LEON M. TOLBERT

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The University of Tennessee
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Education

PhD. in Electrical Engineering, Georgia Institute of Technology, Atlanta, Georgia, June 1999

Dissertation: "Multilevel Carrier-Based Pulse Width Modulation Techniques Applied to a Diode-Clamped Converter for Use as a Universal Power Conditioner"

Advisor: Dr. Tom Habetler

M.S. in Electrical Engineering, Georgia Institute of Technology, Atlanta, Georgia, March 1991

Bachelor's of Electrical Engineering with highest honors, Georgia Institute of Technology, Atlanta, Georgia, December 1989

Employment

The University of Tennessee, Knoxville, Tennessee

August 2010 – present, *Min H. Kao Professor*

January 2013 – July 2018, *Department Head*, Electrical Engineering and Computer Science

August 2007 – January 2010, *Associate Department Head*

August 2005 – July 2010, *Associate Professor*

August 1999 – July 2005, *Assistant Professor*

Oak Ridge National Laboratory, Oak Ridge, Tennessee

September 1999 – February 2020, *Senior Research and Design Engineer*, Power Electronics and Electric Machinery Group

May 1997 – August 1999, *Research and Design Engineer*, Power Electronics and Electric Machinery Research Center

June 1991 – April 1997, *Electrical Engineer*, Engineering Design Services

Ebasco Services Inc., Norcross, Georgia

June 1990 – September 1990, *Assistant Engineer*

Georgia Institute of Technology, Atlanta, Georgia

January 1990 – June 1991, *Graduate Research Assistant*, School of Electrical Engineering

International Business Machines (IBM), Lexington, Kentucky

June 1989 – September 1989, *Pre-Professional Engineer*, Printers Division

National and International Honors and Awards

- Finalist, R&D 100 Award for "Inverter Based Electrical System Emulator," 2019
- Second place prize paper award from *IEEE Transactions on Power Electronics*, 2016
- William Portnoy Paper Award (First Place Prize) of the IEEE Industry Applications Society Power Electronics Devices and Components Committee, 2015
- IEEE Fellow, Class of 2013, *for contributions to multilevel power electronic converter technology*
- Second place prize paper award from the Industrial Power Converter Committee of the IEEE Industry Applications Society, 2013
- Prize paper award from *IEEE Transactions on Power Electronics*, 2009
- First place prize paper award from the Industrial Power Converter Committee of the IEEE Industry Applications Society, 2007
- IEEE Industry Applications Society Outstanding Young Member Award, 2001
- National Science Foundation CAREER Award, 2001
- Second place prize paper award from the Industrial Drives Committee of the IEEE Industry Applications Society, 1992

University and ORNL Honors and Awards

- Charles E. Ferris Faculty Award, Tickle College of Engineering, The University of Tennessee, 2019
- Research Achievement Award, Tickle College of Engineering, The University of Tennessee, 2017
- Chancellor's Citation for Research and Creative Achievement, The University of Tennessee, 2016
- Research Fellow Award, College of Engineering, The University of Tennessee, 2013
- Chancellor's Multidisciplinary Research Award, The University of Tennessee, 2012
- Research Fellow Award, College of Engineering, The University of Tennessee, 2012
- Moses A. and Mayme Brooks Distinguished Professor Award, College of Engineering, The University of Tennessee, 2010
- Named Min H. Kao Professor, Department of Electrical Engineering and Computer Science, The University of Tennessee, 2008
- Research Fellow Award, College of Engineering, The University of Tennessee, 2007
- Min H. Kao Faculty Fellowship, Department of Electrical and Computer Engineering, The University of Tennessee, 2006
- Gonzalez Family Award for Excellence in Research, Department of Electrical and Computer Engineering, The University of Tennessee, 2004
- Research Fellow Award, College of Engineering, The University of Tennessee, 2003
- Provost's Citation for Professional Promise in Research and Creative Achievement, The University of Tennessee, 2003
- Significant Event Award, Oak Ridge National Laboratory, 2003
- Weston Fulton Professorship, College of Engineering, The University of Tennessee, 2001
- World Class Teamwork Award, ORNL, 2001
- Extra Mile Award, Engineering Technology Division, ORNL, 1999
- President's Award for Continuous Improvement, ORNL, 1999
- Teamwork Award, Engineering Services Division, ORNL, 1993
- Georgia Tech Graduate President's Fellowship, 1990 – 1991
- Atlanta Section, IEEE Power Engineering Society Fellowship, 1989 – 1990
- Tau Beta Pi Engineering Honor Society, 1988

- Eta Kappa Nu Electrical Engineering Honor Society, 1988
- Georgia Tech President's Scholarship, 1986 – 1989

Professional Memberships

- Registered Professional Engineer, State of Tennessee, 1995 – present
- IEEE: Fellow, 2013 – present, Senior Member, 1998 – 2012, Member, 1991 – 1998, Student Member, 1988 – 1991
  - Member of the following IEEE societies
    - Industry Applications Society
    - Industrial Electronics Society
    - Power Electronics Society
    - Power and Energy Society
- American Society of Engineering Education (ASEE), Member, 2011 - present

Service Activity

Professional Service

- Member, Fellows Evaluation Committee, IEEE Power Electronics Society, 2019 – 2021
- Chair, Awards Committee, Industrial Power Conversion Systems Department, IEEE Industry Applications Society, 2018 – present
- Transactions Review Chair (Editor), Industrial Power Converter Committee, *IEEE Transactions on Industry Applications*, 2014 – 2017
- Associate Editor, *IEEE Transactions on Power Electronics*, 2007 – 2013
- Associate Editor, *IEEE Power Electronics Letters*, 2003 – 2006
- Nomination Committee, IEEE Power Electronics Society, 2012 – 2014
- Elected Member At-Large, Advisory Committee, IEEE Power Electronics Society, 2010 – 2012
- Membership Committee Chair, IEEE Power Electronics Society, 2011 – 2012
- Member, Power Conversion Systems and Components Technical Committee, IEEE Power Electronics Society, 2003 – present
- Member, Industrial Power Converter Committee, IEEE Industry Applications Society, 1998 – present
- Member, Organizing Committee, IEEE Workshop on CyberPELS, 2019, Knoxville, Tennessee
- Member, Steering Committee, IEEE Workshop on Wide Bandgap Power Devices and Applications, 2013-2014
- Member of Organizing Committee, Web Chair, Keynote Session Chair, IEEE Workshop on Wide Bandgap Power Devices and Applications, 2014, Knoxville, Tennessee
- Conference Web Chair and Technical Program Committee, IEEE Energy Conversion Congress and Exposition, 2012, Raleigh, North Carolina
- Conference Web Chair and Technical Program Committee, IEEE Energy Conversion Congress and Exposition, 2010, Atlanta, Georgia
- Conference Web Chair and Technical Program Committee, IEEE Energy Conversion Congress and Exposition, 2009, San Jose, California
- Chair, Education Activities Committee, IEEE Power Electronics Society, 2003 – 2007
- Member, Advisory Committee, IEEE Power Electronics Society, 2003 – 2007
- Chair, Special Activities, Industrial Power Converter Committee, IEEE Industry Applications Society, 2003 – 2006
- Associate Editor, *IEEE Transactions on Industry Applications* special issue on Fault Diagnosis of Electric Machines, Power Electronics and Drives published in May/June 2017

- Session Co-Chair, Inverter Control, IEEE Energy Conversion Congress and Exposition, Baltimore, Maryland, October 2, 2019
- Invited International Panelist, Centre for Power Electronics Annual Conference, Loughborough, England, July 4, 2019
- Invited Tutorial, Power Electronics, IEEE Workshop on Cybersecurity of Power Electronics Systems, Knoxville, Tennessee, April 29, 2019
- Session Co-Chair, High Efficiency SiC-based Power Converters, IEEE Workshop on Wide Bandgap Devices and Applications, Atlanta, Georgia, Nov. 2, 2018
- Sessions Co-Chair, (1) Single-Phase Inverters, (2) Modeling and Control of Multilevel Converters, IEEE Energy Conversion Congress and Exposition, Portland, Oregon, Sept. 24 and 25, 2018
- Session Co-Chair, Modeling and Control of DC-AC Converters II, IEEE Energy Conversion Congress and Exposition, Cincinnati, Ohio, Oct. 5, 2017
- Sessions Co-Chair, (1) Drive Applications, (2) Converter Control in Microgrids and Distributed Generation, IEEE Energy Conversion Congress and Exposition, Milwaukee, Wisconsin, Sept. 20-21, 2016
- Best Poster Judge, IEEE Energy Conversion Congress and Exposition, Milwaukee, WI, Sept. 19-20, 2016
- Sessions Co-Chair, (1) Wireless Power Transfer and Resonant Converters, (2) Transmission and Distribution, IEEE International Power Electronics and Motion Control Conference, ECCE-Asia, Hefei, China, May 25, 2016
- Sessions Co-Chair, (1) Differential-Mode EMI, (2) Modular Multilevel Converter I, IEEE Energy Conversion Congress and Exposition, Montreal, Canada, September 23, 2015
- Member, Organizing Committee, IEEE Workshop on Wide Bandgap Devices and Applications, Columbus, Ohio, October 27-29, 2013
- Technical Program Committee, IEEE Workshop on Control and Modeling for Power Electronics (COMPEL), Salt Lake City, Utah, June 23-26, 2013
- International Advisory Board, IEEE ECCE Asia DownUnder, Melbourne, Australia, June 3-6, 2013
- Session Chair, Distributed Power Systems, IEEE Energy Conversion Congress and Exposition, Raleigh, North Carolina, September 19, 2012
- Session Chair, Inverters and Rectifiers, IEEE International Power Electronics and Motion Control Conference – ECCE Asia, Harbin, China, June 4, 2012
- Sessions Chair, (1) Power Devices, Components, and Systems II; (2) Losses, Efficiency, and Thermal Analysis, IEEE International Symposium on Industrial Electronics, Hangzhou, China, May 30, 2012
- Judge, Student Poster Contest, IEEE Energy Conversion Congress and Exposition, Phoenix, Arizona, Sept. 20, 2011
- Session Chair, FACTS, European Power Electronics Conference (IEEE ECCE Europe), Aug. 30, 2011
- Sessions Chair, (1) Bidirectional Converters, (2) Multilevel Converters, IEEE Energy Conversion Congress and Exposition, Atlanta, Georgia, Sept. 14 and 16, 2010
- Session Chair, Wind Power, IEEE Power Engineering Society General Meeting, Minneapolis, Minnesota, July 28, 2010
- Session Co-Chair, Soft-Switching Converters, IEEE International Power Electronics Conference, Sapporo, Japan, June 24, 2010
- Session Chair, Reliability and Diagnostics, IEEE Energy Conversion Congress and Exposition, San Jose, California, Sept. 23, 2009
- Session Co-Chair, IEEE International Conference on Industrial Electronics and Applications, Xi'an, China, May 26, 2009
- Session Chair, IEEE Power Electronics and Motion Control Conference, Wuhan, China, May 18, 2009
- Session Chair, Energy Storage, IEEE Energy 2030, Atlanta, Georgia, Nov. 18, 2008
- Session Chair, Alternative Energy, IEEE Industry Applications Society Annual Meeting, Edmonton, Canada, October 9, 2008

