

2018 ELECTROSTATICS JOINT CONFERENCE

June 18-20, 2018

Boston University

General Chair: Mark Horenstein, Boston University, Boston MA

Technical Chair: Shubho Banerjee, Rhodes College, Memphis TN

Sunday, June 17th

6:00 PM – 8:00 PM

10 Buick St., 18th Floor

Informal Welcome Gathering & Registration

Monday, June 18th

7:30 AM – 8:20 AM

8:20 AM – 8:30 AM

8:30 AM – 10:30 AM

10:30 AM – 11:00 AM

11:00 AM – 12:30 PM

12:30 PM – 1:30 PM

1:30 PM – 3:15 PM

3:15 PM – 3:45 PM

3:45 PM – 5:15 PM

Room 906 of Photonics Center, 8 Saint Mary's St.

Registration & Breakfast

Welcome Address

Session A: Atmospheric and Space Applications

Coffee Break and Poster Session (Photonics Center Rm. 901)

Session B: Materials Processing and Behavior I

Lunch

Session C: Contact Charging and Triboelectric Effects I

Coffee Break and Poster Session contd.

Session D: Contact Charging and Triboelectric Effects II

Tuesday, June 19th

7:30 AM – 8:30 AM

8:30 AM – 10:30 AM

10:30 AM – 11:00 AM

11:00 AM – 12:30 PM

12:30 PM – 1:30 PM

1:30 PM – 3:15 PM

3:15 PM – 3:45 PM

3:45 PM – 4:15 PM

4:15 PM – 5:15 PM

Room 906 of Photonics Center, 8 Saint Mary's St.

Registration & Breakfast

Session E: Electrically-Induced Flows and Electrokinetics I

Coffee Break and Poster Session (Photonics Center Rm. 901)

Session F: Electrically-Induced Flows and Electrokinetics II

Lunch

Session G: Biological and Medical Applications I

Coffee Break and Poster Session contd

Session H: Biological and Medical Applications II

Session I: Breakdown Phenomena and Discharges

Wednesday, June 20th

7:30 AM – 8:30 AM

8:30 AM – 10:30 AM

10:30 AM – 11:00 AM

11:00 AM – 11:45 AM

11:45 AM – 12:30 PM

12:30 PM – 1:30 PM

1:30 PM – 3:30 PM

3:30 PM – 5:00 PM

6:00 PM – 9:00 PM

Room 906 of Photonics Center, 8 Saint Mary's St.

Registration & Breakfast

Session J: Gas Discharges and Microplasmas

Coffee Break and Poster Session (Photonics Center Rm. 901)

Session K: Measurements and Instrumentation

Session L: Materials Processing and Behavior II

Lunch

Session M: Safety and Hazards

Coffee and Electrostatics Demonstrations (Photonics 9th Floor Atrium)

Conference Banquet, Recognitions and Awards (Metcalf Trustee Center)

Note: Keynote Lectures are 25 min + 5 min for questions; Invited and Regular Talks are 12 min + 3 min for questions. All posters will be simultaneously displayed throughout the conference. Student presenters are indicated by a *.

Monday, June 18, 2018

8:20 – 8:30 AM **Welcome Address:** Mark Horenstein (Boston University, USA), General Chair
Shubho Banerjee (Rhodes College, USA), Technical Chair

Session A: Atmospheric and space applications
Monday, June 18, 8:30 AM

Chair: N. K. Kishore (Indian Institute of Technology Kharagpur, India)

