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**CITIZENSHIP :** United States and Canada

**EDUCATION :** MBA, University of Toronto, 1987  
Ph.D., Physics, University of Toronto, 1972  
M.Sc., Physics University of Toronto, 1969  
B.A., Physics, Reed College, Portland, Oregon, 1968

## **POSITIONS HELD**

CEO, Nonlinear Systems, Inc., 1995-present  
Director, Electrical Insulation Research Center & Research Professor of Electrical Engineering, Physics, and Materials Science University of Connecticut, November 1993 – September 2013  
Advisory Professor, Southwest Jiaotong University, Chengdu, China, November 2003 - present  
Adjunct Associate Professor, Dept. of Electrical Engineering, University of Toronto September 1991 – May 2012  
Vice-President, Chicago Condenser Corp., February 1987 - October 1993  
Director, Engineering and Research, Underground Systems, Inc. February 1987 - October 1993  
Senior Engineer, Ontario Hydro, January 1983 - February, 1987  
Research Engineer/Physicist, Ontario Hydro, January 1975 to January, 1983  
Research Engineer, Electronic Associates, March 1974 to December, 1974  
PDF, Canada Centre for Remote Sensing, September 1973 to March 1974

## **CONSULTING**

Consultant to Toshiba Mitsubishi Electric Industries (TMEIC), 2011-present  
Consultant to Toshiba Corporation of Japan, 1996-present  
Consultant to The Kerite Company, 1998-2013  
Consultant to The Okonite Company, 1998-2013  
Consultant to the Electric Power Research Institute, 1996-1998  
Consultant to ABB Transmission and Distribution, 1995-1997  
Consultant to ITAIPU Binacional (corporation jointly owned by the governments of Paraguay and Brazil) 1983-1988

## **PATENTS**

Surge Attenuating Cable. U.S. Patent 4,687,882.  
Cable Termination. U.S. Patent 5,406,030  
Room Temperature Dielectric HTSC Cable. U.S. Patent 6,262,375

## **MEMBERSHIPS and HONORS**

IEEE Thomas W. Dakin “Distinguished Technical Contributions” Award, June 2010.  
IEEE Fellow, 1993  
IEEE 3rd Millennium Medal, 2000  
IEEE Power Engineering Society 2003 Technical Committee Prize Paper Award, Surge Protective Devices Committee for S. Boggs, J. Kuang, H. Andoh, S. Nishiwaki. “Electro-

Thermal-Mechanical Computations in ZnO Arrester Elements,” IEEE Trans. Power Delivery, 15(1), pp. 128-134, January 2000.  
Contributing Editor, IEEE Electrical Insulation Magazine.  
Vice-Chairperson, 1998 IEEE International Symposium on Electrical Insulation  
IEEE Power Engineering Society 2004 “Best presentation, Subcommittee D, Insulated Conductors Committee, Zhou, Liming and S.A. Boggs, 'High Frequency Attenuation Cable for Protection of Low-Voltage AC Motors Fed by PWM Inverters' also published in IEEE Trans. PD-20, No. 2, April 2005. pp. 548-553  
Visiting Professor (sponsored), Danish Technical University, 2000 and 2001.  
Program Committee Chairperson, 1996 IEEE International Symposium on Electrical Insulation, Montreal, Canada.  
Board and Program Committee for the IEEE “Conference on Electrical Insulation and Dielectric Phenomena.” (Past Program Committee Chairperson), 1980’s and 1990’s.  
IEEE Electrical Insulation Society  
IEEE Power Engineering Society  
Optical Society of America