- Power Electronics Track Chair, IEEE Midwest Symposium on Circuits and Systems, Knoxville, Tennessee, August 9-13, 2008
- Session Chair, Multilevel Inverter Technologies, IEEE Power Electronics Specialists Conference, Rhodes, Greece, June 19, 2008
- Invited Tutorial Presenter, SiC Semiconductor Devices and Applications, IEEE Power Electronics Specialists Conference, Rhodes, Greece, June 15, 2008
- Session Chair, Modeling and Control of Motor Drives, IEEE Applied Power Electronics Conference, Anaheim, California, February 28, 2007
- Session Organizer and Chair, Industrial Power Converter Committee Products and Services Session, IEEE Industry Applications Society Annual Meeting, Tampa, Florida, Oct. 10, 2006
- Session Chair, Machines and Drives, IEEE Workshop on Computers in Power Electronics, July 19, 2006
- Session Organizer and Chair, Industrial Power Converter Committee Products and Services Session, IEEE Industry Applications Society Annual Meeting, Hong Kong, October 6, 2005
- Session Chair, Motor Drives III, IEEE Power Electronics Specialists Conf., Recife, Brazil, June 22, 2005
- Session Chair, AC Output Converters, IEEE Applied Power Electronics Conference, Austin, Texas, March 10, 2005
- Session Organizer and Chair, Industrial Power Converter Products and Services Session, IEEE Industry Applications Society Annual Meeting, Seattle, Washington, October 4, 2004
- Session Chair, Active Filters, IEEE International Conference on Harmonics and Power Quality, Lake Placid, New York, September 13, 2004
- Associate Editor, *IEEE Transactions on Power Electronics* special issue on Distributed Generation, published vol. 19, no. 5, September 2004
- Session Chair, Power Quality and Utility Interface, IEEE Applied Power Electronics Conference, Anaheim, California, February 25, 2004
- Session Chair, Dynamic Compensators, IEEE Industry Applications Society Annual Meeting, Salt Lake City, Utah, October 14, 2003
- Session Chair, High Frequency Inverters, IEEE Power Electronics Specialists Conference, Acapulco, Mexico, June 19, 2003
- Session Chair, Multilevel Converters, IEEE Industry Applications Society Annual Meeting, Pittsburgh, Pennsylvania, October 14, 2002
- Session Chair, Active Filters, IEEE Industrial Electronics Conference, Denver, Colorado, Dec. 1, 2001
- Invited Panelist, Power Electronics Forecast for the Next Decade, IEEE International Power Electronics Congress, Acapulco, Mexico, October 18, 2000
- Session Chair, High Frequency Power Conversion, IEEE Industry Applications Society Annual Meeting, Rome, Italy, October 12, 2000
- Tutorial Presenter, High Power Converters, IEEE Industry Applications Society Annual Meeting, Rome, Italy, October 8, 2000
- Invited Panelist, Power Electronics and Renewable Energy Systems, IEEE Power Engineering Society Summer Meeting, Seattle, Washington, July 18, 2000

Editorial Review (Partial Selection of Journals and Conferences)

- *IEEE Transactions on Power Electronics*, 1999-2020
- *IEEE Transactions on Industry Applications*, 1996-1999, 2004–2014, 2016, 2018, 2019
- *IEEE Transactions on Industrial Electronics*, 2001, 2002, 2004–2019
- *IEEE Journal of Emerging and Selected Topics in Power Electronics,* 2015-2017, 2019
- *IEEE Transactions on Energy Conversion,* 2004, 2005, 2008, 2009, 2014, 2020
- *Proceedings of the IEEE*, 2020
- *IEEE Access*, 2019
- *IEEE Transactions on Industrial Informatics,* 2016, 2018
- *IEEE Transactions on Power Systems,* 2012, 2013, 2014, 2018
- *IEEE Power Engineering Letters,* 2019
- *IEEE Transactions on Circuits and Systems I,* 2006, 2014, 2019
- *IEEE Transactions on Smart Grids,* 2013-2016
- *IEEE Transactions on Power Delivery*, 2010-2013
- *IEEE Transactions on Sustainable Energy,* 2012, 2013, 2015
- *IEEE Industrial Electronics Magazine,* 2009, 2011, 2012, 2013, 2015
- *IEEE Transactions on Circuits and Systems II,* 2004, 2011
- *IEEE Transactions on Vehicle Technologies*, 2011
- *IEEE Transactions on Education*, 2000, 2001, 2009
- *IEEE Transactions on Nuclear Science,* 2005, 2008
- *IEEE Transactions on Dielectrics and Electrical Insulation*, 2006
- *IEEE Transactions on Applied Superconductivity*, 2004, 2005
- *IEEE Transactions on Control System Technology*, 2002, 2003
- *International Transactions on Electrical Energy Systems,* 2019
- *IET Proceedings on Renewable Power Generation,* 2015
- *IET Proceedings on Power Electronics*, 2008–2013
- *IET Proceedings on Circuits, Devices and Systems*, 2014
- *IET Proceedings on Electric Power Applications*, 2004–2008, 2017, 2018
- *Energies*, 2019
- *International Journal of Electrical Power and Energy Systems*, 2018
- *Electric Power Systems Research,* 2011, 2018
- *European Transactions on Electric Power,* 2009, 2010
- *Journal of Zhejiang University*, 2008–2010
- IEEE Xpert Now, Power Electronics Tutorials, 2005, 2006
- IEEE Applied Power Electronics Conference, 1999, 2000, 2004, 2005, 2010 – 2013
- IEEE Energy Conversion Congress and Exposition, 2009 – 2011, 2013
- IEEE Energy Conversion Congress and Exposition Asia, 2013
- IEEE Industrial Electronics Conference, 2001, 2003, 2004, 2011, 2012, 2014, 2016, 2017
- IEEE Wide Bandgap Power Devices and Applications, 2017
- IEEE PES ISGT Europe, 2014
- IEEE International Conference on Industrial Technology, 2013
- IEEE International Power Electronics and Motion Control Conference, 2009, 2012
- IEEE International Symposium on Industrial Electronics, 2012
- IEEE International Conference on Electrical Machines, 2010
- IEEE International Power Electronics Conference, 2010
- IEEE Power Engineering Society General Meeting, 2003, 2004, 2009, 2014

University Service

- Founding Member and Engineered Systems Thrust Leader, NSF/DOE Engineering Research Center, CURENT, 2011 – present
- Department Head, Electrical Engineering and Computer Science, January 2013 – July 2018
- Member, UTK Energy Task Force, 2017 – 2019
- Member, EECS UG Committee, 2019 - 2024
- Chair, EECS P&T Committee, 2018, 2019
- Member, Research Awards Committee, Tickle College of Engineering, 2019, 2020
- Member, EECS Power Search Committee, 2019
- Member, EECS Department Head Search Committee, 2018
- Member, Business Director Search Committee, Tickle College of Engineering 2018
- Committee Member, Department of Nuclear Engineering Academic Program Review, 2018
- Committee Member, Department of Business Analytics and Statistics Academic Program Review, 2015
- Chair, MABE Department Head Search Committee, 2013
- Member, EECS, Electrical Engineering Curriculum Ad-hoc Committee, 2012
- Member, EECS Assessment Committee (ABET), 2010 – 2012
- EECS Associate Department Head, 2007 – 2010
- EECS Graduate Program Director, 2007 – 2010
- EECS Undergraduate Liaison, 2007 – 2010
- Faculty Advisor, Eta Kappa Nu, 2005 – 2009
- Member, ECE Undergraduate Committee, 2006 – 2007
- Member, College of Engineering GTA Committee, 2007
- Member, EECS Department Head Search Committee, 2007
- Member, EECS Business Manager Search Committee, 2007, 2011
- Member, College of Engineering By-Laws Committee, 2005 – 2006
- Member, ECE Graduate Committee, 2001 – 2006
- Co-chair, ECE-CS Merger Subcommittee #3, 2006
- Member, Gonzalez Family Awards Committee, 2005, 2006
- Chair, ECE Faculty Search Committee – Power, 2004, 2005, 2009, 2012
- Member, ECE Faculty Search Committee – Electronics, 2001, 2002, 2003
- Co-chair, ECE Curriculum Committee, 2001
- Developed and maintain web page for UT Power Engineering Laboratory, http://power.eecs.utk.edu
- Judge, Sigma Xi Graduate Student Presentation Competition, 2004, 2009
- Faculty Mentor, Ronald McNair Post Baccalaureate Achievement Program, 2003

Public Service

- Member, PowerAmerica Operating Plan Working Group, 2019-2020
- Invited Participant, DOE OE Program Review for Transformer Resilience and Advanced Components, Oak Ridge, Tennessee, August 2019
- Invited Panelist, NIST Workshop on Smart Grid Testbeds and Collaborations, Knoxville, TN, April 2019
- External Examiner, Ph.D. Dissertation, National Institute of Technology Calicut, India, 2019
- Proposal Reviewer, Engineering and Physical Science Research Council, United Kingdom, 2012, 2014, 2015, 2019
- Breakout Group Chair, ORNL/NREL Meeting on Early Stage Research for Power Electronics Applications, Oak Ridge, Tennessee, December 2017
- Review Panel, National Science Foundation, Arlington, Virginia, 2003, 2004, 2007, 2013, 2017
- Proposal Reviewer, Canada Foundation for Innovation, 2014, 2015, 2017
- Founding Board Member, Board of Directors, Cyber and Information Security Consortium (CISC), Knoxville, Tennessee, 2016-present
- Invited Panelist, NSF Workshop on Directions in Power Electronics Research, Nov. 2016, Arlington, VA
- Invited Participant, ARPA-E Novel Power Electronic Systems Workshop, Sept. 2016, Washington, DC
- External Examiner, Ph.D. Dissertation, KTH Royal Institute of Technology, Stockholm, Sweden, 2016
- External Examiner, Ph.D. Dissertation, Newcastle University, Australia, 2016
- Participant, Materials Innovation for Next-Generation T&D Grid Components DOE Workshop, Oak Ridge, Tennessee, August 2015
- External Peer Reviewer, Thailand, 2015
- External Peer Reviewer, South Africa's National Research Foundation, 2014
- External Program Reviewer, Department of Electrical Engineering and Computer Science, Colorado School of Mines, 2014
- Proposal Review, National Chiao Tung University, Taiwan, 2014
- Proposal Reviewer, California Energy Commission, Energy Innovations Program, 2004, 2005, 2013
- Member, International Board of Advisors, Vestas Power Program, Aalborg University, Denmark, 2008 - 2012
- External Examiner, Ph.D. Dissertation, Aalborg University, Denmark, 2012
- External Examiner, Ph.D. Dissertation, Monash University, Australia, 2012
- Proposal Reviewer, Knowledge Foundation in Sweden, 2012
- Lead Organizer, EPRI Workshop on Power Electronics for the Power System, Nov. 17-18, 2011
- Proposal Reviewer, Chile National Fund for Scientific & Technological Development, 2010, 2011
- Proposal Reviewer, ARPA-E, 2011
- External Examiner, Ph.D. Dissertation, Indian Institute of Technology, Madras, India, 2011
- On-site Review Panel, National Science Foundation, Raleigh, North Carolina, June 2011
- External Examiner, Ph.D. Dissertation, Lappeenranta University of Technology, Finland, 2010
- Proposal Reviewer, DOE Office of Energy Efficiency, 2009
- External Examiner, Ph.D. Dissertation, Huazhong Univ. of Science and Technology, China, 2009
- External Examiner, Ph.D. Dissertation, Nanyang Technical University, Singapore, 2009

