Session PL1: Plenary1

Monday, May 26 08:00-09:00, Thurgood Marshall East-South
Session Chair: *Joseph W Schumer, Naval Research Laboratory*

8:00 PL1-1 (invited) ULTRACOLD NEUTRAL PLASMAS
S. L. Rolston
Physics, University of Maryland, College Park, MD, United States

Session 1A: Nonequilibrium Plasma Applications I

Monday, May 26 9:30 - 12:00, Thurgood Marshall North
Session Chair: *Xinpei Lu, Huazhong University of Science and Technology, China*

9:30 1A-1 CONTROL OF ION ENERGY DISTRIBUTIONS USING PHASE SHIFTING IN MULTI-FREQUENCY CAPACITIVELY COUPLED PLASMAS
Y. Zhang[1], M. J. Kushner[1], S. C. Shannon[2]
[1]Electrical Engineering and Computer Science Department, University of Michigan, Ann Arbor, MI, United States
[2]Department of Nuclear Engineering, North Carolina State University, Raleigh, NC, United States

9:45 1A-2 EXPERIMENTAL AND NUMERICAL STUDIES ON NONLINEAR PLASMA SERIES RESONANCE EFFECT IN CAPACITIVELY COUPLED RADIO FREQUENCY GLOW DISCHARGE PLASMA BY HOMOGENEOUS DISCHARGE MODEL
B. Bora, L. Soto
Departamento de Plasma Termonuclear, Comision Chilena de Energia Nuclear, Santiago, RM, Chile

10:00 1A-3 ION FLUX UNIFORMITY CONTROL IN LARGE AREA CAPACITIVELY COUPLED DUAL-FREQUENCY DISCHARGES
E. Schuengel[1], J. Schulze[1], S. Mohr[2], U. Czarnetzki[2]
[1]Physics, West Virginia University, Morgantown, WV, United States
[2]Institute for Plasma and Atomic Physics, Ruhr University Bochum, Bochum, Germany

10:15 1A-4 THE EFFECT OF STRUCTURED ELECTRODES ON HEATING AND PLASMA UNIFORMITY IN CAPACITIVE DISCHARGES
N. Schmidt[1], U. Czarnetzki[1], E. Schuengel[2], J. Schulze[2]
[1]Physics, Ruhr-University Bochum, Bochum, NRW, Germany
[2]Physics, West Virginia University, Morgantown, WV, USA

10:30 1A-5 HYDROGEN AND METHANE PLASMA ASSISTED IGNITION BY NS DISCHARGE BEHIND REFLECTED SHOCK WAVE

A. Starikovskiy
MAE, Princeton University, Princeton, NJ, United States

10:45 1A-6 COMPARATIVE STUDY ON MICROWAVE PLASMA-ASSISTED COMBUSTION OF PREMIXED AND NONPREMIXED METHANE-AIR FLOWS
W. Wu, C. A. Fuh, C. Wang
Department of Physics and Astronomy, Mississippi State University, Starkville, MS, United States

11:00 1A-7 MICROPLASMA ASSISTED SYNTHESIS OF GOLD NANOPARTICLES MEDIATED BY ULTRASOUND
S. Zuo[1], R. Wang[1], J. Zhang[1,2], J. Fang[1,2], W. Zhu[3]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China
[2]College of Engineering, Peking University, Beijing, China
[3]Department of Applied Science and Technology and Center for Microplasma Science and Technology, Saint Peters College, New Jersey, USA

11:15 1A-8 CO2 DISSOCIATION USING THE VERSATILE ATMOSPHERIC DIELECTRIC BARRIER DISCHARGE EXPERIMENT (VADER)
M. A. Lindon, E. Scime
Physics, West Virginia University, Morgantown, WV, United States

11:30 1A-9 COMPARISON OF PLASMA SOURCES FOR SURFACE TREATMENT APPLICATIONS: RADIOFREQUENCY INDUCTIVELY COUPLED AND SURFACE-WAVE MICROWAVE PLASMA SOURCES
C. Laurent, J. Lo, B. Caillier, L. Therese, P. Guillot
DPHE, Universite de Toulouse, CUFR J. F. Champollion, albi, France

11:45 1A-10 THRESHOLDS FOR MICROBUBBLE AND MICROPLASMA GENERATION IN LIQUID
P. Xiao, D. Staack
Mechanical Engineering Department, Texas A&M University, College Station, TX, United States

Session 1B: Slow-Wave Devices I

Monday, May 26 9:30 - 12:00, Thurgood Marshall South
Session Chair: *John Pasour, Naval Research Laboratory*

9:30 1B-1 A STUDY OF ABSOLUTE INSTABILITY IN TWTS
D. M. H. Hung[1], I. M. Rittersdorf[1], Y. Y. Lau[1], D. H. Simon[1], P. Zhang[1], R. M. Gilgenbach[1], D. Chernin[2], T. M. Antonsen, Jr[3]
[1]Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States
[2]Leidos Corp., Reston, VA, United States
[3]University of Maryland, College Park, MD, United States

9:45 1B-2 DESIGN OF BROADBAND KILO-WATT CLASS W-BAND SERPENTINE TWTS
K. T. Nguyen[1], A. Cook[2], J. P. Calame[2], C. Joye[2], J. A. Pasour[2], D. Pershing[1], E. Wright[1], S. Cooke[2], B. Levush[2], D. K. Abe[2]
[1]Beam-Wave Research, Inc., Bethesda, MD, United States
[2]U.S. Naval Research Laboratory, Washington, DC, United States

10:00 1B-3 94 GHZ OVERMODED TWT EXPERIMENT
E. J. Kowalski, W. C. Guss, M. A. Shapiro, R. J. Temkin
Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA, United States

10:15 1B-4 DIELECTRIC AND ALTERNATIVE-CONFIGURATION-METAL SLOW WAVE STRUCTURES FOR W-BAND TRAVELING WAVE AMPLIFIERS
J. P. Calame[1], A. M. Cook[1], C. D. Joye[1], B. S. Albright Jr[1], K. T. Nguyen[2], E. L. Wright[2], R. E. Myers[2], L. Ludeking[3]
[1]Naval Research Laboratory, Washington, DC, United States
[2]Beam-Wave Research, Inc., Bethesda, MD, United States
[3]ATK Mission Research, Newington, VA, United States

10:30 1B-5 (invited) DEMONSTRATION OF A WIDEBAND 10-KW KA-BAND SHEET BEAM TWT AMPLIFIER
D. Pershing[1], K. Nguyen[1], D. K. Abe[2], E. Wright[2], P. Larsen[3], J. Pasour[2], S. Cooke[2], A. Balkcum[4], F. Woods[2], R. Myers[1], B. Levush[2]
[1]Beam-Wave Research, Inc., Bethesda, MD, United States
[2]Naval Research Laboratory, Washington, DC, United States
[3]ANSYS Inc., Evanston, IL, United States
[4]CPI, Inc, Palo Alto, CA, United States

11:00 1B-6 PLANAR SLOW-WAVE STRUCTURE WITH PARASITIC MODE CONTROL
L. B. Nguyen, T. M. Antonsen, G. S. Nusinovich
Institute for Research in Electronics and Applied Physics, University of Maryland, College Park, College Park, Maryland, United States

11:15 1B-7 COMPACT, MULTI-KW SHEET BEAM OSCILLATOR AT 94 GHZ
J. Pasour[1], E. Wright[2], K. Nguyen[2], B. Levush[1]
[1]Naval Research Laboratory, Washington, DC, United States
[2]Beam Wave Research, Inc., Bethesda, MD, United States

11:30 1B-8 MULTIPACTOR COATINGS FOR SAPPHIRE WINDOWS USING REMOTE PLASMA ASSISTED DEPOSITION
L. Ives[1], D. Marsden[1], G. Collins[1], D. Zeller[2], G. Lucovsky[2], E. Schamiloglu[3]
[1]Calabazas Creek Research, Inc., San Mateo, CA, United States
[2]Physics Department, North Carolina State University, Raleigh, NC, United States
[3]Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

11:45 1B-9 SPECTRAL DYNAMICS OF MM-WAVE RADIATION FROM TWO-CHANNEL PLANAR FEM WITH TWO DIMENSIONAL DISTRIBUTED FEEDBACK
A. V. Arzhannikov[1], N. S. Ginzburg[2], V. Y. Zaslavsky[2], P. V. Kalinin[3], N. Y. Peskov[2], A. S. Sergeev[2], S. L. Sinitsky[1], V. D. Stepanov[1], M. K. A. Thumm[4]
[1]Institute of Nuclear Physics, Siberian Branch of RAS, Novosibirsk, Russia
[2]Instutute of Applied Physics, RAS, Nizhny Novgorod, Russia
[3]Novosibirsk State University, Novosibsirk, Russia
[4]Karlsruhe Institute of Technology, IHM, Karlsruhe, Germany

Session 1C: Plasma, Ion, and Electron Sources I

Monday, May 26 9:30 - 12:00, Thurgood Marshall East
Session Chair: *Evgeniya H Lock, Naval Research Laboratory*

9:30 1C-1 POLAR, NON-CENTROSYMMETRIC CRYSTALS FOR THE GENERATION OF ATMOSPHERIC PRESSURE GAS DISCHARGES
M. J. Johnson, D. B. Go
Aerospace and Mechanical Engineering, Notre Dame, Notre Dame, United States

9:45 1C-2 THE GLASS-SILICON-GLASS SANDWICH STRUCTURED MICROPLASMA CHIP AS THE ELECTRON SOURCE OF A MICRO MASS SPECTROMETER
J. Tang, X. Yu, Y. Chen, S. -T. Tu, Z. Wang
Key Laboratory of Pressure Systems and Safety, Ministry of Education, East China University of Science and Technology, Shanghai, China

10:00 1C-3 ***WITHDRAWN*** DEVELOPMENT AND MEASUREMENT OF A MICROWAVE MICROPLASMA SOURCE FOR MICROPROPULSION
R. A. Dextre, K. G. Xu
Mechanical and Aerospace Engineering, University of Alabama in Huntsville, Huntsville,AL, United States

10:15 1C-4 (invited) TOMSK POLYTECHNIC UNIVERSITY RESEARCH IN DESIGNING NANOSECOND ELECTRON SOURCES AND THEIR APPLICATION
G. E. Remnev, R. V. Sazonov, I. S. Egorov, V. V. Ezhov, V. S. Esipov, M. I. Kaikanov, D. Y. Kolokolov, E. I. Lukonin, L. R. Merinova, A. V. Nashilevskiy, A. V. Poloskov, D. V. Ponomarev, A. V. Stepanov, G. E. Kholodnaya
Tomsk Polytechnic University, Tomsk, Russian Federation

10:45 1C-5 A GLOBAL MODEL OF HIGH CURRENT NEGATIVE HYDROGEN ION SOURCE
S. N. Averkin[1], N. A. Gatsonis[1], L. Olson[2]
[1]Worcester Polytechnic Institute, Worcester, MA, United States
[2]Busek Co. Inc., Natick, MA, United States

11:00 1C-6 INFLUENCE OF THE EXCITATION FREQUENCY INCREASE ON A FLUID MODEL OF THE CAPACITIVELY COUPLED ARGON PLASMA
S. Leszczynski[1], C. Strobel[1], M. Albert[1], J. W. Bartha[1], U. Stephan[2]
[1]Semiconductor and Microsystems Technology Laboratory, Dresden University of Technology, Dresden, Germany
[2]Forschungs- und Applikationslabor Plasmatechnik GmbH, Dresden, Germany

11:15 1C-7 EVALUATING THE PERFORMANCE OF A CARBON-EPOXY CAPILLARY CATHODE AND CARBON FIBER CATHODE IN A SEALED-TUBE VIRCATOR UNDER UHV CONDITIONS
E. Rocha[1], P. Kelly[1], J. Mankowski[1], A. A. Neuber[1], J. C. Dickens[1], J. M. Parson[1], C. Lynn[1]
T. Queller[2], J. Z. Gleizer[2], and Y. E. Krasik[2]
[1]Texas Tech University, Center for Pulsed Power and Power Electronics, Lubbock, Texas, United States
[2]Physics Department, Technion-Israel Institute of Technology, Haifa, Israel

