WAJIHA SHIREEN

EDUCATION

1/91-8/93	Ph.D. in Electrical Engineering. Texas A&M University, College Station, Texas. Dissertation : *Analysis and Design of active power filter topologies to cancel neutral current harmonics in low voltage electric power distribution systems.*
8/88 - 12/90	Master of Science in Electrical Engineering. Texas A&M University, College Station, Texas. Thesis: *A new technique to reject dc-link voltage ripple in Pulse Width Modulated Inverters.*
8/82 - 7/87	Bachelor of Science in Electrical Engineering. Bangladesh University of Engineering & Technology, Dhaka, Bangladesh.

TEACHING AND RESEARCH EXPERIENCE

8/06-Present	Professor and Chair: Department of Engineering Technology Professor : Electrical and Computer Engineering Department
8/99 – 8/06	Associate Professor: Department of Engineering Technology, University of Houston, Houston, Texas.
8/93 – 8/99	Assistant Professor: Department of Electrical-Electronics Technology, University of Houston, Houston, Texas.
8/88 - 8/93	Research Assistant, Department of Electrical Engineering, Texas A&M A&M University, College Station, Texas.
7/87 - 8/88	Teaching Assistant: Bangladesh University of Engineering and Technology.

INDUSTRIAL AND CONSULTING EXPERIENCE

Consultant: Martech International Inc., Houston, Texas (2016-Present)

Consultant: Texas Instruments, Houston, Texas (1999 – 2014)

Consultant: Baldor Electric Co., Fort Smith, Arkansas (2001-2002)

Consultant: Lynntech Inc., College Station, TX (1999-2000)

Consultant: MagneTek Inc., Huntington, Indiana (1997-1998)

Assistant Engineer: Power Development Board, Dhaka, Bangladesh (2/88-7/88).

Hardware Engineer: Beximco Computers, Dhaka, Bangladesh (7/87 – 2/88).

AWARDS AND RECOGNITION

- Patent awarded - "Modified Space Vector Pulse Width Modulation technique to reduce DC-bus ripple effect in voltage source inverters", U.S. Patent 6,313,602 B1, 2001.
- College of Technology Outstanding Faculty Award for Teaching, 2014.
- Outstanding College of Technology Faculty Award for Research, 1998, 2006.
- Featured as a leading Researcher and Educator in Engineering Technology, in an article published in the Journal of Engineering Technology, 2001.
- Nominated and elected as an IEEE Senior Member in 2001.
- Outstanding Contribution – Faculty Advisor – Society of Instrumentation, Systems, and Automation (ISA). (1996-2005).

RESEARCH AND PUBLICATIONS

Patent

"Modified Space Vector Pulse Width Modulation technique to reduce DC-bus ripple effect in voltage source inverters", U.S. Patent 6,313,602 B1, 2001.

Books

Wajiha Shireen and Sonal Patel, "Fast Converging MPPT Control for Photovoltaic Applications", LAP LAMBERT Academic Publishing, 2012, ISBN:978-3-8473-1903-0.

Wajiha Shireen and Preetham Goli, Book Chapter titled, "Control and Management of PV Integrated Charging Facilities for PEVs". Book Title: "Plug In Electric Vehicles in Smart Grid: Charging Strategies- to be published by Springer, 2014.

Peer reviewed journal and conference articles (Names of student co-authors are underlined)

1. Preetham Goli, Wajiha Shireen, "Laboratory Setup to Meet the Educational Needs for the Future Smart Grid Workforce", IEEE Transmission & Distribution Conference and Exposition, 2016.

2. Preetham Goli, Wajiha Shireen, “Validation and Testing of a Laboratory Scale Microgrid Test Bench”, IEEE Power Engineering Society General Meeting, 2016.

3. Preetham Goli, Wajiha Shireen, “Smart Scheduling of PHEVs in PV Integrated Charging Facilities Based on DC Link Voltage Sensing,” Accepted for publication in Transportation Electrification Conference and Expo (ITEC), 2015.

4. Preetham Goli, Wajiha Shireen, “Control of PHEV Charging Facilities Integrated with Small Scale Wind Turbine,” Accepted for publication in Transportation Electrification Conference and Expo (ITEC), 2015.

5. Kotti, R.; Shireen, W., "Efficient MPPT Control for PV systems adaptive to fast changing irradiation and partial shading conditions," *Solar Energy Journal*, 2015.

