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List of Research Publications

Refereed Journal Papers:

Accepted Papers – to appear in 2013/2014

- [J1] A. Gad and S. H. Jayaram, "Effect of Electric Pulse Parameters on Releasing Metallic Particles from Stainless Steel Electrodes during PEF Processing of Milk", ***IEEE Transactions on Industry Applications***, Accepted, July 2013 for the March/April 2014 issue.
- [J2] R. A. Ghunem, S. H. Jayaram, and E. A. Cherney, "Investigation into the Eroding Dry-Band Arcing Mechanisms in DC Inclined Plane Testing of Silicone Rubber, to be published in the ***IEEE Transactions on Dielectrics and Electrical Insulation***.
- [J3] C. J. Angamma and S. H. Jayaram, "Fundamentals of Electrospinning and Processing Technologies" to be published in the special issue, "Electrostatic Charging of Particulate Materials. In Particulate Science and Technology: Invited paper, Publishers: **Taylor and Sons**.
- [J4] I. Y. Shurrab, A. H. El-Hag, K. Assaleh, R. A. Ghunem, and S. H. Jayaram, "An RF-Based Monitoring and Classification of Partial Discharge on Silicone Rubber Surface", ***IEEE Transactions on Dielectrics and Electrical Insulation***; In Press.
- [J5] J. H. Kang, J. Z. Wen, S. H. Jayaram, X. Wang, and S. H. Chen, "Electrochemical characterization and equivalent circuit modeling of single-walled carbon nano-tube (SWCNT) coated electrodes", Accepted for publication in the ***Journal of Power Source***.

Published Papers:

- [J6] R. Baba, C. J. Angamma, S. H. Jayaram, and L. T. Lim, "An IGBT-Based Pulsed Power Supply in the Fabrication of Non-continuous Nanofibres using Electrospinning", ***IEEE Transaction on Industry Applications***, Vol. 51, pp. 1801-1807, 2013.
- [J7] S. Bian, S. H. Jayaram, and E. A. Cherney, "Erosion Resistance of Electrospun Silicone Rubber Nano-Composites", ***IEEE Transaction on Dielectric and Electrical Insulation***, Vol. 20, pp. 185-193, 2013.
- [J8] R. A. Ghunem, S. H. Jayaram, and E. A. Cherney, "Erosion of Silicone Rubber Composites in the AC and DC Inclined Plane Tests", ***IEEE Transaction on Dielectric and Electrical Insulation***, Vol. 20, pp. 229-236.

- [J9] A. H. El-Hag, O. Rodriguez, S. H. Jayaram and Griffiths, "A Performance Study of a Multi-level Electrode Treatment Chamber for Food Processing", ***IEEE Transactions on Industry Applications***, Vol. 49, pp. 1091-1097.
- [J10] M. S. Moonesan, and S. H. Jayaram, "Effect of Pulse Width on Medium Temperature Rise and Microbial Inactivation under Pulsed Electric Field Food Treatment" ***IEEE Transactions on Industrial Application*** Vol. 49, pp. 1767-1772, 2013.
- [J11] C. J. Angamma and S.H. Jayaram, "Investigation of the Optimum Electric Field for a Stable Electrospinning Process", ***IEEE Transaction on Industry Applications***, Vol. 48, No. 2, pp. 808-815, 2012.
- [J12] Shanshan Bian, Shesha H. Jayaram, Edward A. Cherney, "Electrospinning as a New Method of Preparing Nanofilled Silicone Rubber Composites", ***IEEE Transactions on Dielectrics and Electrical Insulation***, Vol. 19, No.3, pp. 777-785, 2012.
- [J13] Joshua J. Moore, Jin Hee Kang, Jayaram S.H and John Z. Wen (2012) "Performance of carbon nanotube-based electrodes from temperature-controlled electrophoretic deposition", ***Journal of Applied Electrochemistry***, Vol. 42: pp. 501-508, 2012.
- [J14] Robert Allan, Shesha Jayaram, Ayman El-Hag and Paul McGrath, "Development and Testing of a Conductive Composite Material for Wet ESP Applications", ***International Journal on Plasma Environmental Science and Technology***, Vol. 6, No. 1, pp. 15-19, 2012.
- [J15] N. Bastaki, A. M. Gaouda, A. H. El-Hag and S. H. Jayaram, "Condition Monitoring of Pulsed Electric Field Food Processing Systems", ***Insight - Non-Destructive Testing and Condition Monitoring***, Vol. 54, No. 1, pp. 36-44, 2012.
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- [J19] O. Rodriguez Gonzalez, M. Walkling-Ribeiro, S. H. Jayaram, M. W. Griffiths, "Cross-protective effects of temperature, pH and osmotic, and starvation stresses in *Escherichia coli* O157:H7 subjected to pulsed electric fields in milk", ***International Dairy Journal***. Vol. 21, No. 2, pp. 953-962, 2011.
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- [J90] K. H. Sheshakamal (alias **S. Jayaram**), "Natural frequencies and transient responses in three-phase transformer windings", *Electric Machines and Power Systems*, Vol. 15, pp.231- 251, 1988.

