

**Curriculum Vitae**  
**Alexander V. Mamishev, Ph. D.**

Associate Professor  
Director of Sensors, Energy, and Automation Laboratory (SEAL)  
Director of UW Department of Energy Industrial Assessment Center  
Director of Grainger Foundation Power Program  
Past Director of Electrical Energy Industrial Consortium (EEIC)

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## **EDUCATION:**

**Massachusetts Institute of Technology**, Cambridge, MA, January 1995 – May 1999

**Ph.D.** in Electrical Engineering and Computer Science

Thesis advisors: Prof. Markus Zahn and Prof. Bernard Lesieutre

Thesis title: “*Interdigital Dielectrometry Sensor Design and Parameter Estimation Algorithms for Non-Destructive Materials Evaluation.*”

Minor in Engineering Management from MIT Sloan School of Management and Harvard Business School.

**Texas A&M University**, College Station, TX, September 1992 – August 1994

**M. S.** in Electrical Engineering

Thesis advisor: Dr. B. Don Russell, Associate Vice-Chancellor for Engineering Research of Texas A&M University System

Thesis title: “*Calculation Methods and Detection Techniques for Electric and Magnetic Fields from Power Lines with Measurement Verification.*”

**Kiev Polytechnic Institute**, Kiev, Ukraine, September 1988 – July 1992

**B. S.** (equivalent) in Electrical Engineering and Physics

## **RESEARCH EXPERIENCE:**

### **Academic Research:**

University of Washington, Department of Electrical Engineering, 2005 – present

*Position:* Associate Professor,  
Director of Sensors, Energy, and Automation Laboratory (SEAL)  
Director of UW Department of Energy Industrial Assessment Center  
Director of Grainger Foundation Power Program  
Past Director of Electrical Energy Industrial Consortium (EEIC)

#### *Research Interests:*

Sensors, energy efficiency, power engineering, MEMS, non-destructive testing, industrial automation, dielectrometry, high voltage plasma devices, biomedical applications.

University of Washington, Department of Electrical Engineering, 1999 – 2005

*Position:* Assistant Professor,  
Director of Sensors, Energy, and Automation Laboratory (SEAL)  
Director of Electrical Energy Industrial Consortium (EEIC)

### **Industrial Research:**

Jentek Sensors, Inc., Watertown, MA, Summer 1997, January 1998, Summer 1998

*Position:* Research Engineer

Designed and optimized dielectrometry sensors and experimental setups for aerospace, military, chemical, and mechanical applications. Industrial and government customers: 3M, Boeing, SatCon, and US Army. Participated in writing proposals and reports. Co-author of a patent. Supervised other engineers.

SELT, Inc. (Specialized Electric Technologies), Kiev, Ukraine, 1990 – 1992.

*Position:* Software Engineer

Developed FDTD (finite difference time domain) software for two-dimensional simulation of transient processes in the coupled electric and thermal field conditions.

### **Graduate Research:**

MIT Laboratory for Electromagnetic and Electronic Systems and High Voltage Research Laboratory, Cambridge, MA, 1995 - 1999

*Position:* Research Assistant

Developed multivariable optimization algorithms for characterization of insulating materials; designed interdigital sensors for industrial applications; investigated dynamics of diffusion processes; simulated electromagnetic fields with finite element analysis, participated in electronics design; took micrograph and X-ray scans with electron microscopes (TEM, SEM, STEM); coordinated sensor fabrication that involved plasma and vacuum etching of metals and polymers, plasma deposition, lithography, ultrasound surface treatment, etc. Acquired basic familiarity with chemical vapor deposition, evaporation, sputtering; and ion, electron, and laser beam

etching. Assisted with proposal writing. Supervised research of nine undergraduate students and two visiting scientists.

