2021 ESA Annual Meeting - Final Program

All times below are **U.S. Eastern Time** (UTC−04:00). The names in *Italic* are the presenters.

Monday, June 14		
Session A. Measurements and Instrumentation (Session Chair: Kelly Robinson)		
9-9:15 am		Welcome and announcements
9:15-9:55 am	A1	**Keynote:** A D Moore and the Founding of the Electrostatics Society of America, *G. S. Peter Castle*, University of Western Ontario, Canada
9:55-10:10 am	A3	Progress in Electric Field and Potential Detection Systems, *Maciej Noras*, University of North Carolina Charlotte
10:15-10:30 am	A4	A Method for Remote Detection of the Surface Electric Field Efficacy of Electrodynamic Screens, *Benjamin R. Livney*, Mark N. Horenstein, and Malay K. Mazumder, Boston University
10:30-10:45 am	A5	Electric Field Measurements Made on a Robotic Platform, *Karen Aplin* and Zihao Xiong, University of Bristol, UK
Session B. Gas Discharges and Plasmas (Session Chair: Xuewei Zhang)		
11:00-11:30 am	B1	**Invited:** Different Mechanisms of Corona Discharge on AC and DC Overhead Transmission Lines in Rain, *Bo Zhang*, Tsinghua University, China
11:30-11:45 am	B2	Development and Characterization of an Elongated Expanding Plasma Jet for Ambient Temperature, Atmospheric Pressure Sintering, *Jenny Baranker*, Nazli Turan, Mortaza Saedijavash, Minxiang Zeng, Yanliang Zhang, and David Go, University of Notre Dame
11:45am-noon	B3	Two-Dimensional Simulations of Bi-Polar Streamer Propagation in Density-Gradient Media, *Yujie Zhu* and Xuewei Zhang, Tsinghua University, China and Texas A&M University-Kingsville
12:00-12:15 pm	B4	Current Density and Modulation Scaling of Solvated Electron Penetration and Concentration at a Plasma-Liquid Interface, *Daniel C. Martin*, David M. Bartels, Paul Rumbach, and David B. Go, University of Notre Dame
12:15-12:30 pm	B5	Parametrization and Examination of Reliable and Efficient Supply Modes of Electrostatic Precipitator Model Containing More Than One Independent Power Supply, István Kiss, László Székely, Richárd Cselkó, Budapest University of Technology and Economics, Hungary
12:30-12:45 am	B6	The Impact of Gas Composition and the Presence of Metallic Materials on Macroscopic Characteristics of N_2/CH_4 Plasmas, *Ibukunoluwa Akintola*, Garam Lee, Jinyu Yang, Casey O'Brien, David B. Go, University of Notre Dame

Session C. Electrically-induced flows and electrokinetics I (Session Chair: Holger Grosshans)		
1:00-1:40 pm	C1	**Keynote:** Numerical Models of Electrohydrodynamic Processes in Two-Phase Immiscible Liquids and Physical Substantiation of the Limits of Their Applicability, *Vladimir Chirkov*, St. Petersburg State University, Russia
1:40-1:55 pm	C2	A Two-Stage EHD Gas Pump in a Square Channel with Electrodes Mounted on Opposite Side of Walls, C. P. Tien, S. C. Lin, and *F. C. Lai*, University of Oklahoma
1:55-2:10 pm	C3	EHD Induced Flow with Different Polarities in a Square Channel by a Two Stage Electrodes, *A K M Monayem H. Mazumder*, Shariful A. Robin, and Margaret Wood, Saginaw Valley State University
2:10-2:25 pm	C4	Modeling of the Unsteady DBD Plasma Actuation of the Flow around Airfoil, *Afshin Shaygani* and Kazimierz Adamiak, Western University, Canada
2:25-2:40 pm	C5	Spatial and Temporal Characterization of an Electrohydrodynamic Flow Formed off the Surface of a Piezoelectric Transformer, *Ankur Saxena*, Jinyu Yang, Seong-Kyun Im, and David B. Go, University of Notre Dame
Session D. Electrically-induced flows and electrokinetics II (Session Chair: A K M Monayem H. Mazumder)		
3:00-3:40 pm	D1	**Keynote:** Fluid dynamic aspects of triboelectric charging of powder flows, *Holger Grosshans*, Physikalisch-Technische Bundesanstalt Braunschweig, Germany
3:40-3:55 pm	D2	Numerical Study on the Effect of Electrodes Orientation on Flow Induced by a Two-Stage EHD Gas Pump, *A K M Monayem H. Mazumder* and Feng C. Lai, Saginaw Valley State University and University of Oklahoma
3:55-4:10 pm	D3	Electrostrictive Cavitation in Dielectric Liquids under Nanosecond Pulsed Electric Field, *Xuewei Zhang*, Texas A&M University-Kingsville
4:10-4:25 pm	D4	A New Electrostatic Generator Driven by an Electric Field, *Katsuo Sakai*, Electrostatic Generator Laboratory, Japan
4:25-4:40 pm	D5	The Explanation the Cone-Dimple Mode of Electrocoalescence Using Numerical Simulation, *Ioann A. Dobrovolskii* and V. A. Chirkov, St. Petersburg State University, Russia