- 8:30 – 9:00** **A1** **Keynote Lecture:** Mamadou Sow¹, Dogniaux G.¹, Peillon, S.¹, Grisolia, C.², Autricque, A.², Lemaitre, P.¹, Bourrous, S.¹, Gensdarmes, F.¹ (¹Institut de Radioprotection et de Sûreté Nucléaire, ²CEA, IRFM, Saint Paul Lez Durance, France) – *Self-charging of radioactive dust and its bearing for nuclear safety.*
- 9:00 – 9:15** **A2** **Invited Lecture:** Christine Hartzell (University of Maryland, USA) – *Introduction to Electrostatic Dust Motion on Small Planetary Bodies.*
- 9:15 – 9:30** **A3** Hashira Yamamoto, H. Yamamoto^{1,2}, T. Kuroki², H. Fujishima², M. Okubo² (¹Nihon Yamamura Glass Co., Ltd., ²Osaka Prefecture University, Japan) – *Pilot-scale NOx and SOx aftertreatment using a two-phase ozone and chemical injection in glass-melting-furnace exhaust gas.*
- 9:30 – 9:45** **A4** Carlos I. Calle, C. R. Buhler, M. D. Hogue, M. R. Johansen, P. J. Mackey, J. Phillips III, J.S. Clements (NASA, USA) – *Mitigation of Electrostatic Hazards in Spacecraft.*
- 9:45 – 10:00** **A5** Bing Guo, Wasim Javed, Ahmad Al-Kuwari (Texas A&M University at Qatar) – *Effect of Voltage Rise Time on the Efficiency of an Electrodynamic Dust Shield Device Using Trapezoidal Waveform.*
- 10:00– 10:15** **A6** *Annie A. R. Bernard Cristian Morales, Graham Silva, Ryan Eriksen, Mark N. Horenstein, Malay K. Mazumder (Boston University, USA) – *How does sand get unipolar charge in an Electrodynamic Screen (EDS) ?*
- 10:15– 10:30** **A7** Shubho Banerjee, Yi Song, Blake Wilkerson (Rhodes College, USA) – *Electrostatics of unequal sized conducting spheres.*

10:30 – 11:00 AM **Coffee Break and Poster Session**

Session B: Materials synthesis, processing, and behavior I
Monday, June 18, 11:00 AM

Chair: Kelly Robinson (Electrostatic Answers, USA)

- 11:00 – 11:15** **B1** **Invited Lecture:** Zachary Cordero (Rice University, USA) – *Causes and consequences of powder bed charging in electron-beam additive manufacturing.*
- 11:15 – 11:30** **B2** Frantisek Mach (University of West Bohemia, Czech Republic) – *Crucial factors of plastic mixtures separation in free-fall electrostatic separator: simulation and experimental testing.*
- 11:30 – 11:45** **B3** Keith Forward (California State Polytechnic University, USA) – *Heat and Mass Transport in the Electrospinning Process.*
- 11:45 – 12:00** **B4** S. Touhami¹, Wessim Aksa¹, M. F. Boukhoulda¹, T. Zeghloul², K. Medles^{1,2}, Lucian Dascalescu², Amar Tilmatine¹ (¹Djillali Liabes university of Sidi-Bel-Abbes, Algeria, ²Université de Poitiers, France) – *Analysis of the trajectory of insulating particles in a free fall electrostatic separator equipped with four cylindrical electrodes.*
- 12:00 – 12:15** **B5** Arash Sayyah, Martin Z. Bazant, Yi Jiang (Massachusetts Institute of Technology, Saint-Gobain USA) – *An experimental study on the electrostatic projection of particles in production of coated abrasive articles.*
- 12:15 – 12:30** **B6** Michael Grinfeld¹, Pavel Grinfeld² (¹The US Army Research Laboratory, ²Dept. of Mathematics, USA) – *Towards the Kelvin Formula of Forces Acting on Polarized Bodies.*

12:30 – 1:30 PM **Lunch Break**

Session C: Contact charging and triboelectric effects I**Monday, June 18, 1:30 PM**

Chair: Tatsushi Matsuyama (Soka university, Japan)