Refereed Magazine Articles

- [R1] S. Jayaram, "Pulsed Power Applied to Process Industry," *IEEE Industry Applications Magazine*, Vol. 16, No. 4, pp. 34-40, 2010.
- [R2] F. P. Espino-Cortes, Edward A. Cherney, and S. Jayaram, "Impact of Inverter Drives Employing Fast Switching Devices on Form-Wound AC Machine Stator Coil Stress Grading", *IEEE Electrical Insulation Magazine*, published in Jan. 2007 issue.

- [R3] L. H. Meyer, **S.H. Jayaram**, and E.A. Cherney, "The role of inorganic fillers in silicone rubber for outdoor insulation-alumina tri-hydrate or silica" *IEEE Electrical Insulation Magazine*, Vol. 20, No. 4, pp. 13-21, July/Aug 2004.
- [R4] S. Jayaram, "Sterilization of liquid foods by pulsed electric fields", *IEEE Electrical Insulation Magazine*, Vol. 16, pp.17-25, November/December 2000.

Chapters in Books or Monographs

- [B1] S. Jayaram, "Pulse power energization of electrostatic precipitators for air pollution cleaning", Institute of Electronic, Information and Communication Engineers (IEICE) technical report, Japan, 1995.
- [B2] A. Chakrabarti and S. Jayaram, "Generation of high voltages", In. Kelly *et al.*, (eds.). *Handbook of Electrostatic Processes*, Marcel and Dekker Inc., New York, 1995

Patents

Awarded:

- [P1] **L. Meyer**, S. Jayaram, and, E. A. Cherney, "Method and assembly for assessing relative degradation resistance of materials with laser", *US 2005/0185693 A1*, Patent was granted in March 2009. **U S Patent No 10/981,743.**
- [P2] S. Jayaram and K. L. Rao, "Treatment Chamber for Non-thermal Pasteurization of Liquid Foods using Pulsed Electric Field" **Canadian Patent No. 2,560,858**, filed May 6, 2005, **Awarded Nov. 29th 2011.**
- [P3] S. Jayaram and K. L. Rao, "Treatment Chamber for Non-thermal Pasteurization of Liquid Foods using Pulsed Electric Field" **Japanese Patent No. 4,997,102**, filed Sept. 27th 2006, **Awarded May 8th 2012.**

Pending:

- [P4] S. Jayaram and K. L. Rao, "Treatment Chamber for Non-thermal Pasteurization of Liquid Foods using Pulsed Electric Field", Patent Corporation Treaty (PCT), WO 2005/107821 A1
 Brazil: **Patent Application PI 0511134-0, filed on Nov 6, 2006.**
 Hong Kong: **Patent Application No. 7107681.2, filed in 2007.**
 United States: **Patent Application No. 10/599,424, filed in 2007.**
 Europe: **Patent Application No. 05742386.5 filed Sept. 19, 2006.**

*For US and EU patents, office actions are filed in March and December 2012 respectively.

Papers submitted to Journals for review:

- [S1] **Ahmed Gad**, and Shesha H. Jayaram,
- [S2] **P. Sattari**, **S. Ilhan**, J. Z. Wen, S. Jayaram, "Coupled electro-thermal model of supercapacitors during charging and discharging", *IEEE Trans. on Dielectrics and Electrical Insulation*, Submitted, Nov. 2011.
- [S4] Ayman H. El-Hag, Ahmed Gaouda, Shesha Jayaram and Saeed Ul-Haq, "A Novel Technique to Detect AC Machine Turn Insulation Failure Subjected to Steep Front Impulse Waveform", *IEEE Transaction on Dielectrics and Electrical Insulation*, Submitted, Nov. 2011

5. Invited Papers and Presentations


Keynote speeches given at International Conferences

- **S. Jayaram**, “The insulation integrity of power systems in the smart electricity grid of the future”, Plenary talk, Fifth International Conference on Industrial and Information Systems, 29th July to 1st August 2010, Mangalore, India.
- **S. Jayaram**, “Pulse Power Application to Process Industry”, presented at the IEEE IAS Annual Meeting, Oct. 2008, Edmonton, Canada.
- **S. Jayaram**, “Insulation problems in medium voltage induction motors when fed from pulse width modulated voltage source converters” presented at the International Conference on Polymeric Materials in Power Engineering, Central Power Research Institute, Bangalore, India, October 4-8th 2007.
- **S. Jayaram**, “Pulse Power Applied to Process Industry and Environment”, presented at the 4th IEEE GCC Conference and Exhibition, Gulf International Convention Center, Manama, Kingdom of Bahrain, 12-14th Nov. 2007.
- **S. Jayaram**, “Applications of High Voltage to Industrial Processes”, **Key-Note Speaker**, at the Second National Meeting of High Voltage Laboratories, Belo Horizonte, Minas Gerais, hosted by Universidade Federal de Minas Gerais, Brazil, June 1997.