Texas A&M University, Power System Automation Laboratory, College Station, TX, 1992 - 1994

Position: Research Assistant

Designed equipment and software for measurement and simulation of electric and magnetic fields, participated in the development of the power line proximity detector, applied wavelet and fractal analysis to detection of high impedance faults, developed optic fiber acoustic diagnostics technology for high voltage cables. Managed small research projects from proposal writing to the final report submission.

### **Undergraduate Research:**

Kiev Polytechnic Institute, Laboratory of High Voltage Engineering and Physics, and Institute of Electrodynamics, Kiev, Ukraine, 1989 – 1992

Position: Research Assistant

Performed experiments on lightning simulation and high voltage testing, developed software for simulation and optimization of power electronics devices for aerospace applications, designed a high voltage precipitator, supervised a team of undergraduate student programmers.

### **TEACHING EXPERIENCE:**

*University of Washington:*

Course instructor for:

EE 351 Introduction to Energy

EE 400S Engineering Creativity and Innovation

EE 400R FIRST Robotics

EE 401 Engineering Design by Teams: Robotics I

EE 402 Engineering Design by Teams: Robotics II

EE 484 Sensors Design

EE 457 Electrical Power Distribution

EE 503 Simulation and Modeling of MEMS

*Massachusetts Institute of Technology, January 1999*

Position: Numerical Simulation of Electric and Magnetic Fields, short course developer and instructor

*Massachusetts Institute of Technology, Department of Electrical Engineering and Computer Science, September 1998 – December 1998*

Position: Teaching Assistant

Delivered tutorials and recitations, developed homework and term project assignments, graded exams for the undergraduate course 6.013, “Electromagnetic Fields and Energy”.

**Education-related seminar participation:**

*Stanford University*, participant of a 5-day workshop “New Century Scholars”, July 2002

*Stanford University*, participant of a 10-day workshop “Teaching Creativity in Higher Education”, July 2001

*Massachusetts Institute of Technology*, participant of seminar series “Better Teaching at MIT,” January 1998.

**FUNDED RESEARCH:**

Agency	Project Title	Amount	Involvement	Status	Dates
American Public Power Association	<i>Optimization of Electric Power Equipment</i>	\$31K	P.I.	Funded	01/07/00 - 31/06/01
Southern California Edison	<i>Detection of Energization Status of Distribution Power Cables</i>	\$35K	P.I.	Funded	01/07/00 - 12/31/01
Center for Processing Analytical Chemistry	<i>Non-destructive Measurement of Moisture Distribution</i>	\$280K (approx.)	P.I.	Funded	2000-2007
Advanced Power Technologies Center	<i>Substation Automation and Monitoring</i>	\$180K (approx)	P.I.	Funded	2000-2004
NSF	<i>CAREER: Condition-Based Maintenance of Electric Power Systems</i>	\$459K	P.I.	Funded	2001-2006
United Engineering Foundation	<i>Detection of Explosives and Gases with Plasma-Enhanced Chemical Sensors</i>	\$25K	P.I.	Funded	2001 – 2003
Royalty Research Fund	<i>Heat Transfer Technology for Microelectronics and MEMS</i>	\$31K	P.I.	Funded	2001-2002
Metso Automation	<i>On-line control of paper web material properties</i>	\$40K	P.I.	Funded	2002-2003
AFOSSR, CPAC, and matching funds	<i>Advanced Polymer Composite Molding Through Intelligent Process Analysis &amp; Control</i>	\$150K of the total \$600K	co-investigator.	Funded	2002 – 2005
Army Research Office, subcontract from Kronos Air	<i>Electrostatic Dehumidification Technology: SBIR Phase II</i>	\$120K of the total \$730K)	sub-contract P.I.	Funded	2003-2005
Wyeth Pharmaceuticals	<i>Fringing Field Dielectrometry Sensors for Parameter Estimation in Pharmaceutical Samples (preliminary study)</i>	\$15K	P.I.	Funded	Jan-Mar. 2005
Metso Automation	<i>On-line control of paper web material properties, Phase II</i>	\$120K	P.I.	Funded	2003-2005
NIH	<i>Distributed Sensing for Prosthetic Sockets</i>	\$400K	P.I.	Pending	2007-2009
Washington Technology Center	<i>Heat transfer technology for microelectronics and MEMS</i>	\$48K	P.I.	Funded	2005
NSF	<i>IGERT: Astrobiology: Life in a Cosmic Context</i>	\$4.2M	co-investigator	Funded	2005-2009
NSF	<i>Katrina SGER: Robotic Assessment of Incipient Faults in Underground Cable Systems</i>	\$30K	P.I.	Funded	2006
Ethicon	<i>Feasibility of Application of Dielectric Spectroscopy Sensors for</i>	\$14K	P.I.	Funded	2005