- 1:30 – 1:45** **C1** Bogdan-Marian Neagoe, Thami Zeghloul, Yopa Prawatya, Lucian Dascalescu (University of Poitiers, France) – *Analysis of electrically charged polymer surfaces effect on friction coefficient in lubricated sliding contacts.*
- 1:45 – 2:00** **C2** Robert A. Morse (Emeritus, St. Albans School, USA) – *Teaching Electrostatics in Introductory Physics: Real values and a Really Useful Notation.*
- 2:00 – 2:15** **C3** Daniel J. Breton, Emily Asenath-Smith, Nathan J. Lamie (Cold Regions Research & Engineering Laboratory, USA) – *Dynamic triboelectrification of gas-solids flows in metallic tubes.*
- 2:15 – 2:30** **C4** Thiago A. L. Burgo, Bruno C. Batista, Fernando Galembeck (Federal University of Santa Maria, Brazil) – *Elastoelectricity of elastomers: mechanical-to-electrical energy conversion.*
- 2:30 – 2:45** **C5** Adam L. Collins, Rhyan S. B. Ghosh, Seth J. Putterman (UCLA, USA) – *Triboelectrification of Single Crystals as a Function of Orientation and Surface Reconstruction.*
- 2:45 – 3:00** **C6** Isaac Greber, Andrew Wang, John C. Angus (Case Western Reserve University, USA) – *Charge Transfer Between Chemically Identical Solids: Modeling and Experimental Studies.*
- 3:00 – 3:15** **C7** *Adriaan Riet¹, Mamadou Sow², Qizan Chen¹, Daniel J. Lacks¹ (¹Case Western Reserve University, USA, ²Institut de Radioprotection et de Sûreté Nucléaire, France) – *Modeling of Coulombic Adhesive forces on a Charged Particle Near a Grounded, Conducting Plane.*

3:15 – 3:45 PM**Coffee Break and Poster Session****Session D: Contact charging and triboelectric effects II****Monday, June 18, 3:45 PM**

Chair: Thami Zeghloul (University of Poitiers, France)

- 3:45 – 4:00** **D1** *Rhyan S. B. Ghosh, Adam L. Collins, Seth J. Putterman (UCLA, USA) – *Towards A Single Crystal Triboelectric Series.*
- 4:00 – 4:15** **D2** *Fahad Chowdhury¹, Manjil Ray², Andrew Sowinski¹, Poupak Mehrani¹, Alberto Passalacqua² (¹University of Ottawa, Canada, ²Iowa State University, USA) – *A Particle Collision Apparatus to Study the Magnitude and Direction of Charge Transfer between Two Colliding Particles.*
- 4:15 – 4:30** **D3** Gontran Richard, *Ahlem Benabderrahmane, Karim Medles, Lucien Dascalescu, Thami Zeghloul (University of Poitiers, France) *Influence of dielectric barrier discharge treatment on the triboelectric charging and the electrostatic separation of plastic particles.*
- 4:30 – 4:45** **D4** *Manjil Ray¹, Fahad Chowdhury², Andrew Sowinski², Poupak Mehrani², Alberto Passalacqua¹ (¹Iowa State University, USA, ²University of Ottawa, Canada) – *Numerical Modeling of Electrostatic Effects in Monodisperse Polyethylene Particles in a Bubbling Fluidized Bed.*
- 4:45 – 5:00** **D5** *Dylan Carter, Christine Hartzell (University of Maryland, USA) – *Measurements of Granular Tribocharging by High-Speed Videography.*
- 5:00 – 5:15** **D6** *Milad Taghavivand, Andrew Sowinski, Poupak Mehrani (University of Ottawa, Canada) – *Study of electrostatic charge generation of powders during pneumatic conveying.*