Invited talks:

- [I-1] S. Jayaram, “Insulation Issues Related to Smart Grid and Industry Applications”, the IEEE First International Conference on Condition Assessment Techniques in Electrical Systems, Kolkata, India Dec. 6- 8, 2013.
- [I-2] S. Jayaram, “An overview of HVEL Research activities; Machine Insulation and Nanocomposite Materials”, Harbin University of Science and Technology, Harbin, China, Oct. 24th 2013.
- [I-3] S. Jayaram, “Insulation aspects of power system components in the future smart electricity grid”, half-day tutorials presented at the IEEE 10th **International Conference on Properties and Applications of Dielectric Materials**, Bangalore, India, July24-28th, 2012.
- [I-4] **S. Jayaram**, “The insulation integrity of power systems in the smart electricity grid of the future”, Plenary talk, **5th International Conference on Industrial and Information Systems**, 29th July to 1st August 2010, Mangalore, India.
- [I-5] S. Jayaram, A short course type lectures on “Liquid Dielectrics”, was arranged by the Regional University of Blumenau, Brazil, during 2nd – 6th of June 2010, for the professional engineers from WEG Transformers.
- [I-6] S. Jayaram, “An overview of HVEL Research activities; machine insulation work and HV application work”, Royal Institute of Technology (KTH), Stockholm, Sweden, May 28th 2010.
- [I-7] S. Jayaram, “A study of Capacitive Stress Grading of Medium Voltage Form-Wound Coils for PWM Drive Fed Induction Motors”, Royal Institute of Technology (KTH), Stockholm, Sweden, May 20th 2008.
- [I-8] S. Jayaram, “Research at the University of Waterloo HVEL”, March 31st UW Grad-Talk, 2008.
- [I-9] S. Jayaram, “High Voltage Insulation and Pulse Power Applications Research”, Asset Management Group, Hydro One, Toronto, Sept. 19th 2008.
- [I-10] **S. Jayaram**, “High Inverter Fed Motor Insulation Problems and Some Solutions”, Malnad College of Engineering, Hassan, India, October 9th 2007.

- [I-11] S. Jayaram, "Degradation & Diagnostics in Outdoor Polymeric Insulation" Indian Institute of Science, Bangalore, India, October 1st 2007.
- [I-12] S. Jayaram, "Medium Voltage Machine Insulation under Pulse Applications", Southwest Jiaotong University, Chengdu, China, May 30th 2007.
- [I-13] S. Jayaram, "Applications of High Voltage to Industrial Processes", Southwest Jiaotong University, Chengdu, China, May 31st 2007.
- [I-14] S. Jayaram, "Degradation & Diagnostics in Outdoor Polymeric Insulation", Southwest Jiaotong University, Chengdu, China, June 1st 2007
- [I-15] S. Jayaram, "Stress grading systems, Southwest Jiaotong University, Chengdu, China, June 4th 2007.
- [I-16] S. Jayaram, "Writing Research Papers, Southwest Jiaotong University, Chengdu, China, June 5th 2007.
- [I-17] S. Jayaram, "High Voltage Applications in Biotechnology and Emission Control", General Electric (GE) Global Research, Bangalore India, August 2005.
- [I-18] S. Jayaram, "*Pulsed Power to Environmental & Industrial Processes*", Lecture was delivered at the Institution of Mechanical Engineers, Central Canada Branch, Toronto Board of Trade, Co-sponsored by Nano Science Business, April 2005.
- [I-19] S. Jayaram and L. Simon, "Energy – Nano Composites in Power Transmission & Distribution Systems", Lecture was delivered at the Institution of Mechanical Engineers, Central Canada Branch, Toronto Board of Trade, Co-sponsored by Nano Science Business, October 2004.
- [I-20] S. Jayaram and Cherney, "***A Short Course on External Insulation***", IEEE International Symposium on Electrical Insulation 19-22, Sept. 2004, Indianapolis, USA, September 2004.
- [I-21] S. Jayaram, "Applications of High Voltage Pulsed Power to Industrial Processes", Presented at the Laboratoire des Technologies de l'Énergie (LTE), Hydro Quebec Laboratory, Shawinigan, Quebec, August 2003.
- [I-22] S. Jayaram, "Degradation and Diagnostics in Outdoor Polymeric Insulation", Presented at the Hydro Quebec, Varens, Quebec, August 2003.
- [I-23] S. Jayaram, "Overview of Research in Activities in High Voltage and Insulation Engineering Laboratory at University of Waterloo, Upsala University, Upsala, Sweden, September 13th, 2001.
- [I-24] S. Jayaram, "Overview of Research in Insulation and High Voltage Engineering" at UW, TUT, Toyohashi, Japan, January 1999.
- [I-25] S. Jayaram, "Electron beam treatment for water purification", at UW, TUT, Toyohashi, Japan, March 1999
- [I-26] **S. Jayaram**, "Pulse energization of ESPs for air pollution cleaning", Yamagata University, Yamagata, Japan, February 1999.
- [I-27] S. Jayaram, "Seminar series consisting of three topics on High Voltage Engineering Applications" was given at the Royal Institute of Technology, Stockholm, Sweden, December 1999.
 - a. High field pulse sterilization of liquid foods.

- b. Pulse energization of ESPs for air pollution cleaning.
 - c. Low energy electron beam technology for water purification.
- [I-27] S. Jayaram, "Pulse Power Energization of Electrostatic Precipitators", Workshop on the Control of Toxic Emission from Combustion Flue Gases by an Advanced Electrostatic Precipitator, McMaster University, Hamilton, Ontario, May 1997.
 - [I-28] S. Jayaram, "Fast response silicon dioxide capacitive dividers for high voltage pulse measurements", Waterloo Center for Materials Technology, Waterloo, Canada, February 1996
 - [I-29] S. Jayaram, "Electrohydrodynamics  Past, Present and Future"; a round table discussion session, *IEEE - CEIDP Annual Meeting*, San Francisco, California, October 1996.
 - [I-30] S. Jayaram, "Streaming electrification in power transformers", presented at Mechanical Systems Engineering, Tokyo University of Agriculture & Technology, Tokyo, Japan, September 20th, 1995.
 - [I-31] S. Jayaram, "Pulse power energization of electrostatic precipitators for air pollution cleaning", presented at IEEE EMC Tokyo Chapter, Kashizawaki, Niigata, Japan, November 17th, 1995.
 - [I-32] S. Jayaram, "High voltage pulse sterilization of liquid foods", presented at Institute of Electrical Engineers, Japan, Nagoya, Japan, December 7th, 1995.
 - [I-33] S. Jayaram, "High voltage pulse sterilization of liquid foods", presented at K-W IEEE section meeting, Waterloo, 1993.