6. P Goli, W Shireen, “PV powered smart charging station for PHEVs”, Renewable Energy, Volume 66, June 2014, Pages 280-287, ISSN 0960-1481.

7. Kotti, R.; Shireen, W., "An efficient robust MPPT control for grid-connected photovoltaic systems with reduced DC link capacitance," *Industrial Electronics Society, IECON 2014 - 40th Annual Conference of the IEEE* , vol., no., pp.5462,5467, Oct. 29.

8. W. Shireen and P. Goli, “Wind Powered Smart Charging Facility for PHEVs” IEEE Energy Conversion Congress and Exposition (ECCE), 2014. P Goli, W Shireen, “PV powered smart charging station for PHEVs”, Renewable Energy, Volume 66, June 2014, Pages 280-287, ISSN 0960-1481.

9. W. Shireen, A. Nagarajan, S. Patel et. al.“A Reliable Low Cost Power Electronics Interface for Photovoltaic Energy Systems”, *Solar Energy Journal, pp 370-376, 2014.*

10. Kotti, R.; Shireen, W., "Maximum Power Point Tracking of a Variable speed PMSG Wind power system with DC link reduction technique," *2014 IEEE Power & Energy Society General Meeting (PES), 2014 IEEE International Conference on* , 27-31 July 2014

11. Janakiraman, S. Shireen. W, “An Optimal Speed Wind Turbine Test Bench System for PMSG machines with MPP control”, *2014 IEEE Power & Energy Society General Meeting (PES), 2014 IEEE International Conference on.*

12. Kotti, R.; Janakiraman, S.; Shireen, W., "Adaptive Sensorless Maximum Power point Tracking Control of a PMSG Wind Energy Conversion System," *2014 IEEE Control and Modeling for Power Electronics (COMPEL), 2014 IEEE International Conference on* , 22-25 June 2014

13. S. K. Yarlagadda, W. Shireen, "A Maximum Power Point Tracking Technique for Single-Phase PV Systems with Reduced DC-Link", IEEE Applied Power Electronics Conference, 2014.

14. P. Goli and W. Shireen, "PV Integrated Smart Charging of PHEVs Based on DC Link Voltage Sensing", *IEEE Transactions on Smart Grid,*, vol.5, no.3, pp.1421,1428, May 2014.

15. P. Goli, W. Shireen, "PV powered smart charging station for PHEVs", Renewable Energy journal, Volume 66, June 2014, Pages 280-287, ISSN 0960-1481. http://dx.doi.org/10.1016/j.renene.2013.11.066

16. W. Shireen, R. Kotti and J. Villanueva, "Smart Grid, Industry Trends and Power Engineering Education", American Society of Engineering Education (ASEE) Annual Conference Proceedings, 2013.

17. A. Nagarajan & W. Shireen, "Integration of plug-in hybrid electric vehicles (PHEV) with grid connected residential photovoltaic energy systems", Central European Journal of Engineering, Volume 3, No. 2, 2013, pp. 233-242.

18. Kotti, R.; Shireen, W., "Fast converging MPPT control of photovoltaic systems under partial shading conditions," *Power Electronics, Drives and Energy Systems (PEDES), 2012 IEEE International Conference on* , vol., no., pp.1,6, 16-19 Dec. 2012.

19. W. Shireen and H. R. Nene, " Input Ripple Current Compensation using DSP control in reliable Fuel Cell Power Systems", International Journal of Hydrogen Energy 37 (2012), pp. 7807-7813.

20. D. Ortega and W.Shireen, "Control of grid-connected PMSG Wind Turbine with DC-link capacitance reduction", IEEE PES Transmission and Distribution Conference, 2012.

21. W. Shireen and P. Goli, "Photovoltaic Charging Station for Plug-In Hybrid Electric Vehicles in a Smart Grid Environment", *Innovative Smart Grid Technologies (ISGT), 2012 IEEE PES* , vol., no., pp. 16-20, Jan. 2012 .

22. W.Shireen and Sonal Patel, “Fast Converging Digital MPPT control for Photovoltaic Applications”, IEEE Power and Energy Society General Meeting Proceedings, 2011.

23. W. Shireen, Adarsh Nagarajan and Sonal Patel, “A Reliable Low Cost Power Electronics Interface for Photovoltaic Energy Systems using a single DSP controller”, IEEE Power and Energy Society, Power Systems Conference & Exposition (PSCE), 2011.

