Resume of Steven B. Leeb

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Education:

Ph.D. degree, Massachusetts Institute of Technology, 1993
E.E. degree, Massachusetts Institute of Technology, 1990
S.M. degree, Massachusetts Institute of Technology, 1989
S.B. degree, Massachusetts Institute of Technology, 1987

Experience:

Joint Appointment, MIT Department of Mechanical Engineering
MacVicar Professor of Electrical Engineering and Computer Science, Massachusetts Institute of Technology 2005 – Present
(Classes taught include: Feedback Control Systems, Signals and Systems, Circuits, Advanced Mechatronics Project Laboratory, Fields and Forces, Introduction to Power Systems, Motor Design)
Associate Professor of Electrical Engineering, Massachusetts Institute of Technology 1997 – June 2005
Assistant Professor of Electrical Engineering, Massachusetts Institute of Technology 1993—1997
Lieutenant, U.S. Air Force Reserve, Wright Research and Development Center, Microelectronics Branch (part time) 1987—1991

Legal Consulting with Trial/Deposition/Report:

Lynch, Brewer, Hoffman, and Sands, 101 Federal Street, Boston, Massachusetts, beginning January 1998,
Cyberstorage vs. Trimm, Massachusetts District Court, Deposition, Expert Reports, Trial Testimony. (1:97-cv-12369)
Fish and Neave, 1251 Avenue of the Americas , New York, NY, beginning August 2001,
VLT vs. Lucent/Tyco, Massachusetts District Court, Expert Report, Hearing Testimony.
Tyco vs. Power One (product examination, claim review).
Synqor vs. Ericson, Boxborough, MA, Massachusetts District Court, 2001/2002, Expert Report
Vinson and Elkins, 2001 Ross Avenue, Dallas, Texas, beginning August 2003,
Genlyte vs. Lutron, District Court, Expert Reports, Deposition, Trial Testimony.
Latham and Watkins, LLP, 633 W. 5th street, Suite 4000, Los Angeles, CA, beginning August 2004,
Linear Technology vs. Monolithic
Wilson, Sonsini, Goodrich and Rosati, 650 Page Mill Road, Palo Alto, CA beginning September 2004,
LeapFrog vs. Fisher-Price
Lutron, 7200 Suter Road, Coopersburg, Pennsylvania, beginning September 2004 (in-house),
German Patent Application
Vinson and Elkins, 2001 Ross Avenue, Dallas, Texas, beginning July 2005,
Lutron vs. Leviton, U.S. District Court, Eastern Pennsylvania.
McDermott, Will, and Emery, beginning December 2005,
Nilssen versus Wal-Mart Stores, et.al., No. 04-C-5363
WilmerHale, beginning January 2007,
Analog Devices versus Linear Technology Corporation