Papers in Refereed Conference Proceedings (C).

Conference regular papers:

- [C1] A. Gad, S. H. Jayaram, and M. Pritzker, "Performance of Electrode Materials during Food Processing by Pulsed Electric Fields", Proceeding of the IEEE Conference on Pulsed Power and Plasma Science, San Francisco, California, 16-21 Jun 2013.
- [C2] M. Khanali, S. Jayaram, and J. Cheng, "Effects of Voltages with High-Frequency Contents on the Transformer Insulation Properties", Proceeding of the IEEE Electrical Insulation conference, pp.235-238, 2013.
- [C3] Mohammad Saleh Moonesan, S. Jayaram, E. Cherney, R. Omranipour and S. Haq, "Analysis of times-to-failure of various turn insulations of form-wound coils under PWM voltage waveform", Proceeding of the IEEE Electrical Insulation Conference (EIC), Ottawa, Canada. (2013)
- [C4] R. A. Ghunem, S. H. Jayaram, E. A. Cherney, "Suppression of Erosion due to Dry-Band Arcing under DC by Alumina Tri-hydrate Filler in Silicone Rubber," Proceeding of the *IEEE Conference on Electrical Insulation and Dielectric Phenomena*, 2013.
- [C5] R. A. Ghunem, S. H. Jayaram, and E. A. Cherney, "Comparative Inclined Plane Tests on Silicone and EPDM Elastomers under DC," Proceeding of the *IEEE International Symposium on Electrical Insulation*, pp. 356-359, 2013.

- [C6] Tahir A. Jeddy, Chitral J. Angamma, and Shesha H. Jayaram, "Use of Electrospinning to Disperse Silica in Silicone Rubber," Proceedings of the 2013 Electrostatics Conference, Cocoa Beach, FL, USA, June 2013.
- [C7] Ayman H. El-Hag, Ahmed Gaouda, Shesha Jayaram and Saeed Ul-Haq, "Detecting Machine Turn Insulation Failure Using Ground Current Signature" paper accepted and will be presented at the IEEE First International Conference on Condition Assessment Techniques in Electrical Systems (IEEE CATCON2013), Kolkata, India, December 6-8, 2013.
- [C8] Mohammad Saleh Moonesan, S. George, M. Aucoin, S. Jayaram, "Effect of Process Parameters on the Inactivation of Microorganisms and Electrode Reactions During Pulsed Electric Field Treatment of Liquid Food", Proceeding of the International Conference on Bio and Food Electrotechnologies, University of Salerno, Italy, 26-28 Sep 2012.
- [C9] Ahmed Gad, and Shesha H. Jayaram, "Effect of Food Composition and pH on Electrode Material Migration during PEF Application," Proceeding of the International Conference on Bio and Food Electrotechnologies, University of Salerno, Italy, 26-28 Sept. 2012.
- [C10] Ahmed Gad, and Shesha H. Jayaram, "Migration of Electrode Material during Food Processing by High-Field Pulses", Proceedings of the IEEE Conference on Electrical Insulation and Dielectric, Montreal, Canada, October 2012, 170 - 173.
- [C11] Ahmed Gad, and Shesha H. Jayaram, "Effect of Electric Pulse Parameters on Releasing Metallic Particles from Stainless Steel Electrodes during PEF Processing of Milk," Proceedings of the Electrostatic Joint Conference, IEEE IAS, ESA and ES (France), ES (Japan), Cambridge, Ontario, 12-14 Jun 2012.
- [C12] Ilhan, S., Ozdemir, A., Jayaram, H.S., Cherney, E.A., "AC and Transient Electric Field Distributions along a 380 kV V-Insulator String", Proceedings of the IEEE International Symposium on Electrical Insulation, Puerto Rico, USA, June 2012, 399 - 403.
- [C13] Ilhan, S., Ozdemir, A., Jayaram, H.S., Cherney, E.A., "Effects of the Pollution on the Electrical Performance of Suspension Glass Insulators", Proceedings of the IEEE Conference on Electrical Insulation and Dielectric, Montreal, Canada, October 2012, 803 - 806.
- [C14] R.A. Ghunem, S. H. Jayaram, and E. A. Cherney, "Erosion of ATH and Silica Filled Silicone Rubber in the DC Inclined Plane Test," in proceedings of the IEEE international Conference on Properties and Applications of Dielectric Materials," pp. 1-4, 2012.
- [C15] R. A. Ghunem, S. H. Jayaram, E. A. Cherney, "Statistical Parameters as Indicators of Silicone Rubber Tracking/Erosion in the DC Inclined Plane Test," Conference on Electrical Insulation and Dielectric Phenomena, pp. 737-740, 2012.

