| Technical Session | Technical Session Organizer |
|---|---|
| 1.1 Basic Plasma Phenomena | Christopher Moore ( chmoore@sandia.gov) |

## Session MO 1.1: Basic Plasma Phenomena I

Monday, May 22, 2017 from 10:00-12:00, Wildwood 9

Session Chair: Andrew S Fierro, Sandia National Laboratories

**10:00 MO 1.1-1 DARK-TO-ARC TRANSITION IN AIR FOR PLANAR ELECTRODES WITH MICROSCALE GAPS**
A. D. Strongrich[1], G. Shivkumar[1], D. Peroulis[2], A. A. Alexeenko[1]
*[1]School of Aeronautics and Astronautics, Purdue University, West Lafayette, IN, United States*
*[2]School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN, United States*

**10:30 MO 1.1-2 INVESTIGATION OF MICRODISCHARGES IN ASSYMMETRIC ARRANGEMENTS OF A PIN AND A HEMISPHERICAL ELECTRODE WITH NON-UNIFORM ELECTRIC FIELD**
S. Jahanbakhsh, V. Brueser, R. Brandenburg
*INP Greifswald, Greifswald, Germany*

**10:45 MO 1.1-3 UNIVERSAL GAS BREAKDOWN THEORY FROM MICROSCALE TO THE CLASSICAL PASCHEN LAW**
A. M. Loveless, A. L. Garner
*Nuclear Engineering, Purdue University, West Lafayette, IN, United States*

**11:00 MO 1.1-4 SIMULATION OF STRIATIONS IN DC GLOW DISCHARGES IN NITROGEN**
R. Mahamud[1], T. Farouk[1], V. Kolobov[2]
*[1]Mechanical Engineering, University of South Carolina, Columbia, SC, United States*
*[2]CFD Research Corporation, Huntsville, AL, United States*

**11:15 MO 1.1-5 OPTICAL EMISSION SPECTROSCOPY OF PLASMA EVOLUTION IN OVERVOLTAGED SPARK GAPS**
T. R. Schmidt Jr, A. T. Elshafiey, S. Portillo
*Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States*

**11:30 MO 1.1-6 MICROPLASMA COUPLING EFFECT IN ARRAYS OF HYBRID STRUCTURE MICROCAVITIES**
Y. Wang, X. Zhang, Z. He, C. Liu
*Electronic and Information Engineering, Xi'an Jiaotong University, Xi'an, Shaan Xi, China*

**11:45 MO 1.1-7 INFLUENCE OF THE PULSED AMF ARC CONTROL ON THE VACUUM ARC AND POST ARC CHARACTERISTIC IN VACUUM INTERRUPTERS**
G. Ge, M. Liao, X. Duan, Z. Huang, J. Zou
*School of Electrical Engineering, Dalian University of Technology, Dalian, China*

## Session TU 1.1: Basic Plasma Phenomena II

Tuesday, May 23, 2017 from 10:00-12:00, Wildwood 9

Session Chair: Ricky Tang, Sandia National Laboratories

**10:00 TU 1.1-1 SPONTANEOUS SELF-ORGANIZATION IN A HELICON PLASMA DEVICE: INSTABILITIES, BIFURCATION, HYSTERESIS AND PLASMA DETACHMENT**
S. Chakraborty Thakur, R. Hong, K. Adriany, G. R. Tynan
*University of California San Diego, La Jolla, United States*

**10:30 TU 1.1-2 STUDIES OF PLASMA DENSITY GRADIENT EFFECT ON DIRECT CONVERSION OF UPPER-HYBRID WAVES IN ELECTROMAGNETIC EMISSION FOR BEAM-PLASMA SYSTEM**
A. V. Arzhannikov[1,2], V. V. Annenkov[1,2], A. V. Burdakov[1,3], V. S. Burmasov[1,2], I. A. Ivanov[1,2], A. A. Kasatov[1,2], S. A. Kuznetsov[2], M. A. Makarov[1], K. I. Mekler[1], S. V. Polosatkin[1,2,3], V. V. Postupaev[1,2], A. F. Rovenskikh[1], S. L. Sinitsky[1,2], V. F. Sklyarov[1,2], V. D. Stepanov[1,2], I. V. Timofeev[1,2]
[1]*Budker Institute of Nuclear Physics, Novosibirsk, Russian Federation*
[2]*Novosibirsk State University, Novosibirsk, Russian Federation*
[3]*Novosibirsk State Technical University, Novosibirsk, Russian Federation*

**10:45 TU 1.1-3 EFFECT OF PARALLEL CONNECTION LENGTH ON FLOWS, FLUCTUATIONS AND QUASI-STATIONARY EQUILIBRIUM IN SIMPLE TOROIDAL DEVICE**
U. Kumar[1], R. Ganesh[1], S. G. Thatipamula[2], Y. C. Saxena[1], D. Raju[1]
[1]*BETA, Institute for Plasma Research, Gandhinagar, Gujarat, India*
[2]*Pohang University of Science and Technology, Pohang, South Korea*

**11:00 TU 1.1-4 MODELING OF CAPACITIVELY COUPLED RF DISCHARGE WITH NON-SINUSOIDAL CURRENT WAVEFORM**
G. Shivkumar[1], S. S. Tholeti[1], S. O. Macheret[1], M. A. Alrefae[2], T. S. Fisher[2], A. A. Alexeenko[1]
[1]*School of Aeronautics and Astronautics, Purdue University, West Lafayette, IN, United States*
[2]*School of Mechanical Engineering, Purdue University, West Lafayette, IN, United States*

**11:15 TU 1.1-5 EFFECT OF RADIATIVE HEAT TRANSFER ON INDUCTIVELY COUPLED PLASMA SIMULATION**
M. Yu
*Faculty of Mechanical and Precision Instrument Engineering, Xi'an University of Technology, Xi'an, China*

**11:30 TU 1.1-6 A LONG HELIUM PLASMA COLUMN GENERATED AT 13.56 MHZ UP TO ATMOSPHERIC PRESSURE**
J. -S. Boisvert[1], J. Margot[2]
[1]*Institut National de la Recherche Scientifique (INRS), 1602 blvd. Lionel Boulet, Quebec, J3X 1S2, Canada, Varenne, Canada*
[2]*Departement de physique, Universite de Montreal, Montreal, H3T 1J4, Canada, Montreal, Canada*

**11:45 TU 1.1-7 MODULATION INSTABILITY AND ENVELOPE EXCITATION IN PARTIALLY STRIPPED MAGNETIZED QUANTUM PLASMA**
P. Kumar, N. S. Rathore
*Department of Physics, University of Lucknow, LUCKNOW, India*