24. W. Shireen and Adarsh Nagarajan, “Grid connected residential photovoltaic energy systems with plug-in hybrid electric vehicles (PHEVs) as energy storage”, IEEE Power and Energy Society General Meeting Proceedings, 2010.

25. W. Shireen and Sonal Patel, “Plug-In Hybrid Electric Vehicles in the smart grid environment”, IEEE Power and Energy Society,Transmission and Distribution Conference Proceedings, 2010.

26. E. Barbieri, F. Attarzadeh, R. Pascali, W. Shireen, and W. Fitzgibbon, “On B.S.E and B.S.ET for the Engineering Profession”, Journal of Engineering Technology (Invited Paper), Spring 2010, pp.42-46.

27. L. Faulkenberry and W. Shireen, “Undergraduate and Graduate Research Projects On Plug-In Hybrid Electric Vehicles (PHEVs) Supported by the Local Electrical Power Company”, 2010 ASEE Annual Conference Proceedings.

28. E. Barbieri, W. Shireen, F. Attarzadeh et.al.,“A 2-year Common Template for Electrical/Computer Engineering and Electrical/Computer Engineering Technology “, AC 2009-1998, ASEE Conference Proceedings 2009, IEEE Division.

29. E. Barbieri, W. Shireen, W. Fitzgibbon et. al., “CDIO-based 2-year common templates for ECE/ECET and for ME/MET”, AC 2009-2026, ASEE Conference Proceedings 2009, ETD Division. (Nominated for best paper)

30. W. Shireen, Li Tao, “A DSP-based Active Power Filter for low voltage power distribution systems”, Electric Power Systems Research Journal 2008, Vol. 78/9 pp 1561-1567.
31. W. Shireen, H. R. Nene, “DSP-based Control for Reliable Fuel Cell power Systems with Input Ripple Current Compensation”, 2008 Power and Energy Society General Meeting – Conversion and Delivery of Electrical Energy in the 21st Century, 20 - 24 July, 2008, pp. 1-4.

32. W.Shireen and Sara McNeil, "A Modern DSP-based Laboratory for Power Electronics Education', American Society of Engineering Education (ASEE) Conference Proceedings, 2008.

33. *W. Shireen, S. Vanapalli, H. R. Nene, "DSP-based inverter control for alternate energy systems", *Journal of Power Sources*, v 166, n 2, Apr 15, 2007, p 445-449.

34. *W. Shireen and H. R. Nene, "Control and Design Aspects of Power Electronics Converters using PSpice", *Journal of Advanced Technology for Learning*, Vol. 3, No. 1, 2006.

35. *W. Shireen, R. Kulkarni, and M. Arefeen, "Analysis and Minimization of input ripple current in PWM Inverters for designing reliable fuel cell power systems", *Journal of Power Sources*, Vol. 156, Issue 2. p 448-454, June 2006.

36. W. Shireen, Srinivas Vanapalli, H. R. Nene, "A DSP based Utility Interactive Inverter for Alternate Energy Systems", *APEC, v 2006, Twenty-First Annual IEEE Applied Power Electronics Conference and Exposition, APEC '06, 2006, p 1099-1103.*

37. W. Shireen, H. R. Nene, "Active Filtering of Input Ripple Current to Obtain Efficient and Reliable Power from Fuel Cell Sources", IEEE-*INTELEC'06. The 28th International Telecommunications Energy Conference (IEEE Cat. No.06CH37806)*, 2006, pp 1-6.

38. L. Faulkenberry and W. Shireen, "Evolution of the Electrical Power Technology Program at the University of Houston", ASEE Annual Conference, 2006.

39. *W. Shireen, R. Kulkarni, "Using MATLAB for Harmonic Assessment of Three Phase PWM Inverters", *International Journal on Modern Engineering*, Vol. 5, No. 2, Spring 2005.

40. *W. Shireen and R. Kulkarni, "DSP based Space Vector Pulse Width Modulation (SVPWM) control for AC Motor Drives", accepted for publication in *Computers in Education Journal*, 2005.

41. W. Shireen, R. Kulkarni, M. Arefeen, "Analysis and Minimization of input ripple current in PWM Inverters for designing reliable fuel cell power systems", *IEEE Applied Power Electronics Conference (APEC) Proceedings, 2005* Vol. 1, p 97-102.

