IEJ Logo	ESA Logo	IEA Logo	EPC Logo	SFE Logo
Institute of Electrostatics Japan	Electrostatics Society of America	International Electrostatics Assembly	IEEE-IAS Electrostatic Processes Committee	Societe Francaise d'Electrostatique

2009 Electrostatics Joint Conference
Boston University
June 16-18, 2009

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Approximately 97 people participated in our
2009 Electrostatics Joint Conference
including 25 student presenters.

Participants

photo by Radu Beleca 2009

2009 Eelectrostatics Joint Conference Participants

SESSION SCHEDULE

Tuesday 16 June 2009

Session 1: Particles in Flows & Flow Electrification
Chair: Dr. Edmund Devitt, Consultant, Toronto, Ontario, Canada

1.1	8:10	M. Zahn	Invited	Electron Scavenging by Nanoparticles in Oil Insulated Power Transformers
1.2	8:55	G. Munson	Oral	The Reduction of Sub Micron particulate contamination in lubricating and hydraulic oils reduces electrostatic charging and spark discharge
1.3	9:20	H.-F. Huang	Student	Continuum modeling of micro-particle electrorotation in Couette and Poiseuille flows—the zero spin viscosity limit
1.4	9:45	M. Yazdani	Student	Effects of Charges Mobility on EHD Conduction Induced Dielectric Liquid Flow
1.5	10:10	T. Paillat	Oral	High power transformers failures due to flow electrification: tools for understanding the electrostatic hazard

MORNING COFFEE BREAK (30 min; 10:35-11:05)

Session 2: Non-thermal Plasma
Chair: Prof. Eric Moreau, University of Poitiers, Futuroscope, France

2.1	11:05	T. Miura	Student	Analysis of the inactivation mechanism of bacteriophage by Atmospheric barrier discharge
2.2	11:30	Y. Teramoto	Student	Laser-induced fluorescence of N2* metastable in various gas pulsed positive corona discharge
2.3	11:55	S. Sato	Student	Diesel exhaust gas treatment by honeycomb discharge

LUNCH (60 min, 12:20 – 1:20)

Session 3: EHD – Microfluidics & Electrospinning
Chair: Prof. Sheryl Barringer, Ohio State University, Columbus, Ohio, USA

3.1	1:20	N. Benard	Oral	Innovative Three-Electrode Design for Definition of Multiple Dielectric Barrier Discharge Actuators
3.2	1:45	M. Pearson	Student	Experimental study of EHD conduction pumping at the micro-scale
3.3	2:10	P. Cervenka	Student	Comparison of slip and non-slip mathematical models of AC electroosmosis in microchannels with asymmetric co-planar electrodes
3.4	2:35	C. Angammana	Student	Effects of electric field on the multijet electrospinning process and fibre morphology
3.5	3:00	X. Yan	Student	Investigation of Electrospun Fiber Diameter Distribution and Process Dynamics

AFTERNOON COOKIE BREAK (30 min; 3:25 – 3:55)

Session 4: Particles and Modelling Techniques
Chair: Prof. Kaz Adamiak, The University of Western Ontario, London, Ontario, Canada

4.1	3:55	H. Hayashi	Student	Collection of diesel exhaust particle using electrostatic charging prior to mechanical filtration
4.2	4:20	J. Stark	Student	Mathematical Simulation Study of Digital Signal Processing of the ESPART Analyzer for the Nanoparticle Size Range
4.3	4:45	N. Toljic	Student	Charge to radius dependency for conductive particles charged by induction
4.4	5:10	R Nishimura	Oral	Shielding of Drifting Pesticide Particles by Electrostatic Pesticide Spraying and Grounded Conducting Net for Compliance with Positive List System
4.5	5:35	R. Adelman	Student	Basis Models for Complex Electrostatic Simulations
	6:00			Session Ends

6:15 PM – 7:45 PM – Electrostatics Society of America business meeting

6:15 PM – 7:45 PM – IEEE Electrostatic Processes Committee meeting

Wednesday 17 June 2009

Session 5: Tribocharging & Discharge by Tribocharging
Chair: Prof. Dan Lacks, Case Western Reserve University, Cleveland, Ohio, USA

5.1	8:00	S. Vella	Invited	Using Chemistry to Manipulate Contact Electrification and Electrical Discharges
5.2	8:45	S. Beardsmore-Rust	Student	Quantitative Measurement Of Tribo-Electric Charging Phenomena Of Dielectric Materials
5.3	9:10	K. Forward	Student	Particle size dependent charge segregation in triboelectrically charged granular materials
5.4	9:35	A. Akande	Oral	Triboelectrification - why is it variable?
5.5	10:00	M Honda	Oral	Observed ESD Transient Fields Near by Rolling Metal Spheres