11:30 1C-8 CARBON NANOTUBE FIBER FIELD EMISSION CATHODES
S. B. Fairchild[1], M. A. Lange[1], G. J. Gruen[1], P. T. Murray[1], T. C. Back[1], N. P. Lockwood[2], M. Pasquali[3]
[1]Materials and Manufacturing Directorate, Air Force Research Laboratory, Wright-Patterson AFB, OH, United States
[2]Directed Energy Direcorate, Air Force Research Laboratory, Kirtland AFB, NM, United States
[3]Department of Chemical and Biomolecular Engineering, Rice University, Houston, TX, United States

Session 1D: X- and Z-pinches I

Monday, May 26 9:30 - 12:00, Thurgood Marshall West
Session Chair: *Brent Jones, Sandia National Laboratory*

9:30 1D-1 (invited) FULLY KINETIC MODELING AND ION PROBE BEAM EXPERIEMNTS IN A DENSE PLASMA FOCUS Z-PINCH
A. Link[1], J. Ellsworth[1], S. Falabella[1], B. Rusnak[1], A. Schmidt[1], J. Sears[1], V. Tang[1], D. Welch[2]
[1]Lawrence Livermore National Laboratory, Livermore, CA, United States
[2]Voss Scientific, Albuquerque, NM, United States

10:00 1D-2 MEASUREMENTS OF DENSE PLASMA FOCUS PERFORMANCE WITH BOTH DEUTERIUM AND DEUTERIUM-TRITIUM GASSES
E. C. Hagen[1], D. Lowe[2], S. Molnar[3], R. Rundberg[4]
[1]Defense Experimentation, National Securities Technologies (NSTec), Las Vegas, NV, USA
[2]Keystone International, Albuquerque, NM, USA
[3]Powder River Geophysical, Las Vegas, NV, USA
[4]Los Alamos National Laboratory, Los Alamos, NM, USA

10:15 1D-3 COMPRESSION OF PUFFING DEUTERIUM BY NEON PLASMA SHEATH ON PLASMA FOCUS DEVICE

P. Kubes[1], M. Paduch[2], D. Klir[1], J. Kravarik[1], K. Rezac[1], J. Cikhardt[1], J. Kortanek[1], B. Batobolotova[1], E. Zielinska[2]
[1]Czech Technical University in Prague, FEE, Department of Physics, Prague, Czech Republic
[2]IPPLM Warsaw, Poland, Warsaw, Poland

10:30 1D-4 D-ON-D AND AR-ON-D GAS PUFF Z-PINCH SIMULATIONS ON ZR FOR NEUTRON SOURCE

Y. K. Chong[1], A. L. Velikovich[1], J. W. Thornhill[1], J. Giuliani[1], P. Knapp[2], C. Jennings[2]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]Sandia National Laboratories, Albuquerque, NM, United States

10:45 1D-5 TRIPLE NOZZLE GAS-PUFF Z-PINCH IMPLOSIONS ON COBRA

P. W. de Grouchy[1], N. Qi[1], B. R. Kusse[1], L. Atoyan[1], A. Cahill[1], P. A. Gourdain[1], J. B. Greenly[1], C. Hoyt[1], W. Potter[1], P. Schrafel[1], D. A. Hammer[1], S. A. Pikuz[2], T. A. Shelkovenko[2]
[1]Laboratory of Plasma Studies, Cornell University, Ithaca, United States
[2]Lebedev Physical Institute, Moscow, Russia

11:00 1D-6 SYNTHETIC TIME AND SPACE RESOLVED SPECTRA INCLUDING DOPPLER SPLITTING FROM SIMULATIONS OF STAINLESS STEEL AND ARGON PINCHES ON Z

J. Thornhill[1], J. Giuliani[1], J. Apruzese[1], A. Dasgupta[1], Y. Chong[1], B. Jones[2], D. Ampleford[2], A. Harvey-Thompson[2], S. Hansen[2], C. Coverdale[2], C. Jennings[2], G. Rochau[2], M. Cuneo[2]
[1]NAVAL RESEARCH LABORATORY, Washington DC, United States
[2]Sandia National Laboratories, Albuquerque, NM, United States

11:15 1D-7 AVENUES AND CHALLENGES IN MATERIAL PROCESSSING AND SYNTHESIS UNDER EXTREME CONDITIONS IN PULSED HIGH ENERGY DENSITY PLASMA FOCUS DEVICE

R. S. Rawat
Natural Sciences and Science Education, National Institute of Education, Nanyang Technological University, Singapore, Singapore

11:30 1D-8 A NONUNIFORM TRANSMISSION LINE CODE FOR PULSED POWER Z-PINCH DRIVERS

C. Mao, X. Zou, X. Wang
Department of Electrical Engineering, Tsinghua University, BEIJING, China

11:45 1D-9 MEASUREMENTS OF THE TIME-DEPENDENT SPATIAL MAGNETIC FIELD DISTRIBUTION AND STRUCTURE OF A Z-PINCH PLASMA THROUGHOUT THE STAGNATION PROCESS

G. Rosenzweig, E. Kroupp, A. Starobinets, A. Fisher, Y. Maron
Weizmann Institute of Science, Rehovot, Israel

Session 1E: Plasma Thrusters I

Monday, May 26 9:30 - 12:00, Hoover
Session Chairs: *Yevgeny Raitses, Princeton Plasma Physics Laboratory*
Sedina Tsikata, CNRS

9:30 1E-1 (invited) INFLUENCE OF SIZE SCALING AND PLASMA-WALL INTERACTION ON FEATURES OF HALL THRUSTER MICROTURBULENCE
S. Tsikata[1], A. Heron[2], C. Honore[3], S. Mazouffre[1]
[1]ICARE, CNRS, UPR 3021, Orleans, France
[2]CPHT, Ecole Polytechnique, CNRS, UMR 7644, Palaiseau, France
[3]LPP, Ecole Polytechnique, CNRS, UMR 7648, Palaiseau, France

10:00 1E-2 PLASMA-WALL INTERACTION IN PRESENCE OF INTENSE ELECTRON EMISSION FROM WALLS
I. D. Kaganovich[1], A. V. Khrabrov[1], M. D. Campanell[1], H. Wang[1], Y. Raitses[1], D. Sydorenko[2]
[1]PPPL, Princeton, United States
[2]Department of Physics, University of Alberta, Edmundton, Canada

10:15 1E-3 EFFECTS OF WALL MATERIAL, WALL TEMPERATURE, AND SURFACE ROUGHNESS ON THE PLASMA SHEATH
S. J. Langendorf, M. L. R. Walker
School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, GA, United States

10:30 1E-4 ATOMIC BORON SPEED DISTRIBUTION MEASUREMENTS IN THE PLUME OF A HALL THRUSTER USING LASER-INDUCED FLUORESCENCE
B. C. Lee[1], A. P. Yalin[2]
[1]Physics, Colorado State University, Fort Collins, CO, United States
[2]Mechanical Engineering, Colorado State University, Fort Collins, CO, United States

10:45 1E-5 ELECTRON EMISSION FROM MICRO-ARCHITECTURED MATERIALS FOR PLASMA APPLICATIONS
Y. Raitses, C. Jin
Princeton Plasma Physics Laboratory, Princeton, NJ, United States

11:00 1E-6 INITIAL EXPERIMENTS OF A NEW PERMANENT MAGNET HELICON THRUSTER
J. P. Sheehan, B. W. Longmier, I. M. Reese, T. A. Collard, F. H. Ebersohn, E. T. Dale, B. N. Wachs, M. E. Ostermann
Aerospace Engineering, University of Michigan, Ann Arbor, MI, United States

11:15 1E-7 COUPLED MOLECULAR DYNAMICS-POISSON SIMULATIONS OF IONIC LIQUID ELECTROSPRAY THRUSTERS
A. P. Borner, D. A. Levin
Aerospace Engineering, Penn State University, University Park, PA, United States

11:30 1E-8 MICRO-CATHODE ARC THRUSTER FOR SMALL SATTELITES ATTITUDE CONTROL
A. Shashurin, T. Zhuang, J. Lukas, G. Teel, S. Haque, D. Chiu, M. Keidar
Mechanical and Aerospace Department, George Washington University, Washington, DC, United States

11:45 1E-9 PARTICLE-IN-CELL MODELING OF THE HEATERLESS HOLLOW CATHODE OPERATION: KEEPER REGION
V. Vekselman[1], D. Levko[2], I. Haber[3], Y. E. Krasik[4]
[1]Department of Material Science & Eng., Clemson University, Clemson, SC, United States
[2]Laboratoire Plasma et Conversion d'Energie, Universit' Paul Sabatier, Toulouse, France
[3]College Park, University of Maryland, Maryland, United States
[4]Department of Physics, Technion, Haifa, Israel

Session 1F: Basic Plasma Phenomena I

Monday, May 26 9:30 - 12:00, Harding
Session Chair: *Chris H Moore, Sandia National Labs*

9:30 1F-1 THE EFFECTS OF IN-ELASTIC PROCESSES ON ELECTRON TEMPERATURE IN ELECTRON BEAM GENERATED PLASMAS
D. R. Boris, G. M. Petrov, E. H. Lock, T. B. Petrova, R. F. Fernsler, S. G. Walton
Plasma Physics, Naval Research Laboratory, Washington, DC, United States

9:45 1F-2 PARTICLE-IN-CELL SIMULATIONS OF LOWER-HYBRID WAVES GENERATED BY AN ION-RING VELOCITY DISTRIBUTION
S. B. Swanekamp, A. S. Richardson, M. Mithaiwala, C. Crabtree
Plasma Physics Division, Naval Research Laboratory, Washington, United States

10:00 1F-3 PARTICLE-IN-CELL MODELING OF SPECIES SEPARATION IN TWO-SPECIES PLASMAS
A. S. Richardson[1], S. B. Swanekamp[1], S. L. Jackson[1], D. G. Phipps[1], J. W. Schumer[1], P. F. Ottinger[2]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]Engility, Chantilly, VA, United States

10:15 1F-4 EXACT SOLUTION OF FLUID MOMENTUM EQUATIONS IN THE ATMOSPHERIC PLASMA-JETS
J. -E. Heo, Y. Kim, S. Jin, G. -H. Han, G. -C. Kwon, E. -H. Choi, H. S. Uhm, G. Cho
Department of Electrophysics, Kwangwoon University, Seoul, South Korea

10:30 1F-5 (invited) EMERGENCE OF SELF-ORGANIZED PATTERNS IN ARC DISCHARGES BY ANODE COOLING
J. P. Trelles

Department of Mechanical Engineering, University of Massachusetts Lowell, Lowell, MA, United States

11:00 1F-6 THE VALIDITY OF SIMILARITY LAW OF GLOW DISCHARGE AT LOW PRESSURE IN ARGON BY NUMERICAL SIMULATION
Y. Fu, H. Luo, X. Zou, X. Wang
Department of Electrical Engineering, Tsinghua University, BEIJING, China

11:15 1F-7 COMPREHENSIVE RESEARCHES ON DYNAMICS OF NANOSECOND LASER PRODUCED PLASMAS
X. Li, J. Wu, W. Wei, S. Jia, A. Qiu
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi, China

11:30 1F-8 BREAKDOWN VOLTAGE CORRELATIONS IN A LARGE DC DISCHARGE TUBE FOR MULTIPLE GASES
T. E. Gebhart[1], M. A. Bourham[2], A. L. Winfrey[1]
[1]Mechanical Engineering, Virginia Tech, Blacksburg, VA, United States
[2]Nuclear Engineering, North Carolina State University, Raleigh, NC, United States

11:45 1F-9 ADVANCES IN IMPEDANCE PROBE APPLICATIONS AND DESIGN IN THE NRL SPACE PHYSICS SIMULATION CHAMBER
D. Blackwell[1], C. Cothran[2], D. Walker[2], G. Gatling[1], W. Amatucci[1]
[1]U.S. Naval Research Laboratory, Washington DC, United States
[2]Sotera Defense Solutions, Inc., Herndon VA, United States

Session PL2: Plenary2

Monday, May 26 13:00-14:00, Thurgood Marshall East-South
Session Chair: *David French, Air Force Research Laboratory*