Tuesday, June 15		
Session E. Contact charging and triboelectric effects I (Session Chair: Siowling Soh)		
9:00-9:15 am	E1	What Force Causes Particles to Stick to Surfaces? *Siddharth Rajupet*, Adriaan Riet, Qizan Chen, Mamadou Sow, and Daniel Lacks, Case Western Reserve University
9:15-9:30 am	E2	Controlling Electrostatic Charge Generated by Contact at Interfaces of Matter, *Siowling Soh*, National University of Singapore, Singapore
9:30-9:45 am	E3	Mosaics of Charge Formed by Liquid Evaporation, Kelly S. Moreira, Ezequiel Lorenzett, Ana Luisa Devens, Yan A. Santos da Campo, Dylan Mehler and *Thiago A. L. Burgo*, Federal University of Santa Maria, Brazil
9:45-10:00 am	E4	Flexible, Low-Cost, and Scalable Graphite-Based Hydroelectric Generator, *Kelly S. Moreira*, Diana Lermen, Leandra P. dos Santos, Fernando Galembeck, and Thiago A. L. Burgo, University of Santa Maria, Brazil
10:00-11:15 am	E5	Electrostatic Charging of Propellors on Unmanned Aerial Vehicles, *Douglas Tilley*, Kerianne Nicoll, Pejman Iravani, David Cleaver, Jonathan Du Bois, University of Reading and University of Bath, UK
10:15-10:30 am	E6	Electron Transfer between Silicon Dioxides during Contact Electrification, *Yen-Chun Chou*, Tsrong-Yi Wen, and James Chen, National Taiwan University of Science and Technology, and University at Buffalo
10:30-10:45 am	E7	Triboelectric Effects of Continuity Additives and a Silica Catalyst Support on Polyethylene Fluidized Bed Wall Fouling, *Milad Taghavivand*, Andrew Sowinski, and Poupak Mehrani, University of Ottawa, Canada
Session F. Contact charging and triboelectric effects II (Session Chair: Poupak Mehrani)		
11:00-11:15 am	F1	Measuring the Locations of Materials on the Triboelectric Series, *Kelly Robinson*, Electrostatic Answers
11:15-11:30 am	F2	Influence of Temperature on the Degree Polyethylene Triboelectrification and Reactor Wall Fouling in a Pressurized Gas-Solid Fluidized Bed, *Mohsen Isaac Nimvaria*, Andrew Sowinski, and Poupak Mehrani, University of Ottawa, Canada
11:30-11:45 am	F3	Dynamics of Contact Electrification, *Rolf Möller*, University of Duisburg-Essen, Germany
11:45 am-noon	F4	Effect of Humidity on the Triboelectric Charging of Granular Plastics, *Ahlem Benabderrahmane*, Karim Medles, Omar Benaissa, Lucian Dascalescu, and Thami Zeghloul, University of Poitiers, France
12:00-12:15 pm	F5	Multiple-Rotating-Cylinder-Type Tribocharger for Mixed Granular Polymers in View of Electrostatic Separation, *Imed-Eddine Achouri*, Karim Medles, Thami Zeghloul, Gontran Richard, and Lucian Dascalescu, University of Poitiers, France
12:15-12:30 pm	F6	The Effect of Pyrene Substituents on the Photoexcitation Discharging of Contact-Charged Pyrene-Doped PDMS, *Sunay Dilara Ekim*, Görkem Eylül Kaya, and Bilge Baytekin, Bilkent University, Turkey