- External Examiner, Ph.D. Dissertation, Indian Institute of Technology, Madras, India, 2009
- Proposal Reviewer, Nebraska University, 2009
- Proposal Reviewer, Israel Research Foundation, 2008
- On-site Review Panel, National Science Foundation, Raleigh, North Carolina, March 2008
- SBIR Proposal Reviewer, U. S. Department of Energy, 2001, 2002, 2003, 2004, 2007, 2008
- External Examiner, National Research Foundation, South Africa, 2007
- External Examiner, Ph.D. Dissertation, University of Nottingham, UK, May 2007
- Program Reviewer, US DOE Office of Electric Transmission and Distribution, Energy Storage Program, Washington, DC, November 2-3, 2006
- Proposal Reviewer, Florida State University, Cornerstone Program, 2004, 2005
- Program Reviewer, US DOE Office of Electric Transmission and Distribution, Gridworks Program, Chicago, Illinois, October 20-21, 2004
- Proposal Reviewer, National Science Foundation, International Programs, 2004
- Proposal Reviewer, Indiana Governor's Office, 21st Century Initiative, 2004
- Proposal Reviewer, South Dakota Board of Regents, Research Centers Program, 2004
- Program Reviewer, DOE/TVA Reactive Power Program, Knoxville, Tennessee, April 20, 2004
- Proposal Reviewer, Arkansas Science and Technology Authority, 2004
- Program Reviewer, Electrical Reliability Program, U. S. Department of Energy, Washington, D.C., January 23-25, 2004
- Program Review, Power Technology Research, Tennessee Valley Authority, Nashville, Tennessee, 2002, 2003
- Program Reviewer, Advanced Power Electronics and Energy Storage Research, Tennessee Valley Authority, Knoxville, Tennessee, November 14-15, 2002
- Member, Organizing Committee, Future Energy Challenge, 2000-2001
- Program Reviewer, DOE Systems Interconnection Technologies Workshop, U. S. Department of Energy, Washington, D.C., July 23-25, 2001
- Session Chair, U.S. Department of Energy, DER Systems Interconnection Technologies Workshop, Knoxville, Tennessee, May 2001

Current Graduate Students – Major Advisor

Name	Degree Program	Start Date	Expected Completion Date
Dennis Chertkovsky	M.S. EE	January 2019	2021
Ben Dean	M.S. EE	August 2018	August 2020
Xingxuan Huang	Ph.D. EE	August 2016	2021
Paychuda Kritprajun	M.S. EE	August 2018	August 2020
Min Lin	Ph.D. EE	August 2019	2024
Daniel Merced	Ph.D. EE	August 2016	2022
Phuc (Peter) Pham	M.S. EE	August 2018	May 2020
Nattapat Praisuwanna	Ph.D. EE	August 2017	2022
Ishita Ray	Ph.D. ESE	August 2015	2021
Nathan Strain	M.S. EE	August 2017	May 2020
Jingjing Sun	Ph.D. EE	August 2016	2021
Shuyao Wang	Ph.D. EE	August 2016	2021

Previous Ph.D. Students (Graduated) – Major Advisor

23) Handong Gui, Ph.D., May 2020
Dissertation: "Methodology to Improve Switching Speed of SiC MOSFETs in Hard Switching Applications"

22) Mitchell Taylor Smith, Ph.D. (Energy Science and Engineering), December 2019
Dissertation: "Autonomous Multi-Chemistry Secondary-Use Battery Energy Storage"

21) Yutian Cui, Ph.D., May 2016
Dissertation: "High Voltage Point of Load Converter for Data Center Power Supplies"

20) Xiaojie Shi, Ph.D., December 2015
Dissertation: "Analysis and Control of VSC Based HVDC System under Single-Line-to-Ground Fault Conditions"

19) Liu (May) Yang, Ph.D., December 2015
Dissertation: "Three-Phase Power Converter Based Real-Time Synchronous Generator Emulation"

18) Madhu S. Chinthavali, Ph.D., August 2015
Dissertation: "Isolated Wired and Wireless Battery Charger with Integrated Boost Converter for PHEV and EV Applications"

17) Zhiqiang Wang, Ph.D., August 2015
Dissertation: "Driving and Protection of High Density High Temperature Power Module for Electric Vehicle Traction Application"

16) Jing Wang, Ph.D., August 2015
Dissertation: "Versatile Three-phase Power Electronics Converter-based Real-time Load Emulators"

15) Lakshmi Gopi Reddy, Ph.D., August 2014
Dissertation: "Lifetime Estimation of IGBTs in a Grid-connected STATCOM"

14) Bailu Xiao, Ph.D., May 2014
Dissertation: "Cascaded Inverters for Grid-Connected Photovoltaic Systems"

13) Fan Xu, Ph.D., December 2013
Dissertation: "All-SiC Three-Phase Converters for High-Efficiency Applications"

12) Mithat Kisacikoglu, Ph.D., May 2013
Dissertation: "Vehicle-to-grid (V2G) Reactive Power Operation Analysis of the EV/PHEV Bidirectional Battery Charger"

11) Faete Filho, Ph.D., May 2012
Dissertation: "Real-Time Selective Harmonic Minimization for Multilevel Inverters Using Genetic Algorithm and Artificial Neural Network Angle Generation"

10) Shengnan Li, Ph.D., December 2011
Dissertation: "Packaging Design of IGBT Power Module Using Novel Switching Cells"

9) Haiwen Liu, Ph.D., August 2009
Dissertation: "Design and Application of Hybrid Multilevel Inverter for Voltage Boost"

8) Michael Starke, Ph.D., August 2009
Dissertation: "DC Distribution with Fuel Cells as Distributed Energy Resources"

7) Seong Taek Lee, Ph.D., August 2009
Dissertation: "Development and Analysis of Interior Permanent Magnet Synchronous Motor with External Field Excitation Structure"

6) Hui Zhang, Ph.D., December 2007
Dissertation: "Electro-thermal Modeling of SiC Power Electronic Systems"

5) Wenjuan Zhang, Ph.D., December 2007 (Dr. Fran Li co-advisor)
Dissertation: "Optimal Sizing and Location of Static and Dynamic Reactive Power Compensation"

4) Faisal Khan, Ph.D., May 2007
   Dissertation: “Multilevel Modular DC-DC Converters”
3) Surin Khomfoi, Ph.D., May 2007
   Dissertation: “Fault Diagnostic System for Cascaded H-Bridge Multilevel Inverter Drives Based on Artificial Intelligent Approaches Incorporating a Reconfiguration Technique”
2) Zhong Du, Ph.D., May 2005
   Dissertation: “Active Harmonic Elimination in Multilevel Converters”
1) Burak Ozpineci, Ph.D., August 2002
   Dissertation: “System Impact of SiC Power Electronics on Hybrid Electric Vehicle Applications”

Previous M.S. Students (Graduated) – Major Advisor

42) Alaa Alharzi, M.S. May 2020, course only option
Project, "PV Inverter Control in a Microgrid"

41) Taylor Short, M.S. May 2020
Thesis: "Grid Frequency Regulation Provided by High Power Motor Drives"

40) Mark Nakmali, M.S. August 2019, course only option
Project: "Variable Inductor Emulation Using SiC Switches"

39) Daniel Merced, M.S. May 2019, course only option

38) Paxton Wills, M.S. May 2019 (Dr. Hector Pulgar co-advisor)
Project: "Utility Scale PV Inverter Control for Power System Stability and Oscillation Damping"

37) Xingxuan Huang, M.S. May 2019
Thesis: "Design and Switching Performance Evaluation of a 10 kV SiC MOSFET Based Phase Leg for Medium Voltage Applications"

36) Jingjing Sun, M.S. December 2018 (Dr. Daniel Costinett co-advisor)
Project: "Inductor Design and ZVS Control for a GaN-Based High Efficiency CRM Totem-Pole PFC Converter"

35) Montie Smith, M.S. August 2018
Thesis: "Evaluation of IEEE 802.1 Time Sensitive Networking Performance for Microgrid and Smart Grid Power System Applications"

34) Manashi Roy, M.S. December 2017
Project: "Online Data Monitoring and Display of a Grid Connected Solar Power System and Electric Vehicle Charging Station"

33) Jingyi Tang, M.S. August 2017, course-only option
Project: "Emulation of Ultracapacitor for Hardware Testbed"

32) Jessica Boles, M.S. August 2017
Thesis: "Battery Energy Storage Emulation for Power System Applications"

31) Cameron Riley, M.S. December 2014
Thesis: "An Autonomous Online I-V Tracer for PV Monitoring Applications"

30) Kevin Dowling, M.S. May 2014
Thesis: "Hardware-In-Loop Evaluation of Microgrid Protection Schemes"

29) Brandon Johnson, M.S. December 2013
Thesis: "An Occupant-Based Dynamic Simulation Tool for Predicting Residential Power Demand and Quantifying the Impact of Residential Demand Response"

28) Eric Taylor, M.S. May 2013
Thesis: "Short-term Electrical Load Forecasting for an Institutional/Industrial Power System"

27) Yang Xue, M.S. May 2013
Project: "Active Current Balancing for Parallel-Connected Silicon Carbide MOSFETs"

26) Brad Trento, M.S. August 2012
Thesis: "Modeling and Control of Single Phase Grid-Tie Converters"

25) Michael Pickelsimer, M.S. August 2012
Thesis: "Wireless Power Transfer System with Power Factor Correction for Electric Vehicles"

24) Micah Sweeney, M.S. May 2012
Project: "Active Current Balancing for Accurate Power Measurement of Parallel-Output Devices"

23) Brad Hill, M.S. May 2012
Project: "Comparison of a Corporate Reliability Metric to Modeled Reliability and Confidence"

22) Jing Wang, M.S. August 2011
Project: "Characterization, Modeling, and Behavior Analysis of SiC JFET Devices"