42. *W. Shireen, "Solid State Zero Current Switching DC Switch for DC Power Systems", *International Journal on Modern Engineering*, Vol. 4, No. 2, Spring 2004.

43. W. Shireen, R. Kulkarni, " DSP based Space Vector Pulse Width Modulation (SVPWM) control for AC Motor Drives", *ASEE 2004 Annual Conference and Exposition-Engineering Education Research New Heights*, 2004, p 4101-4106.

44. *W. Shireen and R. Kulkarni, "Harmonic Analysis of three phase PWM inverter systems using MATLAB ", *Computers in Education Journal*, v 14, n 3, July/September, 2004, p 81-85.

45. *W. Shireen and S. Vanapalli, "Laboratory setup for variable speed control of a three phase AC Induction Motor using a DSP Controller", *Computers in Education Journa*l, Vol. XIII, No. 2, April-June, 2003, p 20-25.

46. *W. Shireen and M. Arefeen, "Controlling multiple motors utilizing a single DSP Controller", *IEEE Transactions on Power Electronics*, Jan. 2003, Vol 18, No. 1, pp 124-130.

47. W. Shireen and R. Kulkarni, "A Soft Switching Inverter Module with Modified DC-Link Circuit for High Frequency DC-AC Power Conversion", *IEEE Applied Power Electronics Conference (APEC) 2003*, v1, p 507-511.

48. W. Shireen and R. Kulkarni, "Harmonic Analysis of three phase PWM inverter systems using MATLAB ", *ASEE Annual Conference and Exposition*, 2003, p 10401-10408.

49. W. Shireen and Srinivas Vanapalli, " Laboratory setup for variable speed control of a three phase AC Induction Motor using a DSP Controller" ASEE annual conference and exposition", 2002, p 7983-7987.

50. W. Shireen and Li Tao, "Implementation of a DSP based active power filter for electric power distribution systems supplying nonlinear loads", *IEEE Applied Power Electronics Conference* (APEC) Proceedings, v1, 2000, 438-442.

51. W. Shireen and M S Arefeen, "Controlling multiple motors utilizing one DSP controller", *IEEE Applied Power Electronics Conference (APEC) Proceedings*, 1999, v2, p 807-812

52. *A. Ganesh, W. Shireen and P. Enjeti, "Improved active power factor correction circuit using a zero voltage switching boost converter", *IEEE Transactions on Power Electronics*, v 13, n 2, p 308-314 March/April 1998.

53. W. Shireen , C. Andrews, M. Arefeen and J. Chepin," A MCT Based Zero Voltage Switching PWM Inverter", *IEEE Applied Power Electronics Conference (APEC) Records*, 1997, p770-775.

54. *W. Shireen and M. S. Arefeen, "The neutral current harmonics problem and possible solutions", *Journal of Engineering Technology*, pp. 38-41, Spring 1996.

55. *W. Shireen and M. S. Arefeen, "An utility interactive power electronics interface for alternate/renewable energy sources", *IEEE Transactions on Energy Conversion*, Vol. 11, issue 3, pp. 643-649, September 1996.

56. W. Shireen, D. Misir, H. Malki, and M. S. Arefeen, "Soft switching scheme for a PWM inverter using fuzzy logic controller", *IEEE International Telecommunications Energy Conference (INTELEC) Proceeding*, 1996, pp. 428-433.

57. W. Shireen, A. Ganesh and P. Enjeti, "Improved active power factor correction circuit using a zero voltage switching boost converter", *IEEE Power Electronics Specialists Conference* , pp. 701-706,1995 .
58. *P. Enjeti, W. Shireen and P. Packebush, "Analysis and design of a new active filter to cancel neutral current harmonics in three phase four wire electric power distribution systems", *IEEE Transaction on Industry Applications*, vol. 30, No.6, pp.1565-1572, Nov./Dec. 1994.
59. W. Shireen and M. S. Arefeen, "A new dc voltage notching scheme for zero voltage switching of PWM inverters", *IEEE-IAS Conference Rec.*, pp.889-894, 1994.
60. P. Enjeti, W. Shireen, et. al., "Analysis and Design of a new active power filter to cancel neutral current harmonics in three phase four wire electric distribution systems", *IEEE Industry Applications Society Annual Meeting, v2*, 1993, p939-946.
61. *P. Enjeti and W. Shireen, "A new technique to reject dc-link voltage ripple for inverters operating on programmed PWM waveforms", *IEEE Transactions on Power Electronics*, Vol. 7, No. 1, pp. 171-180, January 1992.
62. P Enjeti, W. Shireen and I Pitel, "Analysis and design of an active power filter to cancel harmonic currents in low voltage electric power distribution systems", *Proceedings of the 1992 International Conference on Industrial Electronics, Control, Instrumentation, and Automation*, v 1, pp.368-373, Nov. 1992.
63. *P. Enjeti and W. Shireen, "New technique to reject dc-link voltage ripple in PWM inverters", *Journal of the Institution of Electronics and Telecommunication Engineers*, Vol. 37, No. 1, pp. 139-151, 1991.
64. P. Enjeti and W. Shireen, "A new technique to reject DC-link voltage ripple for inverters operating on programmed PWM waveforms", *IEEE Power Electronics Specialists Conference,* 1990, p 705-713.
65. P. Enjeti and W. Shireen, "Advanced programmed PWM modulator for inverters which simultaneously eliminates harmonics and rejects DC-link voltage ripple", *IEEE 5th. Applied Power Electronics Conference (APEC)*, pp. 681-685, 1990.