	<i>Manufacturing Control</i>				
Veterans Administration	<i>Thermal sensors array for prosthetics</i>	~\$50K	subcontract P.I.	Funded	2005-2006
Intel	<i>Discretionary cash gifts for research in MEMS</i>	~\$120K	P.I.	Funded	2004-2007
Washington Technology Center	<i>Heat transfer technology for microelectronics and MEMS</i>	\$135K	P.I.	Funded	2006-2007
Department of Energy	<i>Industrial Assessment Center</i>	\$0.9M	P.I.	Funded	2006-2011
NSF	<i>STTR Phase I: Monitoring of Consistency and Uniformity of Packaged Food Products</i>	\$150K	P.I.	Funded	2007

**Industrial donations:** Obtained industrial donations of research hardware, software, and funds from Coventor, Ansoft, Tektronix, Hewlett-Packard, Microsoft, Fluke, National Instruments, Pacific Integrated Handling, Bosch, Amazon.com, Kraft, Alstom, and Warden Fluid Dynamics, with a total value about \$1.5M.

## **MEMBERSHIP AND ACTIVITIES:**

### **Societies:**

- IEEE Dielectrics and Electrical Insulation Society
- IEEE Power Engineering Society

### **Activities:**

- Reviewer, American Society for Agricultural and Biological Engineers, 2006-present
- Reviewer, IEEE Transactions on Automation Science and Engineering, 2005-present
- Reviewer for the Journal of Electrostatics, 2006-present
- International Program Committee (IPC) member for the Ninth IASTED International Conference on Intelligent Systems and Control (ISC 2006)
- Reviewer for the IEEE Transactions on CAS (2004-present)
- Invited Reviewer for the conference INNOVATIONS 2006: WORLD INNOVATIONS IN ENGINEERING EDUCATION AND RESEARCH” – INEER 2006
- Guest editor, EURASIP Journal on Applied Signal Processing (JASP), special issue on power quality, 2005
- International Program Committee (IPC) member for the Eighth IASTED International Conference on Intelligent Systems and Control (ISC 2005)
- Organizing committee for the FIRST Robotics Pacific Northwest Regional contest
- Proposal reviewer for NIH, 2005
- Proposal reviewer and panelist for NSF (most years)
- Faculty Counselor of the University of Washington IEEE Branch, August 2000 – present
- Chair of the IEEE PES Seattle Section, 2002 – present
- Treasurer of the IEEE PES Seattle Section, 2001-2002
- Member of the organizing committee of IEEE PES Summer Power Meeting, July 2000
- Member of the Advanced Power Technologies Center at the University of Washington (1999 – present)
- Member and co-author in the IEEE Power Engineering Society AC Field Effects Design Guide Task Force (1993-1997)
- Member of NSF Sensitive Skin Initiative group (1999-2000)
- Member of the MIT Humanitarian Demining Group (1997-1999)
- Reviewer for IEEE Transactions on Dielectrics and Electrical Insulation (1998 – present)
- Reviewer for the IEEE Power Engineering Society Transactions (1999 – present)
- Reviewer for the U.S. Civilian Research and Development Foundation (1999 – present)
- Participant of the 1998 BFGoodrich National Collegiate Inventors Competition, received a certificate for distinguished contribution
- Developed a short course “Numerical Simulation in Electromagnetics,” taught to MIT community in January 1999

