

Sunday, June 25

16:00-18:00 Registration/reception

Monday, June 26

7:00-9:00 Breakfast/Registration

9:00-9:15 **Rajesh Sharma** Conference Introduction

Keynote 1 (Rooms).

9:15-10:00 **Joshua Mendez** University of Oregon.

Spark and glow discharges in supersonic granular flows

Session A (Rooms). Atmospheric and space applications Monday, June 25, 10:00

Session Chair: **Charles Buhler**. NASA Kennedy Space Center

10:00-10:25 **A1 Mamdou Sow**. Institute of Radioprotection and Nuclear Safety (IRSN)

Mamdou Sow, *"The Wind-blown Sand Experiment (WISE) – UAE: Influence of the electric field on desert dust resuspension*

10:25-10:50 **A2 Jerry Wang**. NASA Kennedy Space Center

Jerry J. Wang, Joseph R. Toth, Krystal L. Acosta, Aaron D. Olson, James R. Phillips III, Charles R. Buhler., *NASA's Handheld Ionizer Tool for Astronauts*

10:50-11:10 Coffee Break

11:10-11:35 **A3 Charles Buhler**. NASA Kennedy Space Center

Charles R. Buhler, Jerry J. Wang, Joseph R. Toth, Krystal L. Acosta, Aaron D. Olson, James R. Phillips III, Aaron Curry and Judson S. Clements, *New Methods to Determine the Electromagnetic Effects from Precipitation Static*

11:35-12:00 **A4 James R. Phillips III**. NASA Kennedy Space Center

James R. Phillips III, Krystal L. Acosta, Joseph R. Toth III, Aaron D.S. Olson, Jerry J. Wang, Charles R. Buhler, J. Sid Clements, Xu Wang, Mihaly Horanyi, Sean Hsu, Jan Deca, Joshua Colwell, Adrienne R. Dove, *Design of Electrostatic Dust Lofting Suborbital Flight Experiment Examining Photoionization under Lunar Gravity*

12:00-13:00 Lunch

Session B (Rooms). Contact charging and triboelectric effects

Session Chair: **Drew Fleming**.

13:00-13:25 **B1 Rolf Moller**. University of Duisburg-Essen

Rolf Möller, Andre Mölleken, Hermann Nienhaus, *Analysis of the electrostatic charge of insulating spheres interacting with a metal plate*

13:25-13:50 **B2 Galien Grosjean**. IST Austria

Galien Grosjean, Scott Waitukaitis, *Contact electrification in granular media: acoustic levitation experiments and mosaic models*

13:50-14:15 **B3 Felix Pertl**. IST Austria

Felix Pertl, *No time for charge mosaics: how bulk conductivity hides charge patterns in KPFM*

14:15-14:40 **B4 Andre Mölleken**. University of Duisburg-Essen

Andre Mölleken, Hermann Nienhaus, Rolf Möller, *A three electrode design to analyze the contact*

electrification with high precision

14:40-15:05 B5 Mary Pat Reiter. Rutgers University

Mary Pat Reiter, Troy Shinbrot, ***Modeling triboelectric patterns in a polarity-dependent simulation***

15:05-15:25 Coffee Break

Session C (Rooms). Biological and medical applications + Microelectromechanical devices (MEMS)

Session Chair: **TBA.**

15:25-15:50 C1 Joseph Wood. U.S. EPA

Joseph Wood, Matthew Magnuson, Dahman Touati, Jerome Gilberry, David Hook, Stella McDonald, Jonathan Sawyer, Timothy Chamberlain, ***Evaluation of Electrospray Parameters as they Relate to the Application of Disinfectants***

15:50-16:15 C2 Praveen Sahu. Purdue University

Praveen Sahu, Naimur Rahman, Ignacio G. Camarillo and Raji Sundararajan, ***Effective Microsecond Pulse-Based Gene Transfection in MBA-MB-231 Cells***

16:15-16:40 C3 Abubakar Hamza Sadiq. Shizuoka University

Abubakar Hamza Sadiq, Jaroslav Kristof, Alam Md Jahangir, Afrin Sadiya Rimi, Yoshinori Mizuno, Takumi Okada, Kazuo Shimizu, ***Investigating the cellular barrier permeation to drugs using wire microplasma***

16:40-17:05 C4 Tejasvi Parupudi. University of North Texas

Tejasvi Parupudi, ***Efficient Process Optimization for R2R fabricated Flexible Electronic Sensors: Towards Reducing Coating Trials using ML-Driven Coating of Indium Tin Oxide***

Tuesday, June 27

7:00-9:00 Breakfast/Registration

Keynote 2 (Rooms).

