All times are given in Eastern Standard Time, Raleigh local time.
Central European Time: +6 hours
Japanese Standard Time: +13 hours

June 7, 2022

09:00 am Workshop opening, Welcome remarks

Microplasma Modeling Session I
Session Chair: De-Qi Wen

09:15 am INVITED TALK
Yangyang Fu, Tsinghua University, Beijing, China
"Effects of electrode surface morphology on microgap breakdown and microplasma properties"

09:45 am Saurav Gautam, University of California Merced, Merced, CA, USA
"Computational studies of microplasma devices as variable capacitor"

10:05 am Rafael Navarro, Tufts University, Medford, MA, USA
"Modeling of a microplasma within a photonic crystal at 43 GHz"

10:25 am Coffee Break

Applications Session I
Session Chair: Lawrence Overzet

11:00 am INVITED TALK
Miles Turner, Dublin City University, Dublin, Ireland
"Plasma nitrogen fixation chemistry: Uncertainty, sensitivity and the implications for efficiency limits"

11:30 am Duncan Trosan, North Carolina State University, Raleigh, NC, USA
"Characterization and design of flexible surface dielectric barrier discharge electrodes"

11:50 am Yi-Jui Yeh, National Taiwan University of Science and Technology, Taipei, Taiwan
"Microplasma-engineered nanoassembly of core-shell plasmonic nanoparticles for ultrasensitive flexible surface-enhanced Raman scattering substrates"

12:10 pm *Lunch Break*

Plasmas in Liquids and Bubbles Session
Session Chair: Torsten Gerling

01:30 pm INVITED TALK
Sophia Gershman, Princeton Plasma Physics Laboratory, NJ, USA
"Electrical discharges in qater with gas bubbles: a timescale approach"

02:00 pm Katharina Grosse, Ruhr Universität Bochum, Germany
"Ignition and propagation of nanosecond pulsed plasmas in water with different polarities"

02:20 pm Petr Bilek, Institute of Plasma Physics of the Czech Academy of Sciences, Prague, Czech Republic
"Recent results on nanosecond discharge in liquid water - signatures of direct and bubble-assisted mechanisms"

02:40 pm Daniel Martin, University of Notre Dame, Notre Dame, IN, USA
"The Formation of Solvated Electrons in Anodic Plasma-Liquid Systems"

03:00 pm Naveen Pillai, North Carolina State University, Raleigh, NC, USA
"Interdisciplinary Multiphysics: Using Interface-Resolved Direct Numerical Simulation to Inform Plasma Streamer Modeling"

03:20 pm *Coffee Break*

03:30 pm Poster Session
Poster Pitches & Breakout Sessions

Tyler Wong, Seton Hall University, South Orange, NJ
"Thermocatalytic Plasma-Assisted Dry Reforming of Methane Over Heterogeneous Ni/Al_2O_3 catalyst"

Nicholas Sponsel, North Carolina State University, Raleigh, NC, USA
"Influence of Submerged Bubble Proximity on Electric Field in Water"

Tatsuru Shirafuji, Osaka Metropolitan University, Osaka, Japan
"Surface-launched Plasma Bullets"

Osamu Sakai, The University of Shiga Prefecture, Hikone, Shiga, Japan
"Maze-Solving Visualized by Log-Path Microchannel Plasmas and Reproduced in Reinforced-Learning Model"

Hayata Kanda, Seikei University, Tokyo, Japan
"Numerical modeling on apoptosis induction by low-temperature plasma"

Duarte Goncalves, Universidade de Lisboa, Portugal; Université Paris-Saclay, Orsay, France
"Simulations of atmospheric-pressure micro-plasma jets flows using SPARK"

Chihiro Takazawa, Seikei University, Tokyo, Japan
"Numerical modeling on the dynamic behavior of immune cells"

Arisane Shinke, Seikei University, Tokyo, Japan
"Complex network analysis of low-temperature plasma chemistry"

Kiara Webster, Seton Hall University, South Orange, NJ, USA
"Investigating the Effect of Low Temperature Atmospheric Pressure Plasma Jets on the Cold Hardiness of Sweet Basil"

06:00 pm Adjourn

June 8, 2022

Applications Session II
Session Chair: Tsuyohito Ito

09:00 am INVITED TALK
Nozomi Takeuchi, Tokyo Institute of Technology, Tokyo, Japan
"Plasma-ozone combined advanced oxidation process for decomposition of persistent organic compounds"

09:30 am Kristaq Gazeli, Université Paris-Saclay, Orsay, France; Université Sorbonne Paris-Nord, Villetaneuse, France

"Experimental investigation of a ns-pulsed Ar plasma jet for the fast desorption of weakly volatile organic compounds deposited on glass substrates at variable electric potential"

09:50 am Sung-Jin Park, Eden Park Illumination, Inc., Champaign, IL, USA; University of Illinois at Urbana-Champaign, IL, USA
"Far UV-C microcavity plasma lights for inactivating airborne pathogens in occupied spaces"

10:10 am Coffee Break

Applications Session III
Session Chair: Nozomi Takeuchi

11:00 am Ren-Jie Weng, National Taiwan University of Science and Technology, Taipei, Taiwan
"Microplasma-enabled synthesis of graphene quantum dots from plastics"

11:20 am Yi-Jui Yeh, National Taiwan University of Science and Technology, Taipei, Taiwan
"Microplasma assisted and One-step fabricated Silver/Nitrogen doped graphene quantum dot (NGQD) nanohybrids for enhance Raman detection"