21) Yutian Cui, M.S. May 2011
Project: "Testing and Modeling of SiC Power Devices"
20) Brittnee Robinson, M.S. December 2009
Project: "Behavior of Full-Converter Wind Turbine Under Nearby Wind Plant Fault"
19) Olumide Aluko, M.S. December 2009
Project: "Behavior of Doubly-Fed Induction Generator Under Nearby Wind Plant Fault"
18) Seana McNeal, M.S. December 2008
Project: "Effects of Paralleling Normally-On SiC JFETs"
17) Shibani Mishra, M.S. December 2008
Thesis: "Fault Current Limiting and Protection Circuit for Power Electronics used in a Modular Converter"
16) Curtis Miller, M.S. May 2008
Thesis: "Temperature Characterization of the Ultracapacitor Series Resistance using a Constant Voltage Source"
15) Lakshmi Reddy Gopi Reddy, M.S. August 2007
Thesis: "Evaluation of Losses in HID Electronic Ballast Using Silicon Carbide MOSFETs"
14) Michael Starke, M.S. August 2006
Thesis: "Thermoelectrics for Cooling Power Electronics"
13) Tim Burress, M.S. August 2006
Thesis: "Vector Control and Experimental Evaluation of Permanent Magnet Synchronous Motors for HEVs"
12) Pierre Boheme, M.S. August 2006
Thesis: "Simulation of Power System Response to Reactive Power Compensation"
11) Chris Patton, M.S. August 2006
Project: "Simulation and Design of a Seven-Level, Split-Phase, Diode-Clamped Multilevel Inverter"
10) Gerald Callison, M.S. May 2006
Thesis: "An Evaluation of the Cascaded H-Bridge Multilevel Inverter Topology For Direct-Drive Synchronous Wind Farm Applications"
9) Eric Cardwell, M.S. May 2006, course-only option
8) M. Ben Sooter, M.S., December 2005
Thesis: "Thermal Control for an Advanced Power Conductor Test Facility"
7) SeongTaek Lee, M.S. August 2005
Thesis: "Finite Element Analysis of an Enhanced Flux Permanent Magnet Motor"
6) Pankaj Pandit, M.S., May 2005
Thesis: "Reactive Power Compensation with an Active Front End Rectifier"
5) Jeremy Campbell, M.S., December 2004
Thesis: "A Two-Phase Cooling Method Using R134a Refrigerant to Cool Power Electronics Devices"
4) Keith McKenzie, M.S., May 2004 (Dr. John Chiasson co-advisor)
Thesis: "Eliminating Harmonics in a Cascaded H-Bridges Multilevel Inverter Using Resultant Theory, Symmetric Polynomials, and Power Sums"
3) Jianqing Chen, M.S., August 2003
Project: "Non-Periodic Current Compensation and Energy Storage Requirement"
2) Madhu Chinthavali, M.S. August 2003
Thesis: "Silicon Carbide GTO Thyristor Loss Model for HVDC Application"
1) Tim Cunnyngham, M.S., May 2001
Thesis: "Cascade Multilevel Inverters for HEV Applications with Variant DC Sources"

Graduate Student Committee Member – Ph.D. Students

Name	Degree Program	Graduation Date	Major Advisor
Wen Zhang	Ph.D. electrical engineering		F. Wang
Saeed Anwar	Ph.D. electrical engineering		D. Costinett
Ruirui Chen	Ph.D. electrical engineering	May 2020	F. Wang
Yiwei Ma	Ph.D. electrical engineering	August 2019	F. Wang
Shuoting Zhang	Ph.D. electrical engineering	May 2019	F. Wang
Ling Jiang	Ph.D. electrical engineering	December 2018	D. Costinett
Denis Osipov	Ph.D. electrical engineering	December 2018	K. Sun
Tong Wu	Ph.D. energy science & engr	August 2018	B. Ozpineci
Bo Liu	Ph.D. electrical engineering	August 2018	F. Wang
Chongwen Zhao	Ph.D. electrical engineering	August 2018	D. Costinett
Edward Jones	Ph.D. electrical engineering	May 2018	F. Wang
Weihong Huang	Ph.D. electrical engineering	December 2017	K. Sun
Wenchao Cao	Ph.D. electrical engineering	May 2017	F. Wang
Yalong Li	Ph.D. electrical engineering	December 2016	F. Wang
Can Huang	Ph.D. electrical engineering	August 2016	F. Li
Fengkai Hu	Ph.D. electrical engineering	August 2016	K. Sun
Prabakar Kumaraguru	Ph.D. energy science & engr	December 2015	F. Li
Weimin Zhang	Ph.D. electrical engineering	August 2015	F. Wang
Jerel Cullis	Ph.D. electrical engineering	August 2015	Y. Liu
Zheyu Zhang	Ph.D. electrical engineering	August 2015	F. Wang
Ben Guo	Ph.D. electrical engineering	December 2014	F. Wang
Yao Xu	Ph.D. electrical engineering	December 2014	F. Li
Jing Xue	Ph.D. electrical engineering	August 2013	F. Wang
Zhuxian Xu	Ph.D. electrical engineering	December 2013	F. Wang
Zhiqian Jin	Ph.D. electrical engineering	August 2013	F. Li
Sarina Adhikari	Ph.D. electrical engineering	May 2013	F. Li
Robert Greenwell	Ph.D. electrical engineering	December 2012	B. J. Blalock
Penn Markham	Ph.D. electrical engineering	December 2012	Y. Liu
Dong Jiang	Ph.D. electrical engineering	December 2011	F. Wang
Ashraf Islam	Ph.D. electrical engineering	December 2011	S. K. Islam
Salwa Mostafa	Ph.D. electrical engineering	August 2011	S. K. Islam
Chiahung Su	Ph.D. electrical engineering	August 2010	S. K. Islam
M. Aminul Huque	Ph.D. electrical engineering	May 2010	S. K. Islam
Meng Lian	Ph.D. electrical engineering	May 2010	J. Wu
Kirk Lowe	Ph.D. mechanical engineering	December 2009	R. Arimilli
Rui Bo	Ph.D. electrical engineering	August 2009	F. Li
Niranjan Patil	Ph.D. electrical engineering	May 2009	J. S. Lawler
David Smith	Ph.D. mechanical engineering	May 2009	D.E. Irick
Touhidur Rahman	Ph.D. electrical engineering	May 2009	S. K. Islam
Sazia Afreen Eliza	Ph.D. electrical engineering	December 2008	S. K. Islam
Hasina Huq	Ph.D. electrical engineering	August 2006	S. K. Islam
Mengwei Li	Ph.D. electrical engineering	December 2005	J. N. Chiasson
Kaiyu Wang	Ph.D. electrical engineering	December 2005	J. N. Chiasson
Md. Hasanuzzaman	Ph.D. electrical engineering	May 2005	S. K. Islam
Joao Pinto	Ph.D. electrical engineering	August 2001	J. S. Lawler
Jovan Ilic	Ph.D. electrical engineering	May 2001	J. S. Lawler
Hui Li	Ph.D. electrical engineering	December 2000	J. S. Lawler

Graduate Student Committee Member

M.S. Students

Name	Degree Program	Graduation Date	Major Advisor
Cody Rooks	M.S. electrical engineering	December 2019	F. Li
Wen Zhang	M.S. electrical engineering	December 2019	F. Wang
Paige Williford	M.S. electrical engineering	August 2019	F. Wang
Summer Fabus	M.S. electrical engineering	May 2019	Y. Liu
Doug Bouler	M.S. electrical engineering	August 2018	D. Costinett
Maeve Lawniczak	M.S. electrical engineering	August 2018	D. Costinett
Jie Li	M.S. electrical engineering	August 2018	D. Costinett
Jordan Gamble	M.S. electrical engineering	May 2018	D. Costinett
Spencer Cochran	M.S. electrical engineering	December 2017	D. Costinett
Fei Yang	M.S. electrical engineering	August 2017	F. Wang
Gabriel Gabian	M.S. electrical engineering	August 2017	D. Costinett
Edward Jones	M.S. electrical engineering	August 2016	F. Wang
Liu Liu	M.S. computer engineering	August 2014	H. Qi
Cory Fandrich	M.S. electrical engineering	December 2013	B. Blalock
Yalong Li	M.S. electrical engineering	August 2013	F. Wang
Tooraj Homayooni	M.S. electrical engineering	May 2012	S. K. Islam
Song Yuan	M.S. electrical engineering	December 2011	S. K. Islam
Alex Melhorn	M.S. electrical engineering	August 2011	K. Tomsovic
Kevin Omoumi	M.S. electrical engineering	May 2011	B. Blalock
Brian Miller	M.S. electrical engineering	December 2010	F. Li
Robert Armistead	M.S. electrical engineering	May 2010	F. Li
Ben McCue	M.S. electrical engineering	December 2009	B. J. Blalock
Saeed Ghezawi	M.S. electrical engineering	May 2009	B. Blalock
Nader A. Michou	M.S. electrical engineering	December 2009	G. D. Peterson
Nura Sabir	M.S. electrical engineering	December 2008	F. Li
Zhiyu Chen	M.S. electrical engineering	December 2007	J. R. Roth
L. Jo Calvez	M.S. electrical engineering	May 2007	J. R. Roth
Manish Yadav	M. S. electrical engineering	August 2005	J. R. Roth
Timothy Norton	M.S. mechanical engineering	August 2003	R. Arimilli
Baskar Vairamohan	M.S. electrical engineering	August 2002	J. N. Chiasson
Yinghui Lu	M.S. electrical engineering	August 2002	J. N. Chiasson
David Marshall	M.S. electrical engineering	December 1999	J. S. Lawler

Ph.D. Qualifying Exam Committee Member

Name	Degree Program	Exam Date	Major Advisor
Yan Yu	Ph.D. electrical engineering	April 2020	K. Bai
Liyan Zhu	Ph.D. electrical engineering	Mar 2020	K. Bai
Yang Huang	Ph.D. electrical engineering	Sept 2019	K. Bai
Spencer Cochran	Ph.D. electrical engineering	April 2019	D. Costinett
Liang Qiao	Ph.D. electrical engineering	February 2019	F. Wang
Jared Baxter	Ph.D. energy science	Sept 2018	D. Costinett
Ruiyang Qin	Ph.D. electrical engineering	August 2018	D. Costinett
Mariana Magdy Mounir	Ph.D. electrical engineering	August 2018	F. Li
Zhou Dong	Ph.D. electrical engineering	August 2018	F. Wang
Andrew Foote	Ph.D. electrical engineering	August 2018	D. Costinett
Le Kong	Ph.D. electrical engineering	July 2018	F. Wang
Haiguo Li	Ph.D. electrical engineering	July 2018	F. Wang
Ren Ren	Ph.D. electrical engineering	Dec 2017	F. Wang
Jacob Dyer	Ph.D. electrical engineering	Dec 2017	F. Wang
Jiahao Niu	Ph.D. electrical engineering	Dec 2017	F. Wang
Paige Williford	Ph.D. electrical engineering	August 2017	F. Wang
Zhe Yang	Ph.D. electrical engineering	July 2017	F. Wang
Kamal Sabi	Ph.D. electrical engineering	July 2017	D. Costinett
Taher Naderi	Ph.D. electrical engineering	June 2017	D. Materassi
Xiao Kou	Ph.D. electrical engineering	May 2017	F. Li
Ruirui Chen	Ph.D. electrical engineering	August 2016	F. Wang
Wen Zhang	Ph.D. electrical engineering	August 2016	F. Wang
Chi Xu	Ph.D. electrical engineering	July 2016	D. Costinett
Jing Liang	Ph.D. electrical engineering	August 2015	D. Costinett
Chongwen Zhao	Ph.D. electrical engineering	August 2015	D. Costinett
Tim Burress	Ph.D. electrical engineering	August 2015	D. Costinett
Fei Yang	Ph.D. electrical engineering	July 2015	F. Wang
Saeed Anwar	Ph.D. electrical engineering	July 2015	D. Costinett