Vinson and Elkins, 2001 Ross Avenue, Dallas, Texas, beginning January 2007,
Lutron Electronics Co., Inc. versus Leviton Manufacturing Co., Inc.
Sidley Austin, LLP, One South Dearborn, Chicago, Illinois, beginning February 2008,
Synqor vs. Artesyn et.al., Eastern District, Texas, Expert Reports, Deposition, Trial Testimony.
Vinson and Elkins, 2001 Ross Avenue, Dallas, Texas, beginning April 2008,
Lutron Electronics Co., Inc. versus C4 , Deposition, Expert Report
Vinson and Elkins, 2001 Ross Avenue, Dallas, Texas, beginning August 2010,
Lutron Electronics Co., Inc. versus Crestron, et.al. (Case 2:09-cv-707)
Sidley Austin, LLP, One South Dearborn, Chicago, Illinois, beginning January 2011,
Synqor vs. Lineage., Eastern District, Texas, Declarations, Reports, Depo/Trial Testimony
Sidley Austin, LLP, One South Dearborn, Chicago, Illinois, 2011
Synqor vs. Cisco, et. al.., Eastern District, Texas, Declarations, Depo/Testimony (2:14-CV-00232, 2:14-CV-286, 2:11-cv-54-TJW-CD)
Sidley Austin, LLP, One South Dearborn, Chicago, Illinois, 2011
Synqor vs. Vicor, Eastern District, Texas, Declarations, Depo/Testimony (2:14-CV-287)
McDermott, Will, and Emery, beginning February 2012,
Power Integrations Inc. v. Fairchild Semiconductor Int'l, Inc., et. al.,
(No.: 5:09-CV-05235-JW)
Baker Botts, beginning January 2013
Volterra v. Infineon, et. al. USPTO Re-exam declaration.
Woodcock Washburn, LLP, beginning February 2013
USPTO Re-examination of US 8,111,008, US 7,619,539, Declarations.
Duane Morris, LLP, beginning February 2014
USPTO Re-examination of US 5,905,442, Declaration, Interview.
McDermott, Will, and Emery, beginning June 2015,
Network-1 v. Alcatel-Lucent et.al., 6:11-cv-492-LED
Day Pitney LLP, March-April 2016
Philips v. Amerlux, CV 1:15-cv-13086-LTS, and USPTO proceedings
WilmerHale, starting December 2016
R2 v. Intel, (ITC Inv. No. 337-TA-1024 and 2:16-CV-1011-RWS (EDTX)), IPR filings
WilmerHale, starting December April 2017
Nokia v. Apple, (Inv. No. 337-TA-1039)
Kirkland & Ellis, LLP, starting August 2017
Fundamental Innovation Systems International LLC v. Samsung et.al.,
Case No. 2:17-cv-00145, Eastern District of Texas.
Kirkland & Ellis, LLP, starting September 2017
Avaya Inc., et. al., Case No. 17-10089, Southern District of New York
Paul Hastings, starting March 2019
IPR's for Samsung (vs. NuCurrent), USPTO
Finnegan, Henderson, Farabow, Garrett, & Dunner, LLP, starting May 2019
Asetek Danmark A/S v. CoolIT, Case No. 3:19-cv-00410-EMC
WilmerHale, starting August 2019
VLSI Technology, LLC v. Intel, (W.D. Texas Case Nos. 19-254, -255, -256-ADA) reports, deposition, trial testimony.
Latham & Watkins, starting December 2019
Technical expert. Chamberlain v. OHD, 2:21-cv-00084 ED Texas, reports, deposition
Latham & Watkins, starting April 2020
Technical expert. Civil Action No. 1:20-cv-393 (ED Va) and ITC "In the matter of certain tobacco heating articles and components thereof." (INV.NO. 337-TA-1199)
Carter Arnett, PLLC, starting June 2020

Technical expert. Case No. 4:20-cv-234 (ED TX)
Brian Cave Leighton Paisner LLP, starting February 2021
Technical expert. Case No. 4:16-cv-0399-JAR and 4:13-cv-01895-SEP (ED Missouri) (Nidec Motor Corporation v. Broad Ocean Motor Co. Ltd et.al.)
Quinn Emanuel, starting December 2021
Technical expert. Cases: Inv. No. 337-TA-1285; Civil Action No. 6:21-cv-01008-ADA; Civil Action No. 6:21-cv-01010-ADA
Cozen O'Connor, starting February 2022
Technical expert. IPR US 7,382,103; 1:22-cv-10090-MPK
Latham & Watkins, starting September 2022
Technical expert. Overhead Door in ITC proceedings.
Quinn Emanuel, starting December 2022
Technical expert, *Boston Dynamics, Inc. v. Ghost Robotics Corporation*, Case No. 1:22-cv-01483-UNA
Kirkland & Ellis, LLP, starting December 2022
Technical expert, R2 Semiconductor, Inc. v. (1) Intel Corporation (UK) Limited, and (2) Intel Corporation (Claim No. HP-2022-000031).
Faegre Drinker Biddle & Reath, LLP, starting September 2023
Technical expert, CogniPower LLC v. Samsung Elec. Co. Ltd. Et al., Case No. 2:23-cv-160 (E.D. Texas).

Sample Technical Consulting (not exhaustive):

Lutron Electronics Co., Inc., beginning in 2009
NEMOmetrics, beginning in 2010
U.S. Department of Energy, 2011
Talking Lights, LLC, 1340 Soldiers Field Rd, Massachusetts, beginning December 1998
EPRI-PEAC, 942 Corridor Park Blvd., Knoxville, TN, beginning August 2003

Honors:
AT&T New Ventures Grant 1993
MIT Leader's for Manufacturing Program Junior Faculty Fellow 1993—1996
Spira Teaching Award 1996
Bose Teaching Award 1997
Edgerton Faculty Award 1998
Technology Review's TR100 Outstanding Young Innovator 1999
IEEE Outstanding Young Power Electronics Engineer 1999
R&D 100 Award, 2000
IEEE Senior Member, 2001
R&D 100 Award, 2002
MIT MacVicar Fellow, 2004
Eta Kappa Nu EECS Undergraduate Teaching Award, 2006
IEEE Fellow, 2007
Bose Faculty Award, 2013
Landsman Chair, 2021

