Program

Session PL1: Plenary 1

Monday, June 25 08:30-09:30, Plaza Ballroom A/B/C

Session Chair: Tobin Munsat, Dept. of Physics, Univ. Colorado

8:30 PL1-1 (invited) THE 21ST CENTURY FRONTIER OF PARTICLE ACCELERATOR TECHNOLOGY
M. V. Fazio
Technology Innovation Directorate, SLAC National Accelerator Laboratory, Menlo Park, CA, United States

Session 1A: 1.1 Basic Phenomena I

Monday, June 25 10:00-12:00, Governors Square 12

Session Chair: Scott Robertson, University of Colorado

10:00 1A-1 (invited) MEASUREMENT OF ION HEATING IN COLLISIONAL AND SEMI-COLLISIONAL PLASMA SHOCKS
S. J. Langendorf[1], S. C. Hsu[1], J. P. Dunn[1], K. C. Yates[2], M. A. Gilmore[2], C. Thoma[3]
[1]Physics Division, Los Alamos National Laboratory, Los Alamos, NM, USA
[2]University of New Mexico, Albuquerque, NM, USA
[3]Voss Scientific, Albuquerque, NM, USA

10:30 1A-2 MOIRE DEFLECTOMETRY, MULTI-CHORD SPECTROSCOPY, AND RADIATION IMAGING OF A SPARK GAP PLASMA
T. R. Schmidt Jr[1], J. M. Chen[1], A. Kuskov[1], S. Portillo[1], J. Coleman[2]
[1]Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States
[2]J-5, Los Alamos National Labs, Los Alamos, NM, United States

10:45 1A-3 CONTACT TUNNELING RESISTANCE IN CARBON NANOTUBE FIBERS
S. Banerjee, J. Luginsland, P. Zhang
Electrical and Computer Engineering, Michigan State University, East Lansing, United States

11:00 1A-4 EXPERIMENTAL STUDY ON THE HOLLOW CATHODE DISCHARGE
X. Hou, Q. Zhou, H. Wang, X. Zou, H. Luo, X. Wang
Department of Electrical Engineering, Tsinghua university, Beijing, China

11:15 1A-5 SELF-CONSISTANT 1D3V KINETIC TRAJECTORY SIMULATION MODEL OF MAGNETIZED PLASMA SHEATH
R. Chalise
Department of Physics, Amrit Campus, Tribhuvan Uniersity, Kathmandu,Nepal, Kathmandu, Nepal

11:30 1A-6 PLASMA INSTABILITIES DUE TO COUPLING BETWEEN ION ACOUSTIC WAVES AND NEUTRINO OSCILLATIONS
Y. Ghai, P. Sethi, M. Singh, N. S. Saini
Department of Physics, Guru Nanak Dev University, Amritsar,Punjab, India

Session 1B: 5.4 Environmental, Industrial, and Display Applications I

Monday, June 25 10:00-12:00, Governors Square 11

Session Chair: Allen Garner, Purdue University

10:00 1B-1 NANOSECOND SURFACE DIELECTRIC BARRIER DISCHARGE DRIVEN BY DIFFERENT PULSE PARAMETERS FOR AIRFLOW CONTROL
W. Gan[1,2], C. Zhang[2,3], Q. Xie[1], P. Yan[2,3], T. Shao[2,3]

[1]*North China Electric Power University, Baoding, China*
[2]*Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China*
[3]*Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China*

10:15 1B-2 IGNITION TIME AND TRANSPORT PROPERTIES OF INDUCTIVELY COUPLED PLASMAS USING LOW-HIGH PULSED POWER
C. Qu[1], P. Tian[1], S. J. Lanham[1], M. J. Kushner[1], T. Ma[2], T. List[2], P. Arora[2], V. M. Donnelly[2]
[1]*University of Michigan, Ann Arbor, MI, United States*
[2]*University of Houston, Houston, TX, United States*

10:30 1B-3 OPTIMIZING UNIFORMITY IN PLASMA ETCHING OF HIGH ASPECT RATIO FEATURES BY ENGINEERING THE FOCUS RING
S. Huang[1], M. J. Kushner[1], S. Shim[2], S. K. Nam[2]
[1]*University of Michigan, Ann Arbor, MI*
[2]*Samsung Electronics Co., Ltd., Hwaseong-si, Gyeonggi-do, Republic of Korea*

10:45 1B-4 OPTIMIZATION OF PULSED RF TRANSIENTS UTILIZING SOURCE DESIGN AND TRANSIENT FREQUENCY TUNING
J. Brandon[1], C. Smith[1], K. Ford[1], P. Tian[2], M. Kushner[2], S. Shannon[1], S. K. Nam[3]
[1]*Nuclear Engineering, North Carolina State University Nuclear Engineering, Raleigh, NC, United States*
[2]*Nuclear Engineering, University of Michigan, Ann Arbor, MI, United States*
[3]*Mechatronics, Samsung Electronics, Suwon, South Korea*

11:00 1B-5 REMOVAL OF ETHYLENE FROM AGRICULTURAL STORAGE FACILITIES USING PLASMA AND ZEOLITE-BASED ADSORBENTS
S. Ko, S. -G. Kim, H. W. Lee, Y. J. Hyun, Y. S. Mok
Jeju National University, Jeju, South Korea

11:15 1B-6 ETHYLENE TREATMENT OF POST-HARVEST AGRICULTURAL STORAGE USING CYCLIC OPERATION OF PLASMA/ADSORPTION-CATALYTIC PROCESS
S. -G. Kim, H. W. Lee, Y. S. Mok
Jeju National University, Jeju, South Korea

11:30 1B-7 THE GENERATION OF LOW TEMPERATURE PLASMA AND INDUSTRIAL APPLICATIONS
L. Wan
R&D, CoronaLab., Nanjing,Jiangsu, China

11:45 1B-8 COLD ATMOSPHERIC PRESSURE PLASMA JET DEVELOPMENT AND CHARACTERIZATION FOR MEDICAL APPLICATIONS
V. P. Gajula
Institute for Plasma Reseach, Gandhinagar, Gujarat, India

Session 1C: 3. Charged Particle Beams and Sources I

Monday, June 25 10:00-12:00, Governors Square 10

Session Chair: Jonathan Edelen, RadiaSoft

10:00 1C-1 (invited) MODELING AND EXPERIMENTAL CHARACTERIZATION OF THE PLASMA PRODUCED BY A VELVET CATHODE IN A LINEAR INDUCTION ACCELERATOR
J. -M. Plewa[1,2], O. Eichwald[2], M. Yousfi[2], G. Wattieaux[2], S. Cartier[3], F. Cartier[3], F. Poulet[3], V. Bernigaud[3], M. Ribiere[1], T. D'Almeida[1], R. Maisonny[1]
[1]*CEA, DAM, GRAMAT, F-46500, Gramat, France*
[2]*LAPLACE, CNRS, University of Toulouse, 118 Route de Narbonne, Toulouse, France*
[3]*CEA, DAM VALDUC, F-21120, Is sur Tille, France*

10:30 1C-2 DESIGN OF ELECTRON BEAM DIODES FOR DIRECT IRRADIATION OF MATERIALS ON SATURN
B. V. Weber, R. J. Commisso, D. D. Hinshelwood, I. M. Rittersdorf, S. B. Swanekamp
Naval Research Laboratory, Washington, DC

10:45 1C-3 EFFECT OF EMISSION MODELS ON PARTICLE-IN-CELL SIMULATIONS OF A LARGE-AREA BREMSSTRAHLUNG DIODE OPERATING AT 5 MV WITH COMPARISON TO EXPERIMENTALLY MEASURED DOSE
A. S. Richardson[1], J. C. Zier[1], S. L. Jackson[1], J. W. Schumer[1], D. Mosher[2], D. Duke[3], T. Haines[3], T. Archuleta[3], M. Boswell[3], M. Espy[3], A. Gehring[3], H. Herrmann[3], C. Johnson[3], Y. Kim[3], M. McCumber[3], K. Meaney[3], B. White[3], J. Smith[3]

[1]*Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States*
[2]*Syntek Technologies, Arlington, VA, United States*
[3]*Los Alamos National Laboratory, Los Alamos, NM, United States*

11:00 1C-4 SIMULATIONS & EXPERIMENTS OF CONSTANT IMPEDANCE TUNABLE POWER EXTRACTION CIRCUITS FOR MOBILE IONOSPHERIC HEATING
A. H. Narayan, B. L. Beaudoin, A. Ting, J. A. Karakkad, G. S. Nusinovich, T. M. Antonsen Jr
Electrical & Computer Engineering Dept, Institute for Research in Electronics and Applied Physics, College Park, MD, United States

11:15 1C-5 HOW TO OVER-INJECT A VACUUM ELECTRON DIODE
J. G. Leopold, M. Siman-Tov, Y. E. Krasik
Physics Dept., Technion, Haifa, Israel

11:30 1C-6 PARTICLE IN CELL SIMULATION ON A NOVEL MULTIPACTING CATHODE WITH HIGH CURRENT DENSITY
Y. Dong
Institute of Applied Physics and Computational Mathematics, Beijing, China

Session 1D: 4.1 Fusion I (Inertial, Magnetic, Alternatives)

Monday, June 25 10:00-12:00, Governors Square 17

Session Chair: Arati Dasgupta, Naval Research Laboratory

10:00 1D-1 (invited) ASSESSING MAGNETIZED LINER INERTIAL FUSION STAGNATION CONDITIONS AND IDENTIFYING TRENDS
M. R. Gomez, S. A. Slutz, P. F. Knapp, K. D. Hahn, E. C. Harding, D. J. Ampleford, T. J. Awe, M. Geissel, S. B. Hansen, A. J. Harvey-Thompson, C. A. Jennings, C. E. Myers, K. J. Peterson, G. A. Rochau, D. B. Sinars, M. R. Weis, D. A. Yager-Elorriaga
Sandia National Laboratories, Albuquerque, NM, United States

10:30 1D-2 STAGED Z-PINCH EXPERIMENTS ON ZEBRA AND SIMULATIONS USING DIFFERENT GAS SHELLS
H. Rahman[1], E. Ruskov[1], P. Ney[1], J. Narkis[2], F. Conti[2], J. Valenzuela[2], M. Ross[2], F. Beg[2], A. Anderson[3], E. Dutra[3], A. Covington[3]
[1]*Magneto-Inertial Fusion Technologies, Inc., Tustin, CA, United States*
[2]*University of California, San Diego, La Jolla, CA, United States*
[3]*University of Nevada, Reno, Reno, NV, United States*

10:45 1D-3 MEGAGAUSS-LEVEL MAGNETIC FIELD AND DIELECTRIC BREAKDOWN MEASURED IN AUTO-MAGNETIZING LINER EXPERIMENTS
G. A. Shipley[1], T. J. Awe[1], B. T. Hutsel[1], S. A. Slutz[1], C. A. Jennings[1], D. C. Lamppa[1], J. B. Greenly[2], T. M. Hutchinson[3]
[1]*Sandia National Laboratories, Albuquerque, NM, United States*
[2]*Laboratory of Plasma Studies, Cornell University, Ithaca, NY, United States*
[3]*Department of Physics, University of Nevada, Reno, Reno, NV, United States*

11:00 1D-4 ORGANIZED STRUCTERES, MAGNETIC RECONNECTIONS AND ACCELERATION OF FAST BEAMS IN PLASMA-FOCUS FUSION PLASMA
P. Kubes[1], M. Paduch[2], M. J. Sadowski[3], B. Cikhardtova[1], J. Cihkardt[1], D. Klir[1], J. Kravarik[1], K. Rezac[1], E. Skladnik-Sadowska[3], K. Tomaszewski[2], D. Zaloga[3], E. Zielinska[2]
[1]*Czech Technical University in Prague, FEE, Department of Physics, Prague, Czech Republic*
[2]*IPPLM Warsaw, Warsaw, Poland*
[3]*NCBJ Otwock-Świerk, Otwock/Swierk, Poland*

11:15 1D-5 THREE-AXIS CYLINDRICAL HOHLRAUM DESIGNED FOR INERTIAL CONFINEMENT FUSION
H. Li
RESEARCH CENTER OF LASER FUSION, CHINA ACADEMY OF ENGINEERING PHYSICS, MIANYANG, SICHUAN, CHINA

11:30 1D-6 A BRIGHT PULSED FUSION NEUTRON SOURCE BY THE LASER-DRIVEN SPHERICALLY CONVERGENT PLASMA FUSION
X. Zhang, J. Yan, S. Jiang
Laser Fusion Research Center, Mianyang, China

Session 1E: 5.1 Nonequilibrium Plasma Applications I

Monday, June 25 10:00-12:00, Governors Square 16

Session Chair: Ronny Brandenburg, Leibniz Institute for Plasma Science and Technology

10:00 1E-1 (invited) TUNING THE PLASMA CHEMISTRY FOR ENERGY AND ENVIRONMENTAL APPLICATIONS
R. Snoeckx[1], W. Wang[2], A. Bogaerts[2], M. S. Cha[1]
[1]Clean Combustion Research Center (CCRC), Physical Science and Engineering Division (PSE), King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia
[2]Research group PLASMANT, Department of Chemistry, University of Antwerp, Antwerp, Belgium

10:30 1E-2 CO2 DISSOCIATION IN AN ATMOSPHERIC DIELECTRIC BARRIER DISCHARGE REACTOR: INFLUENCE OF THE POWER SUPPLY NATURE
D. Mei, N. Xu, Y. Yang, Z. Fang
College of Electrical Engineering and Control Science, Nanjing Technology University, Nanjing, Jiangsu, China

10:45 1E-3 THREE DIMENSIONAL PLASMA PHOTONIC CRYSTALS: TUNABLE BANDSTOP FILTERS COMPRISING MICROPLASMA COLUMN ARRAYS
P. P. Sun[1,2], R. Zhang[3], W. Chen[1], Z. Liang[1], Y. Huang[1], P. V. Braun[3], J. G. Eden[1]
[1]Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
[2]Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
[3]Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

11:00 1E-4 PERIODIC PLASMA GENERATION IN NEGATIVE PERMEABILITY SPACES OF METAMATERIALS USING MICROWAVE RADIATIVE POWER TRANSFER
H. Kim, J. Hopwood
Electrical and Computer Engineering, Tufts University, medford, MA, United States

11:15 1E-5 DIFFUSE GAS-CONFINED BARRIER DISCHARGE AT ATMOSPHERIC PRESSURE
S. Q. Wu, F. Wu, C. Liu, X. Dong, C. Zhang
Nanjing University of Aeronautics and Astronautics, Nanjing, China

Session 1F: 7.1 Insulation and Dielectric Breakdown

Monday, June 25 10:00-12:00, Governors Square 15

Session Chair: Hulya Kirkici, University of South Alabama

10:00 1F-1 NANOSECOND BREAKDOWN OF POROUS ALUMINA CERAMICS SATURATED WITH PERFLUORINATED LIQUIDS
I. F. Punanov[1,2], R. V. Emlin[1], P. A. Morozov[1]
[1]Institute of Electrophysics of the Ural Division of the Russian Academy of Sciences, Yekaterinburg, Russian Federation
[2]Ural Federal University, Yekaterinburg, Russian Federation

10:15 1F-2 INTERACTION OF IONIZATION WAVES WITH OPPOSITE POLARITY ALONG LONG GLASS TUBE IN NANOSECOND-PULSE DISCHARGES
J. Qiu[1,2], C. Zhang[1,2,3], Z. Liu[1,2], D. Hu[1,2], T. Shao[1,2,3]
[1]Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
[2]University of Chinese Academy of Sciences, Beijing, China
[3]Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China

10:30 1F-3 PASCHEN'S LAW IN EXTREME PRESSURE AND TEMPERATURE CONDITIONS
G. Galli[1], H. Hamrita[1], C. Jammes[2], M. J. Kirkpatrick,[3], E. Odic[3], P. Dessante[3], P. Molinie[3]
[1]CEA saclay, Gif sur Yvette, France
[2]CEA Cadarache, Cadarache, France
[3]CentraleSupelec, Gif sur Yvette, France

10:45 1F-4 (invited) GAS BREAKDOWN IN ATMOSPHERIC MICROGAPS WITH SURFACE PROTRUSION ON THE CATHODE
Y. Fu[1], P. Zhang[2], J. P. Verboncoeur[1]

[1]*Computational Mathematics Science and Engineering, Michigan State University, MI, United States*
[2]*Electrical and Computer Engineering, Michigan State University, MI, United States*

11:15 1F-5 EVOLUTION OF MICRO-DISCHARGE DYNAMICS IN A 2-DIMENSIONAL PACKED BED REACTOR
K. W. Engeling, J. Kruszelnicki, M. J. Kushner, J. E. Foster
University of Michigan, Ann Arbor, Michigan, United States

11:30 1F-6 HIGH POWER RF BREAKDOWN OF PRESSURIZED SF6
M. Powell, Z. Shaw, J. C. Dickens, J. Mankowski, A. A. Neuber
Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, United States

11:45 1F-7 INVESTIGATION ON THE DYNAMIC PROCESS OF GAS BREAKDOWN ACROSS MICROGAPS UNDER PULSED VOLTAGE
G. Meng, X. Gao, K. Wang, N. Li, D. Zhang, F. Wu, Y. Cheng
School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China

Session PL2: Plenary 2

Monday, June 25 13:30-14:30, Plaza Ballroom A/B/C

Session Chair: Brad Hoff, Air Force Research Laboratory

13:30 PL2-1 (invited) THE EVOLUTION OF COMPUTATIONAL SCIENCE AND ENGINEERING
J. R. Cary
University of Colorado and Tech-X Corporation, Boulder, CO, United States

Session P1A257: Attended Posters (Technical Topics 2, 5, and 7)

Poster Session

Monday, June 25 14:30-16:00, Plaza Ballroom D/E/F

Session Chairs: Jacob C Zier, Naval Research Laboratory
Steven C Exelby, University of Michigan
Drew A Packard, University of Michigan
Muhammed RA Zuboraj, Los Alamos National Laboratory
Ian Rittersdorf, Naval Research Laboratory
David Simon, Air Force Research Laboratory
Timothy J Haugan, Air Force Research Laboratory
Ronny Brandenburg, Leibniz Institute for Plasma Science and Technology
Hae June Lee, Pusan University
Benjamin Jorns, University of Michigan
Li Lin, George Washington University
Joseph Schumer, Naval Research Laboratories
John P Verboncoeur, Michigan State University
Peng Zhang, Michigan State University

P1A257-1 RIPPLED-FIELD MAGNETRON WITH A TRANSPARENT CATHODE
D. A. Andreev[1], A. Elfrgani[1], E. Schamiloglu[1], A. D. Andreev[2]
[1]*Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, USA*
[2]*Directed Energy Account Group, Booz Allen Hamilton Inc, Albuquerque, NM, USA*

P1A257-2 PROGESS ON UNDERSTANGING DEGENERATE BAND EDGE OSCILLATOR STRUCTURES FOR HIGH POWER MICROWAVE GENERATION
A. B. de Alleluia[1], D. A. Andreev[1], A. M. Elfrgani[1], E. Schamiloglu[1], A. Farghaly[2], M. Othman[2], F. Capolino[2], A. Figotin[3]
[1]*Electrical and Computer Engineering, University of New Mexico, Albuquerque,NW, USA*
[2]*Department of Electrical Engineering and Computer Science, University of California Irvine, Irvine,CA, USA*
[3]*Department of Mathematics, University of California Irvine, Irvine,CA, USA*

P1A257-3 MICROWAVE GENERATION USING A TWO SPIRAL METAMATERIAL SLOW WAVE STRUCTURE DRIVEN BY AN ELECTRON BEAM

M. Liu[1,2], S. C. Yurt[1], E. Schamiloglu[1], M. I. Fuks[1], A. Elfrgani[1], C. Liu[2]
[1]*Department of Electrical and Computer Engineering, university of new mexico, Albuquerque,NM, USA*
[2]*Key Laboratory of Physical Electronics and Devices of the Ministry of Education, xi'an jiaotong university, Xi'an Shaanxi, China*

P1A257-4 VARIATIONAL METHODS APPLIED TO CROSSED FIELD DEVICES
A. Darr, A. Garner
Purdue University, West Lafayette, IN, United States

P1A257-5 AN EXACT HOT-TUBE SOLUTION FOR THIN TAPE HELIX TRAVELING-WAVE TUBE
P. Y. Wong, Y. Y. Lau
University of Michigan, Ann Arbor, MI, United States

P1A257-6 A RE-EXAMINATION OF JOHNSON'S THEORY OF BACKWARD WAVE OSCILLATION IN A TRAVELING WAVE TUBE
A. Jassem, P. Wong, Y. Y. Lau
Nuclear Engineering & Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

P1A257-7 3D ICEPIC SIMULATION OF A RELATIVISTIC BACKWARD WAVE OSCILLATOR WITH RESONANT REFLECTOR
P. D. Gensheimer, T. P. Fleming
RDHE, AFRL, KAFB, NM, United States

P1A257-8 DESIGN OF A PHASE CONTROLLED MAGNETRON USING GATED FIELD EMISSION ARRAYS
R. Harper[1], M. Pearlman[1], A. Yue[1], S. Saldivar[1], T. Berntsen[1], S. Longmuir[1], O. Betancourt[1], T. Moodley[1], P. Moore[1], D. Black[1], D. Plumlee[1], J. Browning[1], T. Akinwande[2], W. Chern[2]
[1]*Electrical Engineering, Boise State University, Boise, United States*
[2]*Electrical Engineering, Massachusetts Institute of Technology, Cambridge, United States*

P1A257-9 SIMULATION OF AN INDUSTRIAL MAGNETRON WITH PHASE CONTROL USING A MODULATED CATHODE
M. Pearlman[1], A. Yue[1], J. Browning[1], M. Worthington[2], J. Cipolla[2]
[1]*Electrical and Computer Engineering, Boise State University, Boise, ID, United States*
[2]*Electron Devices, L-3 Communications, Williamsport, PA, United States*

P1A257-10 PIC SIMULATIONS OF A DIELECTRIC SLOW-WAVE STRUCTURE FOR A W-BAND TWT*
K. N. Islam, E. Schamiloglu, A. D. Andreev
Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

P1A257-11 PROGRESS ON THE FABRICATION AND TEST OF AN EXTENDED INTERACTION KLYSTRON WITH A NEW PHOTONIC BANDGAP TOPOLOGY
J. C. Stephens, M. A. Shapiro, R. J. Temkin
Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, United States

P1A257-12 ELECTRON BUNCHING IN A NONLINEAR TRANSMISSION LINE- DRIVEN ELECTRON BEAM
D. H. Simon, B. W. Hoff, J. A. Schrock, S. L. Heidgar
Directed Energy Directorate, Air Force Research Laboratory, Kirtland AFB, NM, United States