Invited Papers

1. W. Shireen, "Application-oriented research projects in Power Electronics", Texas Association of Schools of Engineering Technology Meeting, San Marcos, Texas, 2002.
2. W. Shireen, "Optimizing the size of the DC-link capacitor in ac/dc/ac converters", Texas Instruments Educators Conference, August 1997.

Other Publications

1. "An AC-DC-AC converter with smaller DC-link capacitor for space power distribution systems", report to be published in the Institute of Space Systems operations (ISSO) Annual Report, 2004 -2005.
2. "A DSP-based Power Electronics Interface for Alternate/Renewable Energy System", Department of Energy Market Assessment Report, 2000.
3. "An intelligent energy management system for harmonic detection/filtering in energy efficient high rise buildings", report published in the Environmental Institute of Houston (EIH) Annual Report, 1999-2000.
4. "Advanced Soft-Switching DC to DC Converter for Space Applications", report published in the Institute of Space Systems operations (ISSO) Annual Report, 1995-1996.
5. Five reports were published in the Energy Laboratory Annual Report: 1995, 1996, 1997, 1998, 1999.

Research Grants

Principal Investigator (PI) - Wajiha Shireen

No	*Title*	**Agency**	**Funding Amount**	**Period**
	Micro-grid Simulation Study	MARTECH International Inc.	$14,000	2017
1.	Analysis of PHEV in a smart grid environment.	CenterPoint Energy	$275,000	2010-2015
2.	A Reliable Low Cost Power Electronics Interface for Renewable Energy Systems Using a Single DSP Controller.	California Energy Commission	$83,210	2008-2009
3.	Development of a Modern DSP-based Laboratory for Power Electronics Education.	National Science Foundation (NSF)	$73,996	2005-2007

4.	Control of power converters in a fuel cell system using a single DSP controller	GEAR, UFH	$21,405	2005-2006
5.	Equipment Grant: Seven TMS320F2812 EZ-DSP Starter kits.	Texas Instruments Inc.	$6,475	2005
6.	An AC-DC-AC converter with smaller DC-link capacitor for space power distribution systems.	Institute of Space Systems Operations		2003-2004
7.	Prototype EVRA machine for rehabilitation	GEAR, UFH		2003-2004
8.	Grant for Research in Power Electronics Applications.	Texas Learning and Computation Center		2002-2003
9.	DSP based power electronics interface for alternate/renewable energy systems	Dept. of Energy (DOE)		1999 – 2002
10.	An energy efficient low cost motor drive system using a single DSP controller.	GEAR, University of Houston		2000-2001
11.	An intelligent energy management system for harmonic detection/filtering in energy efficient high rise buildings.	Environmental Institute of Houston		1999-2000
12.	Development of a MCT based solid state dc switch and circuit breaker.	National Science Foundation (NSF)		1997-2000
13.	DSP based power factor correction scheme for energy efficient motor drive systems.	Energy Laboratory University of Houston		1998-1999
14.	A DSP based active power filter to cancel harmonic currents in low voltage electric power distribution systems.	National Science Foundation (NSF)		1997-1999
15.	Equipment grant	Texas Instruments Inc.		1999
16.	DSP based power factor correction scheme for energy efficient uninterruptible power supplies.	Energy Laboratory University of Houston		1997 – 1998