Sample Publications (not exhaustive):

Papers in Refereed Journals

1. Leeb, S.B., J.L. Kirtley, Jr., and G.C. Verghese, "Recognition of Dynamic Patterns in DC-DC Switching Converters," *IEEE Transactions on Power Electronics* Volume 6, Number 2, pp. 296-302, April 1991 (also appeared in *IEEE Power Electronics Specialists Conference*, 1989).
2. White, J., and S.B. Leeb, "An Envelope--Following Approach to Switching Power Converter Simulation," *IEEE Transactions on Power Electronics*, Volume 6, Number 2, pp. 303-307 April 1991.
3. Leeb, S.B., J.L. Kirtley, Jr., D.S. Woodruff, and M.S. Le Van, "Building-Level Power Network Analysis," *IEEE Computer Applications in Power*, Volume 5, Number 1, pp. 30-35, January 1992.
4. Karl, W.C., S.B. Leeb, L.A. Jones, J.L. Kirtley, Jr., and G.C. Verghese, "Applications of Rank-Based Filters in Power Electronics," *IEEE Transactions on Power Electronics*, Volume 7, Number 3, pp. 437-444, July 1992.
5. Leeb, S.B., S.R. Shaw, J.L. Kirtley, Jr., "Transient Event Detection in Spectral Envelope Estimates for Nonintrusive Load Monitoring," *IEEE Transactions on Power Delivery*, Volume 10, Number 3, pp. 1200-1210, July 1995 (also Paper 95 WM 042-2-PWRD *IEEE PES Winter Meeting*, New York, NY, January, 1995).
6. Eissa, M.O., S.B. Leeb, G.C. Verghese, and A.M. Stankovic, "Fast Analog Control for a Power Factor Correcting Converter,"*IEEE Transactions on Power Electronics*, Volume 11, Number 1, pp. 1-6, January 1996.
7. Norford, L.K., S.B. Leeb, "Non-Intrusive Electrical Load Monitoring in Commercial Buildings Based on Steady State and Transient Load-Detection Algorithms," *Energy and Buildings*, Volume 24, pp. 51-64, 1996.
8. Mitwalli, A.H., S.B. Leeb, G.C. Verghese, and V.J. Thottuvelil, "An Adaptive Digital Controller for a Unity Power Factor Converter," *IEEE Transactions on Power Electronics*, Volume 11, Number 2, pp. 374-382, March 1996.
9. Khan, U.A., S.B. Leeb, M.C. Lee, "A Multiprocessor for Transient Event Detection," *IEEE Transactions on Power Delivery*, Volume 12, Number 1, pp. 51--60, January 1997 (also Paper 96 SM 520-7 PWRD *IEEE PES Summer Meeting*, Denver, CO, July, 1996).
10. Jackson, D.K., S.B. Leeb, A.H. Mitwalli, P. Narvaez, D. Fusco, E.C. Lupton, "Power Electronic Drives for Magnetically Triggered Gels," *IEEE Transactions on Industrial Electronics*, Volume 44, Number 2, pp. 217--225, April 1997.
11. Leeb, S.B., A.Ortiz, R.F. Lepard, S.R. Shaw, and J.L. Kirtley, Jr., "Applications of Real-Time Median Filtering with Fast Digital and Analog Sorters," *IEEE Transaction on Mechatronics*, Volume 2, Number 2, pp. 136--143, June 1997.
12. Jackson, D.K., A.M. Schultz, S.B. Leeb, A.H. Mitwalli, and G.C. Verghese, "A Multirate Digital Controller for a 1.5kW Electric Vehicle Battery Charger," *IEEE Transactions on Power Electronics*, Volume 12, Number 6, pp. 1000--1006, November 1997.
13. Jackson, D.K., C. Wang, S.B. Leeb, T. Tanaka, A. Mitwalli, and D. Fusco, "A Sensor for Measuring Gel Phase-Transition Temperature, with Potential as a Metal Ion Detector," *Journal of Intelligent Material Systems and Structures*, Volume 8, Number 2, February 1997, pp. 184--190.
14. Mitwalli, A.H., T. Denison, D.K. Jackson, S.B. Leeb, T. Tanaka, "Closed-Loop Feedback Control of Magnetically-Activated Gels," *Journal of Intelligent Material Systems and Structures*, Volume 8, Number 7, July 1997, pp. 596--604.

15. Jackson, D.K., T.K. Buffaloe, and S.B. Leeb, "*Fiat Lux:* A Fluorescent Lamp Digital Transceiver," *IEEE Transactions on Industry Applications,* Volume 34, Number 3, May--June 1998, pp. 625--630.