Session P: Poster Session and Demonstrations

Monday, Tuesday, and Wednesday

- Coffee Breaks**
- P1** Sara Mantach, Kazimierz Adamiak (University of Western Ontario, Canada) – *A Full EHD Flow Pattern in Point-Plane Corona Discharge.*
- P2** *Maria Kezhia D. Rullan, Erik Jensen, Keith M. Forward (California State Polytechnic University, Pomona, USA) – *Humidity Effects on Triboelectrification of Insulating Materials.*
- P3** *Ahlem Benabderrahmane, Thami Zeghloul, Gontran Richard, Karim Medles, Amar Tilmatine, Lucian Dascalescu (University of Poitiers, France) – *Factors influencing tribo-electrification of granular polymers in a coaxial-counter-rotating-cylinders tribo-charger.*
- P4** Karim Medles, I. Achouri, T. Zeghloul, K. Medles, H. Nouri, L. Dascalescu (University of Poitiers, France) – *Optimal operating point a tribo-aero-electrostatic separator with rotating disk electrodes.*
- P5** M. Maammar, Wessim Aksa, M. F. Boukhoulda, S. Touhami, L. Dascalescu, T. Zeghloul (University Djillali Liabes Sidi Bel Abbès, Algeria) – *Numerical simulation of particle trajectories in a multifunctional electrostatic separator.*
- P6** *Akihiro Matsumura, Tatsushi Matsuyama, Kenta Kato, Junich Ida (Soka university, Japan) – *Electrostatic charging of powder in a metal shaker.*
- P7** Y. Kisanuki, K. Fukuda, Y. Makishima, K. Kitabayashi, S. Katsushima, N. Debasher, K. Takashima, A. Mizuno (Toyohashi University of Technology, Japan) – *Corona discharge with bundle of very fine conductive fibers.*
- P8** *Michelle Nassar, Christophe Louste, Anny Michel, Michel Daaboul (University of Poitiers, France) – *Experimental investigation of the variation of HFE electric properties with temperature.*
- P9** A. K. Batra, B. B. Bohara, J. Mills (AAMU, USA) – *Mechanisms of DC and AC Conduction in PLZT/Paint Nanocomposite films.*
- P10** W. Mike Arnold (Callaghan Innovation, New Zealand) – *Microbial Disinfection Using Microplasma-Generated Ozone.*
- P11** *Quari Abbes, Miloua Farid, Oualid Imene, Djillali Aouimeur, Haskar Houari, Tilmatine Amar (APRLEC Laboratory, Djillali Liabes University of Sidi bel Abbes, Algeria) – *Monitoring of a bag filter by online measurement of the electrical charge of the filter media.*
- P12** *Oualid Imène, Miloua Farid, Ouari Abbès, Flazi Samir (Electrical Engineering Laboratory of oran/ USTO-Oran, Algeria) – *Contribution to the Development and Technology of Electrostatic Precipitator.*
- P13** Francisco J. Durán-Olivencia, Jamal S. Yagoobi (Worcester Polytechnic Institute, USA) – *The Effect of Substrate Curvature on Flexible EHD Conduction Pumping Performance: A Numerical Study.*
- P14** Olivia Koonce, Nicholas Drane, Michael S. June (Christian Brothers University, USA) – *3-D Printed, carbon filled-Plastic Electrode Performance for an Electro-Hydrodynamic Air Moving Device.*
- P15** *Faisal Aldawsari, Arathi Mohan Sharma, Chitral Angamma, Shesha Jayaram (University of Waterloo, Canada) – *Investigation of polymer filler interface using dielectric spectroscopy.*
- P16** T. Jeya Shree, V. Gowri Sree, A. Priyanka, Raji Sundararajan, T. M. Sridhar (Anna University, India) – *Polyphenol grape extract using Pulsed Electric Field for Cancer treatment.*
- P17** Myungjoon Kim, Yong-Jin Kim, Bangwoo Han, Chang Gyu Woo, Hak-Joon Kim (Korea Institute of Machinery & Materials, South Korea) – *Fine particle removal from a corrosive gas using a two-stage electrostatic precipitator with multiple ion injection type chargers and parallel collection plates.*

- P18** Aditya Bandopadhyay, N. K. Kishore, Suman Chakraborty (Indian Institute of Technology Kharagpur, India) – *Experimental observation of lateral movement of a sedimenting drop due to a tilted electric field.*
- P19** Michael Johansen, J. R. Phillips III, J. J. Wang, J. Mulligan, J. S. Clements, C. I. Calle (National Aeronautics and Space Administration, USA) – *Electrical Characteristics of the Mars Electrostatic Precipitator.*
- P20** Marius Blajan, Daisuke Nonanka, Jaroslav Kristof, Kazuo Shimizu (Shizuoka University, Japan) – *Influence of the Microplasma Actuator Electrode Configuration on the Induced EHD Flow.*
- P21** *Satish Polisetty, Shesha Jayaram, Ayman El-Hag (University of Waterloo, Canada) – *Classification of Different types of Discharges in Insulation System Using Acoustic Signals.*
- P22** Thiago A. L. Burgo, Kelly S. Moreira, Leticia O. Ferreira, Fernando Galembeck (University of Santa Maria, Brazil) – *Spontaneous electrostatic charging during evaporation at solid-liquid and solid-gas interfaces.*
- P23** Mark Horenstein (Boston University, USA) – *Design of an Ultra-Sensitive Electric-Field Sensor Using Digital Signal Processing.*
- P24** Liangliang Li, Baoquan Liu, Xin Gao, Quanzhen Liu (SINOPEC Qingdao Institute Research of Safety Engineering, China) – *Study on electrostatic hazard and prevention in Polyester granules packing process.*
- P25** Cuong Nguyen, Carmen Guerra Garcia, Manuel Martinez-Sanchez, Jaime Peraire (Massachusetts Institute of Technology, USA) – *Simulation of glow corona discharge on airfoils.*
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Tuesday, June 19, 2018**Session E: Electrically-induced flows and electrokinetics I****Tuesday, June 19, 8:30 AM**