## TECHNICAL PUBLICATIONS

- Huan, Tran Doan, S.A. Boggs, G. Teyssedre, C. Laurent, M. Cakmak, S. Kumar, and R. Ramprasad. “Advanced polymeric dielectrics for high energy density applications”. Progress in Materials Science Volume 83, October 2016, pp. 236–269.
- Boggs, S.A. “Characteristics of Space Charge Limited Field”. Annual Report of the 2016 Conference on Electrical Insulation and Dielectric Phenomena, Toronto, Canada, 16-19 October 2016.
- Boggs, S.A., Nojima, Kenichi, and Takanori Yasuoka “Computation of Particle Motion in Gas-Filled Systems”. Proceedings of the IEEE International Symposium on Dielectrics, Montpellier, France, 3-7 July 2016, pp. 418-422.
- Boggs, S.A., A. Kumada, and T. Yoshimitsu. “Rotating Machine End Turn Grading During PWM Transitions”. IEEE International Symposium on Dielectrics, Montpellier, France, 3-7 July 2016. pp. 919-921.
- Li, Zongze, H. Uehara, R. Ramprasad, S.A. Boggs, Yang Cao. “Dynamics of Nonlinear Charge Injection in Polymeric Films” Proceedings of the IEEE International Symposium on Dielectrics, Montpellier, France, 3-7 July 2016, pp. 852-855.
- Boggs, S.A., Kenichi Nojima and Takanori Yasuoka. “Computation of Horizontal Force Normal to the Axis of a Spheroidal Conducting Particle in a Field Gradient”. IEEE Trans. DEI, Vol. 23, No. 3, pp. 1649-1651, June 2016.
- Sayah, Abdelkader, Steven A. Boggs, and Naima Oussalah. “Optimization of Water Terminations for Testing of Solid Dielectric Cable”. IEEE Trans DEI, Vol. 23, No 1, Feb. 2016, pp. 61-69.
- Cox, P., R. Fleming, F. Krajick, S.A. Boggs, and Y. Cao. “AC and Impulse Performance of Medium Voltage EPR Cables with Over 25 Years of In-Service Aging in a Wet, Underground Environment”. Submitted to IEEE Electrical Insulation Magazine, November 2015.
- Boggs, S.A., A. Kumada, and T. Yoshimitsu. “Analytical Approximations for the Rotating Machine End-Turn Field Distribution”. IEEE Transactions on Dielectrics and Electrical Insulation, Vol. 22, Issue 6, pp. 3146-3152, Dec. 2015.
- Li, Zongze, H. Uehara, R. Ramprasad, S.A. Boggs and Yang Cao. Pre-breakdown Conduction in Polymeric Films. 2015 Annual Report of the IEEE Conference on Electrical Insulation and Dielectric Phenomena, Ann Arbor, MI, 18-21 October 2015, pp. 272-275.