### **University Service:**

(this record was started in 2005)

2005 – Review Committee for the Fluke Chair Professorship in the College of Engineering

2004 - present – Director of the Electric Energy Industrial Consortium

2005 – present – Director of the Grainger Foundation Program  
2006 – present, CPAC future vision committee

## **SYNERGISTIC ACTIVITIES:**

- *Statistics:* Since the formation of SEAL lab, Prof. Mamishev has supervised about 15 graduate students and about 150 undergraduate research students, among them about 50 Mary Gates Scholars (UW honor students who distinguished themselves with research and community activities). Consequently, these students won about 200 awards and scholarships directly related to their research work, ranging from local to international. About a third of these students are women and minorities, attracted to research through partnerships with minority organizations, direct interaction, and presentations/networking by former students.
- *K12 activities:* Prof. Mamishev also has worked directly with about 150 high school students and four high school teachers in an outreach robotics project. He also serves on the committee as the University of Washington main representative for the FIRST robotics. He has organized several robotics festivals with about 1,500 participants and up to 5,000 people audience in each of them from more than 10 states and from abroad. The audience included students from all local high schools, a number of students from middle schools, as well as many industrial and educational leaders. Results of student work are major showcases in numerous open houses and educational fairs (about 10 occurrences). He is also a faculty host of summer program STEM (Science, Technology, Engineering, and Mathematics) for minority high school students, a participant of GEAR UP college preparation activity for underrepresented high school minority students. In summer 2001, Prof. Mamishev worked directly with 40 six-graders from disadvantaged families of central Washington, in a three-day long “Engineering Creativity” class. His educational and outreach activities have been featured on national (NPR) and local TV and radio stations, and in general public magazines (e.g. Alaska Airlines magazine) and newspapers about 15 times.
- *Student organizations:* Prof. Mamishev also supervised first in the department history student team in a national competition (they scored in the top 8 percent of the country) and transformed local IEEE branch from a dormant community to one of the most active engineering student organizations on campus. The branch also received about five different awards within the IEEE and UW systems, created effective collaboration with about 10 companies, well beyond the usual recruiting sessions and company presentations. Prof. Mamishev made dozens of presentations to different student groups.
- *Collaboration:* Prof. Mamishev works closely with MESA (Mathematics, Engineering, Science Achievement program for underrepresented minorities at high schools), MSEP (Minority Science and Engineering Program for college students), WISE (Women in Science and Engineering), SCORE (Student and Community Relationships Program), and NASA Space Grant center, involving their students in a variety of engineering projects and activities. In that framework, Prof. Mamishev has served as a formal advisor to several women and minority students.
- *Innovation, curriculum development, and service:* Prof. Mamishev chairs the committee for innovative student activities in the Department of Electrical Engineering, and a library committee. He is in the process of forming the SCI-FI Innovation Center in the department, co-sponsored by IEEE, Boeing, and several other companies. Prof. Mamishev developed three new classes (two undergraduate and one graduate) and received very high teaching ratings in these classes. Prof. Mamishev serves as a member of national committees, several organizing committees for conferences, and reviewer of journal/conference papers and research proposals.

## **HONORS:**

### **University faculty (1999-present):**

- Boeing Welliver Faculty Fellow, 2006
- Outstanding Research Advisor Award, UW EE, 2003
- Best paper in the session award in Systemics, Cybernetics, and Informatics Conference, 2001
- Outstanding IEEE Branch Advisor Award, 2001
- NSF CAREER Award, 2001
- Chair Award, UW EE, 2000
- Nominated for the UW CoE Outstanding Faculty Award (2002\_, UW EE Outstanding Teaching Award (2003), and UW Favorite Professor (UW Alumni Association (2006)