Chair: Eric Moreau (University of Poitiers, France)

- 8:30 – 9:00** E1 **Keynote Lecture:** Christophe Louste (University of Poitiers, France) – *Fundamentals and Applications for electrohydrodynamics.*
- 9:00 – 9:15** E2 Chaoao Shi, Kazimierz Adamiak and G. S. Peter Castle (Western University, Canada) – *Numerical Study of the Extended DBD for Flow Control.*
- 9:15 – 9:30** E3 Masaaki Okubo (Osaka Prefecture University, Japan) – *Fluid Dynamic Analysis of Electrostatic Precipitators and Ionized Flows.*
- 9:30 – 9:45** E4 Juan-Martin Cabaleiro¹, Thierry Paillat², Guillermo Artana¹, Gerard Touchard² (¹Universidad de Buenos Aires, Argentina, ²University of Poitiers, France) – *Flow Electrification in Turbulent Flows of Liquids - Comparison of Two Models.*
- 9:45 – 10:00** E5 Masahito Nishikawara¹, Ryo Yoneda¹, Hideki Yanada¹, Takeshi Miyakita², Kenichiro Sawada² (¹Toyohashi University of Technology, ²JAXA, Japan) – *Temperature dependence of the characteristics of an electrohydrodynamic pump with plate-bar electrodes.*
- 10:00– 10:15** E6 Maciej A. Noras, Wesley B. Williams (University of North Carolina at Charlotte, USA) – *Modeling turbulent injection of electrically charged dielectric droplets.*
- 10:15– 10:30** E7 *Michal Talmor, Christophe Louste, Jamal Seyed-Yagoobi (Worcester Polytechnic Institute, USA) – *PIV Flow Field Measurements Of Electrohydrodynamic Conduction Pumping.*

10:30 – 11:00 AM**Coffee Break and Poster Session****Session F: Electrically-Induced Flows and Electrokinetics II****Tuesday, June 19, 11:00 AM**

Chair: Masaaki Okubo (Osaka Prefecture University, Japan)

- 11:00 – 11:15** F1 Vladimir Chirkov, Aleksandr Lashko, Marina Reznikova, Albert Gazaryan (St. Petersburg State University, Russia) – *Numerical and Experimental Investigation of Water Droplet Electrical Coalescence and Non-coalescence.*
- 11:15 – 11:30** F2 *Po-Hao Wang, Tsrong-Yi Wen (National Taiwan University of Science and Technology, Taiwan (R.O.C)) – *Experimental Study of Pressure and Flow Rate of Wire-to-Rod Ionic Wind Pumps.*
- 11:30 – 11:45** F3 Eric Moreau, Patrick Braud, Etienne Defoort, Nicolas Benard (University of Poitiers, France) – *EHD flow produced by positive and negative point-to-plate corona discharges.*
- 11:45 – 12:00** F4 *Ayyoub Zouaghi, Nouredine Zouzou, Lucian Dascalescu (Université de Poitiers, France) – *Analysis of fine dielectric particles behavior in a traveling wave electric field.*
- 12:00 – 12:15** F5 Aaron Griffin, Adam Henson, Michael S. June (Christian Brothers University, USA) – *Design of Experiments to Optimize Geometric Parameters for an Electro-Hydrodynamic Air Moving Device.*
- 12:15 – 12:30** F6 *Albert Gazaryan, Vladimir Chirkov (Saint Petersburg State University, Russia) – *Numerical and Experimental Investigation of Flow-type Electrohydrodynamic Mixer.*