MORNING COFFEE BREAK (30 min; 10:25-10:55)

Session 6: Materials
Chair: Kazuo Shimizu, Shizuoka University, Hamamatsu, Japan

6.1	10:55	I. Ramirez	Student	Thermal Conductivity of Silicone Rubber Nanocomposites
6.2	11:20	H. Ishihara	Student	Electrochemical synthesis of titania nanotube array for photoelectrochemical hydrogen production
6.3	11:45	A. Antoniu	Student	Accelerated Discharge of Corona-charged Non-woven Fabrics

LUNCH (60 min, 12:10 – 1:10)

Session 7: Biomedical
Chair: John Gagliardi, Rutgers University, Camden, New Jersey, USA

7.1	1:10	F. Xiao	Student	Electrically Enhanced Chemodrug delivery to Human Breast Cancer Cells
7.2	1:35	C. Browning	Student	Injection of Drug-Infused Nanoparticles Through the Skin Using Electrostatic Pulse
7.3	2:00	R. Beleca	Student	Investigation of Electrostatic Properties of Dry Powder Drug Aerosols using Phase Doppler Anemometry
7.4	2:25	W. M Arnold	Oral	Electrical Manipulation of Particles within a Nanopore

AFTERNOON COOKIE BREAK (30 min; 2:50 – 3:20)

All Student Presentations are completed. Student Paper Competition judging can proceed.

Poster Session 1; 3:30 PM – 5:30 PM

P1.01	A. Ieta	Poster	Opto-Electric Characterization of an AC Field Controlled Electrospray
P1.02	G. Prieto	Poster	Needle array DBD for solid urea decomposition
P1.03	S. Mededovic	Poster	The Production of Hydrogen and Olefin Hydrocarbons by Electrical Discharge in Liquid Fuels
P1.04	R. Gouri	Poster	Effect of the Discretization of the Active Electrode of Wire-to-Cylinder ESP on the Collection of Efficiency of Submicron Particles for Different Particle Sizes
P1.05	B. Tibati	Poster	Factors that Influence the Decay Rate of the Potential at the Surface of Non-woven Fabrics after Negative Corona Discharge Deposition
P1.06	Hk. Lee	Poster	Removal of odorous gas using discharge plasma
P1.07	H-H. Kim	Poster	Combination of Electrospray with Electrostatic Precipitator for Collection Efficiency Enhancement of Fine Particles
P1.08	K. Shimizu	Poster	Emission Spectroscopy of Pulsed Power Microplasma for Atmospheric Pollution Control
P1.09	K. M. Forward	Poster	Surface modification to investigate charge segregation in single component materials
P1.10	K. Yatsuduka	Poster	An EHD Effect of Silicone Oil with Normal Alcohol Additives due to Asymmetric Space Charge Polarization
P1.11	C. Dragan	Poster	Tribocharging of Insulating Powders in the Annular Ducts of Pneumatic Devices
P1.12	P. Mas	Poster	Behavior of insulating oil in terms of the temperature inside the large power transformers
P1.13	M Sun	Poster	The Study of Non-Thermal Plasma by Optical Emission Spectroscopy with Nozzle-Plate Electrode

P1.14	N Takeuchi	Poster	Gas Discharge Induced Electrohydrodynamic Flow in Narrow Channels
P1.15	P Gefter	Poster	Electrostatic and Biological effects of air ionization Withdrawn
P1.16	M. Redolfi	Poster	Investigation of discharge dynamic and chemical kinetics in the microdischarges generated in a multipin-to-plane pulsed N2/O2 corona system working in the nanosecond regime
P1.17	K. Adamiak	Poster	FEM-FCT Based Dynamic Simulation of Corona Discharge in Point-Plane Configuration
P1.18	T. Paillat	Poster	Physicochemical Analysis at the Interface between Conductive Solid and Dielectric Liquid for Flow Electrification Phenomenon
P1.19	M Blajan	Poster	Triboelectrification of Granular Plastic Wastes in Vibrated Zigzag Shaped Square Pipes in View of Electrostatic Separation
P1.20	M Reznikov	Poster	Electrohydrodynamic enforcement in the heat and mass exchange
P1.21	M. Sadeghi	Poster	Plasma soot removal system for diesel exhaust gas Withdrawn
P1.22	T Oda	Poster	Low Voltage Contact Electrostatic Discharge Phenomena
P1.23	F. Xiao	Poster	A simulation Study of the Electrod Profile on Electroporation Efficacy
P1.24	Y Fukada	Poster	An Estimation for Relaxation Characteristics of an Ionizer Ion Cloud Density Transferred through a Pipe via Hyperbolic Law
P1.25	C. Louste	Poster	Experimental and Numerical Analysis of the Flow Induced by Electric Injection in Blade-Plane Geometry
P1.26	A. Srinivasan (K. Shimizu)	Poster	Corona Treatment For Nox Reduction From Stationary Diesel Engine Exhaust Impact Of Nature Of Energization And Exhaust Composition

