

LEON M. TOLBERT

tolbert@utk.edu

<http://web.eecs.utk.edu/~tolbert/>

The University of Tennessee
Electrical and Computer Engineering
311 Ferris Hall
Knoxville, Tennessee 37996-2100
Office Phone: (865) 974-2881
Fax: (865) 974-5483

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: Tom G. 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

August 2005 – present, *Associate Professor*, The University of Tennessee, Knoxville, Tennessee
Associate Department Head, 2007 – present

August 1999 – July 2005, *Assistant Professor*, The University of Tennessee, Knoxville, Tennessee.

September 1999 – present, *Senior Research and Design Engineer*, National Transportation Research Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

May 1997 – August 1999, *Research and Design Engineer*, Power Electronics and Electric Machinery Research Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

June 1991 – April 1997, *Electrical Engineer*, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

June 1990 – September 1990, *Assistant Engineer*, Ebasco Services Inc., Norcross, Georgia.

January 1990 – June 1991, *Graduate Research Assistant*, School of Electrical Engineering, Georgia Institute of Technology, Atlanta, Georgia.

June 1989 – September 1989, *Pre-Professional Engineer*, International Business Machines, Lexington, Kentucky.

Honors and Awards

- Prize paper award from *IEEE Transactions on Power Electronics*, 2009
- Named Min H. Kao Professor, Department of Electrical Engineering and Computer Science, The University of Tennessee, February 2008
- Engineering Research Fellow Award, The University of Tennessee, April 2007
- First prize paper award from the Industrial Power Converter Committee of the IEEE Industry Applications Society, March 2007
- Min Kao Faculty Fellowship, Department of Electrical and Computer Engineering, The University of Tennessee, October 2006
- Gonzalez Family Award for Excellence in Research, Department of Electrical and Computer Engineering, The University of Tennessee, December 2004
- Engineering Research Fellow Award, The University of Tennessee, October 2003
- University of Tennessee Provost's Citation for Professional Promise in Research and Creative Achievement, April 2003
- Significant Event Award, Oak Ridge National Laboratory, March 2003
- IEEE Industry Applications Society Outstanding Young Member Award, October 2001
- Weston Fulton Professorship, College of Engineering, The University of Tennessee, August 2001
- National Science Foundation CAREER Award, March 2001
- World Class Teamwork Award, ORNL, March 2001
- Extra Mile Award, Engineering Technology Division, ORNL, June 1999
- President's Award for Continuous Improvement, ORNL, May 1999
- Teamwork Award, Engineering Services Division, ORNL, August 1993
- Second prize paper award from the Industrial Drives Committee of the IEEE Industry Applications Society, October 1991
- Georgia Tech Graduate President's Fellowship, 1990 – 1991
- Atlanta IEEE Power Engineering Society Fellowship, 1989 – 1990
- Tau Beta Pi Engineering Honor Society
- Eta Kappa Nu Electrical Engineering Honor Society
- Georgia Tech President's Scholarship, 1986 – 1989

Professional Memberships

- Registered Professional Engineer, State of Tennessee, 1995 – present
- IEEE Senior Member, 1998 – present
IEEE Member, 1991 – 1998
IEEE Student Member, 1988 – 1991
- Member of the following IEEE societies
 - Industry Applications Society
 - Industrial Electronics Society
 - Power Electronics Society
 - Power and Energy Society

Service Activity

Professional Service

- Associate Editor, IEEE Transactions on Power Electronics, 2007 – present
- Conference Web Chair and Technical Program Committee, IEEE Energy Conversion Congress and Exposition, 2009, San Jose, California, www.ecce2009.org
- Conference Web Chair and Technical Program Committee, IEEE Energy Conversion Congress and Exposition, 2010, Atlanta, Georgia, www.ecce2010.org
- Chair, Education Activities Committee, IEEE Power Electronics Society, 2003 – 2007
- Member, Advisory Committee, IEEE Power Electronics Society, 2003 – 2007
- Member, Rectifiers and Inverters Technical Committee, IEEE Power Electronics Society, 2003 – present
- Chair, Special Activities, Industrial Power Converter Committee, IEEE Industry Applications Society, 2003 – 2006
- Associate Editor, *IEEE Power Electronics Letters*, 2003 – 2006
- Chair, Student Activities Committee, IEEE Industry Applications Society, 2001 – 2003
- Associate Editor, *IEEE Transactions on Power Electronics* special issue on Distributed Generation, published vol. 19, no. 5, September 2004
- 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
- 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 Conference, 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
- 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, December 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