12:30 – 1:30 PM Lunch Break**Session G: Biological and Medical Applications I****Tuesday, June 19, 1:30 PM**

Chair: Maciej A. Noras (University of North Carolina at Charlotte, USA)

- 1:30 – 2:00** G1 W. Balachandran (Brunel University, UK) – *Potential of Emerging Electrostatic Technologies for Bio-Medical and Environmental Applications.*
- 2:00 – 2:15** G2 J. Kristof, H. Miyamoto, M. Blajan, K. Shimizu (Shizuoka University, Japan) – *Effect of Plasma on Structure and Permeability of Epidermal Layer of Pig Skin.*
- 2:15 – 2:30** G3 Elisabetta Sieni, Paolo Sgarbossa, Fabrizio Dughiero, Michele Forzan, Paolo Di Barba, Maria Evelina Mognaschi, Tejasvi Parupudi, Lakshya Mittal, Ignacio G. Camarillo, Raji Sundararajan (Purdue University, USA) – *Effect of tissue inhomogeneity on Electric field intensity for electrochemotherapy treatment.*
- 2:30 – 2:45** G4 *Panik Moradian, Bianca Cruz, Nina Abramzon, Keith M. Forward (California State Polytechnic University, USA) – *Surface adhesion effects of PMMA (Poly(methyl methacrylate)) of Medical grade UHMWPE (Ultra-High Molecular Weight Polyethylene) after cold plasma treatment.*

- 2:45 – 3:00 G5 *Tejasvi Parupudi, Allen L. Garner, Raji Sundararajan (Purdue University, USA) – *Electrical impedance as a biomarker for brain tumors.*
- 3:00 – 3:15 G6 Suramya Mihindukulasuriya, Shesha Jayaram (University of Waterloo, Canada) - *Release of electrode materials during the processing of liquid foods using in pulse electric field treatment.*

3:15 – 3:45 PM Coffee Break and Poster Session

Session H: Biological and Medical Applications II

Tuesday, June 19, 3:45 PM

Chair: Shesha Jayaram (University of Waterloo, Canada)

- 3:45 – 4:00 H1 *Mochen Li, Raji Sundararajan (Purdue University, USA) - *Application of Machine Learning Algorithms on Breast Cancer Dataset.*
- 4:00 – 4:15 H2 Raji Sundararajan¹, Lakshya Mittal¹, Vishak Raman¹, V. Gowri Sree³, S. Hemalatha⁴, R. Rajaprabu⁴, Arutselvan Natarajan⁵, and Ignacio G Camarillo¹. (¹Purdue University, USA, ³Anna University, Guindy, Chennai, India, ⁴Crescent Institute of Science and Technology, India, ⁵Stanford University, USA) – *Turmeric Herbal Electro-Chemo-Therapy for Metastatic Triple Negative Breast Cancer.*

Session I: Breakdown Phenomena and Discharges

Tuesday, June 19, 4:15 PM

Chair: Shesha Jayaram (University of Waterloo, Canada)

- 4:15 – 4:30 I1 Manuel Martinez-Sanchez, Carmen Guerra-Garcia, Ngoc Cuong Nguyen, Jaime Peraire (MIT, USA) – *Minimal model of a positive glow corona and its transition to streamers.*
- 4:30 – 4:45 I2 *Deepthi Antony, G. S. Punekar, and N. K. Kishore (NIT Karnataka, India) – *Improvements in an iterative method for localization of Partial discharge source in oil insulation.*
- 4:45– 5:00 I3 *Pengfei Xu, Bo Zhang, Jinliang He, Shuiming Chen (Tsinghua University, China) – *Dynamic corona characteristics of falling water droplet on a conductor-to-ground electrode with AC voltage applied.*
- 5:00– 5:15 I4 *Gaohui He, Qin Hu, Lichun Shu, Xingliang Jiang, Dauchuan Yang, and Raji Sundararajan (Purdue University, USA) – *Influence of rime ice severity on conductor audible noise characteristics of positive corona discharge.*
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Wednesday, June 20, 2018**Session J: Gas discharges and micro-plasmas****Wednesday, June 20, 8:30 AM**