### **Graduate student (1992-1999):**

- American Vacuum Society Graduate Research Award, 1998
- Link Foundation Energy Fellowship, 1998
- Graduate Student Award finalist in the Materials Research Society Fall Meeting, 1997
- American Public Power Association DEED Scholarship, 1997, 1994, 1993
- IEEE Dielectric and Electrical Insulation Society Fellowship, 1995
- IEEE Vincent Bendix Research Award, 1994
- IEEE Power Engineering Society T. Burke Hayes Best Student Paper Award, 1994
- MIT Graduate Student Council Travel Grant, 1998
- IEEE CEIDP (Conference on Electrical Insulation and Dielectric Phenomena) Scholarship, 1998
- Who'sWho in Science and Engineering in America, 1998
- IEEE Dielectrics and Electrical Insulation Society International Symposium on Electrical Insulation Scholarship, 1998
- Student Poster Contest at IEEE Power Engineering Society Winter Meeting, Honorable Mention, 1998
- Power Engineering Education Committee Student Travel Grant for IEEE Power Engineering Society Winter Meeting, January 1998
- Graduate Student Award finalist in the Materials Research Society Fall Meeting, 1997
- American Public Power Association Demonstration of Energy-Efficient Developments Scholarship, 1997
- NSF Student Support Grant for IEEE Power Engineering Society Meetings, 1995 and 1998
- IEEE CEIDP (Conference on Electrical Insulation and Dielectric Phenomena) Scholarship, 1994
- American Public Power Association Demonstration of Energy Efficient Developments Scholarship, 1994
- Texas A&M University Department of Electrical Engineering Scholarship, 1994
- APICS Donald W. Fogarty International Student Paper Contest, 3rd Prize, Houston, 1994
- ISS Texas A&M University Study Grant for Universities Power Engineering Conference, Ireland, 1994
- NSF Student Support Grant for IEEE Power Engineering Society Meetings, 1994
- Electrical Engineering Graduate Program Enhancement Scholarship, 1993

- American Public Power Association Demonstration of Energy Efficient Developments Scholarship, 1993
- Special One-Time Electrical Engineering Scholarship annually awarded by the Department of Electrical Engineering of Texas A&M University, 1993
- Industrial Scholarship, 8-th International Symposium on High Voltage Engineering, Yokohama, Japan, 1993
- Texas A&M University International Student Services Travel Grant, 1993
- Petro Jacyk Scholarship, 1992
- George Soros Educational Scholarship, 1992

## **PUBLICATIONS:**

### ***Book chapters:***

1. A. V. Mamishev, “Overhead Line Conductors,” by invitation, chapter in the *Wiley Encyclopedia of Electrical and Electronics Engineering*, vol. 15, pp. 463-474, John Wiley and Sons, 1999.
2. K. Sundara-Rajan, A. V. Mamishev, and M. Zahn, “Fringing Electric and Magnetic Field Sensors,” by invitation, chapter in the *Encyclopedia of Sensors*, American Scientific Publishers, vol. 4, pp. 89-100, 2006.
3. A. V. Mamishev, “Dielectric Spectroscopy,” by invitation, chapter in the *Micro-Instrumentation for High Throughput Experimentation and Process Intensification. A Tool for PAT*, by Wiley-VCH, 2007.
4. A. V. Mamishev, “Creativity Techniques for Engineering Design,” in preparation.