P1A257-13 METAMATERIAL-INSPIRED GENERATION-EXTRACTION-RADIATION OF HIGH POWER MICROWAVES
A. Elfrgani, S. J. Smith, D. Andreyevich, E. Schamiloglu
Electrical and Computer Engineering, University of New Mexico, Albuquerque, United States

P1A257-14 DESIGN OF A METAMATERIAL-BASED MULTI-BEAM HIGH POWER MICROWAVE OSCILLATOR
A. Elfrgani, H. Seidfaraji, A. Kuskov, K. N. Islam, E. Schamiloglu
Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

P1A257-15 CORROSION AND EROSION PREVENTIVE COATINGS FOR RF SOURCES AND LIQUID-COOLED DEVICES
L. Ives[1], C. J. Oldham[2], M. A. Fusco[2], G. Collins[1], T. Bui[1], D. Marsden[1], I. R. Woodward[2], J. S. Daubert[2], A. P. Gremaud[2], G. N. Parsons[2], B. Mitsdarffer[3]
[1]*Calabazas Creek Research, Inc., San Mateo, CA, United States*
[2]*Department of Chemical and Biomolecular Engineering, N.C. State University, Raleigh, NC, United States*
[3]*Naval Surface Warfare Center, Crane, IN, United States*

P1A257-16 PERIODIC SURFACE LATTICE OVERMODED W-BAND SOURCE
A. W. Cross, A. J. MacLachlan, C. W. Robertson, H. Yin, A. R. Phipps, K. Ronald, A. D. R. Phelps
Department of Physics, University of Strathclyde, Glasgow, United Kingdom

P1A257-17 SPACE-CHARGE INDUCED SHIELDING BETWEEN NEIGHBORING EMITTERS IN AN UNGATED EMITTER ARRAY
K. Torfason, H. V. Haraldsson, A. Manolescu, A. Valfells
School of Science and Engineering, Reykjaviï¿½k University, Reykjavik, Iceland

P1A257-18 MOLECULAR DYNAMICS CODE FOR SIMULATIONS OF VACUUM NANODIODES
K. Torfason, A. Valfells, A. Manolescu
School of Science and Engineering, Reykjavik University., Reykjavik, Iceland

P1A257-19 QUANTUM HYDRODYNAMICS APPROACH TO ELECTRON EMISSION PHYSICS
J. Luginsland, M. Murillo, P. Zhang
Comp Math, Sci, Engin, Michigan State Univ., East Lansing, MI, United States

P1A257-20 FREQUENCY UP-CONVERSION DETECTION OF TERAHERTZ WAVE BY GAS DISCHARGE PLASMA
L. Hou, W. Shi, H. Liu
Applied Physics Department, Xi'an University of Technology, Xi'an, China

P1A257-21 SPEED-LIMITED PARTICLE-IN-CELL MODELING OF PLASMAS: THEORY AND APPLICATIONS
T. G. Jenkins[1], A. M. Chap[1], J. R. Cary[1,2], P. H. Stoltz[1], G. R. Werner[2]
[1]Tech-X Corporation, Boulder, CO, United States
[2]University of Colorado, Boulder, CO, United States

P1A257-22 VAGPS: VOLUME-AVERAGED GLOBAL PLASMA SIMULATOR FOR LOW TEMPERATURE PLASMA SOURCES
D. -C. Kwon[1], D. -H. Yu[2], J. -H. Park[1], M. -Y. Song[1]
[1]Plasma Technology Research Center, National Fusion Research Institute, Gunsan, Republic of Korea
[2]Department of Electrical Engineering, Chungbuk National University, Cheongju, Republic of Korea

P1A257-23 METHOD OF MANUFACTURED SOLUTIONS FOR VERIFICATION OF PARTICLE-IN-CELL SIMULATIONS
A. H. Markosyan, C. Moore, M. Bettencourt
Scalable Modeling & Analysis, Sandia National Laboratories, Livermore, United States

P1A257-24 PLASMA-DUST TRAP IN SUPER DENSE DUST PLASMA AT CRYOGENIC TEMPERATURE
V. V. Shumova, D. N. Polyakov, L. M. Vasilyak
Joint Institute for High Temperatures RAS, Moscow, Russian Federation

P1A257-25 MONTE CARLO AND GENETIC ALGORITHM-BASED METHODS OF NEUTRON EMISSIVITY TOMOGRAPHIC RECONSTRUCTION
J. L. Bielecki
Department of Radiation Transport Physics, Institute od Nuclear Physics, Polish Academy of Sciences, Krakow, Poland

P1A257-26 THERMOELECTRIC TRANSPORT WITH AN 8-MOMENT PLASMA MODEL IN PERSEUS
J. M. Hamilton, C. E. Seyler
Applied Physics, Cornell University, Ithaca, NY, United States

P1A257-27 A RAPID AND VERSATILE SCHEME FOR DECOUPLED ELECTROMAGNETIC POTENTIAL WITH PERFECT ELECTRIC CONDUCTOR
M. Thavappiragasam, A. J. Christlieb, J. Luginsland
ECE and CMSE, Michigan State University, East Lansing, MI, US

P1A257-28 MODELING OF THE HAWK DENSE PLASMA FOCUS (DPF) DEVICE USING USIM
C. M. Roark[1], P. H. Stoltz[1], A. Spirkin[1], J. W. Luginsland[2], S. L. Jackson[3], J. L. Giuliani[3], J. T. Engelbrecht[3], I. M. Rittersdorf[3], A. S. Richardson[3], J. W. Schumer[3]
[1]Tech-X Corporation, Boulder, CO, United States
[2]Michigan State University, East Lansing, MI, United States
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P1A257-29 COMPARISON OF HIGH POWER MICROWAVE SOURCE PERFORMANCE BETWEEN DIFFERENT PARTICLE-IN-CELL CODES AT THE NAVAL RESEARCH LABORATORY
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P1A257-30 USING AND CUSTOMIZATION OF PARAVIEW FOR HPC POST PROCESSING IN MICHELLE
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P1A257-31 MODELING OF INSULATOR SURFACE FLASHOVER IN VACUUM
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P1A257-32 MAGNETIZED PLASMA APPARATUS FOR INVESTIGATING NON-LINEAR INTERACTIONS
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P1A257-33 EXPERIMENTAL DESIGN FOR CONTROLLED STUDY OF TWO SURFACE MULTIPACTOR IN A MICROSTRIP TRANSMISSION LINE
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P1A257-34 EFFECT OF DISCHARGE CONTRACTION ON MW X-BAND ABSORPTION BY AIR PLASMA ARRAY
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P1A257-35 STUDIES ON ENHANCEMENT OF TRANSMITTING AND RECEIVING ELECTROMAGNETIC SIGNALS IN GIGA-HERTZ RADIO FREQUENCY BAND BY THE SUB-WAVELENGTH PLASMA MODULATION
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P1A257-36 ROLE OF ELECTRIC FIELD ON POWER COUPLINGS MECHANISMS DURING EVOLUTION OF PLASMA IN AN OFF-RESONANCE MICROWAVE DISCHARGE
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P1A257-37 INVESTIGATION OF EXTERNAL FIELD INJECTED DOUBLE GAP VIRCATOR
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P1A257-38 CHARACTERIZATION OF ELECTRON DENSITY IN LASER-INDUCED PLASMA WITH TERAHERTZ WAVE
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P1A257-39 TERAHERTZ PULSE GENERATION FROM LASER INDUCED PLASMA IN AIR
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P1A257-40 THE OPTIMIZATION OF METAL NANOPARTICLES COATING ON POLYMER FILM USING UNDERWATER PLASMA
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P1A257-41 ROOM-TEMPERATURE NO2 SENSORS OF POLYPHIOPHENE FILMS BY ATMOSPHERIC PRESSURE PLASMA POLYMERIZATION TECHNIQUE
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P1A257-42 EFFECTS ON SUPPORTED CATALYST ON THE PLASMA IN A PACKED-BED DBD REACTOR FOR AMMONIA SYNTHESIS
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P1A257-43 ANALYSIS ON INTENSE AND BROADEN ATMOSPHERIC PRESSURE PLASMA FOR LARGE AREA SURFACE MODIFICATION
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P1A257-44 EFFECT OF PULSE RISE TIME ON OH GENERATION OF A 10-NS PULSED HELIUM PLASMA JET
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P1A257-45 EXPERIMENTAL STUDY OF ARGON AND NITROGEN PLASMAS SUSTAINED BY HIGH VOLTAGE, HIGH REPETITION RATE NANOSECOND PULSES
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P1A257-46 ATMOSPHERIC HYBRID COLD PLASMA (HCP) ENHANCED SEED SURFACE WETTABILITY AND GERMINATION
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P1A257-47 PLASMA SKINCARE DEVICE AND PLASMA SOAP OF FLOATING-ELECTRODE DIELECTRIC BARRIER DISCHARGES
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P1A257-48 PLASMA EROSION ON THE SURFACE OF VARIOUS DIELECTRIC MATERIALS IN DIELECTRIC BARRIER DISCHARGES
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P1A257-49 SURFACE WAVE PROPAGATION IN NOVEL DYNAMIC PLASMA ANTENNA
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P1A257-50 GAS TEMPERATURE EVOLUTION IN NANOSECOND-PULSE HIGH-FREQUENCY DISCHARGES FOR VARIOUS FREQUENCIES
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P1A257-51 A COMPREHENSIVE SIMULATION SOFTWARE FOR NANOPARTICLE SYNTHESIS
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P1A257-52 CHARACTERIZATION OF A PULSED NANOSECOND HIGH-PRESSURE NITROGEN DISCHARGE FOR AMMONIA PRODUCTION
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P1A257-53 APPLICATION OF AQUEOUS OZONE IN AEROPONICALLY GROWN SAN MARZANO TOMATOES A PLANT DEVELOPMENT STUDY
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P1A257-54 LAMP EFFICIENCY AND COLOR RENDERING AS FUNCTION OF ITEM OF TEMPERATURE EFFECT AND VOLUME EFFECT IN WALL-STABILIZED ARC OF WATER-COOLED VORTEX TYPE
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P1A257-55 DECREMENT OF ARC CONDUCTANCE AFFECTED BY GAS FLOW LATE TO AXIAL CENTER AS FUNCTION OF NOZZLE THROAT IN GAS CIRCUIT BREAKER
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P1A257-56 PLASMA WINDOW FOR CONTAINMENT OF HIGH PRESSURE GAS FOR USE WITH A GAS CHARGE STRIPPER
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P1A257-57 CONVECTIVE HEAT TRANSFER TO RADIAL DIRECTION AFFECTED BY TRANSVERSE MAGNETIC FIELD WITH LATERAL GAS IN TIG ARC WELDING
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P1A257-58 CALCULATION OF TEMPERATURE DISTRIBUTION CONSIDERING THERMAL NON-EQUILIBRIUM
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P1A257-59 NUMERICAL MODELING OF NANO-POWDER SYNTHESIS USING AN INDUCTIVELY COUPLED RF PLASMA TORCH
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P1A257-60 CALCULATION OF TEMPERATURE DISTRIBUTION AND CONCENTRATION DISTRIBUTION WITH CHANGING BLOWING TIMING OF SF6 GAS
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P1A257-61 MEASUREMENT OF THE IMPACT FORCE OF A NONEQUILIBRIUM ATMOSPHERIC PRESSURE PLASMA JET ON VARIOUS SUBSTRATES
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P1A257-62 EXPERIMENTAL STUDY ON THE IGNITION CHARATERISTICS OF AN ELECTROTHERMAL PULSED PLASMA THRUSTER
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P1A257-63 RELATIONSHIP BETWEEN ENERGY DEPOSITION AND ABLATION PHENOMENA IN AN ELECTROTHERMAL PULSED PLASMA THRUSTER
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P1A257-64 THE ABLATION CHARACTERISTIC OF AN ELECTROTHERMAL PULSED PLASMA THRUSTER
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P1A257-65 THE INFLUENCE OF ABLATION RATE ON THE OUTPUT PARAMETERS OF AN ELECTROTHERMAL PULSED PLASMA THRUSTER
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P1A257-66 DIRECTIONAL PATTERN OF PLASMA FLOW GENERATED BY NANOSECOND SURFACE FLASHOVER AT 90 KV
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P1A257-67 INFLUENCE OF DISCHARGE GAP PARAMETERS ON EFFICIENCY OF DISINFECTION OF CONTAMINATED WATER
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P1A257-68 OH RADICAL DEGRADATION EFFECTS ON WASTE WATER PROCESSING GENERATED BY THE BALL-LIGHTNING LIKE DISCHARGE
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P1A257-69 THE VALIDITY OF CHEMICAL OXYGEN DEMAND (COD) TESTS ON PLASMA-TREATED WATER THROUGH DECOMPOSITION OF METHYLENE BLUE
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P1A257-70 PRODUCTION OF LIQUID NITRATE USING ATMOSPHERIC AIR PLASMA DRIVEN BY SHORT REPETITIVE PULSES
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P1A257-71 STUDY ON COALESCENCE AND GROWTH RHYTHM OF CHARGED DROPLET PRODUCED BY CORONA DISCHARGE
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P1A257-72 NUMERICAL SIMULATION OF DROPLET FUSION UNDER HIGH VOLTAGE DISCHARGE
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P1A257-73 NUMERICAL SIMULATION ANALYSIS ON THE TRANSPORT OF CHARGED PARTICLES BASED ON THE VORTEX RINGS
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P1A257-74 BORON DOPED NANOTUBES PRODUCED BY THERMAL PLASMA AND THEIR POTENTIAL USE AS SUPERCAPACITOR
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P1A257-75 BIOGAS CONVERSION AND SYNGAS UPGRADING VIA WARM PLASMA REFORMING
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P1A257-76 MULTI-POINT IGNITION PROCESS INDUCED BY MICROWAVE DISCHARGE
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P1A257-77 TREATMENT OF DIOXINS AND FURANS IN MICROWAVE-DRIVEN PLASMA GASIFICATION FOR MIXTURE OF PVC AND BIOMASS AT SMALL SCALE
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P1A257-78 NON-THERMAL PLASMA INACTIVATION OF PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME (PPRS) VIRUS AEROSOLS
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P1A257-79 COMPACT PIEZOELECTRIC TRANSFORMER X-RAY SOURCE
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P1A257-80 MODELLING AND OPTIMIZATION OF HIGH CURRENT THERMIONIC ENERGY CONVERTERS
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P1A257-81 PARALLEL PLATE COLD ATMOSPHERIC PRESSURE PLASMA SOURCE FOR DESTROYING BACTERIA AND BIOFILMS
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P1A257-82 ADVANCED COLD PLASMA DEVICE FOR CANCER TREATMENT
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P1A257-83 STUDY ON THE DEVELOPMENT OF RESIDUAL SURFACE INSULATION STRENGTH UNDER REPETITIVE NANOSECOND PULSES IN NITROGEN
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P1A257-84 SURFACE FLASHOVER CHARACTERISTICS OF SPACER IN C4F7N-CO2 MIXTURES UNDER AC VOLTAGE
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P1A257-85 INVESTIGATION OF BY-PRODUCTS OF G3 IN QUASI-UNIFORM FIELD UNDER AC POWER DISCHARGE
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P1A257-86 FRINGE FIELD ENHANCED PULSED CORONA PLASMA AND ITS POLARITY EFFECTS FOR ORGANIC SURFACE MODIFICATION
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P1A257-87 RESEARCH ON A PLASMA TEMPERATURE AND ELECTRON DENSITY OF PULSED ARC DISCHARGE IN HIGH-PRESSURIZED NITROGEN INCLUDING SUPERCRITICAL STATE
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P1A257-88 MODELING OF SPACECRAFT ELECTROSTATIC DISCHARGING INDUCED BY EXTERNAL ELECTROMAGNETIC FIELD
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P1A257-89 DECOMPOSITION CHARACTERISTICS OF SF6 UNDER OVERHEATING OF SOLID INSULATION
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P1A257-90 DISTINGUISHING DISCHARGING AND OVERHEATING FAULTS IN GIS ACCORDING TO THE DECOMPOSITION PRODUCTS OF SF6
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P1A257-91 THE INFLUENCE THE TEMPERATURE CHANGING OF THE CONTAMINATED INSULATOR ON FLASHOVER VOLTAGE
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P1A257-92 THE INFLUENCE OF CONTAMINATION ON FLASHOVER DISCHARGE UNDER AC VOLTAGE
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P1A257-93 MULTIPACTOR IN COAXIAL GEOMETRIES
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P1A257-94 EXPERIMENTAL STUDY ON THE SELF-BREAKDOWN CHARACTERISTICS OF CORONA STABILIZED SWITCH

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P1A257-95 INVESTIGATION OF TRIPLE-POINT FIELD ENHANCEMENTS
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P1A257-96 RESEARCH ON THE TRIGGERING CHARACTERISTICS OF MAGNETIC DELAY PSEUDOSPARK SWITCH
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P1A257-97 SWITCHING CHARACTERIZATION OF RADIAL MULTI-CHANNEL PSEUDOSPARK SWITCH FOR HIGH CURRENT APPLICATIONS
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P1A257-98 FACTORS AFFECTING AND METHODS OF IMPROVING THE PULSE REPETITION FREQUENCY OF PLASMA CLOSING SWITCHES
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P1A257-99 A NOVEL HIGH REPETITION RATE TRIGGER SYSTEM FOR PSEUDOSPARK SWITCH
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P1A257-100 A MODIFIED HIGH VOLTAGE NANOSECOND PULSE GENERATOR BASED ON AVALANCHE TRANSISTORS
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P1A257-101 SEPARATE CONTROL OF PLASMA PARAMETERS BASED ON THE ELECTRICAL ASYMMETRY EFFECT UNDER DIELECTRIC BARRIER DISCHARGE INDUCED BY TAILORED VOLTAGE WAVEFORMS
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P1A257-102 MI2: A 700KEV-2.5KA DUAL PULSE ELECTRON BEAM INJECTOR
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P1A257-103 HIGH-POWER RF SOURCE FOR THE PULSED FIELDS EXCITATION IN THE GROUND
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P1A257-104 SHORT LENGTH HIGH-POWER WATER FILLED COAXIAL TRANSMISSION LINE FOR LONG PULSES
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P1A257-105 TYPE 2 FUZZY CONTROLLERS IN CIRCULATION MODE FOR ITER PF CONVERTR POWER SUPPLY
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P1A257-106 STUDY ON OUTPUT CHARACTERISTICS OF HIGH REPETITIVE FREQUENCY NANOSECOND PULSE GENERATOR BASED ON THE INDUCTOR-ISOLATION AVALANCHE TRANSISTOR MARX CIRCUIT
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P1A257-107 THE PULSED MAGNET AND POWER SUPPLY SYSTEM FOR 50-250 MEV ELECTRON RADIOTHERAPY
K. -L. Tsai, C. -S. Fann, C. -L. Chen, H. -P. Chang, K. -K. Lin
Linac Group, National Synchrotron Radiation Research Center, Hsinchu, Taiwan

P1A257-108 THE PERFORMANCE OF AN UPGRADED IGBT SWITCH BASED INJECTION KICKER PULSER FOR TPS BOOSTER
H. -P. Chang, C. -S. Fann, S. -Y. Hsu, C. -Y. Wu, K. -T. Hsu, C. -L. Chen, K. -L. Tsai, K. -K. Lin
NSRRC, Hsinchu 30076, Taiwan

P1A257-109 CHARACTERIZATION OF PHOTOCONDUCTIVE SEMICONDUCTOR SWITCHES WITH PERIODIC-TRENCH STRUCTURE
M. -S. Kim, J. Ryu, C. H. Kim, S. -H. Baek
4th R&D institute, Agency for Defense Development, DaeJeon, South Korea

P1A257-110 STUDY ON THE OUTPUT CURRENT OPTIMIZATION OF MULTI-BRICK PARALLEL DISCHARGE DRIVER
J. Yan[1], S. Zhang[1], Y. Gou[2], S. Shen[1], W. Ding[1]
[1]State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, Shannxi, China*
[2]State Grid Chengdu Electric Power Supply Company, Cheng'du, Sichuan, China*

P1A257-111 A POWER SUPPLY BASED ON AIR-CORED TESLA TRANSFORMER AND MAGNETIC COMPRESSION NETWORK FOR HIGH REPETITION RATE TEST
L. Li, J. Li, Z. Zhao, Y. Liu, C. Li, Y. Wang
School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China

P1A257-112 REPETITIVE TRIBOLUMINESCENCE X-RAY SOURCE
S. Furuya
Saitama Institute of Technology, Fukaya, Saitama, Japan

P1A257-113 THE EXPERIMENT OF LINEAR TRANSFORMER DRIVER (LTD) AND ITS APPLICATION TO DIELECTRIC BARRIER DISCHARGE
X. Feng
Xi'an Jiaotong University, Xii¿½i¿½an, China

P1A257-114 Design and research of 25 kJ plasma focus device
A. M. Zhukeshov, Z. Moldabekov, A. U. Amrenova, K. Serik
plasma physics, Researh Institute of Experimental and Theoretical Physics, Almaty, Kazakstan

P1A257-115 HIGH-CURRENT STAND BASED ON THE MARX GENERATOR FOR HPM SOURCES TESTING
E. Blazhko[1], A. Goryushkin[1], P. Hupchenko[1], V. Kolesnik[1], Y. Tkach[1], N. Antsyferov[1], V. Kosenko[1], V. Fedchenko[1], H. Fomin[1], A. Lobanov[1], V. Zakorko[1], S. Mironenko[1], Y. Tkach[2], M. Rader[3]
[1]Institute for Electromagnetic Research, Kharkiv, Ukraine
[2]Gomez Research Associates Inc., Huntsville, AL, United States
[3]USASMDC/ARSTRAT, Huntsville, AL, United States

P1A257-116 DEVELOPING DENSE PLASMA FOCUS CAPABILITIES AT THE UNIVERSITY OF MICHIGAN
A. P. Shah[1], R. D. McBride[1], N. M. Jordan[1], C. E. Seyler[2]
[1]University of Michigan, Ann Arbor, United States
[2]Cornell University, Ithaca, United States

Session 2A: 1.2 Computational Plasma Physics I

Monday, June 25 16:00-18:00, Governors Square 12

Session Chair: Nong Xiang, IPP, China

16:00 2A-1 (invited) LINEARIZED COULOMB COLLISION OPERATOR FOR SIMULATION OF INTERPENETRATING PLASMA STREAMS
A. M. Dimits[1], J. Banks[2], R. L. Berger[1], S. Brunner[3], T. Chapman[1], D. Gosh[1], I. Joseph[1]
[1]Lawrence Livermore National Laboratory, Livermore, CA, United States
[2]Rensselaer Polytechnic Institute, Troy, NY, United States
[3]Ecole Polytechnique Federale de Lausanne (EPFL, Lausanne, Switzerland

16:30 2A-2 OCTREE BASED COLOUMB INTERACTION MODEL FOR ELECTROSPRAY MD SIMULATIONS
N. A. Mehta, D. A. Levin
Aerospace engineering, The University of Illinois at Urbana - Champaign, Urbana, Illinois, United States

16:45 2A-3 A NEW SELF-CONSISTENT BOUNDARY CONDITION FOR MODELING OF PLASMA PLUME EVOLUTION USING A FULLY KINETIC PIC APPROACH.