16. Shaw, S.R., C.B. Abler, R.F. Lepard, D. Luo, S.B. Leeb, and L.K. Norford, "Instrumentation for High Peformance Nonintrusive Electrical Load Monitoring," *ASME Journal of Solar Energy Engineering,* Vol. 120, No. 3, August 1998, pp. 224--229.

17. Shaw, S.R., S.B. Leeb, "Identification of Induction Motor Parameters from Transient Stator Current Measurements," *IEEE Transactions on Industrial Electronics*, Volume 46, No. 1, February 1999, pp. 139--149.

18. Shaw, S.R., R.F. Lepard, S.B. Leeb, and C.R. Laughman, "A Power Quality Prediction System," *IEEE Transactions on Industrial Electronics*, Volume 47, No. 3, June 2000, pp. 511--517.

19. Jackson, D.K., S.B. Leeb, S.R. Shaw, "Adaptive Control of Power Electronic Drives for Servomechanical Systems," *IEEE Transactions on Power Electronics,* Volume 15, No. 6, November 2000, pp. 1045--1055.

20. Burke, D.T., S.B. Leeb, R.T. Hinman, E.C. Lupton, J. Burke, J.C. Schneider, B. Ahangar, K. Simpson, E.A.K. Mayer, "Using Talking Lights to Assist Brain-Injured Patients with Daily Inpatient Therapeutic Schedule," *The Journal of Head Trauma Rehabilitation,* Volume 16, No. 3, June 2001, pp. 284--291.

21. Shaw, S.R., D. Luo, L.K. Norford, S.B. Leeb, "Detection of HVAC Faults via Electrical Load Monitoring," *International Journal of HVAC&R Research*, Volume 8, No. 1, January 2002, pp. 13--40.

22. D. Luo, L.K. Norford, S.R. Shaw, S.B. Leeb, "Monitoring HVAC Equipment Electrical Loads from a Centralized Location -- Methods and Field Test Results," *ASHRAE Transactions,* Volume 108, Part 1, January 2002.

23. Jackson, D.K., S.B. Leeb, "A Digitally Controlled Amplifier with Ripple Cancellation," *IEEE Transactions on Power Electronics, Special Issue on Digital Control*, Volume 18, Number 1, Part 2, January 2003, pp. 486-494.

24. Hinman, R.T., E.C. Lupton, S.B. Leeb, A. Avestruz, R. Gilmore, D. Paul, and N. Peterson, "Using Talking Lights Illumination Networks to Enhance Word Comprehension by Subjects who are Deaf or Hard-of-Hearing," *American Journal of Audiology,* January 2003.

25. Shaw, S.R., M. Keppler, S.B. Leeb, "Pre-Estimation for Better Initial Guesses," *IEEE Transactions on Instrumentation and Measurement, Volume 53, No. 3,* June 2004, pp. 762-769.

26. Cooley, J., A. Avestruz, S.B. Leeb, "Small-signal analysis of fully-differential closed-loop op-amp circuits with arbitrary external impedance elements," IET Circuits, Devices, & Systems, Vol., 5, Issue 5, 2011, pp. 371-383.

27. Avestruz, A., J. Cooley, D. Vickery, J. Paris, S.B. Leeb, "Dimmable Solid-State Ballast with Integral Capacitive Occupancy Sensor," IEEE IES Transactions, Volume 59, No. 4, April 2012, pp. 1739-1750.

28. Banerjee, Arijit, M. Tomovich, S. Leeb, J. Kirtley, "Control Architecture for a Switched Doubly-fed Machine Propulsion Drive," IEEE *Industry Applications Society Transactions,* Vo. 51, No. 2, March-April 2015, pp. 1538-1550.

29. Banerjee, Arijit, A.H. Chang, K. Suarkitbovorn, S. Leeb, J. Kirtley, "Bumpless Automatic Transfer for a Switched Doubly-Fed Machine Propulsion Drive," IEEE *Industry Applications Society Transactions,* Vo. 51, No. 4, July-August 2015, pp. 3147-3158.

30. C. Schantz, S.B. Leeb, "Self-sensing Induction Motors for Condition Monitoring," *IEEE Sensors Journal*, Vol. 17, No.12, 2017, pp.3735-3743.