Undergraduate Students Participating in Research - Advisor

Name	Start Date	End Date
William Pierce	September 2019	presently working
Jordan Jones	June 2019	July 2019 (CURENT Summer REU)
Vince Wilson	June 2019	July 2019 (CURENT Summer REU)
Garrett Floyd	November 2018	May 2019
Dennis Chertkovsky	June 2018	July 2018 (CURENT Summer REU)
Rafael E. Ocasio	June 2018	July 2018 (CURENT Summer REU)
Taylor Short	August 2017	May 2018
Ben Dean	August 2014	May 2018
Meghan Stuart	April 2017	August 2017
Montie Smith	January 2016	December 2016
Jessica Boles	January 2012	May 2015
Mark Nakmali	June 2015	July 2016 (CURENT Summer REU - twice)
Summer Church	February 2014	May 2014
Lauren Atwell	May 2014	July 2014 (CURENT Summer REU)
Clifton Blalock	May 2013	August 2013 (CURENT Summer REU)
Michael Massey	May 2013	August 2013 (CURENT Summer REU)
Lily Hoang	December 2010	December 2012
Candace Patton	September 2011	May 2012
Yue Cao	May 2008	May 2011
Jonathan Coplon	March 2009	December 2010 (J. Wu co-advisor)
Brad Trento	October 2006	May 2007
Tim Burress	June 2004	December 2004
Jessica Coon	November 2000	May 2002
Keith McKenzie	January 2001	December 2001
Jim Snively	January 2001	December 2001
Robert Ardis	May 2000	May 2001

Host of Visiting Scholars, Researchers, Post-Docs

Dr. Yunting Liu, post-doc, The University of Tennessee, August 2019 – present

Mr. Yu Ren, visiting Ph.D. student, Xi'an Jiaotong University, Xi'an, China, Oct. 2017 – Oct. 2018

Dr. Nan Jin, visiting professor, Zhengzhou University of Light Industry, October 2016 – October 2017

Dr. Sheng Zheng, post-doc, The University of Tennessee, December 2013 – February 2017

Dr. Xiaojie Shi, research professor, The University of Tennessee, January 2016 – January 2017

Dr. Bishuang Fan, visiting professor, Changsha University of Science & Technology, China, December 2015 – December 2016

Dr. Yufeng Wang, visiting professor, Changsha University of Science & Technology, China, December 2015 – December 2016

Ms. Weihong Ding, Huaiyin Institute of Technology, China, September 2013 – March 2014

Dr. Metin Kesler, visiting professor, Bilicek University, Turkey, January 2013 – October 2013

Dr. Engin Ozdemir, visiting professor, Kocaeli University, Turkey, July 2013 – September 2013

Dr. Sule Ozdemir, visiting professor, Kocaeli University, Turkey, July 2013 – September 2013

Dr. Lijun Hang, post-doc, The University of Tennessee, December 2011 – September 2013

Mr. Ke Shen, visiting student, Harbin Institute of Technology, China, August 2011 – August 2012

Dr. Jun Mei, visiting professor, Southeast University, China, August 2011 – August 2012

Mr. Alain Sanchez, visiting student, Mondragon University, Spain, February 2012 – May 2012

Mr. Martin Stempfle, visiting student, University of Stuttgart, June 2011 – November 2011

Dr. Ming Li, post-doc, The University of Tennessee, January 2010 – April 2011

Dr. Timothy Han, visiting researcher, Global Power Electronics, Inc., August 2008 – August 2009

Dr. Hui Zhang, post-doc, The University of Tennessee, January 2008 – August 2009

Mr. Hyoung Woo Kim, visiting researcher, Korea Electrotechnology Res. Inst., Nov. 2007 – Feb. 2008

Dr. Engin Ozdemir, visiting professor, Kocaeli University, Turkey, January 2007 – October 2007

Dr. Sule Ozdemir, visiting professor, Kocaeli University, Turkey, January 2007 – September 2007

Student Awards

- Handong Gui received an Outstanding GRA Award from the Dept. of Electrical Engineering and Computer Science in 2019.
- Jessica Boles received an Outstanding Presentation Award from the IEEE Applied Power Electronics Conference and Exposition in San Antonio, Texas, in 2018.
- Shuyao Wang received a Min H. Kao Fellowship in 2017.
- Jessica Boles received an NSF Graduate Fellowship in 2017.
- Jessica Boles received a Bodenheimer Fellowship for 2016-2017.
- Brad Trento received an Outstanding Achievement Award from EPRI in December 2015.
- Xiaojie Shi received The University of Tennessee Chancellor's Citation for Extraordinary Professional Promise in April 2015.
- Zhiqiang Wang received The University of Tennessee Chancellor's Citation for Extraordinary Professional Promise in April 2015.
- Bo Liu received an Outstanding Poster Presentation Award from the IEEE Applied Power Electronics Conference and Exposition in Charlotte, North Carolina, in 2015.
- Yutian Cui received an Outstanding Presentation Award from the IEEE Applied Power Electronics Conference and Exposition in Charlotte, North Carolina, in 2015.
- Yutian Cui received a Min H. Kao Fellowship from UT EECS for 2014-2015.
- Xiaojie Shi received a Min H. Kao Fellowship from UT EECS for 2014-2015.
- Lakshmi Gopi Reddy received an Outstanding Presentation Award from the IEEE Applied Power Electronics Conference and Exposition in Ft. Worth, Texas, in 2014.
- Zhiqiang Wang received a Min H. Kao Fellowship from UT EECS for 2014.
- Michael Pickelsimer received a DOE GATE Fellowship from US DOE for 2011 – 2012.
- Yutian Cui received a DOE GATE Fellowship from US DOE for 2009 – 2012.
- Fan Xu received an Outstanding Presentation Award from IEEE Applied Power Electronics Conference in Orlando, Florida, in 2012.
- Lakshmi Gopi Reddy received 2nd Place Student Poster Award at the IEEE Power Systems Conference and Exposition in Phoenix, Arizona, in 2011.
- Shengnan Li received an Outstanding Presentation Award from IEEE Applied Power Electronics Conference in Ft. Worth, Texas, in 2011.
- Shengnan Li received an ESPN Fellowship from UT COE for 2009 – 2011.
- Yue Cao received a Myron Zucker travel grant to attend the IEEE Energy Conversion Congress and Exposition in 2009 (San Jose, California) and 2010 (Atlanta, Georgia.
- Yue Cao won an award for poster presentation at UT EURECA in April 2009.
- Brittnee Robinson received the UT Office of Graduate Studies Fellowship for 2008–2009.
- Shengnan Li received a Min H. Kao Fellowship from UT EECS for 2007–2010.
- Michael Starke received a Bodenheimer Fellowship from UT EECS for 2005–2008.
- Surin Khomfoi received The University of Tennessee Provost's Citation for Extraordinary Professional Promise in April 2007.
- Zhong Du received The University of Tennessee Provost's Citation for Extraordinary Professional Promise in April 2005.
- Zhong Du received second place in the Sigma Xi Student Presentation Contest at The University of Tennessee in April 2004.
- Melanie Agcaoili received awards for Exemplary Scholar and Stellar Presentation during her participation in the McNair Post Baccalaureate Achievement Program in July 2003.
- Sherica Matthews received the University of Tennessee's Gene Mitchell Gray Pioneer Award in 2003.

- Burak Ozpineci received The University of Tennessee Provost's Citation for Extraordinary Professional Promise in April 2002.
- Burak Ozpineci received the Best Student Paper Award for the IEEE Systems Man and Cybernetics Conference in Phoenix, Arizona, in October 2001.

Student Competition Teams - Advisor

- Faculty Co-Advisor, University of Tennessee team, Google Littlebox (high efficiency power supply), 2014-2015. Team was one of 3 U.S. finalists in international competition.
- Faculty Co-Advisor, University of Tennessee team, EcoCar2 (convert vehicle to hybrid-electric), 2011-2013. UT team finished 6th place overall in 2012.
- Faculty Co-Advisor, University of Tennessee team, Solar Decathlon, 2010-2011. UT team received first place in energy generation and hot water. UT team finished 8th place overall.
- Faculty Co-Advisor, University of Tennessee team, EPA P3 Challenge (all-electric 1-person vehicle), 2010-2011
- Faculty Co-Advisor, University of Tennessee team, FutureTruck Competition, 2002, 2003, 2004. UT team won the Most Innovative Use of Virtual Instrumentation Award by National Instruments in 2004. UT won the Visteon Award for most innovative use of electronics in 2004.
- Faculty Advisor, University of Tennessee team, Future Energy Challenge, 2001

Teaching, Education, Leadership Workshops Attended

- Southern Association of Electrical and Computer Engineering Department Heads, Atlanta, Georgia, Nov. 2-3, 2017. Panelist for session on first-year engineering courses for ECE students.
- SEC Deans and Department Heads Annual Meeting, Atlanta, Georgia, August 10-11, 2017
- WomEngineers Day, Knoxville, Tennessee, April 22, 2017
- Electrical and Computer Engineering Department Head Annual Meeting, Destin, Florida, March 13-18, 2017
- Electrical and Computer Engineering Department Head Annual Meeting, La Jolla, California, March 18-21, 2016
- Workshop on Strategic Shaping of ECE: Vision, Branding, and Advocacy for Electrical and Computer Engineering, Atlanta, Georgia, January 20-21, 2016
- Leadership Training, University of Tennessee, May 2015 - May 2016
- Southern Association of Electrical and Computer Engineering Department Heads, Atlanta, Georgia, Nov. 5-6, 2015
- SEC Deans and Department Heads Annual Meeting, Atlanta, Georgia, August 6-7, 2015
- WomEngineers Day, Knoxville, Tennessee, April 11, 2015
- Electrical and Computer Engineering Department Head Annual Meeting, Hilton Head, South Carolina, March 13-17, 2015
- Proven Practices for Recruiting and Retaining Women in Engineering, Entrepreneurship and Student Activities, Best Practices in Senior Design, Southern Association of Electrical and Computer Engineering Department Heads, Atlanta, Georgia, Nov. 6-7, 2014
- Fundamentals of Wind Power Plant Design, Madison, Wisconsin, April 7-10, 2008
- IEEE Power Electronics Education Workshop, Recife, Brazil, June 16-17, 2005
- NSF Faculty Workshop on Teaching of Courses in Power Electronics and Electric Drives, Tempe, Arizona, January 3-5, 2002
- NSF Workshop on Multimedia Delivery of Modern Power Electronics Curriculum, Orlando, Florida, November 11-13, 2000
- Effective Teaching Workshop, IEEE Power Engineering Society, Seattle, Washington, July 15-16, 2000