- Umemoto, Takahiro, Takao Tsurimoto, S.A. Boggs, Tomohito Kusakibaru, Kodai Ushiwata and Tetsuo Yoshimitsu. "Considerations on Evaluation Methods for Reliable Stress Grading Systems of Converter-fed High Voltage Rotating Electrical Machines" 2015 Annual Report of the IEEE Conference on Electrical Insulation and Dielectric Phenomena, Ann Arbor, MI, 18-21 October 2015, pp. 47-50.
- Sun, Ying, Shilei Ma, and S.A. Boggs. "Mechanism for Composite Materials with Dielectric Constant which Increases with Electric Field." IEEE Tran. DEI, Vol. 22, Issue 3, pp. 1719-1722, June 2015.
- Boggs, S.A., A. Kumada, and T. Yoshimitsu. "End-Turn Grading for PWM-Driven Machines". IEEE Electrical Insulation Conference, Seattle, WA, USA, 8-10 June 2015.
- Nakamura, T., A. Kumada, H. Ikeda, K. Hidaka, S. A. Boggs, Y. Tsuboi, and T. Yoshimitsu. "Transient Potential Measurement on Stress Grading under multi-level PWM". IEEE Electrical Insulation Conference, Seattle, WA, USA, 8-10 June 2015.
- Sun, Ying, Shilei Ma, and S.A. Boggs. "Initiation of a typical network secondary manhole event". IEEE Electrical Insulation Magazine, Vol. 31, No. 3, pp. 26-31, May/June 2015.
- Darko, K., N. Uzelac, D. Martin, and S.A. Boggs. "A Novel Way of Implementing Visible Break in a Solid Dielectric Switch. CIRED, Lyons France, 15-18 June 2015.
- Sun, Y., S.A. Boggs, and R. Ramprasad. "The Effect of Dipole Scattering on Intrinsic Breakdown Strength of Polymers". IEEE Transactions DEI, Vol. 22, No. 1, pp. 495-502, February 2015.
- Sun, Y., S.A. Boggs, and R. Ramprasad. "Monte Carlo Studies of Hot Electron Transport and High Field Degradation". 2014 Annual Report of the IEEE Conference on Dielectrics and Electrical Insulation, October 2014.
- Kenichi Nojima, Xueqin Zhang, Masayuki Sato, Takanori Yasuoka, Motoharu Shiiki, Masafumi Takei, and S.A. Boggs. "Approximate Formula of Electrostatic Force on Spheroidal Particle between Coaxial Electrodes" IEEE Trans DEI, Vol. 21, No. 5, October 2014. pp. 2062-2069.
- Sharma, Vinit, Chenchen Wang, Robert G. Lorenzini, Rui Ma, Qiang Zhu, Daniel W. Sinkovits, Ghanshyam Pilia, Artem R. Oganov, Sanat Kumar, Gregory A. Sotzing, Steven A. Boggs, and Rampi Ramprasad. "Rational design of all organic polymer dielectrics". Nature Communications, 5:4845, 17 Sept 2014.
- Nakamura, T., A. Kumada, H. Ikeda, K. Hidaka, S.A. Boggs, Y. Tsuboi, and T. Yoshimitsu. "Transient potential measurement on stress grading under multi-level PWM. IEEE International Conference on Advances in Communication and Computing Technologies (ICACACT), Mumbai, India, August 2014. pp. 161-165.
- Boggs, S.A., Akiko Kumada, and Tetsuo Yoshimitsu. "End-turn grading for PWM-driven machines" IEEE International Conference on Advances in Communication and Computing Technologies (ICACACT), Mumbai, India, August 2014. pp. 158-160.
- Boggs, S.A., Akiko Kumada, and Tetsuo Yoshimitsu. "Measurement of stress grading conductivity to 1.6 MV/m and 155 °C and Computation of grading power density and temperature rise for PWM waveforms". IEEE/IEE International Symposium on Electrical Insulating Materials, Niigata, Japan, 1-5 June 2014. Paper B4.
- Nojima, Kenichi, Xueqin Zhang, Masayuki Sato, Takanori Yasuoka, Motoharu Shiiki, Masafumi Takei, and S.A. Boggs. "Forces Affecting Particle Motion in GIS". IEEE International Symposium On Electrical Insulating Materials, Niigata City, Japan, 1-5 June 2014.
- Wang, CC, G. Pilia, S.A. Boggs, S. Kumar, C. Breneman, R. Ramprasad. "Computational strategies for polymer dielectrics design". Polymer, Vol. 55, No. 4, 25 February 2014, pp. 979-988.
- Ma, S. and S.A. Boggs. "50+ Years of Impedance Measurement and Spectroscopy, and Implementation of Virtual Spectroscopy Based on Finite Element Analysis". IEEE Electrical Insulation Magazine, Vol. 30, No. 1, Jan./Feb 2014. pp. 25-31.