- *IEEE Transactions on Power Electronics*, 1999-2009
- *IEEE Transactions on Industry Applications*, 1996-1999, 2004–2009
- *IEEE Transactions on Industrial Electronics*, 2001, 2002, 2004, 2006–2009
- *IEEE Transactions on Energy Conversion*, 2004, 2005, 2008, 2009
- *IEEE Transactions on Education*, 2000, 2001, 2009
- *IET Proceedings on Power Electronics*, 2008-2009
- *IET Proceedings on Electric Power Applications*, 2004–2008
- *IEEE Transactions on Dielectrics and Electrical Insulation*, 2006
- *IEEE Transactions on Circuits and Systems I*, 2006
- *Journal of Simulation Modeling Practice and Theory*, 2006
- IEEE Xpert Now, Power Electronics Tutorials, 2005, 2006
- *IEEE Transactions on Nuclear Science*, 2005, 2008
- *IEEE Transactions on Applied Superconductivity*, 2004, 2005
- *International Journal of Neural Network Science*, 2005
- *IEEE Transactions on Circuits and Systems II*, 2004
- *IEEE Transactions on Control System Technology*, 2002, 2003
- IEEE Industry Applications Society Annual Meeting, 1996, 2000, 2002–2004, 2006–2008
- IEEE Energy Conversion Congress and Exposition, 2009
- IEEE Conference on Industrial Electronics and Applications, 2009
- IEEE International Power Electronics and Motion Control Conference, 2009
- IEEE International Conference on Industrial Electronics and Applications, 2009
- IEEE Power Engineering General Meeting, 2003, 2004, 2009
- IEEE International Electric Machines and Drives Conference, 2007
- IEEE Power Electronics Specialists Conference, 2004, 2006
- IEEE Applied Power Electronics Conference, 1999, 2000, 2004, 2005
- IEEE International Power Electronics Congress, 2000, 2002, 2004
- IEEE Industrial Electronics Conference, 2001, 2003, 2004

University Service

- EECS Associate Department Head, June 2007 - present
- EECS Graduate Program Director, June 2007 - present
- EECS Undergraduate Liaison, June 2007 - present
- Faculty Advisor, Eta Kappa Nu, 2005 – present
- Member, ECE Undergraduate Committee, May 2006 – May 2007
- Member, College of Engineering GTA Committee, 2007
- Member, EECS Department Head Search Committee, 2007
- Member, EECS Business Manager Search Committee, 2007
- Member, College of Engineering By-Laws Committee, 2005 – 2006
- Member, ECE Graduate Committee, May 2001 – May 2006
- Co-chair, ECE-CS Merger Subcommittee #3, 2006
- Member, Gonzalez Family Awards Committee, 2005, 2006
- Chair, ECE Faculty Search Committee – Power, Spring 2004, Spring 2005, Spring 2009
- Member, ECE Faculty Search Committee – Electronics, Spring 2001, Spring 2002, Spring 2003
- Member, ECE Curriculum Committee, January 2001 – December 2001
- Developed and maintain web page for UT Power Engineering Laboratory, <http://power.eecs.utk.edu>
- Faculty Mentor, Ronald McNair Post Baccalaureate Achievement Program, Summer 2003
- Judge, Sigma Xi Graduate Student Presentation Competition, 2004, 2009

Public Service

- Proposal Reviewer, DOE Office of Energy Efficiency, 2009
- External Examiner, Ph.D. Dissertation, Huazhong University 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
- Member, International Board of Advisors, Vestas Power Program, Aalborg University (Denmark), 2008 - present
- Proposal Reviewer, Nebraska University, 2009
- Proposal Reviewer, Israel Research Foundation, 2008
- On-site Review Panel, National Science Foundation, Raleigh, North Carolina, March 2008
- External Examiner, National Research Foundation, South Africa, 2007
- External Examiner, Ph.D. Dissertation, University of Nottingham, UK, May 2007
- SBIR Proposal Reviewer, U. S. Department of Energy, 2001, 2002, 2003, 2004, 2007, 2008
- Review Panel, National Science Foundation, Arlington, Virginia, 2007
- Program Reviewer, US DOE Office of Electric Transmission and Distribution, Energy Storage Program, Washington, DC, November 2-3, 2006
- Proposal Reviewer, California Energy Commission, Energy Innovations Small Grant Program, 2004, 2005
- Proposal Reviewer, Florida State University, Cornerstone Program, 2004, 2005
- Review Panel, National Science Foundation, December 2004
- 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, 2010 Initiative Research Centers Program, 2004
- Program Reviewer, DOE/TVA Reactive Power Program, Knoxville, Tennessee, April 20, 2004
- Proposal Reviewer, Arkansas Science and Technology Authority, Technology, Development Project, 2004
- Program Reviewer, Electrical Reliability Program, U. S. Department of Energy, Washington, D.C., January 23-25, 2004
- Proposal Panel Reviewer, National Science Foundation, Arlington, Virginia, 2003
- Program Review, Power Technology Research, Tennessee Valley Authority, Nashville, Tennessee, June 23, 2003
- Program Reviewer, Advanced Power Electronics and Energy Storage Research, Tennessee Valley Authority, Knoxville, Tennessee, November 14-15, 2002
- Program Reviewer, Power Technology Research, Tennessee Valley Authority, Nashville, Tennessee, April 11, 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