Recent Teaching Experience

Semester	Course	Description	# of Students
Fall 2002	ECE 692 (3)	Flexible AC Transmission Systems	9
Spring 2003	ECE 495 (1)	FutureTruck Seminar	9
	ECE 599 (3)	Alternative Energy Sources	10
	ECE 691 (1)	Advanced Graduate Seminar	10
Fall 2003	ECE 481 (3)	Power Electronics	40
	ECE 599 (3)	Solid State Power Conversion	10
Spring 2004	ECE 495 (1)	FutureTruck Seminar	13
	ECE 691 (1)	Advanced Graduate Seminar	18
	ECE 623 (3)	Advanced Power Electronics	13
Fall 2004	ECE 692 (3)	Utility Applications of Power Electronics	16
Spring 2005	ECE 599 (3)	Alternative Energy Sources	19
	ECE 691 (1)	Advanced Graduate Seminar	17
Fall 2005	ECE 481 (3)	Power Electronics	18
	ECE 599 (3)	Solid State Power Conversion	7
	ECE 691 (1)	Advanced Graduate Seminar	17
Spring 2006	ECE 626 (3)	Power Semiconductor Devices	9
	ECE 691 (1)	Advanced Graduate Seminar	16
Fall 2006	ECE 625 (3)	Utility Applications of Power Electronics	9
Spring 2007	ECE 525 (3)	Alternative Energy Sources	17
	ECE 691 (1)	Advanced Graduate Seminar	14
Fall 2007	ECE 481 (3)	Power Electronics	12
	ECE 523 (3)	Power Electronics and Drives	7
Spring 2008	ECE 482 (3)	Power Electronics Circuits	5
	ECE 599 (3)	Power Electronics Circuits	9
	ECE 691 (1)	Advanced Graduate Seminar	16
Fall 2008	ECE 625 (3)	Utility Applications of Power Electronics	10
Spring 2009	ECE 525 (3)	Alternative Energy Sources	16
	ECE 691 (1)	Advanced Graduate Seminar	14
Fall 2009	ECE 481 (3)	Power Electronics	27
	ECE 523 (3)	Power Electronics and Drives	9
Fall 2010	ECE 625 (3)	Utility Applications of Power Electronics	14
Spring 2011	ECE 525 (3)	Alternative Energy Sources	30
Fall 2011	ECE 481 (3)	Power Electronics	25
	ECE 599 (3)	Solid State Power Conversion	12
Spring 2012	ECE 626 (3)	Power Semiconductor Devices	30
Fall 2012	ECE 625 (3)	Utility Applications of Power Electronics	20
Spring 2013	ECE 525 (3)	Alternative Energy Sources	28
Spring 2014	ECE 625 (3)	Utility Applications of Power Electronics	9
Spring 2015	ECE 525 (3)	Alternative Energy Sources	19
Spring 2016	ECE 625 (3)	Utility Applications of Power Electronics	14
Fall 2016	ECE 481 (3)	Power Electronics	30
	ECE 599 (3)	Power Electronics	15
Spring 2017	ECE 626 (3)	Power Semiconductor Devices	26
Spring 2018	ECE 625 (3)	Utility Applications of Power Electronics	23
	ECE 599 (3)	Power Electronics Packaging	6
Fall 2018	ECE 525 (3)	Alternative Energy Sources	27
Spring 2019	ECE 686 (3)	Power Semiconductor Devices	19
Fall 2019	ECE 625 (3)	Utility Applications of Power Electronics	15
Spring 2020	ECE 525 (3)	Alternative Energy Sources	20

Student Teaching Evaluations for 2005 to 2016

The Student Assessment of Instruction System (SAIS) evaluations of my courses from 2005 to 2016 are summarized in the tables below. The table shows the student responses to General Evaluation items. The scale is 1 to 5, with 1 the lowest and 5 the highest rating.

			SAIS Scores			
Semester	**Course**	**# of Students**	**Course Overall**	**Course Content**	**Instructor Contribution**	**Teaching Effectiveness**
Fall 2005	ECE 481(3)	18	4.22	4.06	4.17	4.22
	ECE 599(3)	7	4.83	4.50	4.83	4.67
	ECE 691(1)	17	4.57	4.43	4.50	4.43
Spring 2006	ECE 626(3)	9	4.43	4.14	4.43	4.14
	ECE 691(1)	16	4.69	4.69	4.62	4.69
Fall 2006	ECE 625(3)	9	4.75	4.63	4.75	4.63
Spring 2007	ECE 525(3)	17	4.18	4.00	4.29	4.06
	ECE 691(1)	14	4.82	4.73	4.73	4.73
Fall 2007	ECE 481(3)	12	3.91	3.73	4.18	4.36
	ECE 523(3)	7	4.67	4.50	4.50	4.67
Spring 2008	ECE 599(3)	8	4.13	3.75	4.25	4.38
	ECE 691(1)	12	4.42	4.25	4.33	4.33
Fall 2008	ECE 625(3)	8	4.38	4.38	4.38	4.25
Spring 2009	ECE 525(3)	15	4.40	4.60	4.67	4.60
	ECE 691(1)	14	4.50	4.50	4.36	4.43
Fall 2009	ECE 481(3)	27	3.96	4.04	4.22	4.09
	ECE 523(3)	9	4.86	4.71	4.71	5.00
Fall 2010	ECE 625(3)	9	4.71	4.57	4.86	4.86
Spring 2011	ECE 525(3)	30	4.10	4.00	4.25	4.25
Fall 2011	ECE 481(3)	24	4.08	4.04	4.30	4.26
Spring 2012	ECE 626(3)	30	4.11	4.11	4.26	4.37
Fall 2012	ECE 625(3)	20	4.53	4.71	4.76	4.65
Spring 2013	ECE 525(3)	28	4.00	4.00	4.11	4.21
Spring 2014	ECE 625(3)	9	5.00	4.83	4.83	5.00
Spring 2015	ECE 525(3)	19	4.67	4.60	4.73	4.80
Spring 2016	ECE 625(3)	14	4.55	4.64	4.55	4.64

Research Grants and Contracts

PI or co-PI on Grants with value >$52 million with individual share >$15 million.

Funded and in Progress:

- June 2020 – May 2023, "SiC Based Modular Transformer-less MW-Scale Power Conditioning System and Control for Flexible Manufacturing Plants," U.S. DOE, $3,581,545, PI: F. Wang, co-PIs: **L. M. Tolbert (shared credit: 25%**), Y. Liu, K. Bai (contract under negotiation)
- January 2016 – July 2021, "Design-Oriented Education and Hands-on Training with WBG Power Electronics for the Next Generation Power Engineering Workforce," U.S. DOE, $2,655,748, **PI: L. M. Tolbert (shared credit: 25%)**, co-PIs: D. Costinett, F. Wang, B. Blalock
- October 2018 – September 2021, "SiC Based Modular Transformer-less MW-Scale Power Conditioning System and Control for Flexible CHP System," U.S. DOE, $1,344,630, PI: F. Wang, co-PIs: **L. M. Tolbert (shared credit: 33%)**, Y. Liu
- August 2011 – July 2021, "Center for Ultra-wide-area Resilient Electric Energy Transmission Networks," NSF, $34,944,444, PI: K. Tomsovic, co-PIs: Y. Liu, F. Wang, **L. M. Tolbert (shared credit: 20%)**, F. Li
- March 2018 – December 2020, "Increasing Distribution System Resiliency Using Flexible DER and Microgrid Assets Enabled by OpenFMB," U.S. DOE, $372,285, **PI: L. M. Tolbert (shared credit: 50%)**, co-PI: Y. Liu
- October 2017 – September 2020, "Battery Management Test System for Energy Storage Technologies," Oak Ridge National Laboratory, $256,791, **PI: L. M. Tolbert (credit: 100%)**
- June 2016 – December 2020, "A Smart and Flexible Microgrid with a Low-cost Scalable Open-source Controller," ARPA-E, $3,651,000, PI: F. Wang, co-PIs: **L. M. Tolbert (shared credit: 33%)**, Y. Liu
- July 2017 – June 2020, "Comprehensive Design Leveraging Wide Bandgap Devices to Enable High Power, High Efficiency Wireless Charging of Electric Vehicles," II-VI Foundation, $285,000, PI: D. Costinett, **co-PI: L. M. Tolbert (shared credit: 25%)**, B. J. Blalock, F. Wang.
- July 2017 – June 2020, "Multi-functional High-efficiency High-density Medium Voltage SiC Based Asynchronous Microgrid Power Conditioning System Module," PowerAmerica, $600,000, PI: F. Wang, **co-PI: L. M. Tolbert (shared credit: 40%.**

Funded and Completed:

- October 2015 – December 2019, "An Ultra-light Highly Efficient MW Class Cryogenically Cooled Inverter for Future All Electric Aircraft Applications," Boeing (NASA), $800,000, PI: F. Wang, co-PIs: **L. M. Tolbert (shared credit: 25%)**, B. Blalock, D. Costinett
- July 2018 – December 2019, "Integrated High Efficiency All-GaN Wireless Power Supply," PowerAmerica, $104,429, PI: D. Costinett, **co-PI: L. M. Tolbert** (credit: 49%)
- June 2016 – January 2019, "Next Generation Electric Machines," GE (DOE Next Generation Electric Machines: Megawatt Class Motors Program), $249,999, PI: F. Wang, **co-PI: L. M. Tolbert (shared credit: 50%.**
- August 2017 – September 2017, "WBG Traineeship," Oak Ridge National Laboratory, $7,631, **PI: L. M. Tolbert (credit: 100%.**
- September 2016 – September 2017, "GMLC Energy Storage for Habitat for Humanity," Oak Ridge National Laboratory, $40,000, **PI: L. M. Tolbert (credit: 100%)**
- September 2012 – September 2017, "CPS: Synergy: Achieving High-Resolution Situational Awareness in Ultra-Wide-Area Cyber-Physical Systems," NSF, $1,000,000, PI: H. Qi, co-PIs: Y. Liu, Q. Cao, **L. M. Tolbert (shared credit: 22%.**