13:00 PL2-1 (invited) HIGH POWER MICROWAVE GENERATION AND MITIGATION
R. M. Gilgenbach
Nuclear Engineering & Radiological Sciences Department, University of Michigan, Ann Arbor, MI, United States

Session 1P: 4.1 Fusion (Inertial, Magnetic, & Alternative Concepts) Posters

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chair: *Scott Wilks, Lawrence Livermore National Laboratory*

1P-1 A PULSE FORMING NETWORK FOR TOROIDAL FIELD SYSTEM FOR TPM-1U TOKAMAK
D. H. Arriaga, M. N. Perez
Alternative Energy, CICATA IPN Queretaro, Queretaro, Mexico

1P-2 Effects of Lithium Wall-coatings on Impurity Ions in the Lithium Tokamak Experiment (LTX)
D. P. Boyle[1], R. E. Bell[1], R. Kaita[1], R. Majeski[1], T. M. Biewer[2], T. K. Gray[2]
[1]Princeton Plasma Physics Lab, Princeton, NJ, United States
[2]Oak Ridge National Lab, Oak Ridge, TN, United States

1P-3 NUMERICAL ANALYSIS OF TEMPERATURE DISTRIBUTION FOR ISOCHORIC HEATING WITH INTENSE PULSED POWER DISCHARGE USING ELECTRON BEAM DIODE BASED IMPEDANCE CONTROLLER
R. Hayashi[1], F. Tamura[1], T. Kudo[1], K. Takahashi[1], T. Sasaki[1], T. Kikuchi[1], T. Aso[1], N. Harada[1], W. Jiang[1], K. Kashine[2], A. Tokuchi[1,3]
[1]Nagaoka University of Technology, Nagaoka, Niigata, Japan
[2]Yuge National College of Maritime Technology, Kamijima, Ehime, Japan
[3]Pulsed Power Japan Laboratory Ltd., Kusatsu, Shiga, Japan

1P-4 OPTIMIZATION OF CAPILLARY SOURCE GEOMETRY FOR MAXIMUM PELLET EXIT VELOCITY IN ELECTROTHERMAL PLASMA LAUNCHERS
M. J. Esmond, S. S. Mostaghim, T. E. Gebhart, A. L. Winfrey
Nuclear Engineering Program, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States

1P-5 INVESTIGATION OF IGNITOR TIME BEHAVIOR ON THE SHOCK IGNITION PERFORMANCE
M. J. Jafari, S. Rezaei, A. H. Farahbod
Laser and Optics Research School, Tehran, Iran

Session 1P: 4.2 Particle Acceleration with Lasers and Beams Posters

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chair: *George M Petrov, Naval Research Laboratory*

1P-6 TRANSVERSE DYNAMICS OF ACCELERATED BUNCHES IN A PLASMA-DIELECTRIC WAKEFIELDS
R. R. Kniaziev[1], G. V. Sotnikov[2]
[1]V. N. Karazin Kharkiv National University, Kharkov, Ukraine
[2]National Science Center Kharkov Institute of Physics and Technology, Kharkov, Ukraine

1P-7 SELF-MODULATION OF ULTRA-RELATIVISTIC SLAC ELECTRON AND POSITRON BUNCHES

P. Muggli[1], O. Reimann[1], N. Lopes[2], L. Silva[2], J. Vieira[2], L. D. Amorim[2], N. Vafaei-Najafabadi[3], C. Joshi[3], W. Mori[3], K. Marsh[3], V. K. Berglyd Olsen[4], E. Adli[5,4], S. Gessner[5], M. J. Hogan[5], S. Li[5], M. Litos[5], Y. Fang[6]
[1]Max Planck Institute for Physics, Munich, Germany
[2]Instituto Superior Tecnico, Lisbon, Portugal
[3]University of California, Los Angeles, USA
[4]University of Oslo, Oslo, Norway
[5]SLAC, Menlo Park, USA
[6]University of Southern California, Los Angeles, USA

1P-8 INVESTIGATION OF HIGH-INTENSITY LASER-PLASMA INTERACTION IN MULTI-PICOSECOND LASER PULSE LENGTH REGIME

A. Sorokovikova[1], B. Qiao[1], M. S. Wei[2], R. B. Stephens[2], S. Krasheninnikov[1], P. Patel[3], H. S. McLean[3], A. P. L. Robinson[4], F. N. Beg[1]
[1]University of California, San Diego, San Diego, CA, United States
[2]General Atomics, San Diego, CA, United States
[3]Lawrence Livermore National Laboratory, Livermore, CA, United States
[4]Central Laser Facility, Oxfordshire, United Kingdom

1P-9 TRANSVERSE FOCUSING OF AN ELECTRON BEAM BY RELATIVISTIC PLASMA WAVES AND LASER BEAMS

R. L. Williams, A. L. Bowman
Physics Department, Florida A. and M. University, Tallahassee, FL, United States

1P-10 3-D PIC SIMULATION OF QUASI-PHASE MATCHED DIRECT LASER ELECTRON ACCELERATION WITH INTRODUCTION OF A PRECURSOR ELECTRON BUNCH

M. -W. Lin[1], I. Jovanovic[1], S. -H. Chen[2]
[1]Department of Mechanical and Nuclear Engineering, The Pennsylvania State University, University Park, Pennsylvania, USA
[2]Department of Physics, National Central University, Jhongli, Taiwan

1P-11 ION ACCELERATION FROM LASER-IRRADIATED THIN TARGETS

E. A. Govras[1,2], V. Y. Bychenkov[1,2], A. V. Brantov[1,2]
[1]Lebedev Physics Institute, Moscow, Russian Federation
[2]Center for Fundamental and Applied Research, VNIIA, Moscow, Russian Federation

1P-12 ELECTRON SELF-INJECTION IN THE PROTON-DRIVEN-PLASMA-WAKEFIELD ACCELERATION

Z. -H. Hu, Y. -N. Wang
Dalian University of Technology, Dalian, China

Session 1P: 4.4 High Energy Density Matter, Posters

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chair: *Victor L Kantsyrev, University of Nevada, Reno*

1P-13 VISRAD, 3-D TARGET DESIGN AND RADIATION SIMULATION CODE
I. E. Golovkin, J. J. MacFarlane, S. Kulkarni
Prism Computational Sciences, Inc., Madison, WI, United States

1P-14 SPECTROSCOPIC NON-LTE MODELING OF HIGHLY CHARGED GOLD PLASMA
A. Dasgupta[1], N. D. Ouart[1], R. W. Clark[2], Y. Aglitskiy[3], J. L. Giuliani[1], S. P. Obenschain[1]
[1]Plasma Physics, Naval Research Laboratory, Washington, DC, United States
[2]Berkeley Research Associates, Beltsville, MD, United States
[3]Science Applications International Corporation, McLean, VA, United States

1P-15 HYBRID MODEL OF CHEMICAL EQUILIBRIUM EQUATION OF STATE FOR NONIDEAL PLASMAS IN UNDERWATER WIRE EXPLOSION SIMULATION
D. -K. Kim, J. Jung
R&D Institute - Division 4, Agency for Defense Development, Daejeon, South Korea

1P-16 SHOCK STUDY WITH EXTENDED-MHD MODEL USING A DISCONTINUOUS GALERKIN SCHEME
X. Zhao, C. E. Seyler, J. B. Greenly
Cornell University, Ithaca, NY, United States

1P-17 AC CONDUCTIVITY AND ELECTRON TRANSPORT STUDIES IN NON-EQUILIBRIUM WARM DENSE GOLD
Y. Tsui[1], Z. Chen[1], B. Holst[2], V. Recoules[2], A. Ng[3]
[1]Electrical & Computer Engineering, University of Alberta, Edmonton, Alberta, Canada
[2]CEA, Cedex, France
[3]Physics & Astronomy, University of British Columbia, Vancouver, British Columbia, Canada

1P-18 INVESTIGATION OF MAGNETIZED, RADIATIVE BOW-SHOCKS IN MAGNETICALLY ACCELERATED PLASMA FLOWS
S. C. Bott-Suzuki[1], S. Cordaro[1], L. S. Caballero Bendixsen[1], J. Chittenden[2], N. Niasse[2], I. Blesener[3], C. Hoyt[3], A. Cahill[3], B. Kusse[3], D. Hammer[3], J. Greenly[3], P. Gourdain[3], C. Seyler[3], K. Blesener[3]
[1]University of California San Diego, La Jolla, CA, United States
[2]Imperial College London, London, UK, United Kingdom
[3]Cornell University, Ithaca, NY, United States

1P-19 ZEEMAN SPLITTING MEASUREMENTS OF LOCAL MAGNETIC FIELDS IN WIRE Z-PINCH PLASMAS
S. G. Patel, D. A. Yager-Elorriaga, A. M. Steiner, N. M. Jordan, Y. Y. Lau, R. M. Gilgenbach
Nuclear Engineering, University of Michigan, Ann Arbor, United States

1P-20 GENERATING MAGNETIC FIELDS STRONGER THAN 100 TESLAS USING SOLENOIDS ON COBRA
H. F. Moore, R. Duggan, G. N. Tabak, L. Ransohoff, L. Mehr, E. Bell, D. Liang, W. Potter, P. - A. Gourdain, J. Greenly, A. Novick
Laboratory of Plasma Studies, Cornell University, Ithaca, NY, United States

1P-21 MEASURING MAGNETIC FIELDS STRONGER THAN 100 TESLAS USING MINIATURE B-DOT PROBES ON COBRA
G. N. Tabak, E. Bell, R. Duggan, D. Liang, L. Mehr, H. F. Moore, A. Novick, L. Ransohoff, P. - A. Gourdain, W. Potter, J. Greenly
Laboratory of Plasma Studies, Cornell University, Ithaca, NY, United States

1P-22 SPECTROSCOPIC STUDIES OF X-RAY LINE POLARIZATION IN HED PLASMAS ILLUSTRATED USING Z-PINCHES
A. S. Safronova, V. L. Kantsyrev, U. I. Safronova, I. Shrestha
Department of Physics, University of Nevada, Reno, Reno,NV, United States

1P-23 NEON SOFT X-RAY LITHOGRAPHY SOURCE BASED ON LOW ENERGY FAST MINIATURE PLASMA FOCUS DEVICE
K. Shenbaga Manogara Pandian
NIE, NANYANG TECHNOLOGICAL UNIVERSITY, Singapore, Singapore

Session 1P: 4.5 Laser Produced Plasmas Posters

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chair: *Zulfikar Najmudin, Imperial College London*

1P-24 VISCOUS EFFECTS IN ICF TARGET IMPLOSIONS
R. J. Mason, R. J. Faehl, R. C. Kirkpatrick
Research Applications Corporation, Los Alamos, NM, United States

1P-25 DIAGNOSTICS OF LASER INDUCED PLASMAS IN DIFFERENT PHASES AND AT PHASE BOUNDARIES USING LASER SHADOWGRAPHY, TWO-WAVELENGTH LASER INTERFEROMETRY, SCHLIEREN IMAGING AND OPTICAL EMISSION SPECTROSCOPY*
M. Thiyagarajan
Plasma Engineering Research Lab (PERL), Texas A&M University - Corpus Christi, Corpus Christi, Texas, United States

1P-26 FEMTOSECOND LASER ABLATION PLASMA FLOWS DYNAMICS EXPERIMENTAL INVESTIGATION
E. Y. Loktionov[1], A. V. Ovchinnikov[2], Y. S. Protasov[1], Y. Y. Protasov[1], D. S. Sitnikov[2]

[1]Bauman Moscow State Technical University, Moscow, Russian Federation
[2]Joint Institute for High Temperatures of RAS, Moscow, Russian Federation

1P-27 MAGNETIC FIELD MEASUREMENT IN MAGNETIZED LASER PLASMAS USING ZEEMAN BROADENING DIAGNOSTICS
S. Haque, R. Presura, M. S. Wallace, A. Arias
University of Nevada, Reno, Reno, NV, United States

1P-28 LIGHT SCATTERING MEASUREMENTS OF ENERGY PARTITIONING IN LASER AIR SPARKS
C. M. Limbach, R. B. Miles
Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ, United States