11:40 am Darwin Kurniawan, National Taiwan University of Science and Technology, Taipei, Taiwan
"Microplasma-Reinforced Fabrication of Crosslinked Nitrogen-Doped Graphene Quantum Dot Sponges for Environmental Water Purification Applications"

June 9, 2022

Applications Session IV
Session Chair: Yangyang Fu

09:00 am INVITED TALK
Tsuyohito Ito, The University of Tokyo, Kashiwa, Chiba, Japan; National Institute of Advanced Industrial Science and Technology (AIST), Kashiwa, Chiba, Japan

"Plasma-assisted materials processing with inkjet droplets"

09:30 am Laura Barillas, Leibniz Institute for Plasma Science and Technology (INP); ZIK plasmatis, Greifswald, Germany
"SurfAP3® – Direct Writing Micro Plasma Printing for Localized Surface Modification of Biosensors and Microfluidic Devices"

09:50 am Lars Bröcker, TU Braunschweig, Germany
"Plasma polymerization with single-filament DBDs at atmospheric pressure: The role of ions"

10:10 am Coffee Break

Diagnostics of Microplasmas Session I
Session Chair: Jean-Pierre van Helden

11:00 am INVITED TALK
Sylvain Iséni, GREMI, Université d'Orléans, France
"Advances in optical diagnostics of Microplasmas: imaging and spectroscopy"

11:30 am Torsten Gerling, ZIK plasmatis, Leibniz Institute for Plasma Science and Technology (INP), Greifswald, Germany
"Fast framing imaging of the kINPen science onto a surface – transient spark formation and subsequent guided streamer pathways"

11:50 am Alice Remigy, Université Sorbonne Paris Nord, Villetaneuse, France
"Atomic nitrogen spatial profile in three different MHCD configurations"

12:00 pm Lunch Break

Plasma Sources and Equipment for Microplasma Generation Session
Session Chair: Rémi Dussart

01:30 pm INVITED TALK
David Go, University of Notre Dame, IN, USA
"Using non-thermal plasmas to direct chemistry at solid and liquid interfaces"

02:00 pm Elene Kouadou, GREMI, Université d'Orléans, France

"Fabrication process and characterization of through silicon-based microplasma reactors

02:20 pm Abbas Semnani, The University of Toledo, OH, USA
"A high-Q microwave resonator-based high-efficiency atmospheric microplasma jet"

02:40 pm Jinyu Yang, University of Notre Dame, IN, USA
"Triple Junction-Enhanced Thermally Induced Gas Discharges Using Pyroelectric Crystals

03:00 pm Shivam Patel, University of Texas at Dallas, TX, USA
"Effects of TiO_2, ZnO, and $SrTiO_3$ on DBD plasmas through N_2/O_2 and $N_2/O_2/CH_4$"

03:20 pm Coffee Break

Microplasma Modeling Session II
Session Chair: Jose Lopez

04:00 pm INVITED TALK
De-Qi Wen, Michigan State University, East Lansing, MI, USA
"Microscale microwave argon discharges: global model and particle-in-cell simulations"

04:30 pm Venkattarama Ayyaswamy, University of California Merced, CA, USA
"An overview of plasma modeling capabilities in SOMAFOAM using dielectric barrier discharges as a case study"

04:50 pm Jose Alfredo Millan, University of California Merced, CA, USA
"Characterization of Helium and Argon Plasmas Under Different Operational Waveform Regimes Operating at Atmospheric Pressure at Radio Frequency"

05:10 pm Tomoyuki Murakami, Seikei University, Tokyo, Japan
"Numerical modeling of the intra- and intercellular behavior influenced by cold atmospheric plasmas"

05:30 pm Tomoyuki Murakami, Seikei University, Tokyo, Japan

"Numerical modeling of the chemical effects of plasma-induced reactive species on air-saturated saline solution

05:50 pm Adjourn

June 10, 2022

Diagnostics of Microplasmas Session II
Session Chair: Osamu Sakai

09:00 am INVITED TALK
Jean-Pierre van Helden, Leibniz Institute for Plasma Science and Technology (INP), Greifswald, Germany
"Cavity ring-down spectroscopy of the spatial distribution of species in a cold atmospheric pressure plasma jet"

09:30 am Xi-Ming Zhu, Harbin Institute of Technology, Harbin, China
"Optical diagnostics of micro-thrusters: spatial and temporal behaviour of the plasma"

09:50 am Tomoki Kuroda, The University of Tokyo, Kashiwa, Chiba, Japan
"Dielectric barrier discharge at low voltage using carbon nanotube electrodes in high density nitrogen including supercritical fluids and liquids"

10:10 am Coffee Break

Diagnostics of Microplasmas Session III
Session Chair: David Go

11:00 am INVITED TALK
Stephan Reuter, Polytechnique Montreal, Canada
"Laser Spectroscopy of Plasmas"

11:30 am Duarte Gonçalves, Universidade de Lisboa, Portugal; Université Paris-Saclay, Orsay, France
"Spatio-temporal density of Ar(1s5) in a co-axial atmospheric-pressure micro-plasma jet"

11:50 am João Santos Sousa, Université Paris-Saclay, Orsay, France

"Periodic forced flow in a nanosecond pulsed cold atmospheric pressure argon plasma jet

12:10 pm Closing Ceremony