- [C16] **R. A. Ghunem**, S. H. Jayaram, and E. A. Cherney, "Inclined Plane Initial Tracking Voltage for AC, +DC and -DC," IEEE International Symposium on Electrical Insulation, **IEEE International Symposium on Electrical Insulation**, June 10-13, 2012, San Juan, Puerto Rico, pp. 459-463, 2012.
- [C17] **Shanshan Bian**, Shesha H. Jayaram, Edward A. Cherney, "Fabrication and Characterization of Electrospun Composite Materials" 2012 IEEE 10th **International Conference on Properties and Applications of Dielectric Materials**, Bangalore, Indian, July24-28th, 2012, pp1-4.
- [C18] **Shanshan Bian**, Shesha H. Jayaram, Edward A. Cherney, "A Comparison of Thermal Characteristics between Conventional and Electrospun Epoxy Composites" **Proceedings of the Electrostatic Joint Conference, IEEE IAS, ESA and ES (France), ES (Japan)**, Cambridge, Ontario, 12-14 Jun 2012.
- [C19] Shanshan Bian, Shesha Jayaram, and Edward Cherney, "Improvements to the Erosion Resistance of Nanofilled Silicone Rubber Composites by Electrospinning", IEEE Conference on Electrical Insulation and Dielectric Phenomena, Montreal, Canada, October 14-17th, 2012, vol.2 pp.741-744.
- [C20] Mahdi Khanali, and Shesha H. Jayaram, "A study on a dry-type model transformer under distorted voltage waveforms", ", Proceedings of the IEEE Conference on Electrical Insulation and Dielectric, Montreal, Canada, Oct 2012, 475 - 478.
- [C21] Chitral J. Angamma and Shesha H. Jayaram, "A study of free surface electrospinning to enhance and optimize the nanofibre production process," Proceedings of the 2012 Electrostatics Joint Conference, Cambridge, ON, Canada, June 2012.
- [C22] Yomna Shaker, Ayman El-Hag and Shesha Jayaram, "Electro-Thermal Modeling of MV Cable Termination using Finite Elements Technique", Proceedings of the IEEE Conference on Electrical Insulation and Dielectric Phenomena, Montreal, Canada, October 2012, 459 - 462.
- [C23] **E. Sharifi**, S. Jayaram, E. Cherney, S. Ul Haq, and R. Omranipour, "IEC Qualification Test Applied to Capacitively Graded 13.8 kV Motor Coils Energized with Repetitive Fast Pulses," Proceedings of the IEEE Electrical Insulation Conference (EIC), Annapolis, USA, Jun. 2011, 402 - 406.
- [C24] **C.J. Angamma** and S.H. Jayaram, "A theoretical understanding of the physical mechanisms of electrospinning," **The Annual Conference of ESA**, Cleveland, USA, June 2011
- [C25] **Ahmed Gad**, and Shesha H. Jayaram, "Electrode Material Migration During Pulsed Electric Field (PEF) Treatment," **Proceedings of the 2011 ESA Annual Meeting on Electrostatics**, Case Western Reserve University, Cleveland OH, 14-16 Jun 2011.
- [C26] **Mohammad Saleh Moonesan**, Shesha Jayaram, "Effect of Pulse Width on Pulsed Electric Field Food Treatment." **IEEE Industrial Application Society (IAS) Annual Meeting**, Orlando, FL, USA. (2011).
- [C27] **Mohammad Saleh Moonesan**, Jain Feng Zhang, Shesha Jayaram,"IGBT based HV Pulse Generator for High Conductivity Liquid Food Treatment, Proceedings of the IEEE Pulsed Power Conference, Chicago, IL, USA, October 2011, 1160 - 1164.
- [C28] **R. A. Ghunem**, M. Hamid, S. Jayaram, R. Seethapathy, and A. Naderian "Transformer Insulation Risk Assessment Under Smart Grid Environment Due to Enhanced Aging Effects," **IEEE Electrical Insulation Conference**, pp. 276-279, Annapolis, MD, USA, June 2011.
- [C29] **Omar M. Hamid** and Shesha H. Jayaram, "Distribution Class Transformer Insulation Evaluation under Distorted Voltage Waveforms", Proceedings of the IEEE Conference on Electrical Insulation and Dielectric, Cancun, Mexico, October 2011, 284 – 287.