R. Jambunathan, D. A. Levin
Department of Aerospace Engineering, University of Illinois, Urbana-Champaign, Urbana, Illinois, United States

17:00 2A-4 NUMERICAL SIMULATIONS OF NANOSECOND-PULSE DISCHARGES
T. Piskin, V. A. Podolsky, J. Poggie, S. O. Macheret
School of Aeronautics and Astronautics, Purdue University, West Lafayette, United States

17:15 2A-5 ON ELECTRON HEATING IN CAPACITIVELY COUPLED OXYGEN DISCHARGES
J. T. Gudmundsson[1], D. I. Snorrason[1,2], A. Proto[1], H. Hannesdottir[1]
[1]Science Institute, University of Iceland, Reykjavik, Iceland
[2]Department of Space and Plasma Physics, KTH-Royal Institute of Technology, Stockholm, Sweden

17:30 2A-6 JOINING THE POWER OF THE CLOUD AND OPEN-SOURCE FOR PLASMA SIMULATION: CASE OF TWO PLASMA DEPOSITION MODELS
A. Obrusnik[1,2], P. Zikan[1,2], Z. Bonaventura[2]
[1]PlasmaSolve, Brno, Czech Republic
[2]Faculty of Science, Masaryk University, Brno, Czech Republic

17:45 2A-7 PARTICLE-IN-CELL SIMULATIONS OF PARAMETRIC DECAYS OF LOWER HYBRID WAVES ON EAST TOKAMAK
N. Xiang[1,2], T. Zhou[1,2], X. Wang[3], Z. Men[1,2]
[1]Institute of Plasma Physics, Chinese Academy of Sciences, China, Hefei, China
[2]Center for Magnetic Fusion Theory, Hefei, China
[3]Physics, Auburn Univerisity, Auburn, USA

Session 2B: 5.4 Environmental, Industrial, and Display Applications II

Monday, June 25 16:00-18:00, Governors Square 11

Session Chair: Allen Garner, Purdue University

16:00 2B-1 EFFICIENCY OF LIQUID NITRATE PRODUCTION BY NONEQUILIBRIUM PLASMA IN ATMOSPHERIC AIR
A. Khomenko, Z. Shen, S. O. Macheret
School of Aeronautics and Astronautics, Purdue University, West Lafayette, United States

16:15 2B-2 (invited) PULSED DISCHARGES IN AND CLOSE TO WATER FOR DEGRADATION OF MICROBIOLOGICAL AND CHEMICAL CONTAMINANTS
J. F. Kolb, J. Kredl, T. Schulz, R. Rataj, V. Hahn, M. Schmidt, K. -D. Weltmann
INP Greifswald, Greifswald, Germany

16:45 2B-3 DISINTEGRATION OF SIMULATED DRINKING WATER BIOFILMS WITH ARRAYS OF MICROCHANNEL PLASMA JETS
P. P. Sun[1,2], G. L. Monroy[3], W. Chen[2], C. Huang[1], S. A. Boppart[3], T. H. Nguyen[1], J. G. Eden[2]
[1]Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
[2]Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
[3]Department of Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

17:00 2B-4 PLASMA PHYSICS AND CHEMISTRY FOR WATER REUSE: ENHANCING THE INTERFACE WITH CLOSE-PACKED WATER JETS
S. Mujovic, J. E. Foster
Dept. of Nuclear Engineering & Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

17:15 2B-5 HYDROGEN PEROXIDE INTERFERENCE IN CHEMICAL OXYGEN DEMAND ASSESSMENTS OF PLASMA TREATED WASTEWATERS
J. R. Groele, J. Lai, J. E. Foster
Mechanical Engineering, University of Michigan, Ann Arbor, MI, United States

17:30 2B-6 A NEW METHOD TO GENERATE STRONG UNDERWATER SHOCK WAVES USING WATER ELECTROLYSIS IN NEGATIVE STREAMER PULSED SPARK DISCHARGE
K. Lee, K. -J. Chung, Y. S. Hwang
Dept. Nuclear Engineering, Seoul National University, Seoul, South Korea

Session 2C: 3. Charged Particle Beams and Sources II

Monday, June 25 16:00-18:00, Governors Square 10

Session Chair: Evgenya Simakov, Los Alamos National Lab

16:00 2C-1 (invited) FIELD EMISSION PROPERTIES OF MACROSCOPIC CARBON NANOTUBE (CNT) MATERIALS
S. B. Fairchild[1], J. Park[1], D. Marincel[2], S. Williams[2]
[1]Materials & Manufacturing Directorate, Air Force Research Laboratory, Wright-Patterson AFB, OH, United States
[2]Chemical and Biomolecular ENgineering, Rice University, Houston, TX, United States

16:30 2C-2 TWO-COLOR LASER INDUCED ELECTRON EMISSION
Y. Luo, P. Zhang
Electrical and Computer Engineering, Michigan State University, East Lansing, MI, United States

16:45 2C-3 CURRENT SATURATION IN SEMICONDUCTOR AND SEMIMETALLIC FIELD EMITTERS
S. S. Baturin[1], A. V. Zinovev[2], S. V. Baryshev[3]
[1]The University of Chicago, Chicago, United States
[2]Argonne National Laboratory, Argonne, United States
[3]Michigan State University, East Lansing, United States

17:00 2C-4 VARIATION OF ANODE GRID SURFACE MORPHOLOGY AND ITS EFFECT ON OPERATION OF A TRIODE VIRTUAL CATHODE OSCILLATOR
L. Liu, S. Li
Institute of High Power Microwave Technology, Changsha, China

17:15 2C-5 GENERATION OF INTENSE ION BEAMS AT THE 13 MEV LEVEL ON THE HERMES-III ACCELERATOR
T. J. Renk
Sandia National Laboratories, Albuquerque, NM, United States

17:30 2C-6 PLASMA ION BEAM GUIDING AND SELF FOCUSING THROUGH MICRO-GLASS CAPILLARY FOR RAPID MICROSTRUCTURING
S. K. Maurya, S. Barman, S. Bhattacharjee
Physics, Indian Institute Of Technology Kanpur, Kanpur, Uttar Pradesh, India

Session 2D: 4.1 Fusion II (Inertial, Magnetic, Alternatives)

Monday, June 25 16:00-18:00, Governors Square 17

Session Chair: Mikhail Dorf, Lawrence Livermore National Laboratory

16:00 2D-1 (invited) ADVANCEMENT OF HYBRID FLUID-KINETIC MODELING EFFORTS FOR HEDP AND ICF SCIENCE
A. B. Sefkow
Laboratory for Laser Energetics, University of Rochester, Rochester, NY, United States

16:30 2D-2 THE IMPACT OF ADAPTIVE MESH REFINEMENT ON A SIMULATED Z-PINCH USING FLASH
M. B. Adams[1], P. Tzeferacos[2], C. Jennings[3], P. -A. Gourdain[1], S. A. Slutz[3], K. Peterson[3]
[1]Physics and Astronomy, University of Rochester, Rochester, NY, United States
[2]Astronomy and Astrophysics, University of Chicago, Chicago, IL, United States
[3]Sandia National Laboratories, Albuquerque, NM, United States

16:45 2D-3 MICRO-SCALE FUSION IN DENSE RELATIVISTIC NANOWIRE ARRAY PLASMAS
C. Calvi[1], A. Curtis[2,3], J. Tinsley[3], R. Hollinger[2], V. Kaymak[4], A. Pukhov[4], S. Wang[2], A. P. Rockwood[1], Y. Wang[2], V. N. Shlyaptsev[2], J. J. Rocca[1,2]
[1]Physics, Colorado State University, Fort Collins, CO, United States
[2]Electrical and Computer Engineering, Colorado State University, Fort Collins, CO, United States
[3]Nevada National Security Site, Las Vegas, NV, United States
[4]Institut fi¿½r Theoretische Physik,, Heinrich-Heine-Universitï¿½t Dï¿½sseldorf, Dï¿½sseldorf, Germany

17:00 2D-4 ADVANCED SIMULATIONS OF HELICON ANTENNAE AND SOURCES
D. N. Smithe, T. G. Jenkins, C. M. Roark
Tech-X Corporation, Boulder, CO, United States

17:15 2D-5 MODELING OF ICRF ANTENNA COUPLING ON EAST TOKAMAK
C. Gan[1], D. Smithe[2], N. Xiang[1], X. Zhang[1]
[1]*Institute of Plasma Physics, Chinese Academy of Sciences, Hefei, Anhui, China*
[2]*Tech-X Corporation, Boulder, CO, USA*

17:30 2D-6 WHAT CAN A LOW-TEMPERATURE SIMPLE MAGNETIZED TORUS REVEAL ABOUT INTERMITTENCY IN SEPARATRIX BOUNDARY LAYERS?
E. I. Taylor, W. L. Rowan, M. E. Austin
Institute for Fusion Studies, The University of Texas at Austin, Austin, Texas, United States

Session 2E: 4.2 Particle Acceleration with Lasers and Beams

Monday, June 25 16:00-18:00, Governors Square 16

Session Chair: Franziska Treffert, student researcher at SLAC

16:00 2E-1 (invited) LASER-ACCELERATION OF QUASI MONO-ENERGETIC AND LOW-DIVERGENCE TITANIUM ION BEAMS
F. Beg[1], J. Li[1], P. Forestier-Colleoni[1], M. Bailly-Granvaux[1], C. McGuffey[1], A. Arefiev[1], S. Bulanov[2], C. Gautier[3], J. Peebles[1], C. Krauland[1], A. Hussain[4], T. Batson[4], J. Fernandez[3], S. Palaniyappan[1], R. Johnson[3], G. Petrov[5]
[1]*University of California-San Diego, San Diego, CA, United States*
[2]*Lawrence Berkeley National Laboratory, Berkeley, CA, United States*
[3]*Los Alamos National Laboratory, Los Alamos, NM, United States*
[4]*University of Michigan, Ann Arbor, MI, United States*
[5]*Naval Research Laboratory, Washington DC, United States*

16:30 2E-2 BEAM MATCHING INTO AND OUT OF A PLASMA WAKEFIELD ACCELERATOR
M. D. Litos[1], R. Ariniello[1], C. Doss[1], K. Hunt-Stone[1], J. R. Cary[1,2]
[1]*Physics, University of Colorado Boulder, Boulder, CO, United States*
[2]*Tech-X, Boulder, CO, United States*

16:45 2E-3 LASER IONIZED PLASMA SOURCES FOR PLASMA WAKEFIELD ACCELERATORS
R. Ariniello[1], C. Doss[1], K. Hunt-Stone[1], J. R. Cary[2], M. D. Litos[1]
[1]*University of Colorado Boulder, Boulder, CO, USA*
[2]*Tech-X, Boulder, CO, USA*

17:00 2E-4 APPLICATIONS OF THIN PLASMA LENSES TO FOCUS BEAMS IN PLASMA WAKEFIELD ACCELERATORS
C. E. Doss[1], R. Ariniello[1], K. Hunt-Stone[1], J. R. Cary[2], M. D. Litos[1]
[1]*University of Colorado Boulder, Boulder, CO, United States*
[2]*Tech-X, Boulder, CO, United States*

17:15 2E-5 ION ACCELERATION IN A FOIL PLASMA HEATED BY A HIGH INTENSITY LASER
A. Kargarian
Kharazmi University Of Teharan, Tehran, Iran

17:30 2E-6 LASER ION ACCELERATION FROM SANDWICH TARGETS
B. Ramakrishna
Physics, Indian Institute of Technology Hyderabad, Hyderabad, India

Session 2F: 7.3, 7.4 Generators, Compact Pulsed Power, and Applications

Monday, June 25 16:00-18:00, Governors Square 15

Session Chair: Yaroslav Tkach, Gomez Research Associates Inc.

16:00 2F-1 (invited) PORTABLE DENSE PLASMA FOCUS NEUTRON SOURCE FOR ACTIVE INTERROGATION APPLICATIONS
B. B. Gall, M. K. Heika, M. D. Blasco, V. N. DiPuccio, J. N. Bellow, B. T. Meehan
Diagnostics Research and Material Studies, Mission Support and Test Services LLC, North Las Vegas, NV, United States

16:30 2F-2 HIGH ENERGY LONG PULSE MARX BANK DRIVER FOR THE HIGH-POWER MICROWAVE SOURCES

A. Kuskov, J. Chen, M. Lerma, T. Schmidt, S. Portillo
Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States of America

16:45 2F-3 LINEAR TRANSFORMER DRIVER CAVITY TESTING ON HADES
R. V. Shapovalov, M. Evans, B. L. Foy, P. -A. Gourdain
Department of Physics & Astronomy, University of Rochester, Rochester, United States

17:00 2F-4 ATMOSPHERIC PRESSURE MICROWAVE PLASMA SYSTEM AND APPLICATIONS
W. A. Toor[1], A. U. Baig[2], N. Shafqat[2], R. Irfan[2], M. Ashraf[1]
[1]Department of Electrical Engineering, Capital university of Science and technology, Islamabad, Pakistan
[2]Department of Electrical Engineering, Pakistan institute of engineering and applied sciences, Islamabad, Pakistan

17:15 2F-5 DEMONSTRATION OF MULTIPLE SHOT PER DAY CAPABILITY ON THE CLAM SHELL MAGNETICALLY-INSULATED TRANSMISSION LINE (CSMITL2) AT THE SATURN ACCELERATOR*
B. A. Ulmen[1], J. P. VanDevender[2]
[1]Sandia National Laboratories, Albuquerque, NM, United States
[2]VanDevender Enterprises, Albuquerque, NM, United States

17:30 2F-6 A COMPACT, HIGH REPETITION FREQUENCY, ALL SOLID-STATE PULSED POWER SOURCE
H. Li, C. Luan, J. Xiao, X. Ma, Y. Huang, C. Wang
Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, China

Session PL3: Plenary 3

Tuesday, June 26 08:30-09:30, Plaza Ballroom A/B/C

Session Chair: Mary Ann Sweeney, Sandia National Laboratories

8:30 PL3-1 (invited) ADDRESSING THE CHALLENGES AHEAD IN HIGH ENERGY DENSITY PHYSICS AND INERTIAL FUSION
N. Frazier
U.S. Department of Energy National Nuclear Security Administration, Washington DC, USA

Session 3A: 1.1 Basic Phenomena II

Tuesday, June 26 10:00-12:00, Governors Square 12

Session Chair: Kris Beckwith, Sandia National Laboratories

10:00 3A-1 (invited) ON RECYCLING IN HIGH POWER IMPULSE MAGNETRON SPUTTERING DISCHARGES
J. T. Gudmundsson[1,2], D. Lundin[3], M. A. Raadu[2], T. J. Petty[3], T. Minea[3], N. Brenning[2]
[1]Science Institute, University of Iceland, Reykjavik, Iceland
[2]Department of Space and Plasma Physics, KTH-Royal Institute of Technology, Stockholm, Sweden
[3]Laboratoire de Physique des Gaz et Plasmas - LPGP, Universite Paris-Sud, Orsay, France

10:30 3A-2 TRANSITION FROM MICROSCALE TO NANOSCALE BREAKDOWN DYNAMICS
A. M. Loveless, A. M. Darr, S. D. Dynako, A. L. Garner
Nuclear Engineering, Purdue University, West Lafayette, IN, United States

10:45 3A-3 TRANSITION FROM FIELD EMISSION TO GLOW DISCHARGE PLASMA IN POLYCRYSTALLINE DIAMOND FILMS
S. V. Baryshev[1], S. S. Baturin[2]
[1]Michigan State University, East Lansing, United States
[2]The University of Chicago, Chicago, United States

11:00 3A-4 COMBINING THEORY AND EXPERIMENT IN SEARCH OF NOVEL PEROVSKITE ELECTRON EMITTERS
R. Jacobs, L. Lin, T. Ma, D. Morgan, J. Booske
University of Wisconsin-Madison, Madison, WI, United States

11:15 3A-5 HIGH PRESSURE MICRODISCHARGES IN ARGON UP TO 50BAR
M. Klas[1], S. Matejcik[1], L. Moravsky[1], M. Radmilovic[2], B. Radjenovic[2]

[1]*Department of experimental physics, Comenius University, Bratislava, Slovakia*
[2]*Institute of Physics, University of Belgrade, Belgrade, Serbia*

11:30 3A-6 FIRE-COLUMN-LIKE DUSTY-PLASMA EJECTED FROM BASALT BY LOCALIZED MICROWAVES
E. Jerby, Y. Shoshani
Faculty of Engineering, Tel Aviv University, Ramat Aviv, Israel

11:45 3A-7 THE EFFECT OF DIELECTRIC MATERIALS ON THE DISCHARGE CHARACTERSITICS OF A COAXIAL DIELECTRIC BARRIER DISCHARGE DRIVEN BY NANOSECOND POWER SUPPLY
F. Liu, Z. Fang, D. Mei
College of Electrical Engineering and Control Science, Nanjing Technology University, Nanjing, Jiangsu, China

Session 3B: 2.7 Microwave Plasma Interactions I

Tuesday, June 26 10:00-12:00, Governors Square 11

Session Chair: Remington Reid, Air Force Research Laboratory

10:00 3B-1 DESIGN AND MODELING OF A MICROWAVE PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION SYSTEM
K. Aranganadin[1], Y. Jiang[1], M. -C. Lin[1], C. -Y. Lin[2], H. -Y. Hsu[2]
[1]*Department of Electrical and Biomedical Engineering, Hanyang University, Seoul, South Korea*
[2]*Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan*

10:15 3B-2 (invited) IONIZATION-INDUCED SELF-CHANNELING OF AN ULTRA-HIGH POWER SUB-NS MICROWAVE BEAM IN GAS AND PLASMA
G. Shafir[1], Y. Cao[1], Y. E. Krasik[1], Y. P. Bliokh[1], J. Leopold[1], A. Fisher[1], R. Gad[1], D. Levko[2], V. Bernshtam[3]
[1]*Physics Department, Technion - Israel Institute of Technology, Haifa, Israel*
[2]*Department of Aerospace Engineering and Engineering Mechanics, University of Texas, Austin, USA*
[3]*Faculty of Physics, Weizman Institute of Science, Rehovot, Israel*

10:45 3B-3 MODELING HIGH-POWER MICROWAVE BEAM CHANNELING AND SELF-FOCUSING BY NEUTRAL GAS IONIZATION
J. G. Leopold, Y. P. Bliokh, G. Shafir, Y. Cao, Y. E. Krasik
Physics Dept., Technion, Haifa, Israel

11:00 3B-4 TRIPLE LANGMUIR PROBE MEASUREMENTS OF FREE-SPACE MICROWAVE-DRIVEN PLASMA
A. Lopez[1,2], R. Reid[3]
[1]*Nuclear Engineering, University of Michigan, Ann Arbor, MI, United States*
[2]*Advanced Solutions, Leidos, Inc., Albuquerque, NM, United States*
[3]*RDHP, Air Force Research Laboratory, Albuquerque, NM, United States*

11:15 3B-5 MICROPLASMA GENERATION IN LOW-POWER MICROWAVE COPLANAR WAVEGUIDE (CPW) STRUCTURES
A. Semnani, Z. Vander Missen, D. Peroulis
Department of Electrical and Computer Engineering, Purdue University, West Lafayette, IN, United States

11:30 3B-6 STUDY OF THE ABSORPTION, AND TRANSMISSION OF MICROWAVES BY THE NO-UNIFORM PLASMA ROUTE WAY
E. Yan
Science and Technology on High Power Microwave laboratory, Institute of Applied Electronics. CAEP, P, mianyang, China

Session 3C: 5.5 Medical and Biological Applications I

Tuesday, June 26 10:00-12:00, Governors Square 10

Session Chair: Michael Keidar, George Washington University

10:00 3C-1 (invited) THE INSTANT CELLULAR RESPONSE TO COLD ATMOSPHERIC PLASMA TREATMENT
D. Yan[1], W. Xu[1], L. Lin[1], X. Yao[1], J. H. Sherman[2], M. Keidar[1]
[1]*Department of Mechanical and Aerospace Engineering, The George Washington University,, Washington, DC, United States*
[2]*Neurological Surgery,, The George Washington University,, Washington, DC, United States*

10:30 3C-2 MICRO-HOLLOW SURFACE DIELECTRIC BARRIER DISCHARGES FOR DECONTAMINATION OF BACTERIAL BIOFILM
Z. Tucekova[1], L. Vacek[2], R. Krumpolec[1], J. Kelar[1], M. Cernak[1], F. Ruzicka[2]
[1]CEPLANT, Department of Physical Electronics, Faculty of Science, Masaryk University, Brno, Czech Republic
[2]Department of Microbiology, Faculty of Medicine, Masaryk University, St. Anne's University Hospital, Brno, Czech Republic

10:45 3C-3 PLASMAS IN AGRICULTURE: DIRECT TREATMENT AND ACTIVATED WATER
K. W. Engeling, V. C. Fritz, J. R. Groele, J. Lai, J. E. Foster
University of Michigan, Ann Arbor, Michigan, United States

11:00 3C-4 ROLE OF REACTIVE NITROGEN SPECIES IN INACTIVATION OF FELINE CALICIVIRUS USING TWO-DIMENSIONAL ARRAY OF MICRO-DISCHARGES IN AIR
G. Nayak[1], H. A. Aboubakr[2], S. M. Goyal[2], P. J. Bruggeman[1]
[1]Department of Mechanical Engineering, University of Minnesota, Minneapolis, United States
[2]Veterinary Diagnostic Laboratory, College of Veterinary Medicine, University of Minnesota, Saint Paul, United States

11:15 3C-5 ANALYSIS OF DUAL SHOCK-WAVE, ELECTRIC PULSING STRATEGY FOR ELECTROMANIPULATION OF BIOMEMBRANE NANOPORES
Q. Hu[1], A. R. Chowdhury[2], R. P. Joshi[2]
[1]School of Engineering Technology, Eastern Michigan University, Ypsilanti,MI, United States
[2]Department of Electrical and Computer Engineering, Texas Tech University, Lubbock,TX, United States