9:00-9:45 Kelly Robinson. Electrostatic Answers

Kelly Robinson, ***Review of Static Electricity Industrial Ignitions 2010-2020***

Session D (Rooms). Electrostatic Hazards and Mitigations + Electrospinning and Electrospaying

Session Chair: **Kelly Robinson.**

9:45-10:10 D1 Jiangtian Hou. University of British Columbia

Jiangtian Hou, Guilin Hu, John R. Grace, Xiaotao Bi, ***Experimental study of electrostatic charging related to prevention of fire and dust explosions in wood processing facilities***

10:10-10:35 D2 Kelly Robinson. Electrostatic Answers

Kelly Robinson, ***Static Control for Gravure Coating Electrostatic Assist***

10:35-10:55 Coffee Break

10:55-11:20 D3 Drew Fleming. Arkansas State University

Drew Fleming, ***Dew-induced Cementation and Adhesion of Particulate Soils on Functional Silica Nanoparticle Coatings***

11:20-11:45 D4 Shesha Jayaram. University of Waterloo

Khadija Kanwal Khanum, Shesha Jayaram, ***Impact of filler dispersion on the dielectric and thermal properties of silica filled silicone composites***

11:45-12:45 Lunch

Session E (Rooms). Electrohydrodynamics I + Electrostatic Precipitators

Session Chair: **AKM Monayem H Mazumder.**

12:45-13:10 E1 A K M Monayem H. Mazumder. Saginaw Valley State University

A K M Monayem H. Mazumder, *EHD Enhanced Forced Convection by a Two Stage Gas Pump with Uneven Applied Voltages*

13:10-13:35 E2 James Kribs. North Carolina A&T State University

James Kribs, Christian McKinnie, M. Sean June, Maciej Noras, *Electrohydrodynamic Flame Suppression through the Application of Positively Charged Electrostatic Charges*

13:35-14:00 E3 AKM Monayem H Mazumder. Saginaw Valley State University

A K M Monayem H. Mazumder, *Fluid Flow Supplied by a Two-Stage EHD Gas Pump with Minimum Emitting Electrode Fitted on Two Parallel Walls*

14:00-14:25 E4 Samira Safaripour. University at Buffalo

Samira Safaripour, Gaurav Anand, Craig Snoeyink, *Potential of Electric Fields for Water Condensation in Micron Deep Channels*

14:25-14:45 Coffee Break

Session F (Rooms). Measurements and instrumentation

Session Chair: **Maciej Noras.**

14:45-15:10 F1 Holger Grosshans. Physikalisch-Technische Bundesanstalt (PTB)

Holger Grosshans, Wenchao Xu, *A non-invasive system to measure the spatially resolved charge of turbulent powder flows*

15:10-15:35 F2 Maciej Noras. UNC Charlotte

Maciej Noras, *Cracking activity detection in rocks using electric fields sensing*

15:35-16:00 F3 Wamadeva Balachandran. Brunel University

H Ahmad, M Rasekh, N Manivannan, W Balachandran, *DC Volume Resistivity of Pharmaceutical Propellants and Their Mixtures for Enhanced Metered Dose Inhaler Performance*

16:00-17:00 ESA Business meeting

17:00-18:30 Demos/Poster session.

P1 Adrian Ieta. SUNY Oswego

Adrian Ieta, *Study of an atmospheric ionic thruster with toroidal collectors and circular emitters*

P2 Christian McKinnie. North Carolina A&T State University

Christian McKinnie, *Dielectric Barrier Discharges for the formation of Electro-Aerodynamic flows: An Alternative to Circulation Control Systems*

P3 David Lund. NASA KSC/MS&T

David Lund, *Kinetic Simulations of Plasma Charging of Irregularly-Shaped Dust Grains Near Surfaces under Various Plasma Conditions*

P4 Heekyu Lee. KASSE(Korean Association of Senior Scientists and Engineers

Heekyu Lee, *Sterilization of Mongolian Traditional Wine(Airag) Using HV Discharged Plasma*

P5 Adrian Ieta. SUNY Oswego

Adrian Ieta, *Optimizing the Design of Rotary Ionic Engines (RIE): a Virtual Comparison of RIE*

Arrays

Wednesday, June 28

7:00-9:00 Breakfast/Registration

Keynote 3 (Rooms).

9:00-9:45 Malay Mazumder Boston University.

Malay Mazumder, Mark Horenstein, Jeremy Stark, Rajesh Sharma, Michael Crowley, Woud Alsadoun, Sana Almarzooqi, Anindita Sengupta, Deepanjana Adak, and Silajit Manna, *Solar-to-Electrical Energy Conversion via Bifacial Photovoltaic Modules with Self-cleaning Diffuse Reflectors and Energy Storage with Supercapacitors for Mitigating Climate Change*

Session G (Rooms). Electrohydrodynamics II

Session Chair: **F.C. Lai**.

9:45-10:10 D1 S.C. Lin. University of Oklahoma

S. C. Lin, B. L. Huang, S. H. Liou, F. C. Lai, *Enhancement of Flow Mixing Using a Two-Stage EHD Gas Pump with Electrodes Anchored at One Corner of Channel*

10:10-10:35 D2 F. C. Lai. University of Oklahoma

S. F. Cheng, J. C. Leong and F. C. Lai, *EHD Gas Pump as a Cooling Device for Electronic Components in a Horizontal Channel*

10:35-10:55 Coffee Break

10:55-11:20 D3 Adrian Ieta. SUNY Oswego

Marius Chirita, Adrian Ieta, Dante Rogers, *Rotary Ionic Engine with Toroidal Collectors: A New Approach to Atmospheric Ionic Thrusters for High Thrust Density*

11:20-11:45 D4 Xuwei Zhang. Texas A&M University-Kingsville

Younes Tatari, Xuwei Zhang, *Numerical Modeling of Nanosecond Pulsed Electrical Breakdown in Water*

11:45-12:45 Lunch

Explore Memphis!

18:30-20:30 Banquet

Student presentations are shown in BOLD