### **Refereed Archival Journal Publications**

1. A.V. Mamishev, “Method of Shifted Grids for Calculation of Transient Processes in Electric Equipment,” *Visnyk KPI, Electric Power, Lybid'*, Kiev, Ukraine, 1993, Vol. 29, pp. 103-105.
2. A.V. Mamishev, B.D. Russell, “Measurement of Magnetic Fields in the Direct Proximity of Power Line Conductors,” *IEEE Transactions on Power Delivery*, Vol. 10, No.3, 1995, pp. 1211-1216.
3. A.V. Mamishev, R.D. Nevels, B.D. Russell, “Effects of the Sag of Power Line Conductors on Ambient Magnetic Fields,” *IEEE Transactions on Power Delivery*, Vol.11, No.3, July 1996, pp. 1571-1576.
4. A.V. Mamishev, B.D. Russell, C.L. Benner, “Analysis of High Impedance Faults Using Fractal Techniques,” *IEEE Transactions on Power Systems*, Vol. 11, No. 1, 1996, pp. 435-440.
5. A.V. Mamishev, S.X. Short, T.W. Kao, B.D. Russell, “Non-intrusive Sensing Techniques for the Discrimination of Energized Electric Cables,” *IEEE Transactions on Instrumentation and Measurements*, Vol.45, No.2, 1996, pp. 457-461.
6. S.X., Short, A.V. Mamishev, T.W. Kao, B.D. Russell, “Evaluation of methods for discrimination of energized underground power cables,” *Electric Power Systems Research Journal*, Vol.37, No.1, 1996, pp. 29-38.
7. A.V. Mamishev, B.C. Lesieutre, and M. Zahn, “Optimization of Multi-Wavelength Interdigital Dielectrometry Instrumentation and Algorithms,” *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol. 5, No. 3, June 1998, pp. 408-420 (invited paper).

8. A.V. Mamishev, Y. Du, B.C. Lesieutre, M. Zahn, "Development and Application of Fringing Electric Field Dielectrometry Sensors and Parameter Estimation Algorithms," *Journal of Electrostatics*, vol. 46, 1999, pp. 109-123.
9. Y. Du, M. Zahn, B.C. Lesieutre, A.V. Mamishev, S. Lindgren, "Moisture Equilibrium in the Paper-Oil System," Feature Article, *IEEE Electrical Insulation Magazine*, Vol. 15, No. 1, January/February 1999, pp. 11-20.
10. B. C. Lesieutre, A. V. Mamishev, Y. Du, E. Keskiner, M. Zahn, G. C. Verghese, "Forward and Inverse Parameter Estimation Algorithms of Interdigital Dielectrometry Sensors," *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol. 8, No. 4, August 2001, pp. 577-588.
11. Y. Du, A. V. Mamishev, B. C. Lesieutre, M. Zahn, S. H. Kang, Moisture Solubility for Differently Conditioned Transformer Oils, *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol. 8, No. 5, October 2001, pp. 805--811.
12. A.V. Mamishev, Y. Du, J. H. Bau, B.C. Lesieutre, M. Zahn, "Evaluation of Diffusion-Driven Material Property Profiles Using Three-Wavelength Interdigital Sensor," *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol. 8, No. 5, Oct. 2001, pp. 785-798.
13. A.V. Mamishev, A.R. Takahashi, Y. Du, B.C. Lesieutre and M. Zahn, "Parameter Estimation In Dielectrometry Measurements," *Journal of Electrostatics*, vol. 56, 2002, pp. 465 – 492.
14. A. V. Mamishev, S. R. Cantrell, Y. Du, B. C. Lesieutre, and M. Zahn, "Uncertainty in Multiple Penetration Depth Fringing Electric Field Sensor Measurements," *IEEE Transactions on Instrumentation and Measurements*, Vol. 51, No. 6, Dec 2002, pp. 1192 –1199.
15. K. Sundara-Rajan, L. Byrd, and A. V. Mamishev, "Moisture Measurement in Paper Pulp Using Fringing Field Dielectrometry," *IEEE Sensors Journal*, vol. 4, no. 3, 2004, pp. 378-383.
16. A .V. Mamishev, K. Sundara-Rajan, F. Yang, Y. Du, M. Zahn, "Interdigital Sensors and Transducers," *Proceedings of the IEEE*, vol. 92, no. 5, 2004, pp. 808-845 (invited paper).
17. M. Wang and A. V. Mamishev, "Classification of Power Quality Events Using Optimal Time-Frequency Representations -- Part 1: Theory," *IEEE Transactions on Power Delivery*, vol. 19, no. 3, July 2004, pp. 1488 - 1495.
18. M. Wang, G. I. Rowe, and A. V. Mamishev, "Classification of Power Quality Events Using Optimal Time-Frequency Representations -- Part 2: Application," *IEEE Transactions on Power Delivery*, vol. 19, no. 3, July 2004, pp. 1496 – 1503.
19. B. Jiang, A. V. Mamishev, "Robotic Monitoring of Power Systems," *IEEE Transactions on Power Delivery*, vol. 19, no. 3, July 2004, pp. 912 - 918.
20. M. Hegg, A. Ogale, A. Mescher, A.V. Mamishev, B. Minaie, "Remote Monitoring of Resin Transfer Molding Processes by Distributed Dielectric Sensors," *Journal of Composite Materials*, vol. 39, no. 17, June 2005, pp. 1519-1539.