- [C30] **Patel, U.**; Jayaram, S.H.; El-Hag, A.; Seetahpathy, R, "MV cable termination failure assessment in the context of increased use of power electronics," Proceedings of the Electrical Insulation Conference (EIC), June 2011, 418-422.
- [C24] **I. Ramirez**, S. Jayaram, and E. A. Cherney, "Comparison of the Erosion Resistance of Silicone Rubber and EPDM Composites filled with micro Silica and ATH", Proceedings of the IEEE Conference on Electrical Insulation and Dielectric Phenomenon, Cancun, Mexico, October 2011, 218 - 224.
- [C31] Robert Allan, Shesha Jayaram, Ayman El-Hag and Paul McGrath, "Conductive Composite Material for Wet ESP Applications" the XII International Conference on Electrostatic Precipitation, Nuremberg, Germany, May, 9th – 11th, 2011.
- [C32] Ayman El-Hag, Ahmed Gaouda and Shesha Jayaram, "A Novel Technique to Detect AC Machine Turn Insulation Failure Subjected to Steep Front Impulse Waveform" the **International Conference on Power Systems Transients**, Delft, Netherlands, June 14-17, 2011.
- [C33] **Utkarsh Patel**, Shesha H. Jayaram, and Ayman El-Hag, "Analysis of Cable Termination under Power frequency and High Frequency Voltages" Proceedings of the Conference on Electrical Insulation and Dielectric Phenomenon (CEIDP), Cancun, Mexico, October 2011, 288 – 291.
- [C34] **Walkling-Ribeiro, M., Rodríguez-González, O.**, Jayaram, S.H., & Griffiths, M.W. (2011), Food safety research on pulsed electric fields at the University of Guelph in collaboration with the University of Waterloo. IFT Non-thermal Processing Division Newsletter, 12(2), 18-22. Invited Paper
- [C35] **E. Sharifi**, E. A. Cherney and **S. H. Jayaram**, "A Coupled Electro-thermal Study of the Stress Grading System of Medium Voltage Motor Coils when Energized by Repetitive Fast Pulses", presented at the *IEEE, International Symposium on Electrical Insulation*, San Diego USA, June 2010, pp. 1-4.
- [C36] **C. J. Angamma** and S.H. Jayaram, "The Effects of Electric Field on the Multi-jet Electrospinning Process and Fiber Morphology", presented at the *Electrostatic Societies USA, Charlotte, USA*, June 2010, (**Best paper award – 2nd place**)
- [C37] **R. Baba**, C. J. Angamma, **S. H. Jayaram**, L. T. Lim, "Electrospinning of alginate and polyethylene oxide blends using pulsed electric fields to fabricate chopped nanofibre", presented at the *Electrostatic Societies USA, Charlotte, USA*, June 2010,
- [C38] **S. Bian**, C. J. Angamma and **S.H. Jayaram**, "Use of Electrospinning Technique to Improve the Dispersion of Inorganic Nanofillers in Silicone Rubber", presented at the *Electrostatic Societies USA, Charlotte, USA*, June 2010.
- [C39] **S. Banerjee** and **S. H. Jayaram**, "Performance of medium voltage cable terminations under high frequency voltage waveforms", Proceedings of the International Conference on Industrial and Information Systems, Mangalore, India, July/August 2010, 538 - 543.
- [C40] **R. Baba**, S. H. Jayaram, "An IGBT-Based Pulsed Power Supply in the Fabrication of Non-contiguous Nanofibers using Electrospinning', to be presented at the IEEE-IAS Annual Meeting, Huston, USA, October 2010, pp. 1-4.

- [C41] **C. J. Angamma** and S.H. Jayaram, "Investigation of the Optimum Electric Field for a Stable Electrospinning Process", to be presented at the IEEE-IAS Annual Meeting, Huston, USA, October 2010, pp. 1-6.
- [C42] A. H. El-Hag, **R. Dadarwal**, **O. Rodriguez**, S. H. Jayaram and M. W. Griffiths, "A Performance Study of a Multi-Level Electrode Treatment Chamber for Food Processing", Proceedings of the IEEE-IAS Annual Meeting, Huston, USA, October 2010, 1-4.
- [C43] **C. J. Angamma** and S.H. Jayaram, "Effects of Ionic carriers on the Morphological Properties of Electrospun Nanofibers", Proceedings of the IEEE-CEIDP Annual Meeting, Purdue University, Indiana, USA, October 2010, 1-4.
- [C44] **S. Bian**, S. H. Jayaram, E. A. Cherney, "Use of Electrospinning to Disperse Nanosilica into Silicone Rubber", Proceedings of the IEEE-CEIDP Annual Meeting, Purdue University, Indiana, USA, October 2010, 1-4.
- [C45] **E. Sharifi**, E. A. Cherney and S. H. Jayaram, "Anisotropic Dielectric Properties of Stress Grading Materials in Medium Voltage Form-Wound Motor Coils to Study Thermal Effects of Repetitive Fast Pulses", Proceedings of the IEEE [Electrical Insulation Conference, EIC 2009](#), May 31 2009- June 3 2009, 333-337.
- [C46] **Ya (Alex) Tong Yu** and Jayaram, S.H., "Form wound stator insulation system under different voltage waveform stresses", [IEEE Electrical Insulation Conference, EIC 2009](#), May 31 2009- June 3 2009 Page(s):425 – 429
- [C47] **C. J. Angamma** and S.H. Jayaram, "Effects of Electric Field on the Multi-jet Electrospinning Process and Fiber Morphology", Electrostatics Joint Conference, **IEEE IAS, Electrostatic Societies USA, France and Japan**, Boston, June 2009, (**Best paper award – 1st place**)
- [C48] **I. Ramirez**, S. Jayaram, and E. A. Cherney, "Thermal Conductivity of Silicone Rubber Nanocomposites", Electrostatics Joint Conference, **IEEE IAS, ESA and ES (France), ES (Japan)**, Boston, Massachusetts, USA, June 2009, (**Best paper award – 3rd place**).
- [C49] **I. Ramirez**, S. Jayaram, E. A. Cherney, "Aging Evaluation of Silicone Rubber Nanocomposites", Presented at the **IEEE Conference on Elec. Insul. & Dielec. Phenomena (CEIDP)** 2009, Virginia Beach, Virginia, USA
- [C50] **E. Sharifi**, S. H. Jayaram, and E. A. Cherney, "Analysis of Thermal Stresses in Medium Voltage Motor Coils under Repetitive Fast Pulses", Proceedings of the IEEE Conference on Elec. Insul. & Dielec. Phenomena Virginia Beach, Virginia, USA, October 2009, 339 – 342.
- [C51] **O. Rodriguez Gonzalez, Griffiths, M.W.**; Jayaram, S., Yu, A., "Conditions for the Inactivation of Listeria in milk using High Intensity Pulsed Electric Fields", **Institute of Food Technologists (IFT) Conference**, Anaheim and Orange County, California, June 6th to 9th 2009.
- [C52] **O. Rodriguez Gonzalez, M. Walkling-Ribeiro**, M. W. Griffiths, S. H. Jayaram and L. Y. Brovko, "Application of flow cytometry for comparative microbiological analysis of the impact of selected food processing technologies on food preservation and