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- Bolliger, D., G. Pilania, and S.A. Boggs. "The Effect of Aromatic and Sulfur Compounds on Partial Discharge Characteristics of Hexadecane". IEEE Trans. DEIS, Vol. 20, No. 3, June 2013, pp. 801-813.
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- Kumada, A., K. Kiuchi, H. Ikeda, K. Hidaka, S. A. Boggs, Y. Tsuboi, T. Kisakibaru, and T. Yoshimitsu, "Potential distribution measurement on stress grading system of HV rotating machines with high temporal resolution by Pockels sensor". Proc. of 12th International Electrical Insulation Conference (INSUCON 2013), Birmingham, UK, 2013, pp. 213- 218.
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- Sun, Y., C. Bealing, S.A. Boggs, and R. Ramprasad. "50+ Years of Intrinsic Breakdown". IEEE Electrical Insulation Magazine, Vol. 29, No. 2, March/April 2013. pp. 8-15.
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- Guo, J., T. Campbell, and S.A. Boggs. "Partial Discharge Magnitude Estimation with Three-Dimensional Finite Element Methods". IEEE Trans PD, Vol. 27, No. 2, April 2012. pp. 491-496.
- Huzayyin, A., S.A. Boggs, and R. Ramprasad. "Quantum Mechanical Study of Charge Injection at the Interface of Polyethylene and Platinum". IEEE 2011 Annual Report of the Conference on Electrical Insulation and Dielectric Phenomena. pp. 800 – 803.
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- Qin, S.C. and S.A. Boggs. "Design of Longitudinal Multisection Foil-film Capacitors". IEEE Trans. DEI Vol. 17, No. 6, pp. 1884-1887, December 2010.
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- Zhou. K. and S.A. Boggs. "Derivation of Exact and Approximate Formulas for the Force on a Conducting Particle Standing on a Ground Plane and Comparison with Finite Element Computations". IEEE Trans DEI, Vol. 17, No. 5, pp. 1602-1606, Oct. 2010.
- Huzayyin, A., S.A. Boggs, and R. Ramprasad. "The Influence of Impurity States on Dielectric Properties of Polyethylene". 2010 Annual Report of the Conference on Electrical Insulation and Dielectric Phenomena, October 2010, pp. 1-4.
- Qin, S. and S.A. Boggs. "Limits to the Performance and Design of High Voltage Metalized Film Capacitors". IEEE Trans. DEI, Vol. 17, No. 4, pp. 1298-1306, August 2010.
- Boggs, S.A. "The Increasing Role of Modeling in HV and Materials Engineering". Proceedings of the 2010 IEEE International Symposium on Electrical Insulation. San Diego, 6-9 June 2010.
- Thinh Pham and Steven Boggs. "Flashover of Arcing Horn in Transient Simulation", 2010 IEEE International Symposium on Electrical Insulation (ISEI 2010), San Diego, CA, 5-9 June, 2010.
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- Huzayyin, A., S.A. Boggs, and R. Ramprasad. "Quantum Mechanical Studies of Carbonyl Impurities in Dielectric Polyethylene". IEEE Trans. DEI, Vol. 17, No. 3, pp. 926-930, June 2010.
- Boggs, S.A., J. Ho, and R. Jow. "Overview of Laminar Dielectric Capacitors". IEEE Electrical Insulation Magazine, Vo. 26, No. 2, March/April 2010. pp. 7-13.