Chair: Raji Sundararajan (Purdue University, USA)

- 8:30 – 9:00** **J1** **Keynote Lecture:** Hak-Joon Kim, Yong-Jin Kim, Chang-Gyu Woo, Bangwoo Han (Korea Institute of Machinery and Materials, South Korea) – *Novel air cleaning technologies for indoor air quality using electrostatic precipitation with near-zero ozone generation.*
- 9:00 – 9:15** **J2** Tomoya Mitsui, Akinori Zukeran, Koji Yasumoto, Takashi Nakano, Koyu Tsubouchi, Takashi Ogawa (Kanagawa Institute of Technology, Japan) – *Prevention of Back Corona Discharge in an Electrostatic Precipitator Using Asymmetrical Rectangular AC Voltage.*
- 9:15 – 9:30** **J3** Takuya Kuwahara Keiichiro Yoshida, Tomoyuki Kuroki, Kenichi Hanamoto, Kazutoshi Sato, Masaaki Okubo (Nippon Institute of Technology, Japan) – *Pilot-Scale Combined Reduction of Accumulated Particulate Matter and NOx Using Nonthermal Plasma for Marine Diesel Engine.*
- 9:30 – 9:45** **J4** *Daniel Martin, Nazli Turan, Paul Rumbach, David B. Go (University of Notre Dame, USA) – *Measuring the radius of the plasma at the plasma-liquid interface in a pulsed-current, DC discharge.*
- 9:45 – 10:00** **J5** Tomoyuki Kuroki , Manabu Nakamura, Keita Hori, Masaaki Okubo (Osaka Prefecture University, Japan) – *Effect of monomer concentration on adhesive strength of PTFE film in atmospheric plasma graft-polymerization process.*
- 10:00 – 10:15** **J6** Takashi Ikehata, Ruida Bao, Tomotaka Kijima, Naoyuki Sato (Ibaraki University, Japan) – *Static elimination of charged objects in vacuum by pulsed glow plasma.*
- 10:15 – 10:30** **J7** Yoshio Higashiyama, Takuya Nakajima, Toshiyuki Sugimoto (Yamagata University, Japan) – *Decay time of Current Pulse by Disruption of Taylor-cone Formed at a Capillary Electrode under DC Field.*

10:30 – 11:00 AM**Coffee Break and Poster Session****Session K: Measurements and Instrumentation****Wednesday, June 20, 11:00 AM**

Chair: David B. Go (University of Notre Dame, USA)

- 11:00 – 11:15** **K1** *Kazuki Numayama¹, Toshiyuki Sugimoto¹, Koichi Taguchi² (¹Yamagata University, ²Napson Corporation, Japan) – *Non-contact surface resistivity tester for materials from 10⁶ to 10¹¹ Ω.*
- 11:15 – 11:30** **K2** Philippe Molinié (GEEPS Laboratory, France) – *Return voltage as a dielectric characterization tool.*
- 11:30 – 11:45** **K3** Haskar Houari, Miloua Farid, *Oualid Imene, Ouari Abbes, Tilmatine Amar (APELEC Laboratory, Djillali Liabes University of Sidi Bel Abbes, Algeria) – *High-Voltage Control Of An Electrostatic Precipitator By Automatic Motorized Potentiometer (Amp). In-Situ Measurement Of The Surface Potential Of The Pollution Layer.*

Session L: Materials Processing and Behavior II**Wednesday, June 20, 11:45 AM**

Chair: David B. Go (University of Notre Dame, USA)