31. Orji, U., C. Schantz, S.B. Leeb, J.L. Kirtley, B. Sievenpiper, K. Gerhard, T. McCoy, "Adaptive Zonal Protection for Ring Microgrids," *IEEE Transactions on Smart Grid*, Vol. No., 2017, pp. 1-9.
32. J. Donnal, P. Lindahl, D. Lawrence, R. Zachar, S.B. Leeb, "Untangling Non-Contact Power Monitoring Puzzles," *IEEE Sensors Journal*, Vol. 17, No.11, 2017, pp.3542-3550.
33. C. Schantz, S.B. Leeb, "Self-sensing Induction Motors for Condition Monitoring," *IEEE Sensors Journal*, Vol. 17, No.12, 2017, pp.3735-3743.
34. Lindahl, P., G. Bredariol, J. Donnal, S.B. Leeb, "Noncontact Electrical System Monitoring on a U.S. Coast Guard Cutter," *IEEE Instrumentation and Measurement Magazine,* Vol. 20, Issue 4, 2017, pages 11-20.
35. J. Moon and S. B. Leeb, "Wire Less Sensors for Electromechanical Systems Diagnostics," in *IEEE Transactions on Instrumentation and Measurement*, vol. 67, no. 9, pp. 2235-2246, Sept. 2018.
36. A. Aboulian, J. S. Donnal and S. B. Leeb, "Autonomous Calibration of Non-Contact Power Monitors," in *IEEE Sensors Journal*, vol. 18, no. 13, pp. 5376-5385, 1 July 1, 2018.
37. P. A. Lindahl, D. H. Green, G. Bredariol, A. Aboulian, J. S. Donnal and S. B. Leeb, "Shipboard Fault Detection Through Nonintrusive Load Monitoring: A Case Study," in *IEEE Sensors Journal*, vol. 18, no. 21, pp. 8986-8995, 1 Nov.1, 2018.
38. P. A. Lindahl, S. R. Shaw and S. B. Leeb, "Fuel Cell Stack Emulation for Cell and Hardware-in-the-Loop Testing," in *IEEE Transactions on Instrumentation and Measurement*, vol. 67, no. 9, pp. 2143-2152, Sept. 2018.
39. A. Aboulian *et al*., "NILM Dashboard: A Power System Monitor for Electromechanical Equipment Diagnostics," in *IEEE Transactions on Industrial Informatics*, vol. 15, no. 3, pp. 1405-1414, March 2019.
40. K. Lee, L. Huchel, D. H. Green and S. B. Leeb, "Automatic Power Frequency Rejection Instrumentation for Nonintrusive Frequency Signature Tracking," in *IEEE Transactions on Instrumentation and Measurement*, vol. 70, pp. 1-11, 2021, Art no. 3500311, doi: 10.1109/TIM.2020.3009339.
41. M. Gutierrez, P. Lindahl and S. B. Leeb, "Constant Power Load Modeling for a Programmable Impedance Control Strategy," in IEEE Transactions on Industrial Electronics, doi: 10.1109/TIE.2020.3048323.
42. Ł. Huchel, T. C. Krause, S. B. Leeb and J. Helsen, "Stretched Sensing Strategies for IEPE," in *IEEE Transactions on Instrumentation and Measurement*, vol. 70, pp. 1-10, 2021, Art no. 2003210, doi: 10.1109/TIM.2021.3056753.
43. Ł. Huchel, T. C. Krause, T. Ługowski, S. B. Leeb and J. Helsen, "Chasing the Cut: A Measurement Approach for Machine Tool Condition Monitoring," in IEEE Transactions on Instrumentation and Measurement, vol. 70, pp. 1-10, 2021, Art no. 3509610, doi: 10.1109/TIM.2020.3047939.

Proceedings in Refereed Conferences

1. W.C. Karl, S.B. Leeb, L.A. Jones, J.L. Kirtley, Jr., and G.C. Verghese, "Applications of a Class of Nonlinear Filters to Problems in Power Electronics," *IEEE Power Electronics Specialists Conference,* San Antonio, TX, June 1990, pp. 35-42.
2. Leeb, S.B., A. Ortiz, and J.L. Kirtley, Jr., "Real-Time Median Filtering with a Fast Hardware Sorter," *Applied Power Electronics Conference*, Dallas, TX, pp. 254-260, March 1991.
3. Silveira, L.M., J. White, and S.B. Leeb, "A Modified Envelope-Following Approach to Clocked Analog Circuit Simulation,"*IEEE ICCAD*, November 1991.

4. Mitwalli, A.H., S.B. Leeb, G.C. Verghese, and V.J. Thottuvelil, " A Digital Controller for a Unity Power Factor Power Converter,"*Proceeding of the IEEE Workshop on Computers in Power Electronics,* Berkeley, California, August 1992.