11:30 3C-6 EFFECT OF PLASMA TREATMENT ON LIPID MOLECULES IN STRATUM CORNEUM
J. Kristof, H. Miyamoto, M. Blajan, K. Shimizu
Shizuoka University, Hamamatsu, Shizuoka prefecture, Japan

11:45 3C-7 EVALUATION OF CYLINDRICAL ASYMMETRIC SURFACE DIELECTRIC BARRIER DISCHARGE ACTUATORS FOR SURFACE DECONTAMINATION AND MIXING
K. K. Pai[1], C. Timmons[1], A. D. Ngo[2], J. D. Jacob[2]
[1]Plasma Bionics, Stillwater, Oklahoma
[2]Mechanical and Aerospace Engineering, Oklahoma State University, Stillwater, Oklahoma

Session 3D: 4.1 Fusion III (Inertial, Magnetic, Alternatives)

Tuesday, June 26 10:00-12:00, Governors Square 17

Session Chair: Sasha Velikovich, Naval Research Laboratory

10:00 3D-1 (invited) OVERVIEW OF THE FIRST WENDELSTEIN 7-X DIVERTOR EXPERIMENTAL CAMPAIGN
S. A. Lazerson[1], W. 7. -X. Team[2]
[1]Advanced Projects, Princeton Plasma Physics Laboratory, Princeton, NJ, United States
[2]Max-Planck Institut fur Plasmaphysik, Greifswald, Germany

10:30 3D-2 IMPACT OF ENGINEERING FEATURES ON DOUBLE SHELL IMPLOSIONS ON THE NIF
R. F. Sacks[1], E. Loomis[1], W. Daughton[1], D. Wilson[1], E. Merritt[1], J. Sauppe[1], E. Dodd[1], D. Montgomery[1], S. Palaniyappan[1], T. Cardenas[1], W. Wan[1], J. Kline[1], S. Batha[1], P. Amendt[2], R. Tipton[2], V. Smalyuk[2], Y. Ping[2]
[1]Los Alamos National Laboratory, Los Alamos, NM, United States
[2]Lawerence Livermore National Laboratory, Livermore, CA, United States

10:45 3D-3 FORMATION, TRANSLATION, CAPTURE, MERGING AND COMPRESSION OF FRCS IN AN IMPLODING ROTATIONALLY STABILIZED LINER
M. H. Frese, S. D. Frese
NumerEx, Corrales, NM, United States

11:00 3D-4 PROPAGATION AND SMOOTHING OF TENT-INDUCED PERTURBATIONS IN LOW-DENSITY PLASMA
Z. Dai[1], J. Gu[2], W. Zheng[3]
[1]institute of applied physics and computational mathematics, Beijing, China
[2]institute of applied physics and computational mathematics, Beijing, China
[3]institute of applied physics and computational mathematics, Beijing, China

11:15 3D-5 P2 ASYMMETRY OF HARD X-RAY FLUX IN LASER HEATED HIGH-Z CAVITIES AND ITS EFFECTS ON ICF IGNITION CAPSULES
Y. Li, C. Zhai, W. Zheng, C. Wu, G. Ren, J. Gu, W. Huo, X. Meng, W. Ye, K. Lan, W. Zhang
Institute of Applied Physics and Computational Mathematics, Beijing, China

11:30 3D-6 A TARGET STRUCTURE FOR MULTI-COLLISION DIRCT-DRIVE VOLUMETRIC IGNITTION
Y. Xu
Institute of applied physics and computational mathematics, Beijing, China

Session 3E: 5.1 Nonequilibrium Plasma Applications II

Tuesday, June 26 10:00-12:00, Governors Square 16

Session Chair: Bruce E. Koel, Dept. of Chem and Bio Engineering, Princeton University

10:00 3E-1 (invited) STRONG VIBRATIONAL EXCITATION IN N2 BY US-PULSING IN MICROWAVE PLASMA
D. C. M. van den Bekerom[1], D. A. C. M. Hage[1,2], N. Gatti[1], T. Minea[1], Q. Ong[1], T. Butterworth[1], W. A. Bongers[1], M. C. M. van de Sanden[1,2], G. J. van Rooij[1]
[1]Non-equilibrium Fuel Conversion, DIFFER, Eindhoven, Netherlands
[2]Plasma and Materials Processing, Eindhoven university of Technology, Eindhoven, Netherlands

10:30 3E-2 NANOSECOND-PULSED DBD IN ATMOSPHERIC AIR: TIME-RESOLVED MEASUREMENTS OF ELECTRIC FIELDS AND ROS DELIVERY INTO LIQUID
D. Dobrynin
Drexel University, Philadelphia, PA, United States

10:45 3E-3 MEASUREMENT OF REACTIVE OXYGEN SPECIES DENSITIES OF ATMOSPHERIC PRESSURE PLASMA JET FOR SKIN TREATMENT
F. Wu, J. Li, X. Lu
State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan, China

11:00 3E-4 MAGNETOSTATIC FIELD EFFECTS ON OPTICAL EMISSIONS FROM ATMOSPHERIC PRESSURE MICROPLASMAS
K. Barman[1], P. Pal[1], S. Bhattacharjee[1], S. K. Nema[2], R. Rane[2]
[1]Physics, Indian Institute of Technology Kanpur, Kanpur,Uttar Pradesh, India
[2]FCIPT, Institute for Plasma Research, Gandhinagar,Gujrat, India

11:15 3E-5 LASER DIAGNOSTICS OF A NANSOECOND PULSED HELIUM PLASMA JET USING THOMSON SCATTERING AND TALIF
C. Jiang[1], J. Miles[2], J. Hornef[1], S. Adams[2], C. Carter[2]
[1]Department of Electrical and Computer Engineering & Center for Bioelectrics, Old Dominion University, Norfolk, VA, United States
[2]Wright-Patterson AFB, Air Force Research Lab, Dayton, OH, United States

11:30 3E-6 MODE TRANSITION OF THE POSITIVE NEEDLE-TO-PLANE AIR DISCHARGE AT ATMOSPHERIC PRESSURE
S. Q. Wu, X. Liu, W. Chen, W. Cheng
Nanjing University of Aeronautics and Astronautics, Nanjing, China

11:45 3E-7 DBD-MICRODISCHARGES IN ASYMMETRIC GEOMETRY WITH ROTATING BARRIER ELECTRODE: FIRST EXPERIMENTAL ATTEMPTS AND BENCHMARKING STUDIES
R. Brandenburg[1,2], S. Jahanbakhsh[1], V. Brueser[1], M. Kettlitz[1], V. Andreev[3]
[1]Leibniz Institute for Plasma Science and Technology, Greifswald, Germany
[2]Institute of Physics, University of Rostock, Rostock, Germany
[3]Chuvash State University, Cheboksary, Russia

Session 3F: 2.3 Slow Wave Devices I

Tuesday, June 26 10:00-12:00, Governors Square 15

Session Chairs: Drew A Packard, University of Michigan
Nick Jordan, Universit of Michigan

10:00 3F-1 (invited) ADDITIVE MANUFACTURE OF RF SOURCES
L. Ives, D. Marsden
Calabazas Creek Research, Inc., San Mateo, CA, United States

10:30 3F-2 DESIGN AND RECENT STATUS OF THE NRL LOW VOLTAGE FOLDED WAVEGUIDE FOUR BEAM MINI-TWT
A. N. Vlasov[1], J. C. Rodgers[1], R. L. Jaynes[1], C. D. Joye[1], J. A. Pasour[1], F. N. Wood[1], I. A. Chernyavskiy[1], S. J. Cooke[1], D. K. Abe[1], B. Levush[1], T. M. Antonsen Jr[2], D. Chernin[2], V. Jabotinski[2], K. T. Nguyen[3]
[1]Naval Research Laboratory, Washington,DC, United States
[2]Leidos Inc., Billerica, MA, United States
[3]Beam-Wave Research Inc., Bethesda, MD, United States

10:45 3F-3 A 1.3 GHZ 100 KW ULTRA-HIGH EFFICIENCY KLYSTRON
M. E. Read[1], R. L. Ives[1], J. Neilson[2], A. Jensen[3]
[1]Calabazas Creek Research Inc., San Mateo, CA, United States
[2]SLAC National Accelerator Laboratory, Menlo Park, CA, United States
[3]Leidos, Billerica, MA, United States

11:00 3F-4 S BAND METAMATERIAL-BASED AMPLIFIER
Z. Duan, X. Wang, S. Jiang, Z. Wang, Y. Gong
School of Electronic Science and Engineering, University of Electronic Science and Technology of China, Chengdu,, Chengdu, Sichuan, China

11:15 3F-5 SCALING STUDIES OF A MILLIMETER WAVE BACKWARD WAVE OSCILLATOR
A. Elfrgani[1], E. Schamiloglu[1], N. A. Alferjani[2]
[1]Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States
[2]PV15 Danau Saujana st, Setapak, Kuala Lumpur, Malaysia

11:30 3F-6 W-BAND EXTENDED INTERACTION OSCILLATOR DRIVEN BY A PSEUDOSPARK-SOURCED SHEET ELECTRON BEAM
H. Yin[1], A. W. Cross[1], L. Zhang[1], W. He[1], G. Shu[2], J. Zhao[3], G. Liu[4], Y. Yin[4], K. Ronald[1], A. D. R. Phelps[1]
[1]Department of Physics, University of Strathclyde, Glasgow, United Kingdom
[2]College of Electronic Science and Technology, Shenzhen University, Shenzen, China
[3]School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China
[4]School of Physical Electronics, University of Electronic Science & Technology of China, Chengdu, China

11:45 3F-7 DESIGN OF AN L BAND RELATIVISTIC MAGNETRON WITH LOW GUIDING MAGNETIC FIELD
D. Wang
Laboratory of High Power Microwave Technology, Institute of Applied Electronics, CAEP, mianyang, China

Session PL4: Plenary 4

Tuesday, June 26 13:30-14:30, Plaza Ballroom A/B/C

Session Chair: Chunqi Jiang, Old Dominion University

13:30 PL4-1 (invited) INTERACTIONS OF NON-EQUILIBRIUM PLASMA WITH LIQUIDS: PHYSICS, CHEMISTRY AND APPLICATIONS
P. Lukes
Institute of Plasma Physics of the CAS, Prague, Czech Republic

Session 4A: 1.4 Partially Ionized Plasmas

Tuesday, June 26 14:30-16:00, Governors Square 12

Session Chair: Hoyoung Kim, Department of Electrical Engineering, University of Colorado Denver, CO, USA

14:30 4A-1 (invited) ON THE SIMILARITIES OF LOW-TEMPERATURE PLASMA DISCHARGES
Y. Fu, J. P. Verboncoeur
Computational Mathematics Science and Engineering, Michigan State University, MI, United States

15:00 4A-2 EXPERIMENTS AND MODELING OF PLASMA IONIZATION AND ACCELERATION IN A COAXIAL PLASMA ACCELERATOR
A. D. Stepanov, U. Shumlak
Aeronautics and Astronautics, University of Washington, Seattle, WA, United States

15:15 4A-3 EFFECT OF SUSCEPTOR TEMPERATURE ON ION ENERGY AND ANGLE DISTRIBUTIONS IN A CAPACITIVELY COUPLED PLASMA
J. S. Kim[1], H. J. Kim[2], H. J. Lee[1]
[1]Electrical Engineering, Pusan National University, Busan, South Korea
[2]Mechanical Engineering, Dong-A University, Busan, South Korea

15:30 4A-4 MECHANISMS OF ARGON PLASMA DECAY BETWEEN HIGH VOLTAGE, HIGH REPETITION RATE NANOSECOND PULSES
V. A. Podolsky, S. O. Macheret
School of Aeronautics and Astronautics, Purdue University, West Lafayette, IN, United States

Session 4B: 2.5 Codes and Modeling I

Tuesday, June 26 14:30-16:00, Governors Square 11

Session Chair: Andrew S Richardson, Naval Research Laboratory

14:30 4B-1 (invited) NEW ALGORITHMS FOR PIC MODELING OF HPM SOURCES IN NEPTUNE
S. J. Cooke, A. N. Vlasov
Electronics Science And Technology Division, Naval Research Laboratory, Washington, DC, United States

15:00 4B-2 A NOVEL TECHNIQUE TO MODEL ULTRAFAST ELECTRON MICROSCOPE
T. Bui, M. Read, L. Ives
Calabazas Creek Research, Inc., Mountain View, CA, USA

15:15 4B-3 DEVELOPMENT OF PIFE-PIC: A 3-D PARALLEL IMMERSED FINITE ELEMENT PARTICLE-IN-CELL CODE FOR PLASMA SIMULATIONS
D. Han, X. He
Missouri University of Science and Technology, Rolla, MO, United States

15:30 4B-4 EVALUATION OF THE SPEED-LIMITED PARTICLE-IN-CELL METHOD USING STEADY-STATE DETECTION
A. M. Chap[1], T. G. Jenkins[1], J. R. Cary[1,2], P. H. Stoltz[1], G. R. Werner[2]
[1]Tech-X Corporation, Boulder, CO, United States
[2]University of Colorado, Boulder, CO, United States

15:45 4B-5 MODELING MAGNETRON SPUTTERING DEVICES WITH VSIM
N. P. Crossette, T. G. Jenkins, D. N. Smithe, J. R. Cary
Tech-X Corporation, Boulder CO, United States

Session 4C: 3. Charged Particle Beams and Sources III

Tuesday, June 26 14:30-16:00, Governors Square 10

Session Chair: Jorge Rocca, Colorado State University

14:30 4C-1 (invited) CHARACTERIZATION OF A COMPACT, LOW COST, ATMOSPHERIC PRESSURE PLASMA JET DRIVEN BY A PIEZOELECTRIC TRANSFORMER
M. J. Johnson, D. R. Boris, T. B. Petrova, S. G. Walton
Plasma Physics, Naval Research Laboratory, Washington, DC, United States

15:00 4C-2 ION CYCLOTRON RESONANCE HEATING ON PROTO-MPEX
P. A. Piotrowicz[1], D. N. Ruzic[1], J. F. Caneses[2], J. B. O. Caughman[2], R. H. Goulding[2], D. L. Green[2], J. D. Lore[2], J. Rapp[2]
[1]Nuclear, Plasma, and Radiological Engineering, University of Illinois at Urbana Champaign, Urbana, IL, United States
[2]Oak Ridge National Laboratory, Oak Ridge, TN, United States

15:15 4C-3 ELECTRON-BEAM SUSTAINED PLASMA WITH UNIQUE CHARACTERISTIC OF LOW ELECTRON TEMPERATURE AT VERY LOW PRESSURE
Z. Chen, J. Blakeney, M. Doppel, P. Ventzek, A. Ranjan
Tokyo Electron America, Austin, TX, Texas

15:30 4C-4 DEVELOPMENT OF ADVANCED DIELECTRIC BARRIER DISCHARGE WITH FLEXIBLE CERAMIC BARRIER LAYER

J. Kelar, M. Zemanek, M. Pazderka, M. Cernak
CEPLANT - Department of physical electronics, Masaryk University, Brno, Czech Republic

15:45 4C-5 GENERATION OF BEAM PLASMA BY PLASMA CATHODE ELECTRON SOURCE AT FORE-VACUUM PRESSURE RANGE.
E. M. Oks[1,2]
[1]Physics, Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russian Federation
[2]Plasma Sources, High Current Electronics Institute, Tomsk, Russian Federation

Session 4D: 5.3 Plasma Thrusters

Tuesday, June 26 14:30-16:00, Governors Square 17

Session Chair: John Foster, University of Michigan

14:30 4D-1 COMPARISON OF PLASMA PLUME CHARACTERISTICS OBTAINED USING PIC-DSMC APPROACH WITH BOLTZMANN APPROXIMATIONS
R. Jambunathan, D. A. Levin
Department of Aerospace Engineering, University of Illinois, Urbana-Champaign, Urbana, Illinois, United States

14:45 4D-2 NON-INVASIVE MEASUREMENTS OF THE ELECTRON MOBILITY IN A HALL EFFECT ACCELERATOR
B. Jorns, E. Dale
Aerospace Engineering, University of Michigan, Ann Arbor, MI, United States

15:00 4D-3 MODELING OF ION-SPUTTERING AND SURFACE DEPOSITION ON A SPACECRAFT SURFACE DUE TO Xe+ ION THRUSTER PLUME PLASMA
N. Nuwal, D. A. Levin
Aerospace Engineering, University of Illinois Urbana Champaign, Urbana,IL, United States

15:15 4D-4 3D QUASI-NEUTRAL FAR FIELD PLUME MODELING OF SPT-100
A. Tekinalp, D. A. Levin
Aerospace Engineering, University of Illinois, Urbana, United States

15:30 4D-5 DISCHARGE IGNITION AND LIFETIME OPTIMIZATION IN MICRO-CATHODE VACUUM ARC THRUSTER
D. B. Zolotukhin[1,2], M. Keidar[1]
[1]Mechanical and Aerospace Engineering, George Washington University, Washington, DC, United States of America
[2]Physics, Tomsk State University of Control Systems and Radioelectronics (TUSUR), Tomsk, Russian Federation

15:45 4D-6 GYROFLUID MODEL OF PLASMA EXPANSION IN A MAGNETIC NOZZLE
S. Robertson
Department of Physics, University of Colorado, Boulder, CO, United States

Session 4E: 4.4 High Energy Density Matter I

Tuesday, June 26 14:30-16:00, Governors Square 16

Session Chair: Guy Rosenzweig, Massachusetts Institute of Technology

14:30 4E-1 (invited) EFFECT OF AXIAL MAGNETIC FIELD ONTHE CURRENT DISTRIBUTION IN Z-PINCH IMPLOSION WITH PRE-EMBEDDED AXIAL MAGNETIC FIELD
D. Mikitchuk[1], M. Cvejić[1], R. Doron[1], E. Kroupp[1], C. Stollberg[1], Y. Maron[1], A. L. Velikovich[2], J. L. Giuliani[2], E. P. Yu[3], A. Fruchtman[4]
[1]Weizmann Institute of Science, Rehovot, Israel
[2]Plasma Physics Devision, Naval Research Laboratory, Washington D.C., USA
[3]Sandia National Laboratories, Albuquerque, USA
[4]Holon Institute of Technology, Holon, Israel

15:00 4E-2 EXTERNAL MAGNETIC FIELD EFFECTS ON FOIL ABLATION RELATING TO PLASMA JET DISRUPTION
T. Byvank, N. Hamlin, L. Atoyan, C. E. Seyler, B. R. Kusse
Laboratory of Plasma Studies, Cornell University, Ithaca, NY, United States

15:15 4E-3 THE PERFORMANCE OF MAGNETIC ANVIL CELLS FROM 1 TO 100 MA
P. -A. Gourdain[1], M. Adams[1], M. Evans[1], R. Shapovalov[1], G. Collins[2], A. Sefkow[2], S. Glenzer[3], C. Seyler[4]
[1]Physics and Astronomy, University of Rochester, Rochester, United States
[2]Mechanical Engineering, University of Rochester, Rochester, United States
[3]SLAC, Stanford University, Menlo Park, United States
[4]Electrical Engineering, Cornell University, Ithaca, United States

15:30 4E-4 DEVELOPMENTS OF A WARM DENSE MATTER EXPERIMENT USING A PULSED POWER DRIVER
M. Evans[1], M. Adams[1], R. Shapovalov[1], P. -A. Gourdain[1], P. Campbell[2], J. Woolstrum[2], S. Miller[2], N. Ramey[2], N. Jordan[2], R. McBride[2]
[1]Physics & Astronomy, University of Rochester, Rochester, NY, United States
[2]Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

15:45 4E-5 DISPERSION RELATION OF STRATIFIED ELECTROTHERMAL INSTABILITY IN WARM, DENSE, TAMPED ALUMINUM-6061 WITH CURRENT IN A SKIN LAYER
B. S. Bauer[1], T. M. Hutchinson[1], S. R. Fuelling[1], T. J. Awe[2], E. P. Yu[2], W. G. Yelton[2], K. C. Yates[3]
[1]University of Nevada, Reno, Reno, NV, United States
[2]Sandia National Laboratories, Albuquerque, NM, United States
[3]University of New Mexico, Albuquerque, NM, United States

Session 4F: 1.1, 1.3, 1.6 Basic Phenomena, Space Plasmas, and Plasma Chemistry

Tuesday, June 26 14:30-16:00, Governors Square 15

Session Chair: Hafiz U Rahman, Magneto-Inertial Fusion Technology Inc.