safety”, **2nd Cytometry Symposium**, Montreal, QC, Canadian Cytometry Association, June 18-20, 2009.

- [C53] **I. Ramirez**, S. H. Jayaram, E. A. Cherney, and Mario Gauthier, “Study of Laser Ablation and Mechanical Properties of Silicone Rubber Nano-composites”, Electrostatic Society of America, Minneapolis, USA, paper B3, pages 1-10, June 17-20, 2008, (**Best paper award – 3rd place**).
- [C54] **I. Ramirez**, E. A. Cherney, S. H. Jayaram, and Mario Gauthier, “Thermogravimetric and Spectroscopy Analyses of Silicone Nanocomposites”, Proceedings of the CEIDP 2008, Québec City, Québec, Canada, October 2008, 249-252.
- [C55] A. EL-Hag, **A. Otunola**, S. H. Jayaram and William A. Anderson, "Reduction of Microbial Growth in Milk by Pulsed Electric Fields", paper presented at the International Conference on Dielectric Liquids (ICDL), Poitiers-France, June 30th - July 4th, 2008, pp. 1-4.
- [C56] A. El-Hag and S. Jayaram, "Effect of Biological Cell Size and Shape on Killing Efficiency of Pulsed Electric Field" paper presented at the International Conference on Dielectric Liquids (ICDL), Poitiers-France, June 30th - July 4th, 2008.
- [C57] **C.J. Angamma** and S.H. Jayaram, "Analysis of the Effects of Solution Conductivity on Electrospinning Process and Fibre Morphology" IEEE-IAS Annual Meeting, Edmonton, Alberta, Canada, October 2008, 5-9 Oct. 2008 Page(s):1 – 4
- [C58] A. H. El-Hag, **R. Dadarwal**, **O. Rodriguez**, S. H. Jayaram and M. W. Griffiths, "Survivability of Inoculated Versus Naturally Grown Bacteria in Liquid Foods under Pulsed Electric Fields", Proceedings of the IEEE-IAS Annual Meeting, Edmonton, Alberta, Canada, 5-9 Oct. 2008, 1109 - 1117.
- [C59] A. M. Gaouda, A. H. El-Hag, and S. Jayaram, "Detection of Discharge Activities During Food Processing by Pulsed Electric Field," IEEE-IAS Annual Meeting, Edmonton, Alberta, Canada, October 2008, 5-9 Oct. 2008 Page(s):1 – 4
- [C60] **C. J. Angamma** and S. H. Jayaram, "The Effects of Electrode Polarity on Electrospinning Process and Fibre Morphology" Canada Nanoscience and Nanotechnology Forum, Edmonton, Alberta, Canada, May 2008.
- [C61] **Alex (Yatong) Yu** and S. Jayaram, “High Voltage square wave generation for motor insulation testing”, '2008 IEEE International Power Modulator Conference (IPMC)', May 27-31, Las Vegas, USA, 2008., pp. 381 to 383.
- [C62] **E. Sharifi**, S. Jayaram and E. A. Cherney, “Capacitive Grading of 13.8 kV Form-Wound Motor Coil Ends for Pulse Width Modulated Drive Operation”, Conference Record of the 2008 IEEE International Symposium on Electrical Insulation, ISEI 2008, pp. 632-635, 9-12 June 2008, Vancouver, Canada.
- [C63] **S. Banerjee**, S. H. Jayaram, “Thermal Effects of High-Frequency Voltage on Medium Voltage Cable Terminations”, *IEEE International Conference on Solid Dielectrics*, 8th-13th July, Winchester, Hampshire, UK, pp. 669 – 672, 2007.
- [C64] A. H El-Hag, A. N. Jahromi, and S. Jayaram, "Aging Performance of ATH based RTV Insulator Coatings" paper presented at the *IEEE International Conference on Solid Dielectrics*, 8th-13th July, Winchester, Hampshire, UK, pp. 172-175, 2007.
- [C65] **S. Ul Haq**, S. H. Jayaram, and Edward A. Cherney, “Experimental Study of Space Charge Influenced Field in Motor Enameled Wires”, *Electrostatics Society of America*, Annual Meeting, June, 2007.