- October 2016 – June 2017, "Medium Voltage Silicon Carbide Converter for PV," Wolfspeed (DOE SOLAR ADEPT program), $129,238, PI: F. Wang, **co-PI: L. M. Tolbert (shared credit: 40%)**
- January 2015 – June 2017, "Wide-BandGap (WBG) Device and System Assessment for Future Automotive Electric Drivetrains," Oak Ridge National Laboratory, $211,171, **PI: L. M. Tolbert (shared credit: 25%)**, F. Wang, D. Costinett, B. J. Blalock
- July 2014 – June 2017, "SiC Based High Temperature Three Phase Voltage Source Converter with Maximum Switching Speed and Adaptive Operation Capability for High Efficiency," II-VI Foundation, $285,000, PI: B. J. Blalock, co-PIs: **L. M. Tolbert (shared credit: 25%)**, D. Costinett, F. Wang.
- August 2015 – May 2017, "A Cloud-enabled Data-driven Sensing, Communication, and Analysis Platform for Driver and Pedestrian Safety," Volkswagen, $50,000, PI: Q. Cao, co-PIs: **L. M. Tolbert (shared credit: 33%)**, A. Khattak
- August 2015 – July 2016, "Exploring Lean Margin EV Power Electronics Design Utilizing Wide Bandgap Semiconductors for Drastic Improvement of Efficiency, Power Density, and Cost," Volkswagen, $49,963, PI: F. Wang, **co-PI: L. M. Tolbert (shared credit: 25%)**, D. Costinett, B. J. Blalock
- July 2014 – December 2016, "Magnetic Amplifier – Phase II"; ORNL (from ARPA-e GENI), $552,000, PI: K. Tomsovic, co-PIs: F. Wang, D. Costinett, **L. M. Tolbert (shared credit: 25%)**
- October 2013 – September 2016, "Microgrid Control," Oak Ridge National Laboratory, $167,975, **PI: L. M. Tolbert (credit: 100%)**
- November 2014 – December 2015, "Exploratory Research on a New Paradigm for Design and Operation of Electric or Hybrid Electric Vehicle Traction Drives for Improved Efficiency, Power Density, and Lifetime," Volkswagen, $49,300, PI: F. Wang, co-PI: **L. M. Tolbert (shared credit: 25%)**, D. Costinett, B. J. Blalock
- January 2015 – December 2015, "Designing Beyond the Limits of Modern Power Inverters," EPRI, $199,368, PI: D. Costinett, **co-PIs: L. M. Tolbert (shared credit: 25%)**, F. Wang.
- January 2013 – December 2014, "Highly Integrated Power Module," Oak Ridge National Laboratory, $237,443, **PI: L. M. Tolbert (credit: 50%)**, co-PIs: Ben Blalock, Kamrul Islam, Jeremy Holleman, F. Wang, D. Costinett.
- July 2011 – June 2014, "Integrated High-temperature Phase-leg Power Modules," II-VI Foundation, $285,728, PI: B. J. Blalock, co-PIs: **L. M. Tolbert (shared credit: 33%)**, F. Wang.
- May 2005 – May 2014, "Power Electronics Evaluation for DER and T&D," Oak Ridge National Laboratory, $705,510, **PI: L. M. Tolbert (shared credit: 80%)**, co-PIs: S. K. Islam, F. Li, H. Qi, X. Wang.
- April 2012 – December 2013, "Ultra High Efficiency Power Supplies for Data Centers," Auburn University, $628,347, **PI: L. M. Tolbert (shared credit: 34%)**, F. Wang, B. Blalock.
- August 2012 – December 2013, "Integrated Circuit Intelligent IGBT Gate Drive," IMRA, $150,000, PI: B. Blalock, **co-PI: L. M. Tolbert (shared credit: 30%.**
- October 2012 – September 2013, "Microgrid Protection," Oak Ridge National Laboratory, $45,000, **PI: L. M. Tolbert (credit: 100%)**
- June 2010 – June 2013, "Scalable and Flat Controls for Reliable Power Grid Operation with High Renewable Penetration," Global Climate Energy Project, UT share: $877,500, PI: K. Tomsovic, co-PIs: F. Li, **L. M. Tolbert (shared credit: 30%.** UT is Lead Institution with Univ. of Illinois, RPI, and Northeastern University as team members.

- January 2012 – February 2013, "Cascaded Micro Inverter PV System for Reduced Costs," Delphi Automotive Systems, contract to DOE SEGIS program, $129,688, **PI: L. M. Tolbert (credit: 100%.**
- September 2012 – February 2013, "Ancillary Services for Residential Customers," Oak Ridge National Laboratory, $28,000, **PI: L. M. Tolbert (credit: 100%)**
- November 2011 – December 2012, "Isolation and Buffers for Smart Integrated Power Module," Oak Ridge National Laboratory, $65,000, **PI: L. M. Tolbert (shared credit: 50%)**, co-PI: Ben Blalock.
- June 2012 – September 2012, "Load Participation in Ancillary Services," Oak Ridge National Laboratory, $22,277, **PI: L. M. Tolbert (credit: 100%.**
- February 2011 – June 2012, "Novel Package to Reduce Stray Inductance in IGBT Modules Used for Volkswagen's EVs and HEVs," Volkswagen, $50,000, **PI: L. M. Tolbert (credit: 100%.**
- August 2010 – March 2012, "High Efficiency Wide-Band-Gap Power Supplies," Auburn University, $353,688, **PI: L. M. Tolbert (shared credit: 34%)**, F. Wang, B. Blalock.
- January 2010 – January 2012, "Solar Decathlon 2011," National Renewable Energy Laboratory, $100,000, PI: E. Stach, co-PIs: J. Rose, B. Klinkhammer, D. Shmerler, **L. M. Tolbert (credit: 20%.**
- November 2010 – September 2011, "Packaging to Reduce Stray Inductance in Power Electronics Modules," Oak Ridge National Laboratory, $68,023, **PI: L. M. Tolbert (credit: 100%.**
- September 2008 – August 2011, "A Resilient Real-Time System for a Secure and Reconfigurable Power Grid," National Science Foundation, $50,000, PI: H. Qi, co-PIs: **L. M. Tolbert (shared credit: 20%)**, F. Li, X. Wang.
- July 2008 – June 2011, "High Temperature Power Electronics," II-VI Foundation, $326,250, **PI: L. M. Tolbert (shared credit: 40%)**, co-PIs: S. K. Islam, B. J. Blalock
- June 2010 – May 2011, "Testing System for High-temperature, High-density SiC Power Electronics Converters," Defense University Research Instrumentation Program, Office of Naval Research, $502,948, PI: Fred Wang, **co-PI: L. M. Tolbert (shared credit: 50%.**
- August 2010 – July 2011, "H2vBE: A Case Study of the Reliability, Cost, and Environmental Sustainability of Hydrogen Fuel," Environmental Protection Agency, $10,000, PI: P. Frymier, co-PIs: D. Irick, **L. M. Tolbert (shared credit: 20%)**, C. Cherry, R. Counce.
- November 2010 – May 2011, "High Temperature Silicon Carbide (SiC) Gate Driver," US Army SBIR Topic A10-132, (Subcontract to GPE, Inc., SBIR Phase I), $20,620, PI: B. J. Blalock, co-PIs: F. Wang, **L. M. Tolbert (credit: 33%.**
- December 2009 – December 2010, "High Temperature Universal Gate Drives," Oak Ridge National Laboratory, $175,000, **PI: L. M. Tolbert (shared credit: 40%)**, co-PIs: B. J. Blalock, S. K. Islam.
- February 2010 – October 2010, "Modeling High Temperature Power Electronic Modules," Global Power Electronics, Inc., $99,083, PI: F. Wang, **co-PI: L. M. Tolbert (shared credit: 50%.**
- November 2009 – October 2010, "Packaging to Reduce Stray Inductance in Power Electronics Modules," Oak Ridge National Laboratory, $85,000, **PI: L. M. Tolbert (credit: 100%.**
- November 2008 – November 2009, "Highly Integrated SOI-Based Gate Drives," Oak Ridge National Laboratory, $155,989, **PI: L. M. Tolbert (shared credit: 40%)**, co-PIs: B. J. Blalock, S. K. Islam.
- October 2008 – October 2009, "Active Filter to Reduce DC Link Capacitance," Oak Ridge National Laboratory, $43,909, **PI: L. M. Tolbert (credit: 100%.**
- October 2008 – October 2009, "Finite Element Analysis and Modeling of Interior Permanent Magnet Electric Machines," Oak Ridge National Laboratory, $41,557, **PI: L. M. Tolbert (credit: 100%.**

- September 2007 – August 2008, "A Resilient Real-Time System for a Secure and Reconfigurable Power Grid," NSF, $101,500, PI: H. Qi, co-PIs**: L. M. Tolbert (shared credit: 20%)**, F. Li, X. Wang.
- January 2006 – September 2008, "High Temperature Gate Drives," Oak Ridge National Laboratory, $245,000, PI: S. K. Islam, **co-PIs: L. M. Tolbert (shared credit: 30%)**, B. J. Blalock.
- October 2006 – September 2008, "Advanced Power Converter System Using High-Temperature, High-Power Density SiC Devices," U.S. Department of Energy, (Subcontract to Aegis Technology Inc. STTR Phase II, DEFG02-05ER86234), $225,000, **PI: L. M. Tolbert (credit: 100%.**
- October 2006 – September 2008, "Magnetic-less DC-DC Converter for HEV Applications," Oak Ridge National Laboratory, $151,552, **PI: L. M. Tolbert (credit: 100%.**
- October 2006 – September 2008, "Finite Element Analysis and Modeling of Permanent Magnet Machines," Oak Ridge National Laboratory, $84,185, **PI: L. M. Tolbert (credit: 100%.**
- January 2006 – July 2008, "DC Circuits for Fuel Cell Aggregation," Oak Ridge National Laboratory, $86,620, **PI: L. M. Tolbert (credit: 100%.**
- August 2007 – April 2008, "High Power Compact Electronics For Naval Applications," U.S. Navy (Subcontract to Aegis Technology, Inc., STTR Phase I), $21,000, **PI: L. M. Tolbert (credit: 100%.**
- July 2006 – April 2007, "High Efficiency Electronic Ballasts Using SiC," U.S. Department of Energy, (Subcontract to Epic Systems, Inc., SBIR Phase I), $30,000, **PI: L. M. Tolbert (credit: 100%.**
- October 2006 – September 2007, "Fault Diagnosis and Reconfiguration of a Multilevel Converter," Oak Ridge National Laboratory, $40,622, **PI: L. M. Tolbert (shared credit: 100%.**
- October 2006 – September 2007, "Wide Band Gap Semiconductor Characterization and Modeling," Oak Ridge National Laboratory, $39,362, **PI: L. M. Tolbert (credit: 100%.**
- March 2001 – December 2006, "CAREER: Power Electronics Circuits for Renewable and Distributed Energy Systems," National Science Foundation, $375,000, **PI: L. M. Tolbert (credit: 100%.**
- August 2003 – August 2006, "Power Electronics Research for Distribution Systems," EPRI Solutions, $73,805, **PI: L. M. Tolbert (credit: 100%.**
- October 2005 – September 2006, "Economic Evaluation of Reactive Power Compensation," Oak Ridge National Laboratory, $10,934, **PI: L. M. Tolbert (credit: 100%.**
- July 2005 – March 2006, "Advanced Power Converter System Using High-Temperature, High-Power Density SiC Devices," U.S. Department of Energy, (SBIR Subcontract to Aegis Technology Inc.), $30,000, **PI: L. M. Tolbert (credit: 100%.**
- June 2003 – December 2006, "Power Electronics and Controls for Hybrid Electric Vehicles," Oak Ridge National Laboratory, $707,311, **PI: L. M. Tolbert (shared credit: 60%)**, co-PI: J. N. Chiasson.
- 2004 – 2005, "High Temperature, High Power Density Electronic Devices," U.S. Department of Navy, SBIR N65538-04-M-0146, $20,789. (Subcontract IJ Research, Inc.), **PI: L. M. Tolbert (credit: 100%.**
- 2004 – 2005, "SiC MOSFET Test and Loss Modeling," National Renewable Energy Laboratory, TAM-4-3320-01, (Subcontract to Peregrine Power, Inc.), $49,567, **PI: L. M. Tolbert (credit: 100%.**
- 2001 – 2003, "Characterization and Application of SiC MOSFETs," Oak Ridge National Laboratory, $119,992, **PI: L. M. Tolbert (shared credit: 50%)**, co-PI: S. K. Islam.
- 2001 – 2003, "Electric Machinery Controls Research and Development," U.S. Department of Energy, $237,292, PI: J. N. Chiasson, **co-PI: L. M. Tolbert (shared credit: 40%.**
- 2000 – 2001, "Advanced Mobile Military Generator Set," U.S. Army CECOM, $128,900, **PI: L. M. Tolbert (credit: 100%.**