14:30 4F-1 (invited) CORRELATIONS AND ENERGY CASCADES IN MAGNETIZED TURBULENCE
K. Beckwith[1], P. Grete[2], B. O'Shea[2]
[1]Sandia National Laboratories, Albuquerque, NM, United States
[2]Department of Physics and Astronomy, Michigan State University, East Lansing, MI, United States

15:00 4F-2 FILAMENTATION OF A SHORT LASER PULSE IN MAGNETIZED QUANTUM PLASMA WITH SPIN POLARIZATION
P. Kumar, N. Ahmad, S. Singh
Physics, University of Lucknow, Lucknow, India

15:15 4F-3 INTERACTIONS AMONG JETS IN AN ATMOSPHERIC PRESSURE PLASMA JET ARRAY IN ARGON
B. Zhang, Z. Fang, D. Mei, F. Liu
College of Electrical Engineering and Control Science, Nanjing Tech University, Nanjing, Jiangsu, China

15:30 4F-4 OBLIQUE PROPAGATION OF ION-ACOUSTIC SHOCK DYNAMICS IN ASTROPHYSICAL PLASMAS
B. Hosen[1], M. R. Hossen[2], A. A. Mamun[3]
[1]Science & Humanities, Bangladesh Army International University of Science & Technology, Comilla, Bangladesh
[2]General Educational Development, Daffodil International University, Dhaka, Bangladesh
[3]Physics, Jahangirnagar University, Dhaka, Bangladesh

15:45 4F-5 EFFECT OF LASER BEAM SPOT SIZE ON THE DYNAMICS OF ULTRASHORT LASER-PRODUCED PLASMA IN VACUUM*
P. Sankar[1], H. D. Shashikala[1], S. S. Harilal[2], R. Philip[3]
[1]Department of Physics, National Institute of Technology, Mangalore, India
[2]Pacific Northwest National Laboratory, Richland, WA
[3]Light and Matter Physics Group, Raman Research Institute, Banglore, India

Session 5A: 1.2 Computational Plasma Physics II

Tuesday, June 26 16:30-18:00, Governors Square 12

Session Chair: Andris M Dimits, Lawrence Livermore National Laboratory

16:30 5A-1 (invited) DEVELOPMENT OF A MULTI-WEIGHT COLLISION ALGORITHM FOR DSMC/PIC SIMULATIONS
S. N. Averkin[1,2,3], D. Han[1], N. A. Gatsonis[1]

[1]*Worcester Polytechnic Institute, Worcester, MA, United States*
[2]*Tech-X Corporation, Boulder, CO, United States*
[3]*University of Colorado Boulder, Boulder, CO, United States*

17:00 5A-2 CURRENT COUPLING VIA ELECTRON EMISSION IN FAST AND MESOTHERMAL ION BEAMS
D. Han, S. N. Averkin, N. A. Gatsonis
Aerospace Engineering Program, Worcester Polytechnic Institute, Worcester, MA, United States

17:15 5A-3 SIMULATION OF ION AXIAL AND PLANAR MOTION IN AN ULTRA-COLD PENNING TRAP WITH A ROTATING WALL POTENTIAL
C. Tang[1], D. Meiser[1], S. E. Parker[1], J. J. Bollinger[2]
[1]*Physics, CU Boulder, Boulder, United States*
[2]*Ion Storage group, NIST, Boulder, United States*

17:30 5A-4 HIGH ORDER FINITE DIFFERENCE WENO SCHEMES FOR IDEAL MAGNETOHYDRODYNAMICS
F. Cakir, A. J. Christlieb, Y. Jiang
Michigan State University, East Lansing, United States

17:45 5A-5 A PHASE SPACE CONSERVATION APPROACH TO VLASOV ALGORITHMS
S. D. Webb, J. P. Edelen
RadiaSoft, LLC, Boulder, CO, United States

Session 5B: 2.5 Codes and Modeling II

Tuesday, June 26 16:30-18:00, Governors Square 11

Session Chair: Ian Rittersdorf, Naval Research Laboratory

16:30 5B-1 (invited) APPLICATIONS OF THE MICHELLE CODE IN HPC ENVIRONMENTS
J. Petillo[1], S. Ovtchinnikov[1], A. Jensen[1], A. Burke[1], E. Nelson[1], G. Stantchev[2], S. Cooke[2], B. Held[3], A. Nichols[3]
[1]*Center for Electromagnetics, Leidos Corp, Billerica, MA, United States*
[2]*Electromagnetics Technology Branch, US Naval Research Laboratory, Washington, DC, United States*
[3]*AWR Group, National Instruments, Mequon, WI, United States*

17:00 5B-2 BANDWIDTH BROADENING OF WAVEGUIDE CIRCULATOR FOR INDUSTRIAL DUAL-BAND MAGNETRONS
K. Aranganadin[1], L. Li[1], M. -C. Lin[1], H. -Y. Hsu[2]
[1]*Department of Electrical and Biomedical Engineering, Hanyang University, Seoul, South Korea*
[2]*Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan*

17:15 5B-3 3-D ELECTROMAGNETIC PARTICLE-IN-CELL SIMULATION STUDY ON LOW-FREQUENCY OSCILLATION IN A FUSION GYROTRON
M. -C. Lin[1], D. N. Smithe[2]
[1]*Hanyang University, Seoul, South Korea*
[2]*Tech-X Corporation, Boulder, CO, USA*

17:30 5B-4 STUDY ON BEAM WAVE INTERACTION AND MODE COMPETITION IN A FUSION GYROTRON USING 3-D ELECTROMAGNETIC PARTICLE-IN-CELL SIMULATION
M. -C. Lin[1], D. N. Smithe[2]
[1]*Hanyang University, Seoul, South Korea*
[2]*Tech-X Corporation, Boulder, CO, USA*

17:45 5B-5 DOMAIN DECOMPOSITION FOR THE FINITE-ELEMENT ELECTROSTATIC PARTICLE IN CELL CODE MICHELLE
A. Jensen[1], A. Burke[1], J. Petillo[1], S. Ovtchinnikov[1], E. Nelson[1], G. Stantchev[2], S. Cooke[2], B. Held[3], A. Nichols[3]
[1]*Leidos, Billerica, MA, United States*
[2]*US Naval Research Laboratory, Washington, DC, United States*
[3]*National Instruments, Mequon, WI, United States*

Session 5C: 2.4, 2.8 Vacuum microelectronics & THz devices, THz sources, radiation, & applications

Tuesday, June 26 16:30-18:00, Governors Square 10

Session Chair: Rebecca Seviour, University of Huddersfield

16:30 5C-1 (invited) TUNABLE MICROWAVE RADIATION PULSE GENERATION BY EXCITATION OF SUPERCONDUCTING CLOSED-LOOP ANTENNAS
T. J. Haugan[1], T. J. Bullard[1], J. P. Murphy[1], J. S. Bulmer[2], M. R. Ferdinandus[3]
[1]AFRL/RQQM, U.S. Air Force Research Laboratory, Wright Patterson AFB, OH, U.S.A.
[2]Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, U.K.
[3]IN/ENP, Air Force Institute of Technology, Wright Patterson AFB, OH, U.S.A.

17:00 5C-2 TERAHERTZ GENERATION BY FOCUSING OF TWO GAUSSAIN LASER BEAMS PROPAGATION IN A WARM PLASMA
M. R. Jafari Milani, S. Rezaei, J. Jafari
Plasma Physics Research School, NSTRI, Tehran, Iran

17:15 5C-3 MICROFABRICATED MILLIMETER-WAVE TRAVELING WAVE TUBES
C. D. Joye[1], A. M. Cook[1], J. C. Rodgers[1], R. L. Jaynes[1], A. N. Vlasov[1], J. P. Calame[1], D. K. Abe[1], A. T. Burke[2]
[1]Code 6850, U.S. Naval Research Laboratory, Washington, DC, United States
[2]Leidos, Inc., Reston, VA, United States

17:30 5C-4 DETERMINATION OF THE RADIAL PROFILE OF THE BEAM CURRENT DENSITY IN EMITTANCE DOMINATED BEAMS FOR HIGH FREQUENCY TWTS
M. Zuboraj, B. E. Carlsten
Accelerator and Electrodynamics, Los Alamos National Laboratory, Los Alamos, United States

17:45 5C-5 A NEW THZ TIME DOMAIN SPECTROMETER SETUP FOR POLARIMETRIC STUDIES
F. Sanjuan, G. Gaborit, J. -L. Coutaz
PHOTO, IMEP-LAHC, UMR 5130, Bourget du Lac, France

Session 5D: 4.7 Plasma Material Interactions I

Tuesday, June 26 16:30-18:00, Governors Square 17

Session Chair: R.S. Rawat, Nanyang Technological University

16:30 5D-1 (invited) HYDROGEN RETENTION IN LITHIUM AND LITHIUM COMPOUNDS
L. Buzi, Y. Yang, O. A. Nelson, B. E. Koel
Department of Chemical and Biological Engineering and Department of Plasma Physics, Princeton University, Princeton, NJ, United States

17:00 5D-2 PLASMA INDUCED NANO-STRUCTURES ON THE SURFACE OF TUNGSTEN ANODE IN ATMOSPHERIC PRESSURE GLOW
Y. E. Kovach, F. Zhang, F. Gao, J. E. Foster
University of Michigan, Ann Arbor, MI, USA

17:15 5D-3 EFFECT OF ADDITIVE OXYGEN ON THE INTERACTION OF A HELIUM ATMOSPHERIC PRESSURE PLASMA JET WITH A DIELECTRIC SURFACE
L. Wang, Y. Zheng, D. Wang, S. Jia
Xi'an Jiaotong University, Xi'an, Shaanxi, China

17:30 5D-4 PLASMA FOCUS: A NOVEL TECHNIQUE FOR THE DEPOSITION OF HARD COMPOSITE FILMS
I. A. Khan[1], R. S. Rawat[2], R. Ahmad[3]
[1]Government College University Faisalabad, Punjab, Pakistan
[2]Nanyang Technological University Singapore, Singapore, Singapore
[3]GC University Lahore, Punjab, Pakistan

17:45 5D-5 STANDOFF DETECTION OF SOLID MATERIALS USING LASER INDUCED FLUORESCENCE OF LASER-PRODUCED PLASMAS
S. S. Harilal, B. E. Brumfield, M. C. Phillips
Pacific Northwest National Laboratory, Richland, WA, United States

Session 5E: 4.4 High Energy Density Matter II

Tuesday, June 26 16:30-18:00, Governors Square 16

Session Chair: Ryan D McBride, University of Michigan

16:30 5E-1 (invited) IMPACTFUL TIMES: MEMORIES OF 60 YEARS OF SHOCK WAVE RESEARCH AT SANDIA NATIONAL LABORATORIES
M. A. Sweeney[1], J. R. Asay[2], L. C. Chhabildas[2], R. J. Lawrence[2]
[1]*Pulsed Power Sciences Center, Sandia National Laboratories, Albuquerque, NM, United States*
[2]*retired, Sandia National Laboratories, Albuquerque, NM, United States*

17:00 5E-2 RECENT RESULTS OF ELECTRICAL EXPLOSION OF WIRES AND WIRE ARRAYS IN WATER AND GLYCEROL
A. Rososhek[1], M. Nitishinskiy[1], S. Efimov[1], D. Yanuka[1], S. Tewari[1], Y. E. Krasik[1], K. Khishchenko[2], S. Bland[3]
[1]*Physics Department, Technion - Israel Institute of Technology, Haifa, Israel*
[2]*Joint Institute for High Temperatures, Moscow, Russia*
[3]*Institute of Shock Physics, Imperial College, London, UK*

17:15 5E-3 SOFT X-RAY DEPTH-DOSE PROFILES IN SATELLITE SURFACE MATERIALS
P. Dressman, G. Miloshevsky
Purdue University, West Lafayette, IN

17:30 5E-4 STUCTURES AND TRANSPORT PROPERTIES OF WARM DENSE HYDROGEN
J. Dai, Z. Zhao, X. Wang
Department of Physics, National University of Defense Technology, Changsha, China

Session 5F: 7.1, 7.2 Insulation, Breakdown, Opening and Closing Switches

Tuesday, June 26 16:30-18:00, Governors Square 15

Session Chair: Michael Mazarakis, Sandia National Laboratories

16:30 5F-1 INVESTIGATION OF GaN PHOTOCONDUCTIVE SEMICONDUCTOR SWITCHES
N. A. Wilson[1], J. A. Culpepper[1], V. Kuryatkov[1], M. Gaddy[1], J. C. Dickens[1], S. Nikishin[1], R. Ness[2], A. A. Neuber[1]
[1]*Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, USA*
[2]*Ness Engineering, San Diego, CA, USA*

16:45 5F-2 FUNDAMENTAL STUDY OF ATMOSPHERIC RF BREAKDOWN AT 3.3 MHZ*
I. A. Aponte, B. Esser, Z. Shaw, J. C. Dickens, J. J. Mankowski, A. A. Neuber
Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, United States

17:00 5F-3 AN ADJUSTABLE MAGNETIC SWITCH AND ITS APPLICATIONS
S. Li, J. Gao, H. Yang, B. Qian, Y. Cui
Institute of High Power Microwave Technology, Changsha, China

17:15 5F-4 (invited) EFFECT OF CORONA PLASMA DEVELOPMENT ON DIELECTRIC BREAKDOWN AND RECOVERY IN CORONA-STABILIZED SWITCHES
L. Li, J. Li, Z. Zhao, Y. Liu, C. Li, Y. Wang
School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China

Session PL5: Plenary 5

Wednesday, June 27 08:30-09:30, Plaza Ballroom A/B/C

Session Chair: Michael G Kong, Old Dominion University

8:30 PL5-1 (invited) A CAREER IN ELECTRON BEAMS, PLASMAS AND EM FIELDS & WAVES: EVERYTHING I NEEDED TO SUCCEED I LEARNED IN KINDERGARTEN
J. H. Booske
Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, WI, United States

Session 6A: 1.5 Dusty and Strongly Coupled Plasmas

Wednesday, June 27 10:00-12:00, Governors Square 12

Session Chair: Mary Ann Sweeney, Sandia National Laboratories

10:00 6A-1 (invited) EXPERIMENTAL OBSERVATIONS OF METEOR ABLATION
M. DeLuca[1,2], Z. Sternovsky[1,2], T. Munsat[3]
[1]*Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder, CO, United States*
[2]*Dept. of Aerospace Engineering Sciences, University of Colorado, Boulder, CO, United States*
[3]*Dept. of Physics, University of Colorado, Boulder, CO, United States*

10:30 6A-2 ELECTROSTATIC DUST TRANSPORT IN LABORATORY AND SPACE
X. Wang[1,2], N. Hood[1,2], A. Carroll[1,2], R. Mike[1,2], H. -W. Hsu[1,2], M. Horanyi[1,2]
[1]*Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder, CO, United States*
[2]*NASA/SSERVI's Institute for Modeling Plasma, Atmospheres and Cosmic Dust, Boulder, CO, United States*

10:45 6A-3 DUST PARTICLE MOTION IN AN RF PLASMA ANALYZED FOR STRONGLY COUPLED BEHAVIOR
C. -S. Wong[1], J. Goree[1], Z. Haralson[2]
[1]*Department of Physics and Astronomy, University of Iowa, Iowa City, IA, United States*
[2]*Lockheed Martin Aeronautics, Palmdale, CA, United States*

11:00 6A-4 EFFECT OF SELF-GRAVITATING FIELD ON NUCLEUS-ACOUSTIC SHOCK WAVES IN DEGENERATE QUANTUM PLASMAS
D. M. S. Zaman[1], M. R. Hossen[2], A. A. Mamun[1]
[1]*Physics, Jahangirnagar University, Dhaka, Bangladesh*
[2]*Department of General Educational Development, Daffodil International University,, Dhaka, Bangladesh*

11:15 6A-5 ELECTROSTATIC WAVE FEATURES IN A COLLISION FREE MAGNETIZED DUSTY PLASMA
S. A. Ema[1], M. R. Hossen[2], A. A. Mamun[3]
[1]*Electrical and Electronic Engineering, Sonargaon University, Dhaka, Bangladesh*
[2]*General Educational Development, Daffodil International University, Dhaka, Bangladesh*
[3]*Physics, Jahangirnagar University, Dhaka, Bangladesh*

11:30 6A-6 NONPLANAR SHOCK DYNAMICS IN A NONEXTENSIVE DUSTY PLASMA
M. R. Hossen[1], M. Sarker[2], S. A. Ema[3], A. A. Mamun[2]
[1]*General Educational Development, Daffodil International University, Dhaka, Bangladesh*
[2]*Physics, Jahangirnagar University, Dhaka, Bangladesh*
[3]*Electrical and Electronic Engineering, Sonargaon University, Dhaka, Bangladesh*

11:45 6A-7 DUST-ELECTRON-ACOUSTIC SHOCK WAVES IN MAGNETIZED NONEXTENSIVE PLASMAS
S. Banik[1], M. R. Hossen[2], A. A. Mamun[3]
[1]*Health Physics Division, Bangladesh Atomic Energy Commission, Dhaka, Bangladesh*
[2]*General Educational Development, Daffodil International University, Dhaka, Bangladesh*
[3]*Physics, Jahangirnagar University, Dhaka, Bangladesh*

Session 6B: 2.7 Microwave Plasma Interactions II

Wednesday, June 27 10:00-12:00, Governors Square 11

Session Chair: Adrian Lopez, University of Michigan

10:00 6B-1 ANALYSIS OF PLASMA PARAMETERS AND CONDITIONS REQUIRED FOR RECONFIGURABLE ANTENNAS
A. Semnani[1], D. Peroulis[1], S. Macheret[2]
[1]*Department of Electrical and Computer Engineering, Purdue University, West Lafayette, IN, United States*
[2]*School of Aeronautics and Astronautics, Purdue University, West Lafayette, IN, United States*

10:15 6B-2 EXPLORING ELECTRON KINETICS IN RF AND MICROWAVE DISCHARGES USING A NON-STATIONARY, MULTI-TERM BOLTZMANN EQUATION MODEL
J. C. Stephens
Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA, United States

10:30 6B-3 A WIDEBAND HIGH-POWER PLASMA-BASED MICROWAVE POWER LIMITER
A. Semnani, Z. Vander Missen, D. Peroulis
Department of Electrical and Computer Engineering, Purdue University, West Lafayette, IN, United States

10:45 6B-4 (invited) A STUDY OF SOME INHERENT CAUSES FOR NON-UNIFORM MICROWAVE HEATING

K. R. Chu, Y. F. Tsai, L. R. Barnett, H. H. Teng, C. C. Ko
Department of Physics, National Taiwan University, Taipei, Taiwan

11:15 6B-5 DUAL MICROPLASMA IGNITION USING CONCENTRIC SPLIT RING RESONATORS
R. Dextre, G. Xu
UNIVERSITY OF ALABAMA IN HUNTSVILLE, Huntsville, AL, United States

11:30 6B-6 ELECTRICALLY SMALL ANTENNA DESIGN FOR TRANSPORTABLE IONOSPHERIC HEATING
B. Esser, J. C. Dickens, J. J. Mankowski, A. A. Neuber
Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, United States

11:45 6B-7 FDTD SIMULATION OF CIRCULAR PLASMA TUBE ARRAY AS ANTENNA REFLECTOR
S. -C. Tuan[1], S. S. M. Chung[2]
[1]*Department of Communication Engineering, Oriental Institute of Technology, Taipei 220, Taiwan*
[2]*Department of Aviation & Communication Electronics, Air Force Institute of Technology, Ganshan 820, Taiwan*

Session 6C: 5.5 Medical and Biological Applications II

Wednesday, June 27 10:00-12:00, Governors Square 10

Session Chair: Xinpei Lu, HuaZhong University of Science and Technology

10:00 6C-1 (invited) PLASMAS FOR AGRICULTURE: PRE-HARVEST PREPARATION AND POST-HARVEST PRESERVATION
J. F. Kolb, U. Schnabel, J. Ehlbeck, H. Brust, N. Wannicke, K. -D. Weltmann
INP Greifswald, Greifswald, Germany

10:30 6C-2 IONIZATION WAVE PROPAGATION AND SURFACE INTERACTIONS IN A HE PLASMA JET
A. M. Lietz[1], J. E. Foster[1], M. J. Kushner[1], E. V. Barnat[2]
[1]*University of Michigan, Ann Arbor, MI, United States*
[2]*Sandia National Laboratory, Albuquerque, NM, United States*

10:45 6C-3 PLASMA-MODIFIED 3D ADDITIVE MANUFACTURED SCAFFOLDS FOR CARTILAGE/BONE INTERFACIAL TISSUE ENGINEERING
P. Cools, M. Asadian, N. De Geyter, R. Morent
Applied Physics, Ghent University, Ghent, Belgium

11:00 6C-4 BIOCIDAL EFFICACY OF NON-EQUILIBRIUM PLASMA SOURCES: A COMPARATIVE STUDY
A. Moldgy[1], G. Nayak[1], H. A. Aboubakr[2], D. Yuan[1], S. M. Goyal[2], P. J. Bruggeman[1]
[1]*Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN, United States*
[2]*College of Veterinary Medicine, University of Minnesota, St. Paul, MN, United States*

11:15 6C-5 MODEL FEEDBACK CONTROL FOR ADAPTIVE COLD ATMOSPHERIC PLASMA
L. Yuanwei, L. Li, E. Gjika, K. Michael
Mechanical and Aerospace Engineering, School of Engineering and Applied Science, The George Washington University, District of Columbia, United States

11:30 6C-6 ANTIMICROBIAL AG/A-C:H NANOCOMPOSITE COATED TITANIUM SUBSTRATES FOR IMPLANT APPLICATIONS
M. Thukkaram[1], P. Cools[1], O. Kylian[2], R. Morent[1], N. De Geyter[1]
[1]*Department of Applied Physics, Ghent University, Ghent, Belgium*
[2]*Faculty of Mathematics and Physics, Charles University in Prague, Prague, Czech Republic*

11:45 6C-7 THEORETICAL ANALYSIS OF FREE RADICAL CHEMISTRY AT A PLASMA-LIQUID INTERFACE
P. Rumbach, H. E. Delgado, D. M. Bartels, D. B. Go
University of Notre Dame, Notre Dame, IN, United States

Session 6D: 4.6 Fast Z Pinches I

Wednesday, June 27 10:00-12:00, Governors Square 17

Session Chair: Felipe Veloso, Instituto de Fisica - Pontificia Universidad Catolica de Chile

10:00 6D-1 (invited) POWER-FLOW MODELING USING PERSEUS EXTENDED-MHD SIMULATION CODE FOR HED PLASMAS
N. D. Hamlin, C. E. Seyler
School of Electrical and Computer Engineering, Cornell University, Ithaca, NY, United States

10:30 6D-2 CORRELATION OF PLASMA TEMPERATURE, CHARGED PARTICLE GENERATION AND X-RAY EMISSION FROM A DENSE PLASMA FOCUS
R. Behbahani[1,2], S. Chung[1], C. Xiao[1]
[1]*Physics and Engineering Physics, University of Saskatchewan, Saskatoon, Canada*
[2]*Department of Radiation Oncology, University of Colorado School of Medicine, Aurora, USA*

10:45 6D-3 NEUTRON EMISSION FROM THE PLASMA FOCUS PF-24 DEVICE UNDER DIFFERENT AR DOPING IN AR + D2 MIXTURES - EXPERIMENTS AND SIMULATIONS
L. Marciniak[1], M. Akel[2], A. Kulinska[1], S. Lee[3], M. Scholz[1], H. J. Kunze[4], S. H. Saw[5]
[1]*Institute of Nuclear Physics PAN, Krakow, Poland*
[2]*Department of Physics, Atomic Energy Commission, Damacus, Syria*
[3]*INTI International University, Nilai, Malaysia*
[4]*Institute for Experimental Physics V, Ruhr-University, Bochum, Germany*
[5]*Nilai University, Nilai, Malaysia*

11:00 6D-4 INITIAL RESULTS FROM A DENSE PLASMA FOCUS DRIVEN BY A HIGH-INDUCTANCE GENERATOR
S. L. Jackson[1], J. T. Engelbrecht[1], A. S. Richardson[1], A. Beresnyak[1], B. V. Weber[1], J. L. Giuliani[1], I. M. Rittersdorf[1], J. W. Schumer[1], D. Klir[2], K. Rezac[2], J. Cikhardt[2], Y. Maron[3], E. Stambulchik[3], C. Roark[4], P. H. Stoltz[4], A. Spirkin[4], J. W. Luginsland[5]
[1]*Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States*
[2]*Faculty of Electrical Engineering, Department of Physics, Czech Technical University in Prague, Prague, Czech Republic*
[3]*Faculty of Physics, Weizmann Institute of Science, Rehovot, Israel*
[4]*Tech-X Corporation, Boulder, CO, United States*
[5]*Michigan State University, East Lansing, MI, United States*

11:15 6D-5 SIMULATION STUDY ON THE EARLY PHASES OF THE CYLINDRICAL FOIL IMPLOSIONS ON THE PTS FACILITY
N. Ding, G. Wang, D. Xiao, S. Sun, X. Wang, X. Shu
Institute of Applied Physics and Computational Mathematics (IAPCM), Beijing, China

11:30 6D-6 PRELIMINARY RESULTS OF THIN FOIL ALUMINUM LINER IMPLOSION EXPERIMENTS AT AN 8 MA FACILITY
J. Lu, S. Meng, F. Ye, J. Ning, X. Yan, F. Chen, Z. Huang, J. Yang, R. Yang, Z. Xu, R. Xu
Institute of Nuclear Physics and Chemistry, China Academy of Engineering Physics, Mianyang, Sichuan, China

11:45 6D-7 NUMERICAL ANALYSIS OF FORMATION PROCESS AND KEY ISSUES OF Z-PINCH DYNAMIC HOHLRAUM ON THE PTS FACILITY
D. Xiao, N. Ding, S. Sun, X. Wang, G. Wang, X. Shu
Institute of Applied Physics and Computational Mathematics, Beijing, China

Session 6E: 5.1 Nonequilibrium Plasma Applications III

Wednesday, June 27 10:00-12:00, Governors Square 16

Session Chair: Petr Lukes, Institute of Plasma Physics AS CR, v.v.i.