EVENING BREAK (30 min; 5:30 – 6:00)

Set-up time for Poster Session #2 and set-up time for buffet dinner

Poster Session 2; 6:00 PM – 8:00 PM

P2.01	T Mizuno	Poster	Plasma Assisted NOx Removal Using Modified Attapulgite Clay Catalyst
P2.02	F. Miloua	Poster	Experimental Evaluation of the Filtration Efficiency of a Chicane-Type Electrostatic Precipitator
P2.03	C Louste	Poster	Influence Of The Signal Frequency On Vortex Shedding Induced By Dielectric Barrier Injection
P2.04	C Louste	Poster	PIV Measurements Of The Influence Of Seeding Particles Concentration On The Velocity Of An EHD Flow
P2.05	W. Greason	Poster	Electrostatic Analysis of Cable Discharge Events (CDE)
P2.06	H Berndt	Poster	Requirements and measurement method for ESD packaging material - shielding properties
P2.07	J Cabaleiro	Poster	Modeling of static development and dynamic behavior of Electrical Double Layer at oil-pressboard interface
P2.08	K Sakai	Poster	The electrostatic force that acts on the charged asymmetric conductor in a high electric field

P2.09	B. Nader	Poster	Dynamics of Induction Charging for Multiple Particle Agglomerations with a Thin Conducting Surface Layer
P2.10	K Nakayama	Poster	Microplasma generation in gap of sliding contact through discharging of ambient gas due to triboelectrification
P2.11	K Robinson	Poster	Electrostatic Sticking of Sheets Fed from a Stack
P2.12	J. Stark	Poster	Role of Optics in Optimizing Photoelectrochemical Activity of Semiconductor Anodes
P2.13	L Zhao	Poster	Electrohydrodynamic Flow Produced by Electric Corona Discharge (Numerical and Experimental Studies, and Applications)
P2.14	M Blajan	Poster	Study of Simulated Odor Treatment for a Factory Farm by Using Microplasma
P2.15	M. Hogsett	Poster	A New Approach to Electrostatic Measurements for Semiconductor Wafers withdrawn
P2.16	M Reznikov	Poster	Space charge effects in the electrolytes
P2.17	R Sharma	Poster	Bone Cells Growth and Proliferation on TiO2 Nanotubes Modified by Plasma Discharge withdrawn
P2.18	G. Prieto	Poster	Plasma-Catalysis for Toluene Destruction One Pass Process
P2.19	A Gronskis	Poster	Modeling EHD actuation with a slip velocity
P2.20	A Ieta	Poster	Onset Characteristics of Aqueous Electrosprays
P2.21	H-H Kim	Poster	High Speed Camera Observation of Electrospray
P2.22	R.Sundararajan	Poster	Pulsed Electric Field Distribution of Tumor Cells
P2.23	N Zouzou	Poster	Correlation between the EHD flow and the collection efficiency of an ESP
P2.24	J. Zhang	Poster	Numerical Study of EHD-Induced Flow Field in an Enclosed Rectangular Channel Withdrawn
P2.25	Y. Tajitsu	Poster	Piezoelectricity Due to Space Charge at Ferroelectret Withdrawn
P2.26	F. Hardcastle	Poster	The Structure of Titanium Oxide in Titania (TiO2) Photoactive Water-Splitting Catalysts by Raman Spectroscopy Withdrawn
P2.27	C. Calle	Poster	Development of Dust Mitigation Technologies

Several conference participants gather
to say hello to our friend and colleague
Prof. Alexandru Iuga