12:30-12:45 pm	F7	Triboelectric Patterns from Peeling Adhesive Tape: Investigating the Sticks and the Slips, *Mary Pat Reiter*, Rutgers University, The State University of New Jersey
Session G. Materials synthesis, processing, and behavior (Session Chair: Vladimir Chirkov)		
1:00-1:40 pm	G1	**Keynote:** Atmospheric Pressure Sub-Normal Glow Discharge and Their Application in Enhancing the Piezoelectric Properties of Polyvinylidene Fluoride (PVDF) Films, *Tanvir Farouk*, University of South Carolina
1:40-2:10 pm	G2	**Invited:** Plasma-Water Interfaces for Applications in Nanomaterials Synthesis, *David Pai*, Laboratoire de Physique des Plasmas, Ecole Polytechnique, France
2:10-2:25 pm	G3	Comparative Study between Numerical Simulated and Experimental Trajectories of Insulating and Conducting Particles in a Multifunctional Electrostatic Separator, *Mohamed Maammar*, Karim Medles, Seddik Touhami, Wessim Aksa, Thami Zeghloul, and Lucian Dascalescu, University of Poitiers, France
2:25-2:40 pm	G4	Deposited Charge Uniformity and Chemical Modification of a Dielectric Surface Exposed to the Corona Discharge Generated by a Multi-Needle Electrode, *Mohamed Sofiane Bendilmi*, Zehira Ziari, Thami Zeghloul, Karim Medles, and Lucian Dascalescu, University of Poitiers, France
2:25-2:40 pm	G5	Dielectric Properties of Silicone Composites under Combined Effects of Pressure and Temperature, *Khadija Kanwal Khanum* and Shesha Jayaram, University of Waterloo, Canada
Session H. Biological and medical applications (Session Chair: Raji Sundararajan)		
3:00-3:30 pm	H1	**Invited:** Electrostatic Virus and Bacteria Detection Based on Dielectrophoresis, *Michihiko Nakano*, Kyushu University, Japan
3:30-3:45 pm	H3	Electroporation-Mediated Metformin for Effective Anticancer Treatment of Triple Negative Breast Cancer Cells, *Praveen Sahu*, Ignacio G. Camarillo, Pragatheiswar Giri, and Raji Sundararajan, Purdue University
3:45-4:00 pm	H4	Effect of Microplasma Treatment on Ceramide and Phosphatidylcholine, *Jaroslav Kristof*, Ahmad Guji Yahaya, Fariha Mustafa, Marius Blajan, and Kazuo Shimizu, Shizuoka University, Japan
4:00-4:15 pm	H5	Sterilization of Cutibacterium Acnes in Liquid Using Microplasma, *Tomohiro Okuyama*, Ahmad Guji Yahaya, Jaroslav Kristof, Marius Blajan, and Kazuo Shimizu, Shizuoka University, Japan
4:15-4:30 pm	H6	On the Use of a PEF Generator for Non-Conventional Characterization of Biological Material, Patrizia Lamberti, *Elisabetta Sieni*, and Raji Sundararajan, University of Salerna, Italy, Insubria University, Italy, and Purdue University

Wednesday, June 16		
9-9:30 am		ESA Business Meeting / ESA Award Announcements
Session I. Atmospheric and space applications I (Session Chair: Tanvir Farouk)		
9:30-10 am	I1	**Invited:** Electric Charge Measurements in Solid and Liquid Media and Structures with Non-Destructive Direct Thermal Method, *Petru Notingher*, Universite de Montpellier, France
10-10:15 am	I2	Empirical Optimization of Rotary Ionic Engines, Marius Chirita, *Adrian Ieta*, Mircea Nicolaescu, and Virgil Rotaru, National Institute for Research and Developement in Electrochemistry and Condensed Matter, Romania, and SUNY Oswego
10:15-10:30 am	I5	Water Vapor Condensation under an Electric Field Proceeds Fast, Producing Highly Electrified Ice Needles, *Leandra P. Santos*, André Galembeck, Douglas S. Silva, and Fernando Galembeck, Galembetech Ltd., Brazil
10:30-10:45 am	I6	Multilateration Techniques for a Short-Range Lightning Location System, *Armando Heilmann*, University Federal of Paraná, UK
Session J. Atmospheric and space applications II (Session Chair: Maciej Noras)		
11:00-11:15 am	J1	Collection Efficiency of Ultrafine Particles and Inactivation of Microorganisms under Low Ozone Concentration in an Electrostatic Precipitator, *Kakeru Terasawa*, Hirotoshi Sugiyama, Risei Wada, Jun Sawai, *Akinori Zukeran*, Nobuaki Ohguri, Tadashi Asada, Noboru Masumoto, and Keisuke Yamashiro, Kanagawa Institute of Technology, Japan
11:15-11:30 am	J2	Charge Emission into Fog from a Remotely Piloted Aircraft, *R. Giles Harrison*, Keri A. Nicoll, Douglas Tilley, and Pejman Iravani, University of Reading, UK
11:30-11:45 am	J3	Electrostatic Engineering Challenges in Solar-to-Electrical Energy Generation and Storage for meeting Terrestrial and Lunar applications with Dust Mitigation with Self-Cleaning Solar Panels and Supercapacitors, *Malay Mazumder*, Mark Horestein, Annie Bernard, Ryan Eriksen, and Benjamine Livney, Boston University
11:45am-noon	J4	Electrostatic Force between Two Charged Conducting Spheres of Any Size, *Shubho Banerjee*, Thomas Peters, Nolan Brown, and Yi Song, Rhodes College
12:15-12:30 pm		Closing Remarks / Student Best Presentation Awards Announcement