Session 1P: 4.6 Fast Z-Pinches Poster

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chair: *Brent Jones, Sandia National Laboratory*

1P-29 NUMERICAL SIMULATION OF RADIATING Z PINCH ON GAMMA
K. V. Strabykin, V. S. Gordeev, A. V. Grishin, A. P. Orlov, A. L. Mozgovoy, B. G. Repin, S. Y. Puchagin, S. L. Glushkov
RFNC-VNIIEF, Sarov, Nizhny Novgorod region, Russian Federation

1P-30 ***MOVED to 6C-1***

1P-31 GENERATION OF CUMULATIVE JETS DURING UNDERWATER EXPLOSION OF COPPER WIRES IN THE X-PINCH CONFIGURATION
D. Shafer, G. R. Toker, V. T. Gurovich, Y. E. Krasik
Physics Department, Technion Israel Institute of Technology, Haifa, Israel

1P-32 PULSED POWER PRODUCED COUNTER-PROPAGATING PLASMA FLOWS AND THE STUDY OF SHOCK WAVE FORMATION FOR LABORATORY ASTROPHYSICAL PHENOMENA
J. C. Valenzuela, G. W. Collins IV, T. Zick, J. Narkis, I. Krasheninnikov, F. N. Beg
Center for Energy Research, University of California San Diego, La Jolla, CA, United States

1P-33 ANGULAR DISTRIBUTION MEASUREMENTS OF ENERGY SPECTRA OF PROTONS EMITTED FROM HYDROGEN PLASMA FOCUS
H. Ito, R. Kishimoto, H. Ohashi
University of Toyama, Toyama, Japan

1P-34 PHOTO-IONISATION OF GAS BY X-RAYS FROM A WIRE ARRAY Z-PINCH
J. D. Hare, S. V. Lebedev, M. Bennett, S. N. Bland, G. C. Burdiak, L. Suttle, F. Suzuki-Vidal, G. F. Swadling
Department of Physics, Imperial College, London, United Kingdom

1P-35 STABILIZATION OF GAS PUFF Z-PINCH IMPLOSIONS BY USING EXTERNAL BZ FIELD ON COBRA
N. Qi[1,2], P. DeGrouchy[1], P. C. Shrafel[1], L. Atoyan[1], W. M. Potter[1], A. D. Cahill[1], P. A. Gourdain[1], J. B. Greenly[1], D. A. Hammer[1], C. L. Hoyt[1], B. R. Kusse[1], S. A. Pikuz[1], T. A. Shelkovenko[1]
[1]Laboratory of Plasma Studies, Cornell University, Ithaca, NY, United States
[2]Applied Technologies, L-3 Communications, San Leandro, CA, United States

1P-36 GAS-FILLED LINER Z-PINCH EXPERIMENTS ON THE MAGPIE FACILITY
G. C. Burdiak, S. V. Lebedev, S. Bland, F. Suzuki-Vidal, L. Suttle, M. Bennet, J. Hare, G. F. Swadling
Plasma Physics Group, Imperial College London, London, United Kingdom

1P-37 Early Time Studies of Cylindrical Liner Implosions on COBRA
L. Atoyan, W. M. Potter, T. Byvank, P. De Grouchy, P. A. Gourdain, J. B. Greenly, B. R. Kusse, D. A. Hammer
Laboratory of Plasma Studies, Cornell University, Ithaca, NY, United States

1P-38 COAXIAL VACUUM GAP BREAKDOWN FOR PULSED POWER LINERS
S. W. Cordaro, S. C. Bott-Suzuki, L. S. Caballero Bendixsen
University California San Diego, La Jolla, United States

1P-39 THE INFLUENCE OF INSULATING COATINGS UPON SINGLE WIRE EXPLOSIONS
R. Presura, L. O'Brien, S. Haque
University of Nevada, Reno, Reno, NV, United States

1P-40 PARAMETER EFFECTS OF INSULATING COATING ON THE ELECTRICAL EXPLODING WIRES
J. Wu[1], X. Li[1], Y. Li[1,2], L. Sheng[2]
[1]State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, China
[2]State Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Northwest Institute of Nuclear Technology, Xi'an, China

1P-41 3-D ELECTROMAGNETIC SIMULATION OF MONOLITHIC RADIAL TRANSMISSION LINES FOR Z-PINCH
C. Mao, X. Zou, X. Wang
Department of Electrical Engineering, Tsinghua University, BEIJING, China

1P-42 THE EFFECTS OF TIN DROPLETS ON THE EUV EMISSION AFTER LASER-TRIGGERED DISCHARGE FOR EUVL
S. Lim, S. Kitajima, T. Sakugawa, H. Akiyama, S. Katsuki
Graduate School of Science and Technology, Kumamoto University, Kumamoto, Japan

Session 1P: 4.7 Plasma Material Interactions Posters

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chair: *Ahmed Hassanein, Purdue University*

1P-43 OEDGE MODELING OF OUTER WALL EROSION IN NSTX AND THE EFFECT OF CHANGES IN NEUTRAL PRESSURE
J. H. Nichols, M. A. Jaworski, R. Kaita, T. Abrams, C. H. Skinner, D. P. Stotler
Princeton Plasma Physics Laboratory, Princeton, NJ, United States

1P-44 RE-DEPOSITION OF LITHIUM AND BORON COATINGS UNDER HIGH-FLUX PLASMA BOMBARDMENT AT NORMAL AND GRAZING MAGNETIC INCIDENCE
T. Abrams[1], M. A. Jaworski[1], R. Kaita[1], J. H. Nichols[1], D. P. Stotler[1], G. De Temmerman[2], M. A. van den Berg[2], H. J. van der Meiden[2], T. W. Morgan[2]
[1]Princeton Plasma Physics Laboratory, Princeton, NJ, United States
[2]FOM Institute DIFFER, Nieuwegein, The Netherlands

1P-45 TUNGSTEN RESPONSE TO TRANSIENT HEAT LOADS GENERATED BY LASER PULSES
S. Harilal, A. Suslova, O. Et-atwani, N. Farid, A. Hassanein
Center for Materials Under Extreme Environment, School of Nuclear Engineering, Purdue University, West Lafayette, IN, United States

1P-46 LOW-ENERGY D+ RETENTION IN C AND O CONTAINING LI FILMS ON MO(110)
J. P. Roszell[1], A. M. Capece[2], C. H. Skinner[2], B. E. Koel[1]
[1]Chemical and Biological Engineering, Princeton University, Princeton, NJ, United States
[2]Princeton Plasma Physics Lab, Princeton, NJ, United States

1P-47 FILM CONDENSATION STUDY OF LIQUID LITHIUM ON MATERIALS RELEVANT TO FUSION REACTORS
C. Sandoval Rios, M. J. Nieto Perez, J. A. Huerta Ruelas
Tecnologa Avanzada, CICATA, Queretaro, Mexico

1P-48 CHARACTERIZATION OF ATMOSPHERIC PRESSURE RF DISCHARGES WITH AQUEOUS PLASMA FACING SURFACES
A. Lindsay, B. Byrns, D. Knappe, S. Shannon
North Carolina State University, Raleigh, NC, United States

1P-49 ATMOSPHERIC PRESSURE PLASMA JETS OF FINE-POINT DOPING FOR THE SELECTIVE EMITTER OF SOLAR CELL
S. Jin, H. Kim, S. Kim, M. Yun, G. -C. Kwon, G. Cho
Department of Electrophysics, Kwangwoon University, Seoul, South Korea

1P-50 LASER-INDUCED FLUORESCENCE MEASUREMENTS OF XENON ION VELOCITY DISTRIBUTIONS NEAR CERAMIC SURFACES
S. P. Walsh, J. L. Rath, A. P. Yalin
Mechanical Engineering, Colorado State University, Fort Collins, United States

1P-51 WATER VAPOR PLASMA TORCH FOR SYNTHESIS GAS PRODUCTION FROM ORGANIC WASTE
V. Grigaitienė, A. Tamoiūnas, V. Valinčius, P. Valatkevičius
Plasma Processing Laboratory, Lithuanian Energy Institute, Kaunas, Lithuania

1P-52 PLASMA PROCESSING OF PET IN AN OXYGEN DECOUPLED PLASMA SOURCE
M. L. Brake, R. L. Rhoton
School of Engineering Technology, Eastern Michigan University, Ypsilanti, MI, United States

Session 1P: 6.1 Microwave, FIR, Optical and X-ray Diagnostics Posters

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chairs: *Simon Bott-Suzuki, U. C. San Diego*
Simon Bland, Imperial College

1P-53 ***WITHDRAWN*** STUDY ON ARGON METASTABLE AND 4P STATE NEUTRAL ATOMS IN MAGNETIZED ICP AND HELICON PLASMAS MEASURED BY LASER INDUCED FLUORESCENCE AND PLASMA EMISSION
J. -H. Kim[1], B. -H. Seo[2], S. -J. You[1], D. -J. Seong[1], Y. -H. Shin[1]
[1]Industrial Metrology, Korea Research Institute of Standards and Science, Daejeon, South Korea
[2]physics department, Korea Advanced Institute of Science and Technology, Daejeon, South Korea

1P-54 SPATIAL CORRELATION BETWEEN EMITTING SPECIES AND PLASMA BULLET PROPAGATION IN LOW TEMPERATURE PLASMA JETS
H. Razavi, S. Mohades, M. Laroussi
Old Dominion University, Norfolk,VA, United States

1P-55 CORRELATING METASTABLE-ATOM DENSITY, REDUCED ELECTRIC FIELD, AND ELECTRON ENERGY DISTRIBUTION IN A 1-TORR ARGON DISCHARGE
J. B. Franek[1], S. H. Nogami[1], M. E. Koepke[1], V. I. Demidov[1], E. V. Barnat[2]

[1]Physics, West Virginia University, Morgantown, United States
[2]Lasers, Plasmas and Remote Sensing, Sandia National Labs, Albequerque, United States

1P-56 LASER INDUCED FLORESCENCE AND CONTINUOUS WAVE RING DOWN SPECTROSCOPY: MEASUREMENTS OF ARGON ION VELOCITY DISTRIBUTION FUNCTIONS IN A HELICON PLASMA
D. W. McCarren, G. Lusk, E. E. Scime, M. Soderholm, R. Vandervort
Physics Dept., West Virginia University, Morgantown, United States

1P-57 LARGE VOLUME PENNING PLASMA DISCHARGE SOURCE: AN EFFICIENT LIGHT EMITTING SOURCE FOR THE VISIBLE AND VUV RADIATIONS SIMULTANEOUSLY
G. L. Vyas
Central Electronics Engineering Research Institute, rajasthan, India

1P-58 X-RAY ABSORPTION SPECTROSCOPY UTILIZING AN ELLIPSOIDAL CRYSTAL
A. D. Cahill, C. L. Hoyt, S. A. Pikuz, T. A. Shelkovenko, D. A. Hammer
ECE, Cornell University, Ithaca, NY, United States

1P-59 CHARACTERIZING A POLARIZATION SPLITTING QUARTZ CRYSTAL
M. S. Wallace[1], N. R. Pereira[2], A. L. Kastengren[3], R. Presura[1]
[1]Physics, University of Nevada, Reno, Reno, NV, United States
[2]Ecopulse Inc., Springfield, VA, United States
[3]Advanced Photon Source, Argonne National Laboratory, Argonne, IL, United States

1P-60 OPTICAL DIAGNOSTICS FOR QUANTITATIVE ANALYSES OF PLASMA PARAMETERS IN HIGH-ENERGY ELECTRON-BEAM DIODES
M. D. Johnston[1], M. L. Kiefer[1], P. W. Lake[1], N. Bennett[2], D. W. Droemer[2], Y. Maron[3]
[1]Sandia National Laboratories, Albuquerque, NM, United States
[2]National Security Technologies, LLC, Las Vegas, NV, United States
[3]Weizmann Institute on Science, Rehovot, Israel

1P-61 DETECTION OF POWERFUL TERAHERTZ PULSES WITH USE OF TERMOACOUSTIC PROBE
V. A. Vdovin[1], V. G. Andreev[2], Y. K. Kalynov[3]
[1]Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, Russian Federation
[2]Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow, Russian Federation
[3]Institute of Applied Physics of RAS, Nizhny Novgorod, Russian Federation

