

John M. Miller

Oak Ridge National Laboratory
Power Electronics and Electric Machinery Research Center
2360 Cherahala Boulevard
Knoxville, Tennessee 37932
(865) 946-1469
millerjm@ornl.gov

Education:

Ph. D., Michigan State University, 1983, Electrical Engineering
M.S., Southern Methodist University, 1979, Electrical Engineering
B.S., University of Arkansas-Fayetteville, 1976, Electrical Engineering

Professional Experience:

12/2010–present	Distinguished R&D Staff, Oak Ridge National Laboratory
02/2010–12/2010	Technical Advisor to Chief Executive Officer, Maxwell Technologies
12/2005–2/2010	Vice President, Systems Applications & Integration, Maxwell Technologies, Inc.
08/2005–12/2005	Senior Managing Engineer, Exponent Failure Analysis
08/2002–07/2005	Private Practice, consulting, expert witness, J-N-J Miller Design Services, PLC
08/1987–07/2002	Senior Staff Technical Specialist, Ford Motor Company
05/1985–07/1987	Technical Specialist and Managing Engineer, Rexair, Inc.
05/1983–04/1985	Research Engineer, Sr. Research Engineer, Ford Motor Company
06/1976–05/1980	Member of Technical Staff, Texas Instruments, Inc.
01/1968–01/1972	United States Air Force, avionics and aircraft maintenance

Invited Speaker - recent:

- Invited speaker, Charged 2020: The Global Energy Storage Forum, following keynote by Mayor of San Diego, and speaking on *The Quest for the Perfect Battery*, 30 June 2010
- Invited speaker and panelist, Florida State University, Florida Symposium on Smart Mobility, Tallahassee, FL, 28 April 2010
- Invited speaker and panelist, MIT CEEPR, Center for Energy and Environmental Policy Research, *Electrification of Transportation*, Cambridge, MA, 23 April 2010

Publications (174):

C. H. Stephan; J. M. Miller, "A Program for Individual Sustainable Mobility," *Frontiers in Transportation Conference*, Amsterdam, Netherlands, 14-16 Oct. 2007.

J. M. Miller, "Power Electronics in Energy Storage Systems: Advancing the Technology Frontiers," Invited keynote presentation, *IEEE Vehicle Power and Propulsion Conference, VPPC2007*, Sheraton Arlington, Arlington, TX, 9-12 September 2007.

J. M. Miller; M. Liedtke; B. Maher; J. Auer, "Ultracapacitor Energy Storage Systems of Heavy Hybrids: A Sustainable Solution," *23rd International Battery, Hybrid and Fuel Cell Electric Vehicle Symposium (EVS23)*, Auditorium Session on Rechargeable Energy Storage Systems, Anaheim, CA, 2-5 Dec 2007.

J.M.Miller, "Hybrid Electric Vehicle Propulsion System Architecture of the e-CVT Type," *IEEE Transactions on Power Electronics*, 2005-2416-SI, Vol. 21, Nr. 3, pps 756- 767, May 2006.

J. M. Miller; M. Ehsani; Y. Gao, "Understanding Power Flows in HEV eCVT's With Ultracapacitor Boosting Using Simplorer," *IEEE Power and Propulsion Conference*, Illinois Institute of Technology, Chicago, IL, 7-9 Sept. 2005.

Y. Gao; M. Ehsani; J. M. Miller, "Hybrid Electric Vehicle Overview and State of the Art," *IEEE International Symposium on Industrial Electronics, ISIE'05*, mini-track on automotive control, MTAC, Dubrovnik, Croatia, June 20-23, 2005.

J.M. Miller; U. Deshpande, T. Bohn, T. Dougherty, "Commercialization Challenges of the Battery-

Ultracapacitor Active Hybrid,” Advanced Capacitor World Summit, Hilton Torrey Pines, San Diego, CA. 31 March – 2 April, 2009.

J. M. Miller; M. Everett; T. Bohn; T. J. Dougherty, “Ultracapacitor plus Lithium-ion for PHEV: Technical and Economic Analysis,” The 26th International Battery Seminar & Exhibit: Primary & Secondary Batteries and other Tech., Broward County Convention Center, Fort Lauderdale, FL, 16-18 March 2009.

J. M. Miller; U. Deshpande; T. J. Dougherty; T. Bohn, “Power Electronic Enabled Active Hybrid Energy Storage System and its Economic Viability,” The 24th IEEE Applied Power Electronics Conference and Exhibition, APEC2009, Marriott Wardman Park hotel, Washington, D.C., 15-19 Feb. 2009

Patents (53):

- 7,433,174 B2 Oct. 7, 2008 Method of Making, Apparatus, and Article of Manufacturing for an Electrode Termination Contact Interface.
- 7,258,183 B2 Aug. 21, 2007 Stabilized Electric Distribution System for use with a Vehicle Having Electric Assist.
- 6,984,954 B2 Jan. 10, 2006 Diagnostic Strategy for an Electric Motor Using Sensorless Control and a Position Sensor.
- 6,876,176 B2 April 5, 2005 Toroidally Wound Induction Motor-Generator with Selectable Number of Poles and Vector Control
- 6,840,200 B2 Jan. 11, 2005 Electromechanical Valve Assembly for an Internal Combustion Engine
- 6,750,626 B2 Jun. 15, 2004 Diagnostic Strategy for an Electric Motor Using Sensorless Control and a Position Sensor.

Synergistic Activities:

General Chair, IEEE Energy Conversion Congress & Exposition, to be held in Phoenix, AZ, Sept. 2011
Recipient, 2009 Gerald Kliman Innovator Award "For meritorious contributions to the advancement of power conversion technologies through innovations and their application to Industry". Recipient, 2010 IEEE PEL's Distinguished Service Award. Registered Professional Engineer over 30 years.
Member, Scientific Advisory Board, NCSU FREEDM consortium for renewable energy and smart grid.
John M. Miller, Propulsion Systems for Hybrid Vehicles, IET Power & Energy Series #45, London, UK, published December, 2003. 2nd Edition published 17 December 2010. Ultracapacitor Applications, The IET Power & Energy Series, scheduled for 2011 release. Co-author two additional books.
Adjunct Professor of Electrical Engineering Michigan State University 1998 – 2010, taught graduate electric machines course. Adjunct Professor of Electrical Engineering Texas A&M University, 2000-2010.