21. K. Sundara-Rajan, L. Byrd, and A. V. Mamishev, "Estimation of Moisture Content in Paper Pulp Containing Titanium Dioxide Using Fringing Field Impedance Spectroscopy," *TAPPI Journal*, vol. 4, no. 2, Feb. 2005, pp. 23-27.
22. M. Philipose, J. R. Smith, J. Bing, A. Mamishev, S. Roy, and K. Sundara-Rajan, "Battery-Free Wireless Identification and Sensing," *IEEE Pervasive Computing*, vol. 4, no. 1, pp. 37-45, 2005.
23. X.B. Li, S. Larson, A. Zyuzin, and A.V. Mamishev, "Design Principles for Multi-Channel Fringing Electric Field Sensors," *IEEE Sensors Journal*, Vol. 6, No. 2, April 2006, pp. 434 – 440.
24. N. E. Jewell-Larsen, E. Tran, I. A. Krichtafovitch, A. V. Mamishev, "Design and Optimization of Electrostatic Fluid Accelerators," *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol. 13, No. 1, Feb. 2006, pp. 191 - 203.
25. J. R. Smith, K. P. Fishkin, B. Jiang, A.V. Mamishev, M. Philipose, A. D. Rea, S. Roy, and K. Sundara-Rajan, "RFID-Based Techniques for Human-activity Detection," *Communications of the ACM*, vol. 48 (9) pp. 40-44, 2005.
26. X.B. Li, G.I. Rowe, V.V. Inclan, and A.V. Mamishev, "Non-dimensionalized Parametric Modeling of Fringing Electric Field Sensors," *IEEE Sensors Journal*, vol. 6, no. 6, Dec. 2006, pp. 1602 – 1608.
27. B. Jiang, J. R. Smith, M. Philipose, S. Roy, K. Sundara-Rajan, and A. Mamishev, "Energy scavenging for inductively coupled passive RFID systems," *IEEE Transactions on Instrumentation and Measurements*, vol. 56, no.1, Jan. 2007, pp. 118-125.
28. I. G. K. Klute, G. I. Rowe, A. V. Mamishev, W. R. Ledoux, "The Thermal Conductivity of Prosthetic Sockets and Liners," accepted on July 14, 2006, *Prosthetics and Orthotics International*.
29. M. Wang, G. I. Rowe, A. V. Mamishev, "DSP-based ubiquitous power quality sensors and their new usage models," *IEEE Transactions on Instrument and Measurement*, submitted.
30. K. Sundara-Rajan, L. Byrd, and A. V. Mamishev, "Estimation of Moisture Content in Paper Pulp Containing Calcium Carbonate Using Fringing Field Impedance Spectroscopy," *Appita Journal*, submitted.
31. Mathur, K. Sundara-Rajan, G. Rowe, and A. V. Mamishe, Dielectric spectroscopy: choosing the right approach, *American Pharmaceutical Journal*, submitted.
32. P. Hsu, N. Jewell-Larsen, I. A. Krichtafovitch, A. V. Mamishev, "Microfabrication Methods for Electrostatic Fluid Accelerators," *Journal of MEMS*, submitted.