5. Leeb, S.B., J.L. Kirtley, Jr., "A Multiresolution Transient Event Detector for Nonintrusive Load Monitoring," *International Conference on Industrial Electronics, Control, and Instrumentation 1993*, Maui, Hawaii, pp. 354-359, November 1993.

6. Eissa, M.O., S.B. Leeb, G.C. Verghese, and A.M. Stankovic, "A Fast Analog Controller for a Unity-Power-Factor AC/DC Converter,"*Applied Power Electronics Conference*, Orlando, Florida, pp. 551-555, 1994.

7. Leeb, S.B., S.R. Shaw, "Harmonic Estimates for Transient Event Detection," *Universities Power Engineering Conference,* Galway, Ireland, pp. 133-136, September 1994.

8. Mitwalli, A.H., S.B. Leeb, T. Tanaka, and U. Sinha, "Polymer Gel Actuators - Status Report," *Universities Power Engineering Conference,* Galway, Ireland, pp. 871-875, September 1994.

9. Leeb, S.B., B.C. Lesieutre, and S.R. Shaw, "Determination of Load Composition Using Spectral Envelope Estimates," *27th Annual North American Power Symposium,* Bozeman, Montana, pp. 618--627, October 1995.

10. Schultz, A.M., S.B. Leeb, A.H. Mitwalli, G.C. Verghese, and S.R. Shaw, "A Multirate Digital Controller for an Electric Vehicle Battery Charger," *IEEE Power Electronics Specialists Conference,* Baveno, Italy, pp. 1919--1925, June 1996.

11. Jackson, D.K., S.B. Leeb, A.H. Mitwalli, P. Narvaez, D. Fusco, and E. C. Lupton, "Power Electronic Drives for Magnetically Triggered Phase Transition Gels," *IEEE Power Electronics Specialists Conference,* Baveno, Italy, pp. 302--309, June 1996.

12. Shaw, S.R., R.F. Lepard, and S.B. Leeb, "DESIRE: A Power Quality Prediction System," *28th Annual North American Power Symposium,* Cambridge, Massachusetts, October pp. 581--586, November 1996.

13. Buffaloe, T.K., D.K. Jackson, S.B. Leeb, M.F. Schlecht, and R.A. Leeb, "Fiat Lux: A Fluorescent Lamp Transceiver," *Applied Power Electronics Conference*, Atlanta, Georgia, pp. 1037--1041, February 1997.

14. Jackson, D.K., S.B. Leeb, A.M. Schultz, and A.H. Mitwalli, "A Comparison of Multirate Digital Compensators for a Battery Charger,"*Proceedings of the IEEE Workshop on Computers in Power Electronics,* Portland, Oregon, pp. 58--65, June 1997.

15. Shaw, S.R., D.K. Jackson, T.A. Denison, and , S.B. Leeb, "Computer-Aided Design and Application of Sinusoidal Switching Patterns," *Proceedings of the IEEE Workshop on Computers in Power Electronics,* Como, Italy, 1998.

16. Jackson, D.K., S.B. Leeb, S.R. Shaw, "Adaptive Control of an Inductive Power Transfer Coupling for Servomechanical Systems," *1999 IEEE Power Electronics Specialists Conference,* Charleston, South Carolina, pp. 1191-1198, June 1999.

17. Norford, L.K., S.B. Leeb, D. Luo, and S.R. Shaw, "Advanced Electrical Load Monitoring: A Wealth of Information at Low Cost," *Diagnostics for Buildings Conference: from Research to Practice,* San Francisco, CA, June 1999.

18. Shaw, S.R., D. Evangelista, S.B. Leeb, and C.R. Laughman, "Nonintrusive Load Monitoring and Identification in an Automotive Environment," *Proceedings of ELECTRIMACS 1999,* Lisboa, Portugal, pp. 199--204, September 1999.

19. Jackson, D.K., S.B. Leeb, "Feedforward Ripple Cancellation for a Full-Bridge Converter," *Applied Power Electronics Conference*, New Orleans, Louisiana, pp. 347--352, February 2000.

20. Jackson, D.K., S.B. Leeb, "A Power Factor Corrector with Bidirectional Power Transfer Capability," *Power Electronics Specialists Conference*, Galway, Ireland, June 2000.

21. Leeb, S.B., G.B. Hovorka, E.C. Lupton, R.T. Hinman, B.L. Bentzen, R.D. Easton, and L. Lashell, "Assistive Communication Systems for Disabled Individuals using Visible Lighting," *CSUN (California State University, Northridge) conference*, California, March 2000.