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- Zhang, L., Stavros Livanos, Graciela Varela, Aaron Prazan, and S.A. Boggs. "The Electro-Chemical Basis of Manhole Events". IEEE Electrical Insulation Magazine, Vo. 25, No. 5, Sept/Oct 2009. pp. 25-30.
- Huzayyin, A., S.A. Boggs, and R. Ramprasad. "Computational Quantum Mechanics-Based Study of Conduction in Iodine Doped Polyethylene". 2009 Annual Report of the Conference on Electrical Insulation and Dielectric Phenomena, October 2009, pp.138-141.
- Zhou, K. and S.A. Boggs. "Charge on a Conducting Particle Standing on a Ground Plane". IEEE Trans. DEI, Vol. 16, No. 4, August 2009. pp. 1158-1159.
- Qin, S. and S.A. Boggs. "Application of a Quasi-Static EM Solver to Optimization of Low Inductance Film Capacitors". Proceedings of the 17th IEEE International Pulsed Power Conference, 28 June - 2 July 2009, Washington D.C.
- Zhou, K. and S.A. Boggs. "Effective Dielectric Constant of a Linear Matrix filled with Linear and Nonlinear Spherical Particles". Proceedings of the 17th IEEE International Pulsed Power Conference, 28 June - 2 July 2009, Washington D.C.
- Xu, C. and S.A. Boggs. "High Frequency Loss in Unjacketed Distribution Cable and Its Effect on PD Measurement". IEEE Trans. PD, Vol. 24, No. 2, April 2009. pp. 495-500.
- Liu, R. and S.A. Boggs. "Cable Life and the Cost of Risk". IEEE Electrical Insulation Magazine, Vol. 25, No. 2, March/April 2009. pp. 13-19.
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## **INVITED PRESENTATIONS**

Dielectric Polymer Energy Storage. *Workshop of 15th International Symposium on Electrics*, Baltimore, MD, 10-13 August 2014.

Search Strategies for Intrinsic Breakdown. *Workshop on Computer Simulations in Dielectrics*. 2014 ISEIM, Niigata, Japan, 1 June 2014.

The Application of Computational Methods to the Design of Dielectric Materials and Systems, DEIS Albany Chapter, November 2013.

The Application of Computational Methods to the Design of Dielectric Materials and Systems, Mitsubishi Research, Osaka, Japan, December 2013.

The Application of Computational Methods to the Design of Dielectric Materials and Systems, University of Tokyo, Tokyo, Japan, December 2013.

Numerical and Analytical Approaches to Estimating Partial Discharge Magnitudes. University of Tokyo, December 2012.

Computation of Intrinsic Breakdown Based on Computational Quantum Mechanics. University of Tokyo, 24 April 2012.

Electromagnetic Propagation in Shielded Power Cable. University of Tokyo, 29 November 2011.

Basic Issues in Gas Circuit Breakers, Southwest Jiaotong University, Chengdu China, 5 November 2011.

Electro-Thermal Stability of High Current Contacts. Southwest Jiaotong University, Chengdu, China, 5 November 2011.

Effect of Chemical Impurities on the Bulk & Electrode Interface Solid State Physics of Polyethylene. Southwest Jiaotong University, Chengdu, China, 6 November 2011.

Lightning Arrester Technology. Southwest Jiaotong University, Chengdu, China, 6 November 2011.

Effect of Chemical Impurities on the Bulk & Electrode Interface Solid State Physics of Polyethylene. North China Power University, Beijing, China, 12 December 2011.

Film Capacitor Technology. North China Power University, Beijing, China, 13 December 2011.

Effect of Chemical Impurities on the Bulk and Electrode Interface Solid State Physics of Polyethylene. GE Global Research, 19 July 2011.

Electromagnetic Pulse Propagation Characteristics of Shielded Power Cable, GE Global Research, 19 July 2011.

Effect of Chemical Impurities on the Solid State Physics of Polyethylene. Central Research Institute of the Electric Power System, Yokosuka Laboratory. 1 June 2011.

Nonlinear Grading of Terminations Under Transient Conditions. Toshiba Mitsubishi Electric Industrial Systems. 30 May 2011.

Effect of Chemical Impurities on the Solid State Physics of Polyethylene. University of Tokyo, 31 May 2011.

Toward A Fundamental Understanding of Conduction in Polyethylene. Center for Advanced Power and Environmental Technology, School of Engineering, University of Tokyo, 2nd Forum, 29 November 2010, Shizuoka University, Hamamatsu, Japan.

Application of Transient Nonlinear Finite Element Analysis to Engineering Problems. University of Tokyo, 30 November 2010.

The Increasing Role of Modeling in HV and Materials Engineering. Plenary talk for 2010 IEEE International Symposium on Electrical Insulation, June 2010, San Diego, CA.