<u>Name</u>	<u>Degree Program</u>	<u>Start Date</u>	<u>Expected Completion Date</u>
Olumide Aluko	M.S.	August 2008	December 2009
Brittnee Robinson	M.S.	August 2008	December 2009
Mithat Kisacikoglu	Ph.D.	August 2007	2011
Shengnan Li	Ph.D.	August 2007	2011
Faete Filho	Ph.D.	January 2008	2011
Lakshmi Gopi Reddy	Ph.D.	August 2008	2011
Yutian Cui	Ph.D.	August 2009	2013
Bailu Xiao	Ph.D.	August 2009	2013
Fan Xu	Ph.D.	August 2009	2013
Jing Wang	Ph.D.	August 2009	2013

Previous Ph.D. Students – Major Advisor

- 1) Haiwen Liu, Ph.D., August 2009
Dissertation: “Design and Application of Hybrid Multilevel Inverter for Voltage Boost”
- 2) Michael Starke, Ph.D., August 2009
Dissertation: “DC Distribution with Fuel Cells as Distributed Energy Resources”
- 3) Seong Taek Lee, Ph.D., August 2009
Dissertation: “Development and Analysis of Interior Permanent Magnet Synchronous Motor with External Field Excitation Structure”
- 4) Hui Zhang, Ph.D., December 2007
Dissertation: “Electro-thermal Modeling of SiC Power Electronic Systems”
- 5) Wenjuan Zhang, Ph.D., September 2007 (Dr. Fran Li co-advisor)
Dissertation: “Optimal Sizing and Location of Static and Dynamic Reactive Power Compensation”
- 6) Faisal Khan, Ph.D., May 2007
Dissertation: “Multilevel Modular DC-DC Converters”
- 7) 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”
- 8) Zhong Du, Ph.D., May 2005
Dissertation: “Active Harmonic Elimination in Multilevel Converters”
- 9) Burak Ozpineci, Ph.D., August 2002
Dissertation: “System Impact of SiC Power Electronics on Hybrid Electric Vehicle Applications”

Previous M.S. Students – Major Advisor

M.S. Students

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

Graduate Student Committee Member

<u>Name</u>	<u>Degree Program</u>	<u>Graduation Date</u>	<u>Major Advisor</u>
Kirk Lowe	Ph.D. mechanical engineering		R. Arimilli
Meng Lian	Ph.D. electrical engineering		J. Wu
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
Saeed Ghezawi	M.S. electrical engineering	May 2009	B. Blalock
Nader A. Michou	M.S. electrical engineering	December 2009	G. D. Peterson
Sazia Afreen Eliza	Ph.D. electrical engineering	December 2008	S. K. Islam
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
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
Manish Yadav	M. S. electrical engineering	August 2005	J. R. Roth
Md. Hasanuzzaman	Ph.D. electrical engineering	May 2005	S. K. Islam
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
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
David Marshall	M.S. electrical engineering	December 1999	J. S. Lawler

Undergraduate Students Participating in Research - Advisor

<u>Name</u>	<u>Start Date</u>	<u>End Date</u>
Jonathan Coplon	March 2009	presently working
Yue Cao	May 2008	presently working
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. Jung Hee Han, visiting researcher, Global Power Electronics, Inc., August 2008 – present

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

Mr. Hyoung Woo Kim, visiting researcher, Korea Electrotechnology Research Institute, November 2007 – February 2008

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

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

Student Competition Teams - Advisor

Faculty Advisor, University of Tennessee team, Future Energy Challenge, 2001.

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.

Student Awards

Yue Cao won an award from UT for poster presentation at Undergraduate Research Poster Presentation.

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 2008–2010

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 April 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.

Teaching Workshops Attended

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.