1P-62 ACTIVE SPECTROSCOPIC METHODS MONITORING OF ACTIVE SPECIES IN ATMOSPHERIC RADIO FREQUENCY PLASMA
L. Li
Department of Applied Physics, Research Unit Plasma Technology, Ghent University, gent, Belgium

Session 1P: 6.2 Particle Diagnostics Posters

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chairs: *Simon Bott-Suzuki, U. C. San Diego*
Simon Bland, Imperial College

1P-63 LANGMUIR PROBES FOR PLASMA PLUME DIAGNOSTICS
A. A. Arias, N. Quiros, R. Presura
Physics, University of Nevada Reno, Reno, NV, United States

1P-64 DISTANT DIAGNOSTICS OF NONEQUILIBRIUM PLASMAS
A. Mustafaev[1], A. Grabovskiy[1], I. Kaganovich[2], V. Demidov[3], A. Strakhova[1]
[1]National Mineral - Resource University (Mining University), Saint-Petersburg, Russian Federation
[2]Plasma Physics Laboratory, Princeton, USA
[3]West Virginia University, Morgantown, USA

1P-65 XENON TWO-PHOTON LASER INDUCED FLUORESCENCE: A NEUTRAL DENSITY MEASUREMENT AND CALIBRATION TOOL
D. B. Elliott[1], E. Scime[1], R. Vandervort[1], M. Soderholm[1], M. Galante[2]
[1]Physics, West Virginia University, Morgantown, West Virginia, United States
[2]Physics, University of Wisconsin Madison, Madison, Wisconsin, United States

1P-66 MAGNETIC DIAGNOSTICS OF PLASMA - SURFACE INTERACTIONS
A. Mustafaev[1], I. Kaganovich[2], Y. Raitses[2], V. Demidov[3], M. Ainov[1], A. Grabovskiy[1]
[1]National Mineral - Resource University (Mining University), Saint-Petersburg, Russian Federation
[2]Plasma Physics Laboratory, Princeton, USA
[3]West Virginia University, Morgantown, USA

Session 1P: 6.3 Pulsed Power Diagnostics Poster

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chairs: *Simon Bott-Suzuki, U. C. San Diego*
Simon Bland, Imperial College

1P-67 THE RESEARCH OF PULSED PLASMA ACCELERATOR OPERATION AT CONTINUOUSLY FILLED MODE
A. Zhukeshov, A. Amrenova, A. Gabdullina, B. Ibraev

Plasma physics division, Researh Institute of Experimental and Theoretical Physics, Almaty, Kazakstan

Session 1P: 7.1 Insulation and Dielectric Breakdown Posters

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chair: *Luis Redondo, Lisbon Superior Engineering Institute (ISEL)*

1P-68 A STUDY OF COAXIAL PULSE CAPACITORS AGING
H. Ruoyu[1], W. Jiawei[1], Z. Haibin[1], L. Qiaojue[1], J. Yan[1], Z. Yongmin[1], Z. Youzhi[2], L. Meijuan[2]
[1]Electrical Engineering, Xi'an Jiaotong University, Xi'an, China
[2]Xian GuanTong Energy technology company, Xi'an, China

1P-69 MODELING VACUUM AND GASEOUS BREAKDOWN IN DIELECTRIC-LOADED SYSTEMS
M. T. P. Aldan[1], J. P. Verboncoeur[2]
[1]Nuclear Engineering, UC Berkeley, Berkeley, CA, United States
[2]Electrical and Computer Engineering, Michigan State University, East Lansing, MI, United States

1P-70 A ceramic insulated, high-electric field pulsed power interface
T. Xun, H. -W. Yang, J. -D. Zhang, Z. -C. Zhang
College of Opto-electric Science and Engineering, National University of Defense Technology, changsha, China

Session 1P: 7.2 Opening & Closing Switches Posters

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chair: *Luis Redondo, Lisbon Superior Engineering Institute (ISEL)*

1P-71 RESEARCH OF HIGH-POWER REPETITIVE SPARK-GAP SWITCH UNDER ADVERSE CONDITIONS
J. Wu
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, China, Xi'an, Shaanxi, China

1P-72 ELECTRODE EROSION CHARACTERISTICS AND FAILURE PREDICTION OF HIGH-POWER REPETITIVE TWO-ELECTRODE SPARK-GAP SWITCH UNDER ADVERSE CONDITIONS
J. Wu

State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, China, Xi'an, Shaanxi, China

1P-73 STUDY ON THE BREAKDOWN CHARACTERISTICS OF UV ILLUMINATION SWITCH UNDER MICROSECOND PULSE
Y. F. Liu, M. W. Yan, J. W. Wu, H. B. Zhou, C. Fan, W. D. Ding
State Key Laboratory of Electrical Insulation for Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi, China

1P-74 EFFECT OF ELECTRODE GEOMETRY ON THE RISE TIME OF SPARK GAP PEAKING SWITCH
M. G. Parekh, S. Umbarakar, H. A. Mangalvedekar
Electrical engineering, Veermata jijabai technological institute, Mumbai, India

1P-75 EXPERIMENTAL STUDY ON MULTICHANNEL DISCHARGE CHARACTERISTICS OF A PLASMA-JET TRIGGERED GAS SWITCH
W. Tie, X. Liu, S. Liu, Q. Zhang
Xi'an Jiaotong University, Shaanxi, China

1P-76 TRIGGERED DISCHARGE CHARACTERISTICS OF A PLASMA-JET TRIGGERED GAS SWITCH OPERATED AT LOW WORKING COEFFICIENTS
Q. Zhang
Xi'an Jiaotong University, Xi'an Shaanxi, China

1P-76a ELECTRIC EXPLODING WIRE TRIGGERING OF THE MEGAVOLT GAS SPARK GAP SWITCH
Z. Zhang, H. Yang, D. Chen, J. Zhang, J. Xu
College 7, National University of Defense Technology, Changsha, Hunan Province, China

Session 1P: 7.3 Generators & Networks Posters

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chair: *Luis Redondo, Lisbon Superior Engineering Institute (ISEL)*

1P-77 INVESTIGATION OF RF GENERATOR RESPONSE TO PLASMA INSTABILITIES
A. Eroglu[1], H. Kirkici[2]
[1]Purdue University, Fort Wayne,IN, United States
[2]Auburn University, Auburn, Alabama, United States

1P-78 PULSE GENERATOR DEVELOPMENT FOR LOW IMPEDANCE LOADS
M. B. Walls, J. Dickens, J. Mankowski, A. Neuber
Electrical and Computer Engineering, Texas Tech University, Lubbock, TX, United States

1P-79 DESIGN OF SYNCHRONIZATION SYSTEM OF ELECTROPHYSICAL FACILITY
S. L. Glushkov, A. V. Grishin, S. T. Nazarenko, A. V. Kozachek, D. A. Kalashnikov,
B. P. Mironychev, V. M. Martynov, V. V. Turutin, D. A. Kuldyushov, V. S. Pavlov,
V. A. Demanov, T. F. Shikhanova, Y. A. Yesaieva
Institute of Nuclear and Radiation Physics, Russian Federal Nuclear Center - The All-Russian Research Institute of Experimental Physics, Sarov, Russian Federation

1P-80 PRELIMINARY TEST OF THE AZIMUTHAL UNIFORMITY OF FEED CURRENTS OF A 1-MV PROTOTYPE INDUCTION VOLTAGE CAVITY
H. Wei
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, China

Session 1P: 7.4 Compacts and Rep-Rated Pulsed Power Posters

Poster Session

Monday, May 26 14:00-15:30, Exhibit C (lower level)
Session Chair: *Luis Redondo, Lisbon Superior Engineering Institute (ISEL)*

1P-81 NANOSECOND PULSED ELECTRIC FIELDS ENHANCE INHIBITION AND REVERSE RESISTANCE OF MOLECULAR TARGETING DRUG IN HUMAN MELANOMA CELL LINES
S. Wu[1], J. Dai[2], Y. Kong[2], J. Guo[2], J. Zhang[3], J. Fang[3]
[1]College of Engineering, Peking University, Beijing, China
[2]Peking Cancer Hospital and Institute, Beijing, China
[3]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China

1P-82 THE HIGH VOLTAGE POWER SUPPLY BASED ON PULSE STEP MODULATION FOR AUXILIARY HEATING SYSTEM ON FUSION DEVICE
W. Xu
College of Electrical and Power Engineering, Taiyuan University of Technology, Taiyuan, Shanxi province, China

1P-83 STUDY OF MECHANISM OF PLASMA HOLLOW CATHODE DISCHARGE FOR INTENSE ELECTRON BEAM SOURCE IN THE FIELD OF PULSED POWER TECHNOLOGY
X. Gu
Zhejiang Sci-Tech University, Hangzhou, China

1P-84 DEVELOPMENT OF SOLID-STATE MARX PULSE GENERATOR FOR TRIGATRON GAS SWITCH APPLICATION
H. Zhou, W. Ding, C. Fan, Y. Wang, X. Zhong, Y. Liu
State Key Lab. of Electr. Insulation & Power Equip., Xi'an Jiaotong Univ., Xi'an, China

1P-85 THE HV WITHSTANDS TEST AND LEAKAGE CURRENT INDUCED BY STRAW CAPACITANCE IN THE PULSED MAGNET SYSTEM
Y. -H. Liu, C. -S. Chen
Utility, National Synchrotron Radiation Research Center, Hsinchu, Taiwan

1P-86 VARIABLE HIGH VOLTAGE, HIGH FREQUENCY NANOSECOND PULSER FOR PLASMA COMBUSTION
A. Vadlamani, A. J. Fairbanks, S. P. M. Bane, A. L. Garner
Nuclear Engineering, Purdue University, West Lafayette, IN, United States

1P-87 TRIBOLUMINESCENCE X-RAY SOURCE FOR ROENTGEN DIAGNOSIS
S. Furuya
Saitama Institute of Technology, Fukaya, Japan

1P-88 DESIGN AND PROJECTED PERFORMANCE OF A COMPACT, PORTABLE PLASMA-RADIATION-SOURCE GENERATOR AT THE IDAHO ACCELERATOR CENTER
R. V. Shapovalov, R. B. Spielman, W. Beezhold
Physics, Idaho State University, Pocatello, United States

1P-89 SIMULTANEOUS TWO-FREQUENCY EXCITATION OF A TESLA COIL
J. K. Reed, J. Jevtic
Milwaukee School of Engineering, Milwaukee, WI, United States

1P-89a DESIGN FEATURES AND OPERATION EXPERIENCE OF A HIGH REPETITION RATE PULSED ELECTRON ACCELERATOR
I. Egorov, A. Poloskov, V. Esipov
Institute of high technology physics, Tomsk polytechnic university, Tomsk, Russian Federation

Session 2A: Computational Physics and Techniques I

Monday, May 26 15:30-17:30, Thurgood Marshall North
Session Chair: *Yaman Güçlü, Michigan State University*

15:30 2A-1 (invited) NUMERICAL THERMALIZATION OF TWO-DIMENSIONAL PLASMAS IN THE PRESENCE OF BINARY COLLISIONS WITH THE PARTICLE-IN-CELL METHOD
W. S. Koh[1], W. J. Ding[1], P. -Y. Lai[2], S. -H. Chen[2], Y. -R. Lin-Liu[2]
[1]Institute of High Performance Computing, Singapore, Singapore, Singapore
[2]Department of Physics, National Central University, Jung-Li, Taiwan

16:00 2A-2 FRONT TRACKING SCHEME FOR DIRECT KINETIC SIMULATIONS
K. Hara, I. D. Boyd
Department of Aerospace Engineering, University of Michigan, Ann Arbor, United States

16:15 2A-3 ***MOVED TO 7F-9***

16:30 2A-4 FULLY IMPLICIT SOLUTION METHODS FOR FLUID PLASMA EQUATIONS WITH PHYSICS-BASED PRE-CONDITIONING
K. Beckwith[1], J. King[1], E. Hallman[1], S. F. McCormick[2], J. W. Ruge[2]
[1]Tech-X Corp., Boulder, CO, United States
[2]Front Range Scientific Computations, Inc., Lake City, CO, United States