17.	DSP based control scheme for uninterruptible power supplies with smaller dc-link capacitor.	PEER University of Houston	1997
18.	Implementation of a DSP-based controller for a PWM inverter.	LGIA, University of Houston	1997
19.	Texas HEAF grant for small equipment	Higher Education Assistance Fund	1997
20.	A DSP based power electronics interface for alternate/renewable energy systems	Energy Laboratory, University of Houston	1996-1997
21.	Implementation of a DSP-based controller for a PWM inverter.	LGIA, University of Houston	1997
22.	Minimizing switching stress in a DC-DC boost converter for high frequency operation.	LGIA, University of Houston	1996
23.	Advanced soft switched DC to DC converter for space power application.	Institute of Space System Operation (ISSO), University of Houston	1996
24.	Development of a dc voltage notching scheme for zero voltage switching of PWM inverters.	LGIA, University of Houston	1995
25.	An utility interactive power electronics interface for alternate/renewable energy systems.	Energy Laboratory, University of Houston	1995-1996
26.	Harmonic assessment and a DSP based power quality measurement system for energy efficient building.	Energy Laboratory, University of Houston	1994-1995
27.	A Modified PWM scheme to minimize output voltage distortion of uninterruptible power supplies	PEER University of Houston	1995
28.	Development of an active power filter to cancel neutral current harmonics in three phase four wire electrical systems.	Research Initiation Grant, University of Houston	1994

TEACHING

NEW COURSES DEVELOPED

Alternate Energy systems (ELET4310)
Power Converter circuits (ELET4326)
Power Transmission and Distribution (ELET4303)
Applied Digital Control Systems (ELET 6304)
Smart Grid Essentials (ELET 6397)
Power Systems Control (ELET 6348)

ADVISING AND MENTORING

Undergraduate Research

Selective list of most recent undergraduate research projects supervised:

1. Impact of PHEV charging on distribution transformers -- Roger Hayes, Fall 2013
2. Study on range issues of PHEVs – Henry Amy, Fall 2013
3. Smart charging of PHEVs – Ayazhan Zakhan, Fall 2013
4. Comparison of on board and off board chargers – Emily Edwards, Fall 2013

Cornell Cup USA Team Project- "Smart Energy Microgrid System (SMEG)", - Team leader Ayazhan Zakhan, 2014

Graduate Research

Supervised numerous Masters thesis's of students both from the College of Technology and the College of Engineering. Supervised Ph.D students from the College of Engineering. The following is a selective list of students' theses/dissertations that were funded by external grants in the past ***three*** years.

Student Name & UH Department	Project/Thesis title	Advising effort	Status
Preetham Goli ECE	Smart Charging Station for PHEVs	Chair	PhD Candidate UH, ECE Deptt. Current
Radhakrishnan Kotti ECE	Maximum Power Point tracking for PV systems under fast changing operating conditions	Chair	PhD Candidate UH, ECE Deptt. Current.
Shyam Janakiraman	Prototype Emulation of a Wind turbine system	Chair	M.S candidate UH, ECE Deptt. Graduated August 2014.

Sindhu Krishna ECE	Fast converging MPPT control with reduced DC-link capacitor	Chair	M.S candidate UH, ECE Deptt. Graduated Dec, 2012
Daniel Ortega	Problems and solutions in rotating machines connected to High Power Drives for renewable energy	Committee Member	PhD candidate Deptt. Of Electrical Engg. University of Milan Graduated June 2012
Wei Chen ET	MPPT for PMSG Wind turbine systems	Chair	Masters thesis UH, ET Deptt. Graduated June 2013
Adarsh Nagarajan ECE	Integration of Plug in hybrid electric vehicles to grid connected photovoltaic energy systems	Chair	MS Thesis Graduated Summer 2011)
Sonal Patel ECE	Digitally controlled fast converging Maximum Power Point tracking for PV systems	Chair	MS Thesis Graduated Dec. 2010

Professional Society Membership

- Senior member of Institute of Electrical and Electronics Engineers (IEEE).
- Member of Instrumentation, Systems, and Automation Society (ISA)
- Member of American Society of Engineering Education (ASEE)
- Member of the IEEE Power Electronics Society (IEEE-PELS)
- Member of the IEEE Industrial Applications Society (IEEE-IAS)
- Member of the IEEE Power Engineering Society (IEEE-PES)
- Member of the Society of Women Engineers (SWE).