10:00 6E-1 (invited) INTERACTION OF PLASMA WITH LIQUID MICRO-DROPLETS: A MODEL FOR PLASMA INDUCED REACTIVITY IN LIQUID WATER
G. Nayak, P. J. Bruggeman
Department of Mechanical Engineering, University of Minnesota, Minneapolis, United States

10:30 6E-2 NANOSECOND-PULSED DISCHARGE IN LIQUID NITROGEN
D. Dobrynin
Drexel University, Philadelphia, PA, United States

10:45 6E-3 ELECTRICAL DISCHARGES CONTACTING A LIQUID: THE ROLE OF BULK LIQUID MASS TRANSPORT IN THE DEGRADATION OF ORGANIC COMPOUNDS
M. D. Vasilev, P. Conlon, D. Bohl, S. M. Thagard

Chemical and Biomolecular Engineering, Clarkson University, Potsdam, United States

11:00 6E-4 THE INFLUENCE OF LIQUID CONDUCTIVITY ON ELECTRICAL BREAKDOWN AND HYDROGEN PEROXIDE FORMATION IN NON-THERMAL PLASMA GENERATED IN A WATER FILM PLASMA REACTOR
H. Wang[1], R. J. Wandell[1], J. Vorac[2], B. R. Locke[1]
[1]Department of Chemical and Biomedical Engineering, Florida State University, Tallahassee, FL, United States
[2]Department of Physical Electronics, Masaryk University, Brno, Czechia

11:15 6E-5 SPECTROSCOPIC AND ELECTRICAL STUDIES OF PULSE WIDTH ON OH RADICALS IN A PULSED HE PLASMA JET IN CONTACT WITH WATER
S. Song[1,2], C. Jiang[1,2]
[1]Frank Reidy center for bioelectrics,Old Dominion University, Norfolk, United States
[2]Department of electrical and computer engineering, Old Dominion University, Norfolk, United States

11:30 6E-6 PROPERTIES OF WATER-PRETREATMENT BY ATMOSPHERIC PRESSURE MICROPLASMA DISCHARGE USING NANOPULSE FOR PORTABLE DEVICE APPLICATIONS
G. T. Bae[1], C. -S. Park[1], J. -G. Shin[1], D. H. Kim[1], E. Y. Jung[1], D. Kim[1], B. J. Shin[2], H. -S. Tae[1]
[1]School of Electrical Engineering, College of IT Engineering, Kyungpook National University, Daegu, South Korea
[2]Sejong University, Seoul, South Korea

11:45 6E-7 AQUEOUS GOLD NANOPARTICLES GENERATED BY COLD PLASMA
K. Zhang[1,2], X. Li[3], R. Wang[1], Y. Wang[3], T. Shao[1]
[1]Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
[2]College of Science, Wuhan University of Science and Technology, Beijing, China
[3]Research Institute of Chemical Defense, Beijing, China

Session 6F: 2.3 Slow Wave Devices II

Wednesday, June 27 10:00-12:00, Governors Square 15

Session Chair: Bruce Carlsten, Los Alamos National Laboratory

10:00 6F-1 (invited) DESIGN AND FABRICATION OF A KA-BAND DIELECTRIC-LOADED TRAVELING-WAVE TUBE
E. I. Simakov, B. E. Carlsten, F. L. Krawczyk, K. E. Nichols, W. R. Romero, M. R. Zuboraj
AOT-AE, Los Alamos National Lab, Los Alamos, United States

10:30 6F-2 A 100 KW 1.3 GHZ PHASE LOCKED MAGNETRON FOR ACCELERATORS
M. E. Read[1], R. L. Ives[1], B. Chase[2], J. Reid[2], C. Walker[3], J. Conant[3]
[1]Calabazas Creek Research Inc., San Mateo, CA, United States
[2]Fermi National Accelerator Laboratory, Batavia, IL, United States
[3]Communications and Power Industries LLC, Beverly, MA, United States

10:45 6F-3 RECENT RESEARCH ON THE HARMONIC RECIRCULATING PLANAR MAGNETRON
D. A. Packard[1], G. B. Greening[1], N. M. Jordan[1], S. C. Exelby[1], P. Y. Wong[1], Y. Lau[1], R. M. Gilgenbach[1], B. W. Hoff[2], J. F. Hammond[2]
[1]University of Michigan, Ann Arbor, MI, United States
[2]Air Force Research Lab, Albuquerque, NM, United States

11:00 6F-4 RECENT ADVANCES IN RELATIVISTIC MAGNETRON
A. F. Sayapin[1], Y. E. Krasik[1], U. Dai[2]
[1]Physics Department, Technion - Israel Institute of Technology, Haifa, Israel
[2]DDR&D, IMOD, Tel Aviv, Israel

11:15 6F-5 DESIGN AND DEVELOPMENT OF FIELD EMISSION BASED RISING-SUN MAGNETRON FOR INDUSTRIAL APPLICATIONS USING CFDTD
L. Li[1], K. Aranganadin[1], M. -C. Lin[1], H. -Y. Hsu[2]
[1]Department of Electrical and Biomedical Engineering, Hanyang University, Seoul, South Korea
[2]Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan

11:30 6F-6 GEOMETRY-DRIVEN LARGE-SIGNAL MODELING OF VACUUM ELECTRONIC DEVICES BASED ON GENERALIZED IMPEDANCE MATRIX APPROACH
I. A. Chernyavskiy[1], J. C. Rodgers[1], A. N. Vlasov[1], B. Levush[1], T. M. Antonsen, Jr.[2]
[1]U.S. Naval Research Laboratory, Washington, DC, United States
[2]Leidos, Inc., Reston, VA, United States

11:45 6F-7 EXPERIMENTAL INVESTIGATION OF SIC VELVET CATHODE FOR MILO
F. Qin
Institute of Applied Electronics, China Academy of Engineering Physics, Mianyang, Sichuan, China

Session PL6: Plenary 6

Wednesday, June 27 13:30-14:30, Plaza Ballroom A/B/C

Session Chair: Peter Stoltz, Tech-X Corp.

13:30 PL6-1 (invited) COMPUTER SIMULATIONS OF PLASMAS AND BEAMS: A VIEW FROM MULTIPLE ANGLES
A. Friedman
LLNL, Livermore, CA, United States

Session P2A1346: Attended Posters (Technical Topics 1, 3, 4, and 6)

Poster Session

Wednesday, June 27 14:30-16:00, Plaza Ballroom D/E/F

Session Chairs: Jesse Neri, US Naval Research Laboratory
Edl Schamiloglu, University of New Mexico
Neil A Mehta, The University of Illinois at Urbana - Champaign
Poorya Hosseini, University of Colorado Denver
Yangyang Fu, Michigan State University
Mary Ann Sweeney, Sandia National Laboratories
Vladimir Gorokhovsky, Nano-Product Engineering, LLC
Michael J Johnson, National Research Council
Revathi Jambunathan, University of Illinois, Urbana-Champaign
Paul F Schmit, Sandia National Laboratories
Christopher E Doss, University of Colorado Boulder
P.A. Gourdain, University of Rochester
Tom Byvank, Cornell University
Marissa B Adams, University of Rochester
REZA ALIBAZI BEHBAHANI, UNIVERSITY OF SASKATCHEWAN
Smruti Ranjan Mohanty, CPP, Institute for Plasma Research, India
Joshua E Coleman, Los Alamos National Laboratory
Chijin Xiao, University of Saskatchewan

P2A1346-1 INCORPORATING COLLISIONS INTO THE TRANSITION FROM FIELD EMISSION TO SPACE CHARGE LIMITED FLOW
A. L. Garner, A. M. Darr, A. M. Loveless
Nuclear Engineering, Purdue University, West Lafayette, IN, United States

P2A1346-2 MODELLING NOVEL ELECTRODE CONFIGURATIONS FOR NANOSECOND PULSED PLASMAS: A FIRST STUDY*
N. D. Isner, P. Gupta, T. Sizyuk, C. Scalo, A. L. Garner
Purdue University, West Lafayette, IN, United States

P2A1346-3 PLASMA MODELS AND CLOSURE OF MAXWELL'S EQUATIONS - THE IMPACT OF ELECTROMAGNETIC APPROXIMATIONS
K. Beckwith[1], J. Luginsland[2]
[1]*Sandia National Laboratories, Albuquerque, NM, United States*
[2]*Department of Computational Mathematics, Science and Engineering, Michigan State University, East Lansing, MI, United States*

P2A1346-4 STUDYING THE EFFECTS OF QUENCHING PRESSURE IN PHOTOIONIZATION
J. K. Smith, L. E. Fisher, J. M. Lehr
University of New Mexico, Albuquerque, NM, United States

P2A1346-5 IMPACT OF ELECTRON-ION COULOMB INTERACTION IN ABOVE THRESHOLD IONIZATION OF ATOM IN STRONG MEDIUM INFRARED LASER FIELD
A. K. Avetissian, A. G. Ghazaryan, K. V. Sedrakyan, B. R. Avchyan
Centre of Strong Fields Physic, Yerevan State University, Yerevan, Armenia

P2A1346-6 NONMONOTONIC SHEATHS AT ELECTRON EMITTING SURFACES
X. Wang, S. Robertson
Institute for Modeling Plasma, Atmospheres and Cosmic Dust, University of Colorado, Boulder, CO, United States

P2A1346-7 LOW PRESSURE CASCADED ARC DISCHARGE
V. Gorokhovsky[1], S. Robertson[2]
[1]Nano-Product Engineering, LLC, Lafayette, CO, USA
[2]Department of Physics, University of Colorado, Boulder, Boulder, CO, USA

P2A1346-8 EXPERIMENTAL STUDY ON BEHAVIORS OF LOW TEMPERATURE DC PLASMAS IN THE MAGNETIC X-POINT SIMULATOR SYSTEM, MAXIMUS
Y. Lim, B. Ahn, D. -H. Kwon, W. -J. Lee, Y. -C. Ghim
Department of Nuclear and Quantum Engineering, Korea Advanced Institute of Science and Technology, Daejeon, South Korea

P2A1346-9 OBSERVATION OF HYSTERESIS DURING E TO H MODE TRANSITION AT LOW PRESSURE INDUCTIVELY COUPLED PLASMAS
H. -J. Kang
Department of Electrical Engineering, Hanyang University, Seoul, South Korea

P2A1346-10 PLASMA SPATIOTEMPORAL DISTRIBUTION RECONFIGURATION WITH MANIPULATION OF ELECTRIC FIELD STRENGTH
Y. Wang, X. Zhou, X. Zhang, Z. He, C. Liu
Xi'an Jiaotong University, Xi'an, Shaanxi, China

P2A1346-11 THE INFLUENCE OF CONTAMINATION ON FLASHOVER DISCHARGE UNDER AC VOLTAGE
Y. Liu, Z. Li, Y. Li
Key Laboratory of Special Electrical Technology(Xiâ€™an Jiaotong University)), Xi'an，Shaanxi, China

P2A1346-12 AC GAS BREAKDOWN: FROM SIMPLE SCALING LAWS TO EXPERIMENTS
A. L. Garner, A. M. Loveless, Z. Vander Missen, A. Semnani
Purdue University, West Lafayette, IN, United States

P2A1346-13 CONTROLLED INVESTIGATION OF ELECTROSTATIC DISCHARGE IN AIR AND NITROGEN ENVIRONMENTS
A. S. Fierro, E. V. Barnat, C. H. Moore, M. M. Hopkins
Sandia National Laboratories, Albuquerque, NM, United States

P2A1346-14 EFFECTS OF HIGH BIAS FREQUENCY ON THE FAST FLOATING PROBE MEASUREMENT
J. H. Park[1], S. B. Jeon[2], C. W. Chung[2]
[1]Nanoscale Semiconductor Engineering, Hanyang University, Seoul, South Korea
[2]electrical engineering, Hanyang University, Seoul, South Korea

P2A1346-15 A MODEL ON AC CONTACT RESISTANCE
F. Antoulinakis, Y. Y. Lau
Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arborm, MI, United States

P2A1346-16 HEAD-ON COLLISION OF DUST ACOUSTIC SHOCK WAVES IN MULTI COMPONENTS PLASMA
M. Alimohamadi
Farhanigan University, Tehran, Iran

P2A1346-17 STUDY OF NONLINEAR EXCITATIONS IN A DEGENERATE ION BEAM PLASMA
N. Kaur, Y. Ghai, N. S. Saini
Physics, guru nanak dev university, amritsar, Amritsar, Punjab, India

P2A1346-18 PHYSICAL SOLUTION TO ELECTRON BEAM DEFECTS DURING THE PUMPING PROCESS OF GAAS SEMICONDUCTOR PLASMA
M. S. Afify[1], W. M. Moslem[2,3], M. A. Hassouba[1]
[1]Physics, Faculty of Science, Benha University, Benha, Egypt
[2]Physics, Faculty of Science, Port Said University, Port Said, Egypt
[3]Centre for Theoretical Physics, The British University in Egypt (BUE), El-Shorouk, Egypt

P2A1346-19 THE INTERACTIONS OF ATMOSPHERIC PRESSURE PLASMA JETS WITH SURFACES: IN SITU MEASUREMENTS OF ELECTRON HEATING IN MATERIALS

S. G. Walton[1], D. R. Boris[1], E. D. Gillman[1], T. B. Petrova[1], M. J. Johnson[2], B. M. Foley[3], J. Tomko[3], A. Giri[3], P. E. Hopkins[3]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]NRC Postdoctoral Research Associate, Naval Research Laboratory, Charlottesville, VA, United States
[3]Department of Mechanical and Aerospace Engineering, University of Virginia, Charlottesville, VA, United States

P2A1346-20 COHERENT STRUCTURE FORMATION AND ION ACCELERATION DURING SELF-CHANNELING OF LASER PULSE
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P2A1346-21 NUMERICAL INVESTIGATION OF NEGATIVE DC CORONA MODES TRANSITION
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P2A1346-22 APPROACHES FOR MODELING SELF-ORGANIZATION IN PLASMAS
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P2A1346-23 A HIGH-ORDER FINITE DIFFERENCE WENO SCHEME FOR IDEAL MAGNETOHYDRODYNAMICS ON CURVILINEAR MESHES
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P2A1346-24 ICEPIC MODEL OF GW-CLASS RISING SUN DIFFRACTIVE OUTPUT MAGNETRON
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P2A1346-25 DYNAMIC EVALUATION FREQUENCY OF BOLTZMANN EQUATION SOLVER IN THE KGMF
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P2A1346-26 INVESTIGATING STREAMER PROPAGATION PHYSICS IN 2D AND 3D PIN-TO-PLANE GEOMETRIES USING A PIC-DSMC CODE
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P2A1346-27 MODELING COLLISIONAL PROCESSES ON GPU IN THE VORPAL CODE
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P2A1346-28 PIC-MCC ANALYSIS OF A HIGH-PRESSURE NANOSECOND PULSE DISCHARGE BREAKDOWN IN HELIUM
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P2A1346-29 A MAP-BASED APPROACH TO ELECTROMAGNETIC PLASMA ALGORITHMS
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P2A1346-30 MODELING ELECTRON LENSES INCLUDING IMPACT IONIZATION PHYSICS IN WARP
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P2A1346-31 CODE VERIFICATON OF MAGNETICLY INSULATED TRANSMISSON LINES (MITL) FOR POWER FLOW APPLICATIONS
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P2A1346-32 VISCO-ELASTIC DENSITY FUNCTIONAL THEORY APPROACH TO STRONGLY COUPLED PLASMAS: COMPUTATIONAL CHALLENGES
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P2A1346-33 NUMERICAL STUDIES ON THE SPATIAL UNIFORMITY OF ATMOSPHERIC PRESSURE PLASMA JETS

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P2A1346-34 SIMULATION STUDY OF HOLLOW CATHODE ENHANCED RADIO FREQUENCY CAPACITIVELY COUPLED PLASMA DISCHARGES
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P2A1346-35 HYBRID FLUID-KINETIC SIMULATIONS OF MAGNETIZED PLASMA SYSTEMS
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P2A1346-36 HIGHER ORDER FLUID MOMENTS, AND THEIR ABILITY TO CAPTURE BEAM-WAVE INTERACTION IN HIGH-POWER MICROWAVE SOURCES
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P2A1346-37 ARC DISCHARGE MODEL FOR BORON NITRIDE SYNTHESIS
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P2A1346-38 A MULTISCALE METHOD - EQUATION FREE PROJECTIVE INTEGRATION APPLIED TO GLOBAL GYROKINETIC PARTICLE SIMULATIONS OF PLASMA TURBULENCE
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P2A1346-39 PARTICLE SIMULATION IN FOURIER SPACE
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P2A1346-40 PROGRESS IN VARIATIONAL METHODS FOR SIMULATING ELECTROMAGNETIC PLASMAS
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P2A1346-41 EFFECTS OF VACUUM IMPEDANCE CHANGES ON MITL FLOW USING 3D ELECTROMAGNETIC PIC SIMULATIONS
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P2A1346-42 ULTRA-LOW FREQUENCY HEAVY ION-ACOUSTIC SHOCK DYNAMICS IN A STRONGLY COUPLED CRYOGENIC SPACE PLASMA
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P2A1346-43 MODULATED ELECTROACOUSTIC SOLITONS AND ASSOCIATED ROGUE WAVES IN A RELATIVISTIC DEGENERATE BI-ION PLASMA
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P2A1346-44 ELECTROACOUSTIC KINETIC ALFVEN SOLITARY WAVES IN A SPACE PLASMA WITH MAXWELLIAN DISTRIBUTED ELECTRONS
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P2A1346-45 DUST-ACOUSTIC K-DV AND MK-DV SOLITONS IN A SUPERTHERMAL BI-ION PLASMA
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P2A1346-46 MAGNETOSONIC ROGUE WAVES IN PAIR ION PLASMA
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P2A1346-47 ELECTROACOUSTIC SHOCK DYNAMICS IN MAGNETIZED PLASMAS WITH SUPERTHERMAL ELECTRONS
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P2A1346-48 UNEXPECTED POST-PULSE SECONDARY IONIZATION IN NANOSECOND PULSED DISCHARGES
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P2A1346-49 COULOMB DUST BALLS IN NEON CRYOGENIC PLASMA
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P2A1346-50 THE DUST-VOID BOUNDARY LINE IN NEON DC DISCHARGE
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P2A1346-51 MODULATION INSTABILITY OF DUST KINETIC ALFVEN WAVES IN THE PRESENCE OF POLARIZATION FORCE
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P2A1346-52 EFFECT OF TRAPPED SUPERTHERMAL ELECTRONS ON DUST ACOUSTIC KINETIC ALFVEN WAVES
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P2A1346-53 PROPERTIES OF LOCAL MODES IN A COMPLEX PLASMA CHAIN WITH FOREIGN PARTICLES
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P2A1346-54 STRONGLY-COUPLED ELECTRO-ACOUSTIC EXCITATIONS IN CRYOGENIC QUANTUM PLASMAS
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P2A1346-55 SMALL AMPLITUDE ELECTRO-ACOUSTIC SHOCK WAVES AND DOUBLE LAYERS IN FERMI ELECTRON-POSITRON PLASMAS WITH VISCOUS HEAVY ION FLUIDS
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P2A1346-56 FINITE-SIZE EFFECTS IN ISOTHERMAL COMPRESSIBILITY OF STRONGLY COUPLED DUSTY PLASMAS
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P2A1346-57 ROLE OF POLARIZATION FORCE ON DUST-ACOUSTIC SHOCK AND SOLITARY WAVES IN A STRONGLY COUPLED PLASMA CONTAINING SUPERTHERMAL ELECTRONS AND NONTHERMAL IONS
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P2A1346-58 THE INFLUENCE OF PRESSURE AT O2 IN-SITU DRY CLEANING PROCESS IN MASS PRODUCTION SYSTEM
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P2A1346-59 INVESTIGATION OF PHYSICAL AND CHEMICAL PROPERTIES OF NON-THERMAL PLASMA IN AIR BY THE METHOD OF STANDARD MIXTURES
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P2A1346-60 REACTION RATE CALCULATION AND ERROR ESTIMATION IN PLASMA CHEMISTRY MODELING
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P2A1346-61 STUDY ON THE TRANSPORT CHARACTERISTICS OF ELECTRONS AND HEAVY PARTICLES IN CORONA DISCHARGE INCLUDING PHOTOIONIZATION EFFECT
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P2A1346-62 FIRST ENERGY LOSS MEASUREMENTS OF INTENSE PULSED ION BEAMS IN MATTER USING A THOMSON PARABOLA AT NDCX-II
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P2A1346-63 MEASUREMENT OF ION FIELD EMISSION FROM ANODE SURFACES USING A 1-MV, 50-NANOSECOND PULSE GENERATOR
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P2A1346-64 DISTRIBUTION OF IONS VELOCITIES IN VACUUM ARC PLASMA WITH DEUTERIUM-SATURATED ZIRCONIUM CATHODE
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P2A1346-65 ANODE LAYER PLASMA THRUSTER FOR PRODUCING WIDE-APERTURE ELECTRON BEAMS
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P2A1346-66 EFFECTIVE APPLICATION OF PLASMA LIGHTING FACILITY BASED ON ELECTRODELESS SULFUR LAMP FOR ELECTRICAL REGENERATION
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P2A1346-67 AN ATMOSPHERIC PRESSURE GLOW DISCHARGE IN A PIN-TO-PLATE GAP PARALLELED WITH AN EXTERNAL MAGNETIC FIELD
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P2A1346-68 THE DIFFUSION EFFECT OF MAGNETIC STRENGTH ON ATMOSPHERIC PRESSURE GLOW DISCHARGE IN A COAXIAL PIN-TO-RING GAP WITH A TRANSVERSE MAGNETIC FIELD
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P2A1346-69 THE INFLUENCE OF DISCHARGE FREQUENCY ON OBTAINING DIFFUSIVE ATMOSPHERIC PRESSURE GLOW DISCHARGE WITH A TRANSVERSE MAGNETIC FIELD
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P2A1346-70 THE INFLUENCE OF INPUT VOLTAGE ON ATMOSPHERIC PRESSURE GLOW DISCHARGE IN A COAXIAL PIN-TO-RING GAP WITH A TRANSVERSE MAGNETIC FIELD
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P2A1346-71 PERFORMANCE TEST AND ANALYSIS OF SINGLE UNIT OF SOLID-STATE HIGH REPETITIVE FREQUENCY LINEAR TRANSFORMER DRIVER (LTD)
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P2A1346-72 EXPERIMENTAL OBSERVATIONS ON THE CHARACTERISTICS OF AN ANODE SPOT ONSET
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P2A1346-73 DUAL EMITTED ELECTRON BEAMS FROM VELVET CATHODES
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P2A1346-74 HIGH POWER ELECTRON DIODE FOR LINEAR INDUCTION ACCELERATOR AT THE EPURE FLASH RADIOGRAPHIC FACILITY
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P2A1346-75 SIMULATIONS OF HIGH POWER HIGH EFFICIENCY SOURCES FOR MOBILE IONOSPHERIC HEATING
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P2A1346-76 STUDY OF MEAN TRANSVERSE ENERGY OF (N)UNCD WITH TUNABLE LASER SOURCE
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P2A1346-77 CATHODE SURFACE IMAGING AND ELECTRON BEAM EMITTANCE MEASUREMENT
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P2A1346-78 EFFECT OF ACCELERATION CHARACTERISTIC OF PLASMA SOURCE ON MASS SEPARATION
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P2A1346-79 CONTROL OF PLASMA DENSITY DISTRIBUTION BY ADJUSTING PARALLEL VARIABLE CAPACITOR IN AN INDUCTIVELY COUPLED PLASMA
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P2A1346-80 EXPERIMENTAL INVESTIGATION ON PLASMA DENSITY DISTRIBUTION IN INDUCTIVELY COUPLED PLASMA WITH WIRELESS POWER TRANSFER ANTENNA
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P2A1346-81 MEGAWATT-CLASS PULSED HELICON
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P2A1346-82 GYROKINETIC SIMULATIONS OF DRIFT-WAVE INSTABILITIES IN FLOW-STABILIZED Z-PINCH PLASMAS
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P2A1346-83 DRIFT-IDEAL MHD SIMULATIONS OF THE ENTROPY MODE IN FLOW-STABILIZED Z-PINCH PLASMAS
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P2A1346-84 EFFECT OF ELMS ON LOWER HYBRID CURRENT DRIVE IN EAST TOKAMAK
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P2A1346-85 RADIOGRAPHIC DIAGNOSTIC DEVELOPMENT FOR TESTING MAGNETIC FIELD UNIFORMITY EFFECTS ON IMPLODING CYLINDRICAL LINER STABILITY
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P2A1346-86 A SEMI-ANALYTIC MODEL FOR STAGED Z-PINCH IMPLOSIONS
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P2A1346-87 LASER GATE EXPERIMENT FOR MAGNETIZED LINER INERTIAL FUSION (MAGLIF) UTILIZING A MINI-PULSER
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P2A1346-88 FISHTAIL DIVERTOR-A NEW DIVERTOR CONCEPT FOR ACTIVE CONTROL OF HEAT LOAD ON DIVEROTR PLATE
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P2A1346-89 SUSTAINED NEUTRONS PRODUCTION FROM A SHEARED-FLOW STABLIZIED Z-PINCH
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P2A1346-90 LASER EFFECTS ON THE STOPPING POWER OF ALPHA PARTICLE IN PLASMAS
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P2A1346-91 PLASMA EVOLUTION IN PLASMA WAKEFIELD ACCELERATORS
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P2A1346-92 SPECTROSCOPIC DIAGNOSTICS USING LINE-RADIATION IN LASER DRIVEN NON-EQUILIBRIUM PLASMAS IN A TI-DOPED SILICA AEROGEL FOAM TARGET
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P2A1346-93 COMPACT GAIN-SATURATED PLASMA-BASED X-RAY LASERS DOWN TO 6.85 NM AND AMPLIFICATION DOWN TO 5.85 NM
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P2A1346-94 MULTI-ELEMENT STARK BROADENING FOR DIAGNOSING ELECTRON DENSITY IN HED PLASMAS
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P2A1346-95 DESIGN OF A PULSED-POWER MAGNETIZED PLASMA FLOW EXPERIMENT FOR THE STUDY OF STAR FORMATION AND ASTROPHYSICAL BOW SHOCKS
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[1]*Climate and Space Sciences and Engineering, University of Michigan, Ann Arbor, MI, United States*
[2]*Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States*