- [C66] **S. Ul Haq**, S. H. Jayaram, and Edward A. Cherney "Insulation Problems in Medium Voltage Stator Coils under Fast Repetitive Voltage Pulses", Proceedings of the 53rd IEEE Pulp and Paper Industry Technology Conference, June, 2007, 9-18.
- [C67] **I. Ramirez**, S. Jayaram, E. A. Cherney, and M. Gauthier, "Improving the dispersion of nanofillers in silicone polymers by surface treatment", Proceedings of the *Electrostatics Society of America*, Annual Meeting on Electrostatics, West Lafayette, Indiana, USA, June 12-14, 2007, pages 131-143. (**Best paper award – 2nd place**)
- [C68] **C. Angamma**, S. Jayaram, "Electrode geometry effects on production of nanofibers using electrospinning, Proceedings of the *Electrostatics Society of America*, Annual Meeting on Electrostatics, West Lafayette, Indiana, USA, June 12-14, 2007. (**Best paper award– 3rd place**)
- [C69] **I. Ramirez**, E.A. Cherney, S. Jayaram, and Mario Gauthier, "Silicone Rubber Nanocomposites for Outdoor Insulation Applications", *IEEE Conference on Elec. Insul. & Dielec. Phenomena (CEIDP)*, 2007, Vancouver, B.C. Canada, October 14th -17, 2007.
- [C70] A. H. El-Hag, S. Ul-Haq, S. Jayaram and E. A. Cherney, "Improving the Erosion Resistance of Electrical Insulating Materials using Nano Fillers" *American Institute of Physics* proceeding of the first *International Conference on Nanotechnology* and its applications, April 10-12, 2007, pp. 209-214.
- [C71] S. Ul Haq, S. Jayaram, and Edward A. Cherney, "Evaluation of medium voltage stator bar groundwall insulation under inverter fed pulses", Presented at *IEEE Conference on Elec. Insul. & Dielec. Phenomena (CEIDP)*, Kansas City, USA, 2006, pp. 465-468.
- [C72] **A. Naderian**, E. A. Cherney, S. Jayaram, Leonardo C. Simon, "Accelerated acid-water aging of RTV silicone rubber coatings", Presented at *IEEE Conference on Elec. Insul. & Dielec. Phenomena (CEIDP)*, Kansas City, USA, 2006, pp. 553-556.
- [C73] **F. P. Espino-Cortes**, A. El-Hag, S. Jayaram, O. Adedayo, W. Anderson, "Water processing by high intensity pulsed electric fields", Presented at *IEEE Conference on Elec. Insul. & Dielec. Phenomena (CEIDP)*, Kansas City, USA, 2006, pp. 684-667.
- [C74] **Y. Montasser, M. I. Marei**, S. Jayaram, "Low Power – High Voltage Pulse Generator for Testing Motor Insulation Systems" Presented at the Joint *IEEE IAS and ESA Meeting*, Berkeley, California, June 2006, pp. 164-173.
- [C75] **J. R. Grenier**, H. Wang, S. Jayaram, M. Kazerani, M. W. Griffiths, "A MOSFET-based pulse power supply for bacterial transformation, Presented at the Joint *IEEE IAS and ESA Meeting*, Berkeley, California, June 2006, pp. 356-365.
- [C76] A. H. El-Hag, S. Boggs, S. Jayaram, "Calculation of temperature rise due to the application of pulsed electric fields in the context of food sterilization", Presented at the Joint *IEEE IAS and ESA Meeting*, Berkeley, California, June 2006, pp.261-268.
- [C77] **S. Ul Haq**, S. Jayaram, E. A. Cherney, "Analysis of space charge and dielectric relaxation in medium voltage wires by using thermally simulated depolarization currents (TSDC)", Presented at the Joint *IEEE IAS and ESA Meeting*, Berkeley, California, June 2006, pp. 655-664.
- [C78] **S. Ul Haq**, S. Jayaram, E. A. Cherney and L. C. Simon, "Partial Discharge Erosion in Filled Enameled Wires Subjected to High Frequency Waveforms", Proceedings of the IEEE-ISEI, Toronto, Ontario, 2006, 396 - 399.
- [C79] **S. Ul Haq**, S. Jayaram, E. A. Cherney, "Aging Characterization of Medium Voltage Groundwall Insulation Intended for PWM Applications", Proceedings of the IEEE-ISEI, Toronto, Ontario, 2006, 143 - 146.

- [C80] **F. P. Espino-Cortes, Y. Montasser,** S. Jayaram, E. A. Cherney, "Composite Materials for Double Layer Stress Grading Systems Working Under Fast Rise Time Pulses", Proceedings of the IEEE Electrical Insulation Conference, June 2005, 167 - 170.
- [C81] Edward A. Cherney, **Ali Naderian Jahromi, Ayman H El-Hag,** Shesha H. Jayaram, Leonardo Simon "Effect of Aging in Acid on Thermal and Mechanical Characteristics of RTV Insulator Coatings with Different Fillers" Presented at the, *IEEE-ISEI*, Toronto, Ontario, 2006, 4 pages.
- [C82] **F. P. Espino-Cortes,** and S.H. Jayaram, E. A. Cherney "Effectiveness of Stress Control Coatings in Medium Voltage Form Wound Coil Ends under Fast Rise Time Pulses and Contamination", *IEEE Electrical Insulation Conference 2005*
- [C83] **J. Grenier,** S.H. Jayaram, M. Kazarani, "Study of a Nanosecond Pulsar with Real Loads used in Electroporation Processes", *Electro-Med 2005 International Symposium on Non-thermal Medical/Biological Treatments Using Electromagnetic Fields and Ionized Gases*, , Portland, OR, USA, May 15 – 18, 2005.
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