22. Leeb, S.B., A.H. Mitwalli, "Responsive Polymer Actuators and Sensors," *International Conference on Advanced Prosthetics,*Newport Beach, CA, April 2000.

23. Rodriguez, J.I., D.K. Jackson, S.B. Leeb, "Capability Analysis for an Inductively Coupled Power Transfer System," *Proceedings of the IEEE Workshop on Computers in Power Electronics,* Blacksburg, VA July 2000.

24. Hinman, R., S.B. Leeb, A. Avestruz, E.C. Lupton, B.L. Bentzen, and R. Easton, "Dual-Use Lighting for Assistive Communications,"*Proceedings of the 2002 NSF Design, Service, and Manufacturing Grantees and Research Conference,* San Juan, Puerto Rico, January 2002.

25. Rodriguez, J.I., S.B. Leeb, "A Multilevel Inverter Topology for Inductive Power Transfer," *Applied Power Electronics Conference*, Miami, Florida, pp. 1118--1126, February 2003.

26. Leeb, S.B. "Putting Profit into Power Electronic Products with Digital Control," *Applied Power Electronics Conference: Plenary Session,* Anaheim, CA, pp. 35-44, February 2004.

27. Rodriguez, J.I., and S.B. Leeb, "Resonant Frequency Selectable Induction Heating Targets," *Applied Power Electronics Conference,* Anaheim, CA, pp. 1877-1883, February 2004.

28. Avestruz, A., J.I. Rodriguez, R. Hinman, G. Livshin, N. Lupton, S.B. Leeb, "Stability Considerations and Performance of Wide Dynamic Range, Ambient Light Active Rejection Circuits in Photodiode Receivers," *American Control Conference 2004,* Boston, MA, pp. WEA12.2, June-July 2004.

29. Armstrong, P.R., C.R. Laughman, S.B. Leeb, L.K. Norford, "Fault Detection Based on Motor Start Transients and Shaft Harmonics Measured at the RTU Electrical Service," *Seventeenth International Compressor Engineering Conference,* Purdue University, West Lafayette, IN, pp. R137 (in printing) July 12-15 2004.

30. Cox, R.W., S.B. Leeb, L.K. Norford, "A minimally intrusive, low-cost system for determining air flow patterns," *Proceedings of the IEEE Workshop on Computers in Power Electronics,* University of Illinois, Urbana-Champagne, pp. 44-49, August 2004.

31. Avestruz, A., R. Cox, J. Holloway, S.B. Leeb, "Voltage regulation in induction machines with multiple stator windings by zero sequence harmonic control," *Applied Power Electronics Conference,* 2005.

32. Ramsey, J.S., S.B. Leeb, T. Denucci, J. Paris, M. Obar, R. Cox, C. Laughman, T. McCoy, "Shipboard Applications of Non-Intrusive Load Monitoring," *American Society for Naval Engineers Reconfiguration and Survivability Symposium,* Orlando, FL, February 2005.

33. Greene, W.C., J.S. Ramsey, S.B. Leeb, T. Denucci, J. Paris, M. Obar, R. Cox, C. Laughman, T. McCoy, "Non-Intrusive Monitoring for Condition-Based Maintenance," *American Society for Naval Engineers Reconfiguration and Survivability Symposium,* Orlando, FL, February 2005.

34. DeNucci, T, R. Cox, S.B. Leeb, J. Paris, T.J. McCoy, C.R. Laughman, W.C. Greene, "Diagnostic Indicators for Shipboard Systems using Non-Intrusive Load Monitoring," IEEE Electric Ship Technologies Symposium, Philadelphia, PA, July 2005.

35. Cox, R.W., S.B. Leeb, S.R. Shaw, L.K. Norford, "Transient Event Detection for Nonintrusive Load Monitoring and Demand Side Management using Voltage Distortion," *Applied Power Electronics Conference,* Dallas, TX, March 2006.

36. Cox, R.W., J.P. Mosman, D. McKay, S.B. Leeb, T. McCoy, "Diagnostic Indicators for Shipboard Cycling Systems Using Non-Intrusive Load Monitoring," *American Society for Naval Engineers Day 2006,* Arlington, VA, June 2006.

37. Laughman, C.R., Armstrong, P.R., L.K. Norford, S.B. Leeb, "The Detection of Liquid Slugging Phenomena in Reciprocating Compressors Via Power Measurements," *International Compressor Engineering Conference,* Purdue University, West Lafayette, IN, C084, July 17-20 2006.