Teaching*

<u>Semester</u>	<u>Course</u>	<u>Description</u>	<u># of Students</u>
Fall 1999	ECE 321 (3)	Electric Energy System Components	17
Spring 2000	ECE 321 (3)	Electric Energy System Components	41
Fall 2000	ECE 481 (3)	Power Electronics	7
	ECE 599 (3)	Solid State Power Conversion	2
Spring 2001	ECE 482 (4)	Power Electronics Circuits	18
Fall 2001	ECE 523 (3)	Power Electronics and Drives	8
	ECE 599 (3)	Drives for Hybrid Electric Vehicles	4
Spring 2002	ECE 495 (1)	FutureTruck Seminar	10
	ECE 623 (3)	Advanced Power Electronics	8
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	30
	ECE 523 (3)	Power Electronics and Drives	9

* Research contracts have funded on average a 25% faculty release from Spring 2000 until present.

Student Teaching Evaluations for Last Five Years

The Student Assessment of Instruction System (SAIS) evaluations of my courses during the last five years 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.

<u>Semester</u>	<u>Course</u>	<u># of Students</u>	<u>SAIS Scores</u>			
			<u>Course Overall</u>	<u>Course Content</u>	<u>Instructor Contribution</u>	<u>Teaching Effectiveness</u>
Spring 2004	ECE 495(1)	13	4.18	4.09	4.18	4.18
	ECE 623(3)	13	4.45	4.36	4.45	4.45
	ECE 691(1)	18	4.35	4.18	4.18	4.06
Fall 2004	ECE 692(3)	16	4.42	4.33	4.17	4.33
Spring 2005	ECE 599(3)	19	4.65	4.18	4.65	4.53
	ECE 691(1)	17	4.59	4.29	4.41	4.56
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

Research Grants and Contracts

Funded and in Progress:

- September 2009 – August 2012, “Scalable and Flat Controls for Reliable Power Grid Operation with High Renewable Penetration,” UT share: \$877,500, PI: K. Tomsovic, co-PIs: F. Li, **L. M. Tolbert (shared credit: 40%)**. UT is Lead Institution with Univ. of Illinois, RPI, and Northeastern as team members.
- May 2005 – December 2009, “Power Electronics Evaluation for DER and T&D,” Oak Ridge National Laboratory, \$405,000, **PI: L. M. Tolbert (shared credit: 75%)**, co-PIs: S. K. Islam, F. Li, H. Qi, X. Wang.
- 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 2010, “High Temperature Power Electronics,” II-VI Foundation, \$231,250, **PI: L. M. Tolbert (shared credit: 40%)**, co-PIs: S. K. Islam, B. J. Blalock
- October 2008 – September 2009, “Active Filter to Reduce DC Link Capacitance,” Oak Ridge National Laboratory, \$43,909, **PI: L. M. Tolbert (shared credit: 100%)**.
- October 2008 – September 2009, “Finite Element Analysis and Modeling of Interior Permanent Magnet Electric Machines,” Oak Ridge National Laboratory, \$41,557, **PI: L. M. Tolbert (shared 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.

Funded and Completed:

- 2000–2001, “Advanced Mobile Military Generator Set,” U.S. Army CECOM, \$128,900, **PI: L. M. Tolbert (shared credit: 80%)**, co-PI: J. N. Chiasson.
- 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%)**.
- 2004 – 2005, “High Temperature, High Power Density Electronic Devices,” U.S. Department of Navy, SBIR N65538-04-M-0146, \$20,789. (Subcontract to IJ Research, Inc.), **PI: L. M. Tolbert (shared 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 (shared 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 (shared credit: 100%)**.

- August 2003 – August 2006, “Power Electronics Research for Distribution Systems,” EPRI Solutions, \$73,805, **PI: L. M. Tolbert (shared credit: 100%)**.
- October 2005 – September 2006, “Economic Evaluation of Reactive Power Compensation,” Oak Ridge National Laboratory, \$10,934, **PI: L. M. Tolbert (shared 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 (shared 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.
- 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 (shared 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 (shared 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 (shared credit: 100%)**.
- January 2006 – July 2008, “DC Circuits for Fuel Cell Aggregation,” Oak Ridge National Laboratory, \$86,620, **PI: L. M. Tolbert (shared credit: 100%)**.
- September 2007 – August 2008, “A Resilient Real-Time System for a Secure and Reconfigurable Power Grid,” National Science Foundation, \$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 (shared credit: 100%)**.
- October 2006 – September 2008, “Magnetic-less DC-DC Converter for HEV Applications,” Oak Ridge National Laboratory, \$151,552, **PI: L. M. Tolbert (shared 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 (shared credit: 100%)**.

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