16:45 2A-5 SUPPRESSING NUMERICAL CHERENKOV INSTABILITIES IN FDTD PIC CODES
B. B. Godfrey[1,2], J. -L. Vay[2]
[1]IREAP, University of Maryland, College Park, MD, United States
[2]Accelerator and Fusion Research, Lawrence Berkeley National Laboratory, Berkeley, CA, United States

17:00 2A-6 A HIGH-ORDER POSITIVITY PRESERVING METHOD FOR THE VLASOV-POISSON EQUATION ON UNSTRUCTURED GRIDS
J. A. Rossmanith[1], D. C. Seal[2], A. J. Christlieb[2]
[1]Mathematics, Iowa State University, Ames, IA, United States
[2]Mathematics, Michigan State University, East Lansing, MI, United States

17:15 2A-7 HIGH ORDER PARAMETRIZED MAXIMUM-PRINCIPLE-PRESERVING AND POSITIVITY-PRESERVING WENO SCHEMES ON UNSTRUCTURED MESHES
Y. Liu[1], A. Christlieb[1], Q. Tang[1], Z. Xu[2]
[1]Michigan State University, East Lansing, United States
[2]Michigan Technological University, Houghton, United States

Session 2B: Fast Wave Devices

Monday, May 26 15:30-17:30, Thurgood Marshall South
Session Chair: *Jeffrey P Calame, Naval Research Laboratory*

15:30 2B-1 (invited) PROGRESS ON THE DEVELOPMENT OF THE EU-1MW GYROTRON FOR ITER
S. Illy[1], K. Avramidis[1], G. Gantenbein[1], K. Hesch[1], J. Jelonnek[1], J. Jin[1], I. Pagonakis[1], B. Piosczyk[1], T. Rzesnicki[1], M. Thumm[1], S. Alberti[2], J. -P. Hogge[2], M. Q. Tran[2], V. Hermann[3], F. Legrand[3], Y. Rozier[3], J. L. Vomvoridis[4], J. Chelis[4], Z. C. Ioannidis[5], G. P. Latsas[5], I. G. Tigelis[5], F. Albajar[6], T. Bonicelli[6], F. Cismondi[6]
[1]IHM, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
[2]EPFL-CRPP, Lausanne, Switzerland
[3]Thales Electron Devices, Velizy-Villacoublay, France
[4]SECE, Nat. Technical Univ. of Athens, Athens, Greece
[5]Faculty of Physics, Nat. and Kapodistrian Univ. of Athens, Athens, Greece
[6]F4E, Barcelona, Spain

16:00 2B-2 TESTING OF MEGAWATT-CLASS GYROTRONS
S. Cauffman, M. Blank, P. Borchard, K. Felch
CPI, Palo Alto, CA, United States

16:15 2B-3 CONTROL OF PROFILE OF HEAT DISSIPATION DENSITY IN A HIGH POWER GYROTON
A. Singh[1], L. R. Ives[2], W. B. Herrmannsfeldt[3], H. J. Singh[4]
[1]IREAP (Retired), University of Maryland, College Park, MD, United States
[2]Corporate, Calabazas Creek Research, San Mateo, CA, United States
[3]Retired, Stanford Linear Accelerator Center, Stanford , CA, United States
[4]Corporate Development, Utopia Global, Inc., Morgan Hill, CA, United States

16:30 2B-4 SEPARATION OF THERMAL EXPANSION AND BEAM CHARGE NEUTRALIZATION EFFECTS IN HIGH POWER 140 GHZ CW GYROTRONS
A. Schlaich[1,2], C. Wu[1], I. Pagonakis[1], K. A. Avramidis[1], S. Illy[1], G. Gantenbein[1], J. Jelonnek[1,2], M. Thumm[1,2]
[1]Institute for Pulsed Power and Microwave Electronics (IHM), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
[2]Institut fuer Hochfrequenztechnik und Elektronik (IHE), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

16:45 2B-5 SECOND HARMONIC TE15,2 550 GHZ GYROTRON EXPERIMENT AT NRL
B. Y. Rock, A. W. Fliflet
Plasma Physics Division, The U.S. Naval Research Laboratory, Washington, DC, United States

17:00 2B-6 COLLECTOR LIFETIME ESTIMATIONS FOR THE EU-1MW, 170GHZ CW GYROTRON FOR ITER
S. Illy, F. Kahl, J. Jelonnek
IHM, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

17:15 2B-7 OUTPUT COUPLERS AND WINDOWS FOR HIGH POWER, BROADBAND GYROTRONS
L. Ives[1], M. Read[1], D. Marsden[1], J. Neilson[2], R. Temkin[3], B. Guss[3]
[1]Calabazas Creek Research, Inc., San Mateo, CA, United States
[2]Lexam Research, Redwood City, CA, United States
[3]Massachusetts Institute of Technology, Cambridge, MA, United States

Session 2C: Plasma, Ion, and Electron Sources II

Monday, May 26 15:30-17:30, Thurgood Marshall East
Session Chair: *Stuart L Jackson, Naval Research Laboratory*

15:30 2C-1 DIELECTRIC RESONATOR ANTENNA FOR HIGH-POWER RF PLASMA APPLICATIONS
J. Jevtic[1], A. Menon[2], V. Pikelja[2]

[1]EECS Department, Milwaukee School of Engineering, Milwaukee, WI, United States
[2]Radom Corporation, Milwaukee, WI, United States

15:45 2C-2 ION ENERGIES FROM A PERMANENT-MAGNET HELICON THRUSTER
F. F. Chen
EE, UCLA, Los Angeles, CA, United States

16:00 2C-3 A MEGAVOLT TEST STAND FOR MEASURING CATHODE AND ANODE EMISSIONS WITH NANOSECOND PULSES
R. J. Allen, D. D. Hinshelwood, J. W. Schumer, I. M. Rittersdorf
Plasma Physics, Naval Research Laboratory, Washington, DC, United States

16:15 2C-4 (invited) ROBUST, LONG-LIFE PHOTOCATHODES
L. Ives[1], E. Montgomery[2], B. Riddick[2], D. Marsden[1], G. Collins[1], L. Falce[3]
[1]Calabazas Creek Research, Inc., San Mateo, CA, United States
[2]Institute for Research in Electronics and Applied Physics, University of Maryland, College Park, MD, United States
[3]Consultant, Surprise, AZ, United States

16:45 2C-5 TIME-RESOLVED ARGON THETA-PINCH PLASMA PROPERTIES BY LINE RATIO METHOD WITH COLLISIONAL-RADIATIVE MODEL
W. C. Meeks, J. L. Rovey
Mechanical and Aerospace Engineering, Missouri University of Science and Technology, Rolla, Missouri, United States

17:00 2C-6 COMPARISON OF TRANSIENT PLASMA PARAMETERS IN MULTI-SOURCE PULSED RF CCP CONFIGURATIONS
T. Kummerer[1], S. Shannon[1], D. Coumou[2]
[1]North Carolina State University, Raleigh, United States
[2]MKS Instruments, Rochester, United States

17:15 2C-7 UNIFORMITY CONTROL WITH PHASE-LOCKED RF SOURCE ON A HIGH DENSITY PLASMA SYSTEM
D. J. Coumou[1], D. M. Brown[1], S. Shannon[2]
[1]MKS, ENI Products, Rochester, NY, United States
[2]MKS, ENI Products, Rochester, NY, United States

Session 2D: Fusion (Inertial, Magnetic, and Alternative Concepts)

Monday, May 26 15:30-17:30, Thurgood Marshall West
Session Chair: *Edward M Campbell, Sandia National Laboratory*

15:30 2D-1 (invited) EXPERIMENTAL VERIFICATION OF THE MAGNETIZED LINER INERTIAL FUSION (MAGLIF) CONCEPT*

M. R. Gomez, S. A. Slutz, A. B. Sefkow, T. J. Awe, G. A. Chandler, M. E. Cuneo, M. Geissel, K. D. Hahn, S. B. Hansen, E. C. Harding, A. J. Harvey-Thompson, M. C. Herrmann, C. A. Jennings, P. F. Knapp, D. C. Lamppa, M. R. Martin, R. D. McBride, K. J. Peterson, J. L. Porter, G. A. Rochau, D. C. Rovang, C. L. Ruiz, P. F. Schmit, D. B. Sinars, I. C. Smith
Sandia National Laboratories, Albuquerque, NM, United States

16:00 2D-2 ALTERNATIVE PREHEATING MECHANISMS FOR MAGLIF.
J. Chittenden, S. Lebedev, J. Pecover, N. Niasse
Centre for Inertial Fusion Studies, Imperial College, London, United Kingdom

16:15 2D-3 MAGNETIC FLUX AND HEAT LOSSES BY DIFFUSIVE, CONVECTIVE, AND NERNST EFFECTS IN MAGLIF-LIKE PLASMA
A. L. Velikovich[1], J. L. Giuliani[1], S. T. Zalesak[2]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]Berkeley Research Associates, Beltsville, MD, United States

16:30 2D-4 EARLY TIME INSTABILITY GROWTH FOR MAGLIF SEEDED BY ELECTRO-THERMAL AND MATERIAL STRENGTH EFFECTS
J. Pecover, M. Weinwurm, J. Chittenden
Blackett Laboratory, Imperial College, London, United Kingdom

16:45 2D-5 ACTIVE FEEDBACK STABILIZATION OF FLUTE INSTABILITY IN A MIRROR TRAP
I. Be'ery, O. Seemann, A. Fisher
Physics department, Technion - Israel institute of technology, Haifa, Israel

17:00 2D-6 SPECTROSCOPIC MEASUREMENTS OF ION TEMPERATURE AND ROTATION OF TWO ION COMPONENTS IN C-2 FRC PLASMA.
D. Osin, D. Gupta, S. Korepanov, T. A.E. Team
Tri Alpha Energy Inc., Ranch Santa Margarita, Ca, United States

17:15 2D-7 HIGH HEAT FLUX REMOVAL MEASUREMENTS IN A SINGLE-SIDE HEATED MONOBLOCK FLOW CHANNEL WITH A HELICAL WIRE INSERT
R. D. Boyd, A. M. May, R. J. Martin, P. S. Cofie
Perry College of Engineering, Prairie View A&M University, Prairie View, United States

Session 2E: Microwave, Particle and Pulsed Power Diagnostics

Monday, May 26 15:30-17:30, Hoover
Session Chair: *Simon Bland, Imperial College*

15:30 2E-1 MAGNETIC MOMENTUM PROBE FOR PLASMA STUDIES WITH APPLICATION TO HIGH PRESSURE PLASMAS

F. F. Dyer, I. Alexeff
BioTech Engineering, Tazewell, TN, United States

15:45 2E-2 DIAGNOSIS OF DISCHARGE PLASMAS TEMPERATURE BY LIFBASE USING ATMOSPHERIC PRESSURE PULSED DISCHARGE IN AIR
M. Sun
Institute of Electrostatics, Shanghai Maritime University, Shanghai, China

16:00 2E-3 PLASMA PROPAGATION SPEED AND ELECTRON TEMPERATURE OF AR IN ATMOSPHERIC PRESSURE NON-THERMAL INDIRECT BIOPLASMA JET
P. Suanpoot[1,2], G. -H. Han[2], H. S. Uhm[2], G. Cho[2], E. H. Choi[2]
[1]General Education, Maejo University Phrae Campus, Phrae, Thailand
[2]Electro Biological Physics, Kwangwoon University, Seoul, Korea

16:15 2E-4 ***WITHDRAWN*** MICROWAVE PLASMA DIAGNOSTICS
D. R. Scott, A. Shashurin, M. Keidar
Mechanical and Aerospace Engineering, The George Washington University, Washington DC, United States

16:30 2E-5 COMPUTATIONAL STUDY OF A COMPACT NON-INVASIVE BUNCH LENGTH MONITOR AND SHAPER
C. Leach[1], B. Roberts[2], E. Schamiloglu[1]
[1]Electrical and Computer Engineering Dept., University of New Mexico, Albuquerque, United States
[2]Electrodynamic, Albuquerque, United States

