-dc converter," in *Proc. IEEE Transportation Electrification Conference and Expo, June 16-19, 2013*.

[5]Gysler Castelino, Kaushik Basu, Nathan Weise, and Ned Mohan, "A bi-directional, isolated, single-stage, dab-based ac-dc converter with open-loop power factor correction and other advanced features," in *Proc. IEEE International Conference on Industrial Technology (ICIT'12)*, Mar. 2012, pp. 938–943.

[6]Nathan Weise, Kaushik Basu, and Ned Mohan, "Advanced modulation strategy for a three-phase ac-dc dual active bridge for $\sqrt{2}g$," in *Proc. IEEE Vehicle Power and Propulsion Conference (VPPC'11)*, Sep. 2011, pp. 1–6.

[7]Nathan Weise, Krushna Mohapatra, and Ned Mohan, "Reducing harmonics in bidirectional utility interface for plugin hybrid electric vehicles," in *in Proc. Grand Challenges in Modeling and Simulation*, Jul. 2010.

[8]Nathan Weise, Krushna Mohapatra, and Ned Mohan, "Universal utility interface for plug-in hybrid electric vehicles with vehicle-to-grid functionality," in *Proc. IEEE Power and Energy Society General Meeting*, Jul. 2010, pp. 1–8.

Patents

o R. Gupta, K. Mohapatra, N. Mohan, G. Castelino, K. Basu, N. Weise, "Soft Switching Power Electronic Transformer," U.S. Patent: 8,446,743 B2, issued date May 21, 2013.

Advisees

Masters.....

1. Arjun Andhra
2. Asa Sproul

3. Nathan Reimensynder

Undergraduate.....

1. Anin Maskay
2. Brandon Dupuis
3. Tony Nuzzo
4. David Hart
5. Lance Doiron
6. Lonnie Labonte

Graduate Student Committee Member

Doctoral Students.....

- o Amamihe Onwuachumba
- o Aseem Rambani
- o Yunhui Wu

Masters Students.....

- o Micheal Macinoli

Honors Undergraduate Students.....

- o Brendan Gates

Service

Service outside my discipline

- o Volunteer Foster Parent Bangor Humane Society
- o Habitat For Humanity - Built new homes in Jacksonville Beach, Florida