P2A1346-96 RADIAL DENSITY DISTRIBUTION OF A WARM DENSE PLASMA FORMED BY UNDERWATER ELECTRICAL EXPLOSION OF A WIRE
M. Nitishinskiy, A. Rososhek, D. Yanuka, A. Virozub, Y. E. Krasik
Physics Department, Technion - Israel Institute of Technology, Haifa, Israel

P2A1346-97 STUDY OF THE DISCHARGE AND RADIATION CHARACTERISTICS OF HIGH POWER ANNULAR-SECTION PULSED XENON FLASH LAMP
S. Jia[1], Z. Yang[1], G. Liu[1], S. Fan[1], J. Liu[2], H. Li[2]
[1]*Dept. of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China*
[2]*Shanghai Institute of Optics and Fine Mechanics, Shanghai, China*

P2A1346-98 CHARACTERIZATION OF HIGH-PRESSURE ARGON PLASMA GENERATED BY FEMTOSECOND LASER
K. Tsuchida, N. Tsuda, J. Yamada
Aichi Institute of Technology, Toyota, Japan

P2A1346-99 PROPAGATION OF CIRCULARLY POLARAIZED GAUSSIAN LASER BEAM IN A WARM PLASMA WITH DENSITY RAMP-UP AND MAGNETIC FIELD
M. R. Jafari Milani
Plasma Physics Research School, NSTRI, Tehran, Iran

P2A1346-100 INTERFEROEMTRIC MEASUREEMNTS OF THE SHOCK-WAVES GENERATED BY THE HIGH ENERGY LASER
C. Lim, J. -M. Han
Quantum Optics, KAERI (Korea Atomic Energy Research Institute), DeaJeon, South Korea

P2A1346-101 EFFICIENT PICOSECOND X-RAY SOURCES GENERATED BY HIGHLY RELATIVISTIC IRRADIATION OF VERTICALLY ALIGNED NANOSTRUCTURES
R. Hollinger[1], A. Moreau[1], A. Curtis[1], C. Calvi[2], Y. Wong[1], S. Wong[1], A. P. Rockwood[2], V. N. Shlyaptsev[1], H. Song[2], J. J. Rocca[1,2], M. G. Capeluto[3], V. Kaymak[4], A. Pukhov[4]
[1]*Electrical and Computer Engineering, Colorado State University, Fort Collins, CO, United States*
[2]*Physics, Colorado State University, Fort Collins, CO, United States*
[3]*Universidad de Buenos Aires, Buenos Aires, Argentina*
[4]*Heinrich Heine Universitat, Dusseldorf, Germany*

P2A1346-102 CHARACTERISTICS OF HOT SPOTS IN NORMAL AND REVERSED DISCHARGES IN THE DIVERGENT GAS-PUFF Z PINCH
K. Takasugi[1], M. Nishio[2]
[1]*Institute of Quantum Science, Nihon University, Tokyo, Japan*
[2]*Anan College, National Institute of Technology, Tokushima, Japan*

P2A1346-103 AXIAL PLASMA JET CHARACTERISTICS ON A MICROSECOND X-PINCH
G. S. Jaar, R. K. Appartaim
Department of Physics, Florida A&M University, Tallahassee, Florida, United States

P2A1346-104 PLASMA FLOW EXPERIMENTS ON A 1-MICROSECOND PULSED POWER DRIVER
S. Bott-Suzuki, S. Cordaro, T. Oliver
University of California San Diego, La Jolla, United States

P2A1346-105 SELF-SIMILAR SOLUTIONS WITH ELECTRO-THERMAL PROCESSES FOR PLASMAS OF ARBITRARY BETA

J. L. Giuliani, A. L. Velikovich
Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States

P2A1346-106 STABILITY MEASUREMENTS OF A STAGED Z-PINCH WITH APPLIED AXIAL MAGNETIC FIELD
F. Conti[1], J. Valenzuela[1], M. Ross[1], J. Narkis[1], F. Beg[1], H. Rahman[2], E. Ruskov[2], A. Anderson[3], A. Covington[3]
[1]Center for Energy Research, University of California, San Diego, San Diego, CA, United States
[2]Magneto-Inertial Fusion Technologies, Inc., Tustin, CA, United States
[3]University of Nevada, Reno, Reno, NV, United States

P2A1346-107 DIFFERENTIATING SOURCES OF NON-THERMAL ION ENERGY IN GAS-PUFF Z-PINCHES USING THOMSON SCATTERING
S. V. Rocco, J. T. Banasek, W. M. Potter, D. A. Hammer
Cornell University, Ithaca, NY, United States

P2A1346-108 TIME-DEPENDENT HELICAL MAGNETIC FIELD EFFECTS ON CYLINDRICAL LINER ABLATIONS
P. C. Campbell, T. M. Jones, C. Wagner, S. M. Miller, J. M. Woolstrum, N. M. Jordan, Y. Y. Lau, R. M. Gilgenbach, R. D. McBride
Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

P2A1346-109 PLASMA EXPANSION FROM PULSED POWER ELECTRODE SURFACES: SKIN EFFECTS IN A 100 NS HEATING REGIME
J. B. Greenly, W. Potter, J. Banasek
Laboratory of Plasma Studies, Cornell University, Ithaca, NY, United States

P2A1346-110 SIMULATIONS OF GAS-PUFF Z-PINCH IMPLOSIONS WITH AXIAL AND AZIMUTHAL MAGNETIC FIELDS IN THE WEIZMANN Z-PINCH
V. Tangri[1], J. L. Giuliani[2], T. Queller[3], Y. Maron[3], G. Rosenzweig[4]
[1]Research Support Instruments, Lanham, MD, United States
[2]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[3]Faculty of Physics, Weizmann Institute of Science, Rehovot, Israel
[4]Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA, United States

P2A1346-111 MEASUREMENTS OF EARLY-TIME PLASMA EVOLUTION IN THE HAWK DENSE PLASMA FOCUS
J. T. Engelbrecht[1], S. L. Jackson[1], A. S. Richardson[1], A. Beresneyak[1], B. V. Weber[1], J. L. Giuliani[1], I. M. Rittersdorf[1], J. W. Schumer[1], D. Klir[2], K. Rezac[2], J. Cikhardt[2], Y. Maron[3], E. Stambulchik[3]
[1]Plasma Physics Division, US Naval Research Laboratory, Washington, DC, USA
[2]Faculty of Electrical Engineering, Department of Physics, Czech Technical University in Prague, Prague, Czech Republic
[3]Faculty of Physics, Weizmann Institute of Science, Rehovot, Israel

P2A1346-112 SIMULATIONS OF AN ARGON Z-PINCH IMPLOSION WITH TIME-DEPENDENT NON-LTE POPULATION KINETICS
N. Ouart[1], A. Dasgupta[1], J. Giuliani[1], B. Jones[2], D. Ampleford[2], A. Harvey-Thompson[2], C. Jennings[2], R. Clark[3], V. Tangri[4]
[1]Naval Reseach Laboratory, Washington, DC, United States
[2]Sandia National Laboratories, Albuquerque, NM, United States
[3]Syntek Technologies, Arlington, VA, United States
[4]RSI, Lanham, MD, United States

P2A1346-113 IMPLOSION DYNAMICS AND RADIATIVE PROPERTIES OF RECENT EXPERIMENTS WITH W DOUBLE PLANAR WIRE ARRAYS ON UM MAIZE LTD
C. J. Butcher[1], V. L. Kanstsyrev[1], A. S. Safronova[1], V. V. Shlyaptseva[1], I. K. Shrestha[1], A. Stafford[1], A. M. Steiner[2], P. C. Campbell[2], D. A. Yager-Elorriaga[2], S. M. Miller[2], N. M. Jordan[2], R. D. McBride[2], R. M. Gilgenbach[2]
[1]Physics, University of Nevada, Reno, Reno, NV, United States
[2]Physics, University of Michigan, Ann Arbor, MI, United States

P2A1346-114 AR GAS PUFF Z-PINCHES WITH APPLIED BZ FIELD ON COBRA AT CORNELL UNIVERSITY
N. Qi, S. V. Rocco, J. Banasek, L. Atoyan, T. Byvank, W. M. Potter, J. B. Greenly, D. A. Hammer, B. R. Kusse
Lab. of Plasma Studies, Cornell University, Ithaca, NY, United States

P2A1346-115 FAST-GATED IMAGING OF PINCH AND POST PINCH PHASE DYNAMICS FOR UNDERSTANDING MATERIAL SYNTHESIS AND PROCESSING IN PLASMA FOCUS DEVICE
R. S. Rawat, J. V. Vas, M. Mishra, P. Lee
NSSE, NIE, Nanyang Technological University, Singapore, Singapore

P2A1346-116 BAYESIAN BASED INFERENCE OF ELECTRON TEMPERATURE AND DENSITY BY USING A COLLISIONAL-RADIATIVE MODEL IN LOW DENSITY HELIUM PLASMAS

B. Ahn, Y. Lim, Y. -C. Ghim
Korea Advanced Institute of Science and Technology, Daejeon, South Korea

P2A1346-117 MEASUREMENTS OF Z ELECTRODE TEMPERATURES USING ABSOLUTELY CALIBRATED STREAKED VISIBLE SPECTROSCOPY SYSTEMS AND AVALANCHE PHOTODIODES
S. G. Patel, M. D. Johnston, D. E. Bliss, G. R. Laity, M. R. Gomez, R. E. Falcon, D. J. Scoglietti, K. MacRunnels, M. E. Savage, M. E. Cuneo
Sandia National Labs, Albuquerque, United States

P2A1346-118 MEASUREMENT ON SURFACE TEMPERATURE OF EXPLODING COPPER WIRES USING OPTICAL PYROMETRY TECHNIQUE
J. H. Ryu, K. Lee, K. -J. Chung, Y. S. Hwang
Department of Nuclear Engineering, Seoul National University, Seoul, South Korea

P2A1346-119 CHARACTERIZATION OF SPARK DISCHARGES OF SPARK PLUGS USING TWO DIFFERENT OPTICAL METHODS
S. Groeger, M. Hamme, P. Awakowicz
Ruhr-University Bochum, Bochum, Germany

P2A1346-120 MEASUREMENTS OF ELECTRON DENSITY IN VACUUM ARCS BY MOIRE INTERFEROMETRY
Z. Zhou, Z. Wang
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi Province, China

P2A1346-121 PLANAR MAGNETRON STUDIES WITH A NEW INCOHERENT THOMSON SCATTERING DIAGNOSTIC
B. A. Vincent[1], S. Tsikata[1], T. Minea[2], S. Mazouffre[1]
[1]ICARE, CNRS (UPR 3021), 1C ave. de la Recherche Scientifique, Orleans, France
[2]LPGP, CNRS (UMR 8578), Paris-Sud University, Paris Saclay University, Orsay, France

P2A1346-122 X-RAY DIAGNOSTIC DEVELOPMENT FOR ELECTRON BEAM DRIVEN WDM EXPERIMENTS
N. B. Ramey[1,2], J. E. Coleman[2], M. C. Jones[3], R. J. Hohlfelder[3], R. M. Gilgenbach[1], R. D. McBride[1]
[1]Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States
[2]Los Alamos National Laboratory, Los Alamos, NM, United States
[3]Sandia National Laboratories, Albuquerque, NM, United States

P2A1346-123 A NOVEL HIGH VOLTAGE PROBE FOR THE NANOSECOND PULSE MEASUREMENT
K. Mei, J. Yan, S. Shen, Y. Li, Y. Wang, Z. Li, W. Ding
Xi'an Jiaotong University, Xi'an, China

P2A1346-124 CONTROL OF PLASMA DENSITY BY RF BIAS POWER IN INDUCTIVELY COUPLED PLASMA
H. Lee
hanyang university, seoul, South Korea

P2A1346-125 MEASUREMENT OF PLASMA PARAMETERS BY CHANGE OF TIME CONSTANT
M. -Y. Lee[1], K. -H. Kim[2], C. -W. Chung[2]
[1]Department of Nanoscale Semiconductor Engineering, Hanyang University, Seoul, South Korea
[2]Department of Electrical Engineering, Hanyang University, Seoul, South Korea

P2A1346-126 ELECTRIC MEASUREMENTS IN THE ANODE AREA OF A DC ARC PLASMA TORCH WITH AN EXTERNAL ANODE
P. Ondac[1,2], A. Maslani[1], M. Hrabovsky[1]
[1]Plasma Chemical Technologies, Institute of Plasma Physics AS CR, Za Slovankou 1782/3, 182 00 Prague 8, Prague, Czech Republic
[2]Department of Surface and Plasma Science, Faculty of Mathematics and Physics, Charles University, V Holesovickach 2, 182 00 Prague 8, Prague, Czech Republic

Session 7A: 1.6 Plasma Chemistry

Wednesday, June 27 16:00-17:30, Governors Square 12

Session Chair: Sergey N Averkin, Worcester Polytechnic Institute

16:00 7A-1 (invited) SPATIAL AND TIME-RESOLVED QUANTIFICATION OF PLASMA-DERIVED REACTIVE SPECIES IN LIQUID WATER
J. Lai, J. E. Foster

Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

16:30 7A-2 INFLUENCE OF PLASMA-GENERATED SPECIES ON THE FARADAIC EFFICIENCY OF PLASMA-LIQUID SYSTEMS
H. E. Delgado, D. C. Martin, P. Rumbach, D. M. Bartels, D. B. Go
University of Notre Dame, Notre Dame, IN, United States

16:45 7A-3 A NUMERICAL ANALYSIS OF A MICROWAVE INDUCED COAXIAL HEXAMETHYLDISILOXANE/OXYGEN SURFACE WAVE DISCHARGE
E. H. Kemaneci[1], F. Mitschker[2], D. Eremin[1], P. Awakowicz[2], R. P. Brinkmann[1]
[1]Institute for Theoretical Electrical Engineering, Ruhr University Bochum, Bochum, Germany
[2]Institute for Electrical Engineering and Plasma Technology, Ruhr University Bochum, Bochum, Germany

17:00 7A-4 INVESTIGATIONS OF FUNDAMENTAL NITROGEN OXIDE PLASMA CHEMISTRY & SURFACE INTERACTIONS
A. R. Hanna, E. R. Fisher
Chemistry, Colorado State University, Fort Collins, CO, United States

17:15 7A-5 URANIUM OXIDE EMISSION FROM LASER-PRODUCED PLASMA
S. S. Harilal, B. E. Brumfield, B. E. Bernacki, M. C. Phillips
Pacific Northwest National Laboratory, Richland, WA, United States

Session 7B: 2.7 Multipactor Special Session I

Wednesday, June 27 16:00-17:30, Governors Square 11

Session Chair: Peng Zhang, Michigan State University

16:00 7B-1 (invited) MULTIPACTOR BREAKDOWN THRESHOLD AND GROWTH IN MULTICARRIER SYSTEMS
A. A. Hubble, P. T. Partridge, M. S. Feldman, R. Spektor
The Aerospace Corporation, El Segundo, CA, United States

16:30 7B-2 SPACE CHARGE SATURATION IN MULTIPACTOR DISCHARGES WITH PARALLEL MAGNETIC FIELD
R. Spektor, M. F. S. Feldman, A. A. Hubble
Propulsion Sciencese, The Aerospace Corporation, El Segundo, United States

16:45 7B-3 COMMON HIGH POWER TEST ISSUES SOLVED
J. Farrell, T. Musselman
Boeing, El Segundo, CA, United States

17:00 7B-4 EFFECTS OF BACKSCATTERED ELECTRONS IN MULTIPACTOR DISCHARGES WITH PARALLEL MAGNETIC FIELDS
M. S. Feldman, A. A. Hubble, R. Spektor
Electric Propulsion and Plasma Science, The Aerospace Corporation, El Segundo, CA, United States

17:15 7B-5 SURFACE PROCESSING TECHNIQUES FOR REDUCTION OF HYDROGEN OUTGASSING AND SECONDARY ELECTRON EMISSION
S. B. Fairchild[1], P. T. Murray[1], T. C. Back[1], D. Gortat[2], J. Sattler[3], T. S. Burton[4], G. B. Thompson[4]
[1]Materials & Manufacturing Directorate, Air Force Research Labs, Wright-Patterson AFB, OH, United States
[2]Institute for Manufacturing, University of Cambridge, Cambridge, United Kingdom
[3]Dept. of Electrical and Computer Engineering, Air Force Institute of Technology, Wright-Patterson AFB, OH, United States
[4]Dept. of Metallurgical and Materials Engineering, University of Alabama, Tuscaloosa, AL, United States

Session 7C: 2.1, 2.2, 2.6 Intense microwave generation, Fast wave devices, and Non-fusion microwave systems

Wednesday, June 27 16:00-17:30, Governors Square 10

Session Chair: Sarita Prasad, Raytheon

16:00 7C-1 (invited) PHASE STABILITY MEASUREMENTS OF A 140 GHZ CONFOCAL GYRO-AMPLIFIER

G. Rosenzweig, S. K. Jawla, J. F. Picard, M. A. Shapiro, R. J. Temkin
Massachusetts Institute of Technology, Cambridge, MA, United States

16:30 7C-2 EXTRACTING EFFECTIVE COMPLEX PERMITTIVITY PARAMETERS OF A METAMATERIAL-LINED RECTANGULAR WAVEGUIDE FOR METAMATERIAL-ENHANCED RESISTIVE WALL AMPLIFIERS
J. H. Booske, P. Forbes, S. Dennison, N. Behdad
Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, WI, United States