The Physical Basis of Manhole Events and Propagation Characteristics of Cu Tape Shield Cable. University of California, Berkeley, CA, 26 October 2009.

Technical Problem Solving. Tokyo University, 13 October 2009.

Metalized Film Capacitor Technology. IEEE Toronto Chapter, Dielectrics and Electrical Insulation Society, 8 December 2008.

PD Propagation vs Distance for Asymmetric Waveforms. Northwest Power University, Beijing, China, 1 December 2008.

Does Dispersion Matter for Field PD Measurements of Shielded Power Cable. Northwest Power University, Beijing, China, 1 December 2008.

Future of PD Detection Technology. Northwest Power University, Beijing, China, 1 December 2008.

Metalized Film Capacitor Technology. Northwest Power University, Beijing, China, 1 December 2008.

Inhomogeneous Thermal Field Breakdown of SF<sub>6</sub>. Northwest Power University, Beijing, China, 2 December 2008.

Effect of High Dielectric Constant Fillers on Energy Density, and What is "Nano" in this Context. Northwest Power University, Beijing, China, 2 December 2008.

Cable Diagnostics - Rationale and Techniques. EUCI T&D Cable Systems Conference, 15 October 2008.

Effect of High Dielectric Constant Fillers on Energy Density of Capacitor Films and Implications for Capacitor Design. GE Global Research, 19 May 2008.

Cable Failure, Diagnostics, and Rejuvenation. Intelligent Infrastructures: Workshop on Failure and Diagnostics of Underground Power Distribution Cable. University of California, Berkeley, 25 February 2008.

Fundamentals of Partial Discharge Detection. G&W Electric, Chicago, 25 January 2008.

High Field Phenomena in Insulation - What makes insulation Fail?. G&W Electric, Chicago, 25 January 2008.

Fundamentals of Partial Discharge Detection. High Voltage Testing, Monitoring, and Diagnostics Seminar, Alexandria, VA, 10 Sept. 2007, High Voltage Technologies, Inc.

Transient Nonlinear Finite Element Analysis Computations for ZnO Arresters. Kyushu Electric Power Company, Kyushu, Japan, 24 August 2007.

Applications of Nonlinear Analysis to Dielectrics and ZnO. Kyushu Institute of Technology, Kyushu, Japan, 23 August 2007.

Transient Nonlinear Finite Element Computations for ZnO Arresters. Toshiba Corporation, Hamakawasaki Operations, Kawasaki, Japan, 22 August 2007

Applications of Nonlinear Analysis in Power Engineering. Four hour short course, Xi'an Jiaotong University, Xi'an, China, 16 August 2007.

Fundamentals of Partial Discharge Detection. Southwest Jiaotong University, Chengdu, China, 9 September 2007.

Transient Nonlinear Finite Element Analysis for ZnO Arresters. Southwest Jiaotong University, Chengdu, China, 10 September 2007.

"Materials in Extreme Environments - Polymers in High Electric Fields" DOE Workshop on Materials in Extreme Environments. Bethesda, MD, 11-14 June 2007.

NanoDielectrics in Two Contexts - High and Low Dielectric Constant Fillers". Workshop on Nanodielectrics, Air Force Materials Directorate, Dayton, Ohio, 1 June 2007.

Gas Dynamics and Exhaust Tube to Ground Withstand in Gas Circuit Breakers". Electric Power Research Institute Task Force 37 meeting, 22 May 2007, Charlotte, NC.

Transient Nonlinear Finite Element Computations for ZnO Arresters. Chinese Electrical Power Research Institute, Beijing, China, 7 December 2006.

Arrester Stability as a Function of Heat Sink Configuration. Toshiba Laboratory, Hamakawasaki Works, Kawasaki, Japan, 4 December 2006.

Degradation Mechanisms in Shielded Power Cable. Materials Science Seminar Series, University of California, Berkley, November 16, 2006.