Publications

h-index: 76 (Google Scholar – April 1, 2020)
i-100 index: 59
i-10 index: 296
Citations: 25,151

Refereed Journal Articles

[1] T. G. Habetler, F. Profumo, M. Pastorelli, **L. M. Tolbert**, "Direct Torque Control of Induction Machines Using Space Vector Modulation," *IEEE Transactions on Industry Applications*, vol. 28, no. 5, Sept./Oct. 1992, pp. 1045-1053. doi:10.1109/28.158828.

[2] **L. M. Tolbert**, L. J. Degenhardt, J. T. Cleveland, "Reliability of Lightning-Resistant Overhead Lines," *IEEE Industry Applications Magazine*, July/August 1997, pp. 17-21. doi:10.1109/2943.590676.

[3] J. S. Hsu, J. D. Kueck, M. Olszewski, P. J. Otaduy, D. A. Casada, **L. M. Tolbert**, "Comparison of Induction Motor Field Efficiency Evaluation Methods," *IEEE Transactions on Industry Applications*, vol. 34, no. 1, Jan. 1998, pp. 117-125. doi:10.1109/28.658732.

[4] **L. M. Tolbert**, F. Z. Peng, T. G. Habetler, "Multilevel Converters for Large Electric Drives," *IEEE Transactions on Industry Applications*, vol. 35, no. 1, Jan./Feb. 1999, pp. 36-44. doi:10.1109/28.740843.

[5] **L. M. Tolbert**, T. G. Habetler, "Novel Multilevel Inverter Carrier-Based PWM Method," *IEEE Transactions on Industry Applications*, vol. 35, no. 5, Sept./Oct. 1999, pp. 1098-1107. doi:10.1109/28.793371.

[6] **L. M. Tolbert**, F. Z. Peng, T. G. Habetler, "A Multilevel Converter-Based Universal Power Conditioner," *IEEE Transactions on Industry Applications*, vol. 36, no. 2, Mar./Apr. 2000, pp. 596-603. doi:10.1109/28.833778.

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[8] J. N. Chiasson, **L. M. Tolbert**, Y. Lu, "A Library of SIMULINK Blocks for Real-Time Control of HEV Traction Drives," *SAE Transactions Journal of Engines*, vol. 111, September 2002, pp. 2376-2385. doi:10.4271/2002-01-1934.

[9] **L. M. Tolbert**, B. Ozpineci, S. K. Islam, F. Z. Peng, "Impact of SiC Power Electronic Devices for Hybrid Electric Vehicles," *SAE Transactions Journal of Passenger Cars - Electronic and Electrical Systems*, vol. 111, September 2002, pp. 765-771. doi:10.4271/2002-01-1904.

[10] **L. M. Tolbert**, F. Z. Peng, T. Cunnyngham, J. N. Chiasson, "Charge Balance Control Schemes for Cascade Multilevel Converter in Hybrid Electric Vehicles," *IEEE Transactions on Industrial Electronics*, vol. 49, no. 5, Oct. 2002, pp. 1058-1064. doi:10.1109/TIE.2002.803213.

[11] B. Ozpineci, **L. M. Tolbert**, S. K. Islam, M. Hasanuzzaman "System Impact of SiC Power Devices," *International Journal of High Speed Electronics and Systems*, vol. 12, no. 2, 2002, pp. 439-448 (DOI: 10.1142/9789812796912_0018.

[12] **L. M. Tolbert**, W. A. Peterson, T. J. Theiss, M. B. Scudiere, "Gen-Sets: Electronic Power Conversion System for an Advanced Mobile Generator Set," *IEEE Industry Applications Magazine*, vol. 9, no. 2, March/April 2003, pp. 48-54 (DOI: 10.1109/MIA.2003.1180949.

[13] J. N. Chiasson, **L. M. Tolbert**, K. J. McKenzie, Z. Du, "Control of a Multilevel Converter Using Resultant Theory," *IEEE Trans. on Control Systems Technology*, vol. 11, no. 3, May 2003, pp. 345-354. doi:10.1109/TCST.2003.810382.

[14] Y. Xu, **L. M. Tolbert**, F. Z. Peng, J. N. Chiasson, J. Chen, "Compensation-based Non-active Power Definition," *IEEE Power Electronics Letters*, vol. 1, no. 2, June 2003, pp. 45-50. doi:10.1109/LPEL.2003.819915.

[15] B. Ozpineci, **L. M. Tolbert**, "Characterization of SiC Schottky Diodes at Different Temperatures," *IEEE Power Electronics Letters*, vol. 1, no. 2, June 2003, pp. 54-57. doi:10.1109/LPEL.2003.821026.

[16] J. N. Chiasson, **L. M. Tolbert**, K. McKenzie, Z. Du, "Real-Time Computer Control of a Multilevel Converter Using the Mathematical Theory of Resultants," *Mathematics and Computers in Simulation,* vol. 63, Nov. 2003, pp. 197-208 (DOI: 10.1016/S0378-4754(03)00067-3.

[17] M. Hasanuzzaman, S. K. Islam, **L. M. Tolbert**, "Effects of Temperature Variation (300 – 600 K) in MOSFET Modeling in 6H-Silicon Carbide," *Solid State Electronics*, vol. 48, no. 1, January 2004, pp. 125-132 (10.1016/S0038-1101(03)00293-4.

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[23] **L. M. Tolbert**, J. N. Chiasson, Z. Du, K. J. McKenzie, "Elimination of Harmonics in a Multilevel Converter with Non Equal DC Sources," *IEEE Transactions on Industry Applications*, vol. 41, no. 1, Jan./Feb. 2005, pp. 75-82. doi:10.1109/TIA.2004.841162.

[24] J. N. Chiasson, **L. M. Tolbert**, Z. Du, K. J. McKenzie, "The Use of Power Sums to Solve the Harmonic Elimination Equations for Multilevel Converters," *European Power Electronics and Drives Journal*, vol. 15, no. 1, February 2005, pp. 19-27. doi:10.1080/09398368.2005.11463578.

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[24] "The Role of Power Electronics in Smart Grid and Microgrids," Invited Panelist, IEEE Energy Conversion Congress and Exposition, Raleigh, North Carolina, September 19, 2012.

[25] "Introduction to CURENT and Power Electronics Research at The University of Tennessee," Invited Presentation, University of North Carolina, Charlotte, October 15, 2013.

[26] "Challenges in Switching WBG Power Devices," Invited Keynote, IEEE Workshop on Wide Bandgap Power Devices and Applications, Columbus Ohio, October 28, 2013.

[27] "Reconfigurable Grid Emulator," Invited Presentation, Zhejiang University, Hangzhou, China, June 19, 2014. Also presented at Southeast University, Nanjing, China, June 25, 2014 and Nanjing University of Aeronautics and Astronautics, June 26, 2014.

[28] "Power Electronics-based Grid Emulator," Invited Presentation, Clemson University, April 29, 2015.

[29] "CURENT's Power Electronics Based Reconfigurable Grid Emulator," Invited Presentation, IEEE PES, Georgia Institute of Technology, Atlanta, Georgia, November 5, 2015.

[30] "Gate Drive and Protection Issues in SiC Power MOSFETs," Keynote Presentation, II-VI Foundation Mini-Conference on Fabricating and Applying SiC Power MOSFETs with Greater Mobility and Reliability, Knoxville, Tennessee, February 10, 2016.

[31] "CURENT's Power Electronics Based Reconfigurable Grid Emulator," Invited Presentation, North China Electric Power University, Beijing, China, June 8, 2016.

[32] "WBG-based Data Center Power Supplies," Google, Mountain View, California, June 30, 2016.

[33] "Reconfigurable Power Electronics Based Grid Emulator," Invited Presentation, KTH Royal Institute of Technology, Stockholm, Sweden, October 13, 2016.

[34] "Advanced Semiconductors: Using SiC and GaN Power Devices," Invited Presentation, NSF Workshop on Directions in Power Electronics Research, Arlington, VA, Nov. 3-4, 2016.

[35] "Reconfigurable Power Electronics Based Grid Emulator," Invited Seminar – Booz Allen Hamilton Colloquium, University of Maryland, November 10, 2017.

[36] "Overview of CURENT," Tennessee Municipal Electric Power Association, Knoxville, Tennessee, April 6, 2018.

[37] "Gate Drive and Protection Considerations in Applying SiC MOSFETs," Invited Keynote, IEEE Workshop on Wide Bandgap Devices and Applications, Atlanta, Georgia, Nov. 2, 2018.

[38] "Trends in Power Electronics," Invited Tutorial, IEEE Workshop on CyberPELS, Knoxville, Tennessee, April 29, 2019.

[39] "Gate Drive and Protection for SiC Devices," Invited Keynote, Centre for Power Electronics Annual Conference, Loughborough, England, July 3, 2019.