Guests

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First Row from left

Prof. Mark Horenstein, Boston University, Boston, MA
Prof. Kaz Adamiak, University of Western Ontarion, London, Ontario
Prof. Gerard Touchard, University of Poitier, France
Prof. Malay Mazumdar, Boston University and University of Arkansas at Little Rock, USA
Ms. Angela Antonio, Doctoral Candidate, Technical University "Gheorghe Asach" Iasi, Romania

Second Row from left

Dr. Kelly Robinson, Electrostatic Answers, Rochester, NY
Prof. G. S. Peter Castle, University of Western Ontario, London, Ontario

Prof. Lucien Dascalescu, University of Poitiers, IUT Angoulême, France
Prof. Ed Law, University of Georgia, Athens, GA
Prof. Akira Mizuno, Toyohashi University of Technology, Japan

Thursday 18 June 2009

Session 8: Particles and Instruments
Chair: Dr. Maciej Noras, North Carolina State University Charlotte, North Carolina, USA

8.1	8:00	S. Barringer	Oral	Electrohydrodynamic Spraying of Chocolate
8.2	8:25	J. H. Anderson	Oral	A New Instrument for Determining Charge-to-Diameter Distributions of Charged Particles
8.3	8:50	E. Law	Oral	Electric Space-Charge Driven Process for Reducing Respirable Airborne Dust from Tree-Nut Harvesting Machines
8.4	9:15	M. O'Leary	Oral	The bipolar nature of charge resident on a variety of pharmaceutical aerosols Withdrawn
8.5	9:40	A. Tilmatine	Oral	Roll-Type Versus Free-Fall Electrostatic Separation Of Tribocharged Plastic Particles
8.6	10:05	L. Dascalescu	Oral	Triboelectric Phenomena In Suction-Type Dilute-Phase Pneumatic Transportation Systems For Granular Plastics

MORNING COFFEE BREAK (30 min; 10:30-11:00)

Session 9: Electrostatics Theory & Demonstrations
Chair: Dr. Mark Zaretsky, Eastman Kodak Company, Rochester, New York, USA

9.1	11:00	G. Schmieg	Oral	A Lightning Tutorial: Six Basic Ideas
9.2	11:25	R. Morse	Oral	A New Electrostatics Toy for Demonstrations and Experiments

LUNCH (60 min, 11:50 – 12:50)

Session 10: Materials and Emerging Applications
Chair: Dr. W. Mike Arnold, Industrial Research Limited, Lower Hutt, New Zealand

10.1	12:50	M. Mazumder	Oral	Electrostatic Deposition of Thin Film Solar Cells
10.2	1:15	M. Horenstein	Oral	Low-Power Electrostatic MEMS System for Remote Sensor Applications
10.3	1:40	W. Greason	Oral	Modeling of Capacitive MEMS structures to assess reliability due to charge injection processes
10.4	2:05	T. Sugimoto	Oral	Corona charging and current measurement using phi type corona electrodes
10.5	2:30	C. Calle	Oral	Dust Particle Removal by Electrostatic and Dielectrophretic Forces for Lunar Exploration

AFTERNOON COOKIE BREAK (30 min; 2:55 – 3:25)

Session 11: Non-thermal Plasma
Chair: Prof. Masaaki Okubo, Osaka Prefecture University, Japan

11.2	3:25	A. Mizuno	Oral	Spectrum Analysis of Charging of Human Body during Walking
11.3	3:50	H. Fujishima	Oral	Improvement on NOx Removal Performance of Pilot-scale Boiler Emission Control Using Plasma-Chemical Process

11.4	4:15	M. Okubo	Oral	Preparation of PTFE film with Adhesive Surface Treated by Atmospheric-Pressure Nonthermal Plasma Graft Polymerization
11.5	4:40	R Sosa	Oral	On the Induced Gas Flow by a Trielectrode Plasma curtain at atmospheric pressure
11.6	5:05	T. Yamamoto	Oral	Diesel PM Collection for Marine and Automobile Emissions using EHD Electrostatic Precipitators
11.7	5:30	V. Lakhian	Oral	Discharge Characteristics of Ring Type Flow Stabilized Pulsed Corona Discharge Radical Shower Systems
	6:00			Sessions Finished

7:00 PM – Conference Banquet

Horenstein

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ESA President Raji Sundararajan, Purdue University, West Lafayette, IN
presents the ESA Distinguished Service Award to
Prof. Mark Horenstein, Boston University.

Robinson

photo by Radu Beleca 2009

ESA President Raji Sundararajan, Purdue University, West Lafayette, IN
presents the ESA Distinguished Service Award to
Dr. Kelly Robinson, Electrostatic Answers, Rochester, NY.