38. Avestruz, A. and S.B. Leeb, "DSP Control of Multi-use Induction Machines with Multiple Stator Windings: Closed-Loop Voltage Regulation and Speed," *Proceedings of the IEEE Workshop on Computers in Power Electronics,* Troy, New York, July 2006.

39. Cooley, J., A. Avestruz, S.B. Leeb, "Proximity Detection and Ranging Using a Modified Fluorescent Lamp for Security Applications," *Proceedings of the IEEE International Carnahan Conference on Security Technology,* Lexington, Kentucky, October 2006.

40. Cox, R., P. Bennett, D. McKay, J. Paris, S.B. Leeb, "Using the Non-Intrusive Load Monitor for Shipboard Supervisory Control," IEEE Electric Ship Technologies Symposium, Arlington, VA, May 2007.

41. Cooley, J., A. Avestruz, S.B. Leeb, "A Modified Fluorescent Lamp for Discreet Biometric Surveillance," *2007 IEEE Conference on Technologies for Homeland Security*, Woburn, Massachusetts, May 2007.

42. Cox, R.W., M. Piber, G. Mitchell, P. Bennett, J. Paris, W. Wichakool, S.B. Leeb, "Improving Shipboard Maintenance Practices Using Non-Intrusive Load Monitoring," ASNE Intelligent Ships Symposium VII, Philadelphia, PA, May 2007.

43. Wichakool, W., A. Avestruz, R.W. Cox, S.B. Leeb, "Resolving Power Consumption of Variable Power Electronic Loads Using Nonintrusive Monitoring," *IEEE Power Electronics Specialists Conference*, Orlando, FL, June 2007.

44. Leeb, S.B., M. Alvira, R.W. Cox, J.J. Cooley, J.L. Kirtley, Jr., S.R. Shaw, "Build to Win: A Hands-On Approach to Undergraduate Instruction in Power Electronics," *IEEE Power Electronics Specialists Conference, Power Electronics Education Workshop*, Orlando, FL, June 2007.

45. Leeb, S.B., J.L. Kirtley, E. Tung, W. Wichakool, R. Bavetta, S.R. Shaw, R.W. Cox, "Motor Designs for Instruction in Drives," *IEEE Power Electronics Specialists Conference, Power Electronics Education Workshop*, Orlando, FL, June 2007.

46. Avestruz, A., C. Wilson, R.W. Cox, S. Campbell, S.B. Leeb, "A Hands-On Approach to Advanced Undergraduate Instruction in Control and Circuitry in Power Electronics," *IEEE Power Electronics Specialists Conference, Power Electronics Education Workshop*, Orlando, FL, June 2007.

47. Cooley, J.J., A. Avestruz, S.B. Leeb, L. Norford, "A Fluorescent Lamp with Integral Proximity Sensor for Building Energy Management," *IEEE Power Electronics Specialists Conference*, Orlando, FL, June 2007.

48. G. Mitchell, R.W. Cox, M. Piber, , P. Bennett, J. Paris, W. Wichakool, S.B. Leeb, "Shipboard Fluid System Diagnostic Indicators Using Nonintrusive Load Monitoring," ASNE Day 2007, Arlington, VA June, 2007.

49. Wichakool, W., Z. Remscrim, U.A. Orji, S.B. Leeb, "A Waveform-Based Power Estimator for Variable Power Loads," IEEE Energy Conversion Congress and Exposition (ECCE), 2011.

50. Chang, Arthur, John J. Cooley, Steven B. Leeb, "Design Considerations in Distributed MPPT Switched-Capacitor DC-DC Converters for PV Energy Extraction and Cost Effectiveness," IEEE *Applied Power Electronics Conference,* Florida, February 2012.

51. Banerjee, A., S.B. Leeb, J.L. Kirtley, "A Comparison of Switched Doubly-fed Machine Drive Topologies for High Power Applications," IEEE International Electric Machines and Drives Conference, Coeur d'Alene, Idaho, May 2015

52. Green, D., T. Kane, S. Kidwell, P. Lindahl, J.Donnal, S.B. Leeb, "Dashboard: Nonintrusive Electromechanical Fault Detection and Diagnostics," IEEE *AutoTestCon 2019,* National Harbor, MD, August, 2019. (Prize paper award).

53. E. K. Saathoff, Z. J. Pitcher, S. R. Shaw and S. B. Leeb, "Inrush Current Testing," *2020 IEEE Applied Power Electronics Conference and Exposition (APEC)*, New Orleans, LA, USA, June 2020, pp. 2319-2326.