Thermal and Mechanical Properties of EPR Cable Compound. Exxon Research Center, Baytown, TX, October 27, 2006

Fundamentals of Partial Discharge. 3M Research Center, Austin, TX, October 26, 2006.

Nonlinear Grading. 3M Research Center, Austin, TX, October 25, 2006.

Characterization and Computation of High Field Phenomena in Bulk and Laminar Polymeric Dielectrics. WPAFB, Materials Directorate, 14 September 2006.

Characterization and Computation of High Field Phenomena in Bulk and Laminar Polymeric Dielectrics. Laurence Livermore National Laboratory, 18 June 2006.

Measurement and Computation of High Field Phenomena in Capacitor Films, GE Insulation Symposium, April 17, 2006.

High Field Phenomena in Thin Insulating Films, University of Bologna, Department of Electrical Engineering, September 6, 2005.

Thermal Stability of ZnO Arresters, TM T&D Corporation, Kawasaki, Japan, December 2004.

Series of six invited lectures, Southwest Jiaotong University, Chengdu, China, December 2004.

Technical and Commercial Opportunities in Shielded Power Cable Technology, EXXON Research Laboratory, 6 February 2004, Baytown, TX

Three hour presentation on Gas-insulated Substation Technology for EPRI Solutions Workshop "Substation Life Extension", November 2003.

Series of six invited lectures, Southwest Jiaotong University, Chengdu, China, November 2003.

Failure Mechanisms of Low and Medium High Voltage Distribution Cable. Office of Naval Research ISBB Workshop, New Orleans, 28-29 October 2003.

High Field Phenomena in Dielectrics as Related to Film Capacitor Technology. Army Research Laboratory, Adelphi, MD, 20 October 2003.

Implications of Cable Ground Shield Semicon Conductivity. Union Carbide Division of Dow Chemical, 5 August 2003, Bound Brook, NJ.

High Field Phenomena in Dielectrics as Related to Capacitors. ICAR (Capacitor Manufacturer), 29 July 2003, Milan, Italy.

Fundamental Limitations to Polymer Film Capacitor Technology. JASON Workshop on Intermediate Energy Storage for Pulse Forming Networks, US Army, 30 June - 3 July 2003, San Diego, CA.

Electrical Breakdown and Aging of Capacitor Films. Dielectrics Materials and Components for Pulsed Power Applications Workshop sponsored by the Office of Naval Research. Arlington VA, 2&3 June 2003.

Fundamentals of Partial Discharge Detection. HV Testing, Monitoring, and Diagnostics Workshop. 6 November 2002, VA.

Nonlinear Material Analysis for Power Applications, half day short course given at the IEEE Asia Pacific Transmission and Distribution Conference, 8 October 2002, Yokohama, Japan

Cable Degradation Mechanisms and Diagnostic Techniques. EPRI Cable Users Working Group Meeting, 17 September 2002, Albuquerque, NM.

High Energy Density Capacitor Technology, Combat Hybrid Power Systems Workshop Organized by the National Academy of Sciences, August 26 2002, San Jose, CA.

High Field Electrical Performance of Polymers. Union Carbide Division of Dow Chemical Company, Canal Research Center, 16 July 2002, NJ

Diagnostics Techniques for Medium High Voltage Cable. Educational Conference organized by Detroit Edison, 7 July 2002, Detroit.

Partial Discharge in the Context of Distribution Cable Testing. Workshop organized by Detroit Edison, 9 July 2002, Detroit.

Effect of Material Characteristics on Breakdown under Transient Conditions. GE Central Research Laboratory, 24 April 2002.

Electric Field-Induced Aging, Extrinsic and Intrinsic. EPRI Workshop on Aging, 27 February 2002, Detroit.

High Field Electrical Performance of Polymers, EXXON Research Laboratory, 6 November 2001, Baytown, TX