- 11:45 – 12:00** **L1** Arathi Mohan Sharma, Faisal Aldawsari, Chitral Angamma, Shesha Jayaram (University of Waterloo, Canada) – *Filler dispersion and its influence on the performance of Nanocomposite materials.*
- 12:00 – 12:15** **L2** Carson Gattenby, *Sebastian Olarte, DaJohn Murray, Keith M. Forward (California State Polytechnic University, USA) – *Electrospun Polyvinylidene Fluoride Membranes for Direct Contact Membrane Distillation.*
- 12:15 – 12:30** **L3** Michael Gevelber, Yunshen Cai (Boston University, USA) – *Analysis of Electrospinning Bending Region Physics in Determining Fiber Diameter: focus on mass transfer and effect of relative humidity for non-aqueous hydrophilic solutions.*
- 12:30 – 1:30 PM** **Lunch Break**

Session M: Safety and Hazards**Wednesday, June 20, 1:30 PM**

Chair: Keith Forward (California State Polytechnic University, USA)

- 1:30 – 2:00** **M1** **Keynote Lecture:** Atsushi Ohsawa (National Institute of Occupational Safety and Health, Japan) – *Unified expressions of the charges transferred by brush discharges and of the onset criterion of propagating brush discharges on charged insulating coats and liners.*
- 2:00 – 2:15** **M2** Keiichiro Yoshida (Osaka Institute of Technology, Japan) – *Aftertreatment of Carbon Particle Emitted by Diesel Engine Using Combination of Corona and Dielectric Barrier Discharge.*
- 2:15 – 2:30** **M3** N. K. Kishore, Harimurugan D., G. S. Puneekar (NIT Karnataka, India) – *Arrangement of conductors in a 220 kV double circuit line to reduce e-fields in view of public exposure.*
- 2:30 – 2:45** **M4** *Harimurugan D., G. S. Puneekar, N. K. Kishore (NIT Karnataka, India) – *Electric field and exposure time in a EHV substation near a bay-equipment: concerning ICNIRP guidelines.*
- 2:45 – 3:00** **M5** Takashi Miura (National Institute of Occupational Safety and Health, Japan) – *A study of the tribo-electrification reduction efficiency of argon-nitrogen mixtures due to micro-gap discharge at atmospheric pressure.*
- 3:00 – 3:15** **M6** Ted Dangelmayer – *Presentation / Demonstration: ESD Field Measurement Pitfalls; Voltage Suppression.*
- 3:15-3:30** **M7** Kelly Robinson (Electrostatic Answers, USA) – *Recommended Revisions for NFPA 77 Recommended Practice on Static Electricity.*

Coffee Break and Electrostatics Demonstrations**Special Session: Electrostatics Demonstrations****Wednesday, June 20, 3:30 PM**

- Electrostatic Fundamentals - Bob Morse (Teacher, retired, Washington DC) returns with some of his clever, inexpensive demos originally conceived to demonstrate electrostatic principles to his high school students.
- Partial and Full Discharges - Ken MacKillop, Static Clean (North Billerica MA) will demonstrate novel methods of selectively measuring various discharges within industrial ionization equipment. These discharges include PD and several different types of FD.
- Traveling Wave Electrostatic Cleaner and Electrostatic Field Mill – Mark Horenstein (Boston University) will demonstrate cleaning sand from solar panels and a miniature electrostatic field mill (fieldmeter).
- Electrostatic Fieldmeters and Voltmeters – Bill Vosteen (Monroe Electronics) will demonstrate these two very different instruments.
- Electrostatic Field Meter Measurement Pitfalls – Ted Dangelmayer (Dangelmayer Associates, Boston MA) will demonstrate limitations, pitfalls, and common errors when using an electrostatic fieldmeter.
- Static Dissipaters, Neutralizing systems, and Avoiding Electrical Discharge - Manual C. Blanco (Senior Electrical Design Engineer, Simco-Ion, Hatfield, PA) will demonstrate the latest static dissipation technologies from Simco-Ion, an industry leader in static control.
- Static Charge Density Measurement - Kelly Robinson (Electrostatic Answers, Rochester NY) will demonstrate that charge densities may be measured using electrostatic fieldmeter and will bring his Van Der Graaff generator, Mr. Electro (thanks to Humphrey Wong for this)!

6:00 – 9:00 PM**Conference Banquet, Recognitions and Awards**

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