16:45 7C-3 EXPERIMENTAL MICROWAVE GAIN MEASUREMENTS ON A RECIRCULATING PLANAR CROSSED-FIELD AMPLIFIER
S. C. Exelby[1], G. B. Greening[1], N. M. Jordan[1], D. A. Packard[1], Y. Y. Lau[1], R. M. Gilgenbach[1], B. W. Hoff[2], D. H. Simon[2]
[1]Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, United States
[2]Directed Energy Directorate, Air Force Research Laboratory, Albuquerque, NM, United States

17:00 7C-4 DESIGN AND DEVELOPMENT OF HIGH POWER MAGNETRON FOR WIRELESS POWER TRANSMISSION USING CFDTD PIC SIMULATIONS
L. Li[1], K. Aranganadin[1], M. -C. Lin[1], H. -Y. Hsu[2]
[1]Department of Electrical and Biomedical Engineering, Hanyang University, Seoul, South Korea
[2]Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan

17:15 7C-5 ON THE WAVE PROPAGATION THROUGH APERTURES
Z. Shaw, A. Hewitt, J. C. Dickens, A. A. Neuber
Texas Tech Pulsed Power, Lubbock, TX, United States

Session 7D: 4.7 Plasma Material Interactions II

Wednesday, June 27 16:00-17:30, Governors Square 17

Session Chair: Yao E Kovach, University of Michigan

16:00 7D-1 (invited) LOW TEMPERATURE NITROGEN AND CARBON PLASMA BASED PROCESSING, DOPING AND SYNTHESIS OF NANOSTRUTURED ENERGY STORAGE/CONVERSION MATERIALS
R. S. Rawat, B. Ouyang
NSSE, NIE, Nanyang Technological University, Singapore, Singapore

16:30 7D-2 PLASMA-INDUCED PHASE CHANGE IN VANADIUM DIOXIDE
O. A. Sonoiki, A. Mironov, J. A. Rivera, S. Park, S. Jungerman, J. G. Eden
Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

16:45 7D-3 MATERIALS STUDIES OF GHZ SPLIT-RING RESONATOR PLASMA GENERATORS
Z. Cohick, S. Perini, D. Wolfe, M. Lanagan
Engineering Science and Mechanics, The Pennsylvania State University, University Park, PA, United States

17:00 7D-4 IRRADIATION EFFECTS IN GRAPHITE INDUCED BY HELIUM IONS: SURFACE, STRUCTURAL, AND CHEMICAL ANALYSES
S. R. Mohanty[1], N. J. Dutta[1], N. Buzarbaruah[1], M. Ranjan[2], R. S. Rawat[3]
[1]Centre of Plasma Physics-Institute for Plasma Research, Sonapur, Assam, India
[2]FCIPT, Institute for Plasma Research, Gandhinagar, Gandhinagar, Gujurat, India
[3]National Institute of Education, Nanyang Technological University, 637616 Singapor, Singapore, Singapore

17:15 7D-5 TITANIUM/ALUMINA COMPOSITE FILM PREPARED BY MAGNETRON SPUTTERING
R. Ahmad[1], S. Saleem[2], P. K. Chu[3]
[1]Physics, Government College University Lahore, Lahore, Pakistan
[2]Physics, Lahore College for Woman University Lahore, Lahore, Pakistan
[3]Physics, City University of Hong Kong, Hong Kong, Hong Kong

Session 7E: 5.1 Nonequilibrium Plasma Applications IV

Wednesday, June 27 16:00-17:30, Governors Square 16

Session Chair: Chunqi Jiang, Old Dominion University

16:00 7E-1 (invited) PLASMA-ENHANCED CATALYSIS FOR NH3 SYNTHESIS AT LOW TEMPERATURE, LOW PRESSURE CONDITIONS USING A NON-EQUILIBRIUM PLASMA COMBINED WITH ALLOY CATALYSTS
B. E. Koel[1], X. Yang[1], Y. Ju[2]
[1]Department of Chemical and Biological Engineering, Princeton University, Princeton, NJ, United States
[2]Department of Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ, United States

16:30 7E-2 ATMOSPHERIC-PRESSURE DUAL-FREQUENCY DIELECTRIC BARRIER DISCHARGE CHARACTERIZATION FOR THIN FILM DEPOSITION
Y. Liu[1], S. A. Starostin[2], F. J. J. Peeters[1], M. C. M. van de Sanden[1], H. W. de Vries[1]
[1]Dutch Institute for Fundamental Energy Research, Eindhoven, The Netherlands
[2]FUJIFILM Manufacturing Europe B.V., Tilburg, The Netherlands

16:45 7E-3 CHARACTERISTICS OF PVDF POLYMER FILMS SYNTHESIZED BY ATMOSPHERIC PRESSURE PLASMA POLYMERIZATION FOR FLEXIBLE NANOGENERATOR APPLICATIONS
D. Kim[1], C. -S. Park[1], E. Y. Jung[1], D. H. Kim[1], G. T. Bae[1], B. J. Shin[2], S. Kim[3], H. -S. Tae[1]
[1]School of Electrical Engineering, College of IT Engineering, Kyungpook National University, Daegu, South Korea
[2]Sejong University, Seoul, South Korea
[3]Clemson University, Clemson, USA

17:00 7E-4 DETAILED SPECIATION AND REACTIVITY CHARACTERIZATION OF PRODUCTS GENERATED BY TRANSIENT PLASMA DISCHARGES IN FUEL/OXIDIZER MIXTURES AT ENGINE RELEVANT DENSITIES
S. Biswas[1], I. Ekoto[1], R. Scarcelli[2]
[1]Sandia National Laboratories, Livermore, CA, United States
[2]Argonne National Laboratory, Lemont, IL, United States

17:15 7E-5 WEARABLE PLASMA CLOTHES OF PLASMA PAD, PLASMA CAP, AND PLASMA SHOES
B. J. Park, K. H. Choi, S. Kim, Y. J. Kim, S. J. Kim, G. Cho
Department of Electrical and Biological Physics, Kwangwoon University, Seoul, South Korea

Session 7F: 6.1 Optical, X-ray, FIR, and Microwave Diagnostics

Wednesday, June 27 16:00-17:30, Governors Square 15

Session Chair: Benjamin John Tobias, Los Alamos National Lab

16:00 7F-1 (invited) PLANAR MAGNETRON STUDIES WITH A NEW INCOHERENT THOMSON SCATTERING DIAGNOSTIC
B. Vincent[1], S. Tsikata[1], T. Minea[2], S. Mazouffre[1]
[1]CNRS, ICARE, 1C ave. de la Recherche Scientifique, Orleans, France
[2]LPGP, CNRS, Paris-Sud University, Paris Saclay University, Orsay, France

16:30 7F-2 TEMPERATURE MEASUREMENT OF CH4 PULSED MICROWAVE PLASMAS BY RAMAN SCATTERING
T. D. Butterworth, N. Gatti, D. V. D. Bekerom, A. V. D. Steeg, Q. Ong, G. J. V. Rooij
Dutch Institute for Fundamental Energy Research, Eindhoven, Netherlands

16:45 7F-3 AVERAGE ELECTRON TEMPERATURE ESTIMATION BASED ON RAYLEIGH SCATTERING OF ELETROMAGNETIC WAVE
L. Lin[1], M. Shneider[2], M. Keidar[1]
[1]Mechanical and Aerospace Engineering, The George Washington University, Washington, DC, United States
[2]Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ, United States

17:00 7F-4 THE TALBOT-LAU X-RAY DEFLECTOMETER: A REFRACTION-BASED PLASMA DIAGNOSTIC
M. P. Valdivia
Johns Hopkins University, Baltimore, MD, United States

17:15 7F-5 OPTICAL DIAGNOSTIC OF AR-O2 AND AR-N2 MIXTURE PLASMA WITH FULLY RELATIVISTIC ELECTRON IMPACT FINE-STRUCTURE CROSS SECTIONS
R. Srivastava[1], P. Priti[1], S. Gupta[1], R. Gangwar[2]
[1]Department of Physics, Indian Institute of Technology(IIT) Roorkee, Roorkee, India
[2]Department of Particle Physics and Astrophysics, Weizmann Institute of Science, Rehovot, Israel

Session PL7: Plenary 7

Thursday, June 28 08:30-09:30, Plaza Ballroom A/B/C

Session Chair: Sandra Biedron, University of New Mexico

8:30 PL7-1 (invited) RADIATION BELT REMEDIATION USING SPACE-BASED ANTENNAS AND ELECTRON BEAMS
B. Carlsten
Engineering Sciences Directorate, Los Alamos National Laboratory, Los Alamos, NM, United States

Session 8A: 1.3 Space Plasmas

Thursday, June 28 10:00-12:00, Governors Square 12

Session Chair: Anton Spirkin, Tech-X Corporation

10:00 8A-1 NUMERICAL INVESTIGATION OF ION TRANSPORT IN THE MOMA ION MASS SPECTROMETER
L. Brieda[1], S. Glubke[2], A. Grubisic[2], U. Patel[2]
[1]PIC-C, Westlake Village, CA, United States
[2]NASA Goddard Space Flight Center, Greenbelt, MD, United States

10:15 8A-2 HYBRID PARTICLE-IN-CELL SIMULATION OF WAVE-PARTICLE INTERACTIONS IN COLLISIONLESS SPACE PLASMA WITH FD AND DG SCHEMES
P. Hosseini, H. Y. Kim, M. Golkowski, V. Harid
Electrical Engineering, University of Colorado Denver, Denver, United States

10:30 8A-3 THE DEVELOPMENT OF THE BUNEMAN INSTABILITY IN SPACE AND TIME
E. V. Rostomyan
Theoretical, Institute of Radiophysics & Electronics National Ac Sci of Armenia, Ashtarack, Armenia

10:45 8A-4 SOLAR WIND DRIVEN WHISTLER INSTABILITY IN EARTHï¿½S CUSP REGION
M. N. S. Qureshi
Physics, GC University, Lahore, Lahore, Pakistan

11:00 8A-5 THE ROLE OF COLLISIONALITY AND RADIATIVE COOLING ON THE INTERACTIONS BETWEEN SUPERSONIC PLASMA FLOWS
G. W. Collins IV[1], J. C. Valenzuela Ahumada[1], P. Tzeferacos[2], C. A. Speliotopoulos[1], F. Conti[1], N. Aybar[1], F. N. Beg[1]
[1]Center for Energy Research, University of California, San Diego, San Diego, CA, USA
[2]University of Chicago, Chicago, IL, USA

11:15 8A-6 NONLINEAR WAVES IN A DEGENERATE MAGNETIZED ASTROPHYSICAL PLASMA WITH THE EFFECT OF BOHM POTENTIAL
M. M. Hasan[1], M. R. Hossen[2], A. A. Mamun[3]
[1]Mathematics and Natural Sciences, BRAC University, Dhaka, Bangladesh
[2]General Educational Development, Daffodil International University, Dhaka, Bangladesh
[3]Physics, Jahangirnagar University, Dhaka, Bangladesh

Session 8B: 2.7 Multipactor Special Session II

Thursday, June 28 10:00-12:00, Governors Square 11

Session Chair: Aimee Hubble, The Aerospace Corporation

10:00 8B-1 (invited) MULTIPACTOR AND BREAKDOWN SUSCEPTIBILITY AND MITIGATION IN SPACE-BASED RF SYSTEMS
J. P. Verboncoeur[1], N. Behdad[2], J. H. Booske[2], J. C. Dickens[3], R. M. Gilgenbach[4], M. Gilmore[5], N. M. Jordan[4], R. P. Joshi[3], Y. Y. Lau[4], J. Mankowski[3], D. Morgan[2], A. A. Neuber[3], S. Portillo[5], E. Schamiloglu[5], P. Zhang[1]
[1]Michigan State University, East Lansing, MI, United States
[2]University of Wisconsin, Madison, WI, United States
[3]Texas Tech University, Lubbock, TX, United States
[4]University of Michigan, Ann Arbor, MI, United States
[5]University of New Mexico, Albuquerque, NM, United States

10:30 8B-2 VALIDATION OF MAP-BASED MULTIPACTOR THEORY USING 3D SIMULATIONS
M. Siddiqi, R. Kishek
The Institute for Research in Electronics and Applied Physics, University of Maryland, College Park, MD, United States

10:45 8B-3 A 2 KW, 2.85 GHZ MULTIPACTOR RF SOURCE UTILIZING DEPLETION MODE GAN HEMTS
B. Esser, Z. Shaw, J. C. Dickens, A. A. Neuber
Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, United States

11:00 8B-4 ASSESSING THE INFLUENCE OF SECONDARY ELECTRON EMISSION CHARACTERISTICS ON MULTIPACTOR IN RECTANGULAR WAVEGUIDES
H. K. A. Nguyen, J. Mankowski, J. C. Dickens, A. A. Neuber, R. P. Joshi
Center for Pulsed Power and Power Electronics, Department of Electrical and Computer Engineering, Texas Tech University, Lubbock, Texas 79409, United States

11:15 8B-5 PRELIMARY DATA FOR SUPPRESSION OF SECONDARY ELECTRON YIELD
J. M. Chen, J. -T. Chen, K. W. Fulford, S. Portillo, M. Gilmore, E. Schamiloglu
Electrical and Computer Engineering, University of New Mexico, Albuquerque, New Mexico, United States

11:30 8B-6 OBSERVATION OF MULTIPACTOR EFFECTS IN SPACE-BASED RF ENVIRONMENTS
Z. Shaw, B. Esser, J. C. Dickens, A. A. Neuber
Texas Tech Pulsed Power, Lubbock, Texas, United States

11:45 8B-7 DUAL FREQUENCY MULTIPACTOR ON A DIELECTRIC
A. Iqbal, J. Verboncoeur, P. Zhang
Electrical and Computer Engineering, Michigan State University, East Lansing, Michigan, United States

Session 8C: 5.5 Medical and Biological Applications III

Thursday, June 28 10:00-12:00, Governors Square 10

Session Chair: Dayun Yan, Department of Mechanical and Aerospace Engineering, The George Washington University,

10:00 8C-1 DESIGN AND CONSTRUCTION OF A PULSE LINE ION ACCELERATOR FOR BIOMEDICAL APPLICATIONS
R. Alibazi Behbahani, Q. Diot, B. Kavanagh, N. J. Serkova, D. C. Westerly
Department of Radiation Oncology, University of Colorado School of Medicine, Aurora,Co, United States

10:15 8C-2 APPLICATION OF NANOSECOND AND MICROSECOND PULSED ELECTRIC FIELDS FOR INCREASED LIPID RECOVERY FROM MICROALGA CHLORELLA PROTOTHECOIDES
M. L. Mulligan[1], C. H. Geissler[1], S. Ray[1], Z. E. Zmola[2], J. A. Morgan[1], A. L. Garner[2]
[1]Chemical Engineering, Purdue University, West Lafayette, IN, United States
[2]Nuclear Engineering, Purdue University, West Lafayette, IN, United States

10:30 8C-3 BACTERIAL DECONTAMINATION USING PLASMA ARRAY IN AIR AT ATMOSPHERIC PRESSURE
H. Wang, X. Wang, H. Luo
Department of Electrical Engineering, Tsinghua university, Beijing, China

10:45 8C-4 INHIBITION OF STAPHYLOXANTHIN BIOSYNTHESIS IN STAPHYLOCOCCUS AUREUS BY SURFACE DISCHARGE PLASMA
Y. Zhu, D. Cui, H. Xu, M. Du, R. Ma, J. Zhen
Zhengzhou University, Henan Key Laboratory of Ion-beam Bioengineering, Zhengzhou,Henan province, China

11:00 8C-5 THE SYNERGISTIC EFFECT OF ZINC OXIDE NANOPARTICLE AND COLD ATMOSPHERIC PLASMA ON INACTIVATION OF STAPHYLOCOCCUS AUREUS
M. Du
Henan Key Laboratory of Ion-beam Bioengineering, 17839943281, Zhengzhou ,Henan Province, China

11:15 8C-6 THE DISTRIBUTION OF OH RADICAL AND ITS BIOLOGICAL EFFECT IN SURFACE DIELECTRIC BARRIER GAS DISCHARGE
H. Xu, R. Ma, Y. Zhu, Z. Jiao
zhengzhou university, Henan Key Laboratory of Ion-beam Bioengineering, zhengzhou, Henan, China

11:30 8C-7 MODELLING STUDY ON THE TRANSFORMATION OF NEURONS INDUCED BY REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION
Y. Wang, J. Li, C. Li, S. He, Z. Zhao, L. Li
High Voltage Institute of Xi_an Jiaotong University, Xi_an,Shaanxi Province, China

Session 8D: 4.6 Fast Z Pinches II

Thursday, June 28 10:00-12:00, Governors Square 17

Session Chair: Simon Bott-Suzuki, University of California San Diego

10:00 8D-1 (invited) X-RAY SPECTROSCOPY AND IMAGING OF TUNGSTEN PULSED-POWER PLASMAS
A. S. Safronova[1], V. L. Kantsyrev[1], V. V. Shlyaptseva[1], I. K. Shrestha[1], C. J. Butcher[1], A. Stafford[1], E. E. Petkov[1], R. Childers[1], P. C. Campbell[2], S. M. Miller[2], N. M. Jordan[2], R. D. McBride[2], R. M. Gilgenbach[2]
[1]University of Nevada, Reno, Reno, NV, United States
[2]University of Michigan, Ann Arbor, MI, United States

10:30 8D-2 MULTI-ANGLED, MULTI-PULSE TIME-RESOLVED THOMSON SCATTERING ON LABORATORY PLASMA JETS
J. T. Banasek, T. Byvank, S. V. R. Rocco, W. M. Potter, B. R. Kusse, D. A. Hammer
Cornell University, Ithaca, NY, United States

10:45 8D-3 HIGH VOLTAGE COAXIAL VACUUM GAP BREAKDOWN FOR PULSED POWER LINERS
S. W. Cordaro, S. C. Bott-Suzuki
Mechanical & Aerospace Engineering, University California San Diego, La Jolla, California, United States

11:00 8D-4 CHARACTERISTICS OF A MOLYBDENUM X-PINCH X-RAY SOURCE ANDï¿½ITS APPLICATIONï¿½IN DIFFRACTING AND IMAGING STUDIES
J. Li
Key Laboratory of Pulsed Power, Institute of Fluid Physics, CAEP, Mianyang, China

11:15 8D-5 PARTICLES EMISSION FROM TUNGSTEN CONICAL WIRE ARRAY Z-PINCHES
G. Munoz-Cordovez, F. Veloso, V. Valenzuela-Villaseca, M. Vescovi, W. Useche, E. Wyndham, M. Favre
Instituto de Fisica, Pontificia Universidad Catolica de Chile, Santiago, Chile

Session 8E: 4.5 Laser Produced Plasmas

Thursday, June 28 10:00-12:00, Governors Square 16

Session Chair: Robert J Commisso, Naval Research Laboratory

10:00 8E-1 EXPERIMENTS ON LASER PRODUCED ANNULAR PLASMAS
V. Valenzuela-Villaseca[1], R. Hoppe[1], M. Favre[1], H. Bhuyan[1], F. Veloso[1], E. Wyndham[1], H. M. Ruiz[2]
[1]Instituto de Fisica, Pontificia Universidad Catolica de Chile, Santiago, Chile
[2]Departamento de Fisica, Universidad Tecnica Federico Santa Maria, Valparaiso, Chile

10:15 8E-2 (invited) ABSOLUTE HUGONIOT MEASUREMENTS FOR CH FOAMS IN THE 2-9 MBAR RANGE
Y. Aglitskiy[1], A. L. Velikovich[1], M. Karasik[1], A. J. Schmitt[1], V. Serlin[1], J. L. Weaver[1], J. Oh[1], S. P. Obenschain[1], K. R. Cochrane[2]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]Sandia National Laboratories, Albuquerque, NM, United States

10:45 8E-3 EFFECT OF EXTERNAL MAGNETIC FIELD ON THE CIRCULARLY POLARIZED LASER BEAM PROPAGATED IN A THERMAL COLLISIONAL PLASMA
M. R. Jafari Milani, S. Rezaei, J. Jafari
Plasma Physics Research School, NSTRI, Tehran, Iran

Session 8F: 6.2, 6.3 Particle and Electrical (probe) Diagnostics

Thursday, June 28 10:00-12:00, Governors Square 15

Session Chair: Chijin Xiao, University of Saskatchewan

10:00 8F-1 (invited) TIME-RESOLVED ELECTRON DENSITY MEASUREMENT CHARACTERIZATION OF E-H MODES FOR INDUCTIVELY COUPLED PLASMA INSTABILITIES
D. J. Coumou[1], S. Smith[1], A. Toe[1], S. White[1], S. C. Shannon[2], J. Brandon[2], K. Ford[2]

[1]*MKS, ENI Products, Rochester, New York*
[2]*Nuclear Engineering, North Carolina State University, Raleigh, North Carolina*

10:30 8F-2 ELECTRO-OPTICAL PROBE FOR DIELECTRIC BARRIER DISCHARGE ANALYSIS
F. Aljammal[1], G. Gaborit[1], L. Galtier[2], G. Revillod[2], L. Duvillaret[2], S. Iseni[3], R. Dussart[3]
[1]*IMEP-LAHC, UMR 5130, Bourget du Lac, France*
[2]*Kapteos, Saint Helene du Lac, France*
[3]*GREMI, Orleans, France*

10:45 8F-3 REDUCTION OF SPACE CHARGE DISTORTION IN RETARDING FIELD ENERGY ANALYZERS
S. Shannon[1], M. Talley[1], Y. Du[1], J. Verboncoeur[2]
[1]*Nuclear Engineering, NC State University, Raleigh, NC, United States*
[2]*Michigan State University, East Lansing, MI, United States*

11:00 8F-4 ANALYSIS OF ELECTRICAL PROPERTIES IN A DIELECTRIC BARRIER DISCHARGE PLASMA JET
D. B. Nguyen[1,2], M. M. Hossain[1], Q. H. Trinh[2], W. G. Lee[3], Y. S. Mok[1]
[1]*Department of Chemical and Biological Engineering, Jeju National University, Jeju, South Korea*
[2]*Institute of Research and Development, Duy Tan University, Da Nang, Vietnam*
[3]*Department of Chemical Engineering, Kangwon National University, Chuncheon, South Korea*

11:15 8F-5 MEASUREMENT OF THE CATHODE LAYER THICKNESS IN GLOW DISCHARGES WITH A LANGMUIR PROBE
H. Wang, X. Hou, H. Luo, X. Wang
Department of electrical engineering,, Tsinghua university, Beijing, China