### **Non-Journal Fully Refereed Publications (Conference Papers)**

1. S.A. Sokolovskij, J.V. Romanenko, A.V. Mamishev, "Thermal and Electrodynamic Calculation of Coaxial HV Devices of Limited Height," *8th International Symposium on High Voltage Engineering*, Yokohama, Japan, August 1993, v. 3, pp. 209-212.
2. R.D. Nevels, A.V. Mamishev, B.D. Russell, "Power Line Magnetic Field Including the Catenary Effect and Electric Field Including Absorbing Boundary Conditions," *1994*

*IEEE AP-S International Symposium and URSI Radio Science Meeting*, Seattle, WA, June 1994.

3. A.V. Mамishev, "Analytical Solution for the Magnetic Field Produced by a Sequence of Catenaries," *Winter1994 IEEE-PES Meeting Student Prize Paper*, New York, NY, January 1994.
4. A.V. Mамishev, B.D. Russell, "Influence of Catenary Shape of Power Line Conductors on Ambient Magnetic Fields," *1994 Universities Power Engineering Conference*, Galway, Ireland, September 1994, v. 1, pp. 177-180.
5. V.A. Brzhezitsky, O.S. Il'enko, A.V. Mамishev, B.D. Russell, S.A. Sokolovsky, "Partial Empirical Model of the Multifactor Aging of High Voltage Insulation," *IEEE Conference on Electrical Insulation and Dielectric Phenomena*, Arlington, TX, USA, October 1994, pp. 367-372.
6. S.A. Sokolovsky, V. G. Santotsky, and A.V. Mамishev, "Arc Disconnections of 10 kV Overhead Power Lines," *9th International Symposium on High Voltage Engineering*, Graz, Austria, August 1995, vol. 6, pp. 9-13.
7. A.V. Mамishev, Y. Du, M. Zahn, "Measurement of Dielectric Property Distributions Using Interdigital Dielectrometry Sensors," *IEEE Conference on Electrical Insulation and Dielectric Phenomena*, Virginia Beach, VA, October 1995, pp. 309-312.
8. Y. Du, M. Zahn, A.V. Mамishev, D.E. Schlicker, "Moisture Dynamic Measurements of Transformer Board Using a Three-Wavelength Dielectrometry Sensor," *1996 IEEE International Symposium on Electrical Insulation, Montreal, Canada*, pp. 53-56.
9. A.V. Mамishev, M. Zahn, "Techniques for Semi-Empirical Characterization of Material and Sensor Properties in Interdigital Dielectrometry," *1996 IEEE International Symposium on Electrical Insulation, Montreal, Canada*, pp. 486-9.
10. A. P. Washabaugh, A.V. Mамishev, Y. Du, and M. Zahn, "Dielectric Measurements of Semi-Insulating Liquids and Solids," *12th International Conference on Conduction and Breakdown in Dielectric Liquids*, Rome, Italy, July 1996, pp. 381-384 (invited paper).
11. A.V. Mамishev, M. Zahn, B.C. Lesieutre, B.A. Berdnikov, "Influence of Geometric Parameters on Characteristics of an Interdigital Dielectrometry Sensor," *1996 IEEE Conference on Electrical Insulation and Dielectric Phenomena*, San Francisco, CA, October 1996, pp. 550-553.
12. A.V. Mамishev, B.A. Berdnikov, J.P. Rivenc, B.C. Lesieutre, M. Zahn, "Surface Contact Effects in Interdigital Dielectrometry," *10th International Symposium on High Voltage Engineering*, Montreal, Canada, August 1997, vol. 6, pp. 357-360.
13. A.V. Mамishev, B.C. Lesieutre, M. Zahn, "Parameter Estimation Using an Interdigital Dielectrometry Sensor with Finite-Element Software," *1997 IEEE Conference on Electrical Insulation and Dielectric Phenomena*, Minneapolis, MN, October 1997, pp. 234-237.

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