16:45 2E-6 DIGITAL PULSE ANALYZER FOR ITER VERTICAL NEUTRON CAMERA
A. A. Ivanova[1,2], V. N. Amosov[3], D. A. Skopintsev[3], A. D. Khilchenko[1,2], A. N. Kvashnin[1], P. V. Zubarev[1,2], S. V. Ivanenko[1], A. I. Kotelnikov[1], E. A. Puryga[1,2]
[1]Budker Institute of Nuclear Physics, Novosibirsk, Russian Federation
[2]Novosibirsk State Technical University, Novosibirsk, Russian Federation
[3]Troitsk Institute for Innovation and Fusion Research, Troitsk, Russian Federation

17:00 2E-7 ION BEAM PROFILE DIAGNOSIS METHOD FOR VACUUM ARC ION SOURCE IN SEALED TUBE NEUTRON GENERATOR
Y. Zhen
China Academy of Engineering Physics (CAEP), Institute of Fluid Physics, Mianyang, China

17:15 2E-8 AUTOMATED HEALTH MONITORING OF A PULSED POWER SYSTEM
B. M. Huhman[1], C. W. Peters[2], C. Breuninger[2], J. Carto[2], C. Child[2], C. Green[2], J. Stanley[2], L. Mili[3]
[1]Plasma Physics Division, US Naval Research Laboratory, Washington, DC, United States
[2]Electrical Engineering Dept, Drexel University, Philadelphia, PA, United States
[3]Electrical Engineering and Computer Engineering Dept, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States

Session PL3: Plenary3

Tuesday, May 27 08:00-09:00, Thurgood Marshall East-South
Session Chair: *Weihua Jiang, Nagaoka University of Technology*

8:00 PL3-1 (invited) OVERVIEW OF PULSED POWER RESEARCHES AT CAEP
J. Deng
Institute of Fluid Physics,CAEP, Mianyang, Sichuan, China

Session 3A: Plasma for Lighting, Displays, & Microdischarges

Tuesday, May 27 9:30 - 12:00, Thurgood Marshall North
Session Chairs: *Weidong Zhu, Saint Peters University*
Chunqi Jiang, Old Dominion University

9:30 3A-1 (invited) MERCURY-FREE, FLAT MICROCAVITY PLASMA LIGHTING TILES: EFFICIENT VUV-UVC GENERATION FOR ENVIRONMENTAL APPLICATIONS
S. -J. Park[1,2], C. M. Herring[1], J. G. Eden[1,2]
[1]Eden Park Illumination, Champaign, IL, United States
[2]Department of Electrical and Computer Engineering, University of Illinois, Urbana, IL, United States

10:00 3A-2 PULSED MICRODISCHARGE, 121.6 NM VUV SOURCE WITH 40 WATT PEAK POWER
J. C. Stephens, A. S. Fierro, J. C. Dickens, A. A. Neuber
Center For Pulsed Power and Power Electronics, Texas Tech Center for Pulsed Power and Power Electronics, Lubbock, TX, United States

10:15 3A-3 BREAKDOWN LAW AND POST-BREAKDOWN CURRENT-VOLTAGE CHARACTERISTICS OF EMISSION-DRIVEN MICROPLASMAS
A. Venkattraman
School of Engineering, University of California Merced, Merced, CA, United States

10:30 3A-4 PLASMA DYNAMICS OF MICROWAVE EXCITED MICROPLASMAS IN A SUB-MILLIMETER CAVITY
P. Tian[1], M. J. Kushner[1], M. Denning[2], M. Vahiidpour[2], R. Urdahl[2]
[1]Electrical Engineering and Computer Science Dept., University of Michigan, Ann Arbor, MI, United States
[2]Agilent Technologies, Santa Clara, CA, United States

10:45 3A-5 NEW SELF-ORGANIZATION PATTERNS OBSERVED IN CATHODE BOUNDARY LAYER DISCHARGES IN HIGH PURITY XE GAS
W. Zhu[1], P. Niraula[1], K. H. Becker[2]

[1]Applied Science and Technology, Saint Peters University, Jersey City, NJ, United States
[2]Applied Physics, NYU Polytechnic School of Engineering, Brooklyn, NY, United States

11:00 3A-6 SPATIALLY RESOLVED OPTICAL EMISSION SPECTROSCOPY OF A NANOSECOND PULSED MICROPLASMA JET
J. Lane[1], C. Jiang[1], J. Sanders[2], A. Kuthi[2], M. Gundersen[2]
[1]Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA, United States
[2]Department of Electrical Engineering-Electrophysics, University of Southern California, Los Angeles, CA, United States

11:15 3A-7 NOVEL REACTIVE SPECIES ENVIRONMENT CREATED BY MICROPLASMA JET ARRAYS IN COMBINATION WITH A CONTROLLED GAS FEED SYSTE
P. P. Sun[1,2], J. Rivera[1], H. Chen[2], M. G. Kong[2], S. -J. Park[1], J. G. Eden[1]
[1]Department of Electrical and Computer Engineering, University of Illinois, Urbana, IL, United States
[2]Department of Electrical and Computer Engineering, Old Dominion University, Norfolk, Virginia, United States

11:30 3A-8 FORMATION OF FUNCTIONAL METALLIC PATTERNS IN DOWNFLOW OF ARGON-DILUTED AMMONIA MICROPLASMAS AT ATMOSPHERIC PRESSURE
O. Sakai, N. Kihara, Y. Nishio, Y. Hiraoka
Department of Electronic Science and Engineering, Kyoto University, Kyoto, Japan

11:45 3A-9 UV EMISSION AND PROBE DIAGNOSTICS AND COMPUTATIONAL MODELING OF A LOW PRESSURE MICROWAVE EXCITED MICROPLASMA SOURCE
M. Denning[1], M. Vahidpour[1], R. Urdahl[1], P. Tian[2], M. Kushner[2]
[1]Agilent Technologies, Santa Clara, CA, United States
[2]Electrical Engineering and Computer Science Dept., University of Michigan, Ann Arbor, MI, United States

Session 3B: Intense Beam Microwave Generation

Tuesday, May 27 9:30 - 12:00, Thurgood Marshall South
Session Chair: *Wilkin Tang, Air Force Research Laboratory*

9:30 3B-1 (invited) EMITTANCE, SURFACE STRUCTURE, AND ELECTRON EMISSION FOR THERMAL, PHOTO, AND FIELD EMISSION PROCESSES
K. L. Jensen[1], D. A. Shiffler[2], J. J. Petillo[3], Z. Pan[4], J. W. Luginsland[5]
[1]Code 6843, Naval Research Laboratory, Washington, DC, United States
[2]Air Force Research Lab., Kirtland AFB, NM, United States
[3]Leidos, Billerica, MA, United States
[4]IREAP, University of Maryland, College Park, MD, United States
[5]Air Force Office of Scientific Research, Arlington, VA, United States

10:00 3B-2 (invited) ELECTRON BEAM EXICTATION ON DOPED GRAPHENE PLASMON FOR GENERATION COHERENT RADIATION
K. J. A. Ooi, L. K. Ang
Engineering Product Developement, Singapore University of Technology and Design, Singapore, Singapore

10:30 3B-3 DESIGN OF A PROTOTYPE MULTI-FREQUENCY RECIRCULATING PLANAR MAGNETRON
G. Greening, M. Franzi, Y. Y. Lau, N. Jordan, R. Gilgenbach
Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

10:45 3B-4 MICROWAVE EXTRACTION IN THE RECIRCULATING PLANAR MAGNETRON
M. A. Franzi[1], R. M. Gilgenbach[1], G. Greening[1], N. M. Jordan[1], B. W. Hoff[2], D. H. Simon[1], Y. Y. Lau[1], J. Luginsland[3]
[1]University of Michigan, Ann Arbor, MI, United States
[2]Air Force Research Lab, Albuquerque, NM, United States
[3]Air Force Office of Scientific Research, Arlington, VA, United States

11:00 3B-5 ACHIEVEMENT OF GW-CLASS SINGLE MODE OUTPUT IN AN X-BAND LONG-PULSE OVERMODED RELATIVISTIC BACKWARD WAVE OSCILLATOR
J. Zhang, D. Zhang, H. Zhong, Z. Jin
National University of Defense Technology, Changsha, China

11:15 3B-6 DYNAMICS OF TRANSIENT PROCESSES IN RELATIVISTIC BACKWARD WAVE TUBE DRIVEN WITH AN EXTERNAL ELECTROMAGNETIC SIGNAL
A. Konyushkov, E. Abubakirov, A. Denisenko, A. Gromov, A. Palitsin, E. Soluyanov, V. Yastrebov
Institute of Applied Physics RAS, Nizhny Novgorod, Russian Federation

11:30 3B-7 KEY ISSUES IN DESIGN OF NONLINEAR TRANSMISSION LINES*
J. O. Rossi, L. P. Silva, F. S. Yamasaki
Plasma Laboratory, National Institute for Space Research, Sao Jose dos Campos, Brazil

11:45 3B-8 INTENSIVE MULTIPLE-VELOCITY ELECTRON BEAMS (FORMATION METHODS, USING FOR BROADBAND GENERATION)
A. V. Starodubov, Y. A. Kalinin, A. S. Fokin
Department of Physics of nonlinear systems, Saratov State University, Saratov, Russian Federation

Session 3C: Particle Acceleration with Lasers and Beams

Tuesday, May 27 9:30 - 12:00, Thurgood Marshall East
Session Chair: *George M Petrov, Naval Research Laboratory*

9:30 3C-1 (invited) LASER WAKEFIELD BETATRON X-RAY PROBE FOR FEMTOSECOND TIME-RESOLVED MEASUREMENTS OF WARM DENSE MATTER
M. Mo[1], Z. Chen[1], Y. -Y. Tsui[1], R. Fedosejevs[1], S. Fourmaux[2], A. Saraf[2], J. -C. Kieffer[2], A. Ng[3]
[1]Electrical and Computer Engineering, University of Alberta, Edmonton, AB, Canada
[2]INRS-EMT, University of Quebec, Varennes, QC, Canada
[3]Department of Physics & Astronomy, University of British Columbia, Vancouver, BC, Canada

10:00 3C-2 REGIMES OF INTERACTION BETWEEN CHARGES PARTICLE BUNCHES AND PLASMAS
P. Muggli
Max Planck Institute for Physics, Munich, Germany

10:15 3C-3 LASER-WAKEFIELD ELECTRON ACCELERATOR WITH INDEPENDENT BEAM-PARAMETER CONTROL
G. Golovin[1], S. Chen[1], N. Powers[1], C. Liu[1], S. Banerjee[1], J. Zhang[1], M. Zeng[2], Z. -M. Sheng[2], D. Umstadter[1]
[1]University of Nebraska-Lincoln, Lincoln, United States
[2]Shanghai Jiao Tong University, Shanghai, China

10:30 3C-4 OPTICAL CONTROL OF ELECTRON TRAPPING AND ACCELERATION IN PLASMA CHANNELS: APPLICATION TO TUNABLE, PULSED SOURCES OF MULTI-COLOR THOMSON GAMMA-RAYS
S. Y. Kalmykov[1], X. Davoine[2], B. A. Shadwick[1]
[1]Department of Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE, United States
[2]CEA, DAM, DIF, Arpajon, France

10:45 3C-5 LASER-WAKEFIELD ACCELERATORS AS X-RAY SOURCES FOR MEDICAL IMAGING
Z. Najmudin[1], J. M. Cole[1], N. M. C. Lopes[1], J. Wood[1], K. Poder[1], J. Bryant[1], S. Alatabi[1], M. Katalin[1], M. P. D. Stuart[1], D. Bucker[1], P. A. Abel[2], R. L. Abel[2], M. Winkler[3], N. Ngo[3], D. Symes[4]
[1]The John Adams Institute for Accelerator Science, Imperial College London, London, United Kingdom
[2]Department of Cancer and Surgery, Imperial College London, London, United Kingdom
[3]Imperial College Healthcare NHS Trust, Imperial College London, London, United Kingdom
[4]Central Laser Facility, STFC Rutherford-Appleton Lab., Didcot, United Kingdom

11:00 3C-6 QUASI-MONOENERGETIC ELECTRON BUNCH GENERATION FROM LASER DRIVEN DOUBLE-LAYER ULTRATHIN FILMS
C. Wang, E. Mccary, A. R. Meadows, J. Blakeney, K. Serratto, D. Kuk, C. Chester, R. Roycroft, L. Gao, I. Pomerantz, A. Bernstein, H. Quevedo, G. Dyer, E. Gaul, T. Ditmire, B. M. Hegelich
Physics, University of Texas at Austin, Austin, TX, United States

11:15 3C-7 ***WITHDRAWN*** LASER-DRIVEN IONACCELERATION BEYOND 100MEV/AMU
D. Jung[1,2], D. C. Gautier[1], S. Letzring[1], S. Palaniyappan[1], L. Yin[1], B. Albright[1], B. Dromey[2], J. C. Fernandez[1], B. M. Hegelich[1]
[1]Plasma Physics, Los Alamos National Laboratory, Los Alamos, NM, United States
[2]Plasma Physics, Queen's University Belfast, Belfast, United Kingdom

11:30 3C-8 FOCUSING AND SELF-MODIFIED TRANSPORT OF HIGH INTENSITY PROTON BEAMS
C. McGuffey[1], J. Kim[1], B. Qiao[1], F. N. Beg[1], M. Wei[2], R. B. Stephens[2], J. Fuchs[3], S. N. Chen[3], P. Nilson[4], M. E. Foord[5], H. S. McLean[5]
[1]Center for Energy Research, University of California San Diego, La Jolla, CA, United States
[2]General Atomics, San Diego, CA, United States
[3]Ecole Polytechnique, Paris, France
[4]Laboratory for Laser Energetics, Rochester, NY, United States
[5]Lawrence Livermore National Laboratory, Livermore, CA, United States

11:45 3C-9 AWAKE: PLASMA WAKEFIELD ACCELERATION EXPERIMENTS WITH CERN PROTON BUNCHES
P. Muggli, C. Awake
Max Planck Institute for Physics, Munich, Germany

Session 3D: Insulation and Dielectric Breakdown, Opening and Closing Switches (combined)

Tuesday, May 27 9:30 - 12:00, Thurgood Marshall West
Session Chair: *Luis Redondo, Lisbon Superior Engineering Institute (ISEL)*

9:30 3D-1 (invited) DYNAMICS AND PHYSICS CONSIDERATIONS OF EXTENDED DURATION REP-RATE OPERATION OF LASER TRIGGERED GAS SWITCHES
M. F. Wolford[1], M. C. Myers[1], J. D. Sethian[1], F. Hegeler[2]
[1]Plasma Physics Division, Code 6733, U.S. Naval Research Laboratory, Washington, DC, United States
[2]Commonwealth Technology, Inc., Alexandria, VA, United States

10:00 3D-2 A SURVEY OF LASER INITIATED GASEOUS DISCHARGE STUDIES FOR PULSED POWER
M. Domonkos
Directed Energy Directorate, AFRL, Kirtland AFB, NM, United States

10:15 3D-3 MAGNETIC FIELD PENETRATION AND MAGNETOHYDRODYNAMIC ACCELERATION IN OPENING SWITCH PLASMAS
S. L. Jackson[1], D. G. Phipps[1], A. S. Richardson[1], J. R. Angus[1], S. B. Swanekamp[1], J. W. Schumer[1], D. P. Murphy[1], B. V. Weber[1], D. D. Hinshelwood[1], R. J. Commisso[1], C. N. Boyer[2]

[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]Engility Corporation, Chantilly, VA, United States

10:30 3D-4 PLASMA INJECTION TECHNIQUE FOR SPECIES SEPARATION AND MAGNETIC FIELD PENETRATION EXPERIMENTS
D. Phipps[1], A. S. Richardson[1], S. L. Jackson[1], S. B. Swanekamp[1], B. V. Weber[1], D. D. Hinshelwood[1], R. J. Commisso[1], C. N. Boyer[2]
[1]Plasma Physics Div, US Naval Research Laboratory, Washington, DC, United States
[2]Engility Corporation, Chantilly, VA, United States

10:45 3D-5 PULSED HIGH-VOLTAGE INSULATION EXPERIMENTS
J. Z. Gleizer[1], U. Dai[2], J. G. Leopold[3], Y. E. Krasik[3]
[1]Applied Physics, RAFAEL Labs, Haifa, Israel
[2]MoD/DDR&D, Tel-Aviv, Israel
[3]Physics Dept, TECHNION, Israel Institute of Technology, Haifa, Israel

11:00 3D-6 INFLUENCE OF SF6 ADMIXTURES TO NITROGEN ON CRITICAL PARAMETERS OF SURFACE STREAMER INCEPTION
A. Chvyreva, A. J. M. Pemen
Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

11:15 3D-7 MECHANISMS FOR THE EFFECT OF RESIDUAL PRESSURE ON FIELD EMISSION IN VACUUM
M. J. Kirkpatrick[1], K. Almaksour[2], E. Odic[1], P. Dessante[1], P. Teste[2]
[1]Power and Energy Systems, SUPELEC, Gif-sur-Yvette, France
[2]LGEP, Gif-sur-Yvette, France

11:30 3D-8 NONELECTRODE AND POSTBREAKDOWN IONIZATION PROCESSES IN WATER WITH SCREENED ELECTRODES
S. M. Korobeynikov[1], A. V. Melekhov[2]
[1]Power Eng. Faculty, Novosibirsk State Technical University, Novosibirsk, Russian Federation
[2]Laser Plasma Dept., Institute of Laser Physics, Novosibirsk, Russian Federation

11:45 ***MOVED TO 1P-76a***

Session 3E: Plasma Material Interactions

Tuesday, May 27 9:30 - 12:00, Hoover
Session Chair: *Ahmed Hassanein, Purdue University*

9:30 3E-1 (invited) ADDRESSING THE CHALLENGES OF PLASMA-SURFACE INTERACTIONS IN NSTX-U
R. Kaita[1], T. Abrams[1], M. Lucia[1], M. Jaworski[1], J. Nichols[1], C. H. Skinner[1], D. Stotler[1], J. -P. Allain[2], F. Bedoya[2]

[1]Princeton Plasma Physics Laboratory, Princeton, NJ, United States
[2]Dept. of Nuclear, Plasma, and Radiological Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

10:00 3E-2 (invited) PLASMA SPUTTERING EROSION/REDEPOSITION IN FUSION TOKAMAKS-MODELING STATUS AND CHALLENGES
J. N. Brooks
Purdue University, West Lafayette, IN, United States

10:30 3E-3 LITHIUM WETTING OF STAINLESS STEEL STUDIED VIA SCANNING AUGER MICROSCOPY
C. H. Skinner[1], A. M. Capece[1], B. E. Koel[2], J. P. Roszell[2]
[1]Princeton Plasma Physics Laboratory, Princeton University, Princeton, United States
[2]Department of Chemical and Biological Engineering, Princeton University, Princeton, United States

10:45 3E-4 DEVELOPMENT ANTI-DAIRY FOULING SURFACE OF 316L 2B STAINLESS STEEL BY ATMOSPHERIC PRESSURE PLASMA TREATMENT
G. S. D. Al-ogaili
ENSCL, UMIT, Lille, France

11:00 3E-5 INVESTIGATION ON NANOPARTICLES FORMATION IN WIRE EXPLOSION PROCESS BY FAST IMAGING AND OPTICAL EMMISSION SPECTROSCOPY
B. Bora[1], S. S. Kausik[2], C. S. Wong[2], S. L. Yap[2], L. Soto[1]
[1]Departamento de Plasma Termonuclear, Comision Chilena de Energia Nuclear, Santiago. RM, Chile
[2]Plasma Technology Research Centre, Physics Department, University of Malaya, Kuala Lumpur, Malaysia

11:15 3E-6 BEHAVIOUR OF DISPERSED CERAMIC PARTICLES IN DC ARC PLASMA JET DURING THE SPRAY DEPOSITION OF COATINGS
V. Valinčius, V. Grigaitienė, R. Kėzelis
Plasma Processing Laboratory, Lithuanian Energy Institute, Kaunas, Lithuania

11:30 3E-7 EFFECT OF EDGE PLASMA RADIATION ON EROSION AND DAMAGE TO ITER PLASMA FACING AND NEARBY COMPONENTS
V. Sizyuk, A. Hassanein
Purdue University, West Lafayette, IN, United States

11:45 3E-8 NOVEL APPROACH FOR ZINC OXIDE NANOMATERIALS FUNCTIONALIZATION BASED ON DRY PLASMA PROCESSING
M. A. Ciolan[1,2], I. Motrescu[3], D. Luca[2], M. Nagatsu[1]
[1]Nanovision Department, Shizuoka University, Hamamatsu, Japan
[2]Department of Physics, Alexandru Ioan Cuza University, Iasi, Romania

[3]Department of Science, University of Agricultural Science and Veterinary Medicine, Iasi, Romania

Session 3F: Nonequilibrium Plasma Applications II

Tuesday, May 27 9:30 - 12:00, Coolidge
Session Chair: *Alan R Hoskinson, Tufts University*

9:30 3F-1 (invited) INTRODUCTION TO THE PROTO-TYPE PLASMA JETS OF AC, RF, AND MW-DISCHARGES IN KOREA PLASMA-BIO RESEARCH CENTER
Y. Kim, G. Cho, G. -H. Han, G. -G. Kwon, J. -J. Choi, Y. -H. Na, H. S. Uhm, E. -H. Choi
Department of Electrophysics, Kwangwoon University, Seoul, South Korea

10:00 3F-2 PLASMA POLYMERIZED THIOPHENE USING INTENSE AND HIGHLY ENERGETIC ATMOSPHERIC PRESSURE MICRO PLAMSA JET FOR POLYMERIC BATTERIES
C. -S. Park, S. -O. Kim
Department of Electrical and Computer Engineering, Clemson University, Clemson, United States

10:15 3F-3 DEPOSITION OF ANTIBACTERIAL NANOCOMPOSITE FILMS USING AN ATMOSPHERIC PRESSURE NONEQUILIBRIUM PLASMA JET
X. Deng, A. Nikiforov, C. Leys
Department of Applied Physics, Ghent University, Gent, Belgium

10:30 3F-4 COMPARISON OF SPATIAL AND TEMPORAL CHARACTERISTICS BETWEEN MICROPLASMA JET ARRAYS AND A SINGLE MACROPLASMA JET
P. P. Sun, J. H. Cho, S. -J. Park, J. G. Eden
Department of Electrical and Computer Engineering, University of Illinois, Urbana, IL, United States

10:45 3F-5 PLASMA DIAGNOSTICS OF NON-EQUILIBRIUM ATMOSPHERIC PLASMA JETS
A. Shashurin[1], D. Scott[1], M. Keidar[1], M. N. Shneider[2]
[1]Mechanical and Aerospace Engineering, George Washington University, Washington, DC, United States
[2]Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ, United States

11:00 3F-6 EFFECT OF GROUND ELECTRODES ON STABILITY OF PLASMA JET
J. F. Tang, D. S. Zhou, Y. X. Huo, C. H. Zhang
Harbin Institute of Technology, Harbin, China

11:15 3F-7 AN ATMOSPHERIC NEON PLASMA JET IN AIR DRIVEN BY PULSE-WAVE-MODULATED SINUSOIDAL HIGH VOLTAGE

L. Yang, Y. Tu, Y. Yu, J. Zhan, D. Hu, Q. Li
School of Electronic Science and Engineering, Southeast University, Nanjing, Jiangsu, China

11:30 3F-8 SPECIES GENERATION AND DENSITIES IN ELECTRON BEAM-GENERATED PLASMAS
E. H. Lock[1], R. F. Fernsler[1], S. P. Slinker[2], I. L. Singer[2], S. G. Walton[1]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]Now Retired, Washington, DC, United States

11:45 3F-9 SPATIALLY - AND TEMPORALLY- RESOLVED INVESTIGATION OF DISCHARGE IN WATER IN PIN-TO-PIN GEOMETRY
S. Yatom, A. Kedlaya, P. Bruggeman
Mechanical Engineering, University of Minnesota, Minneapolis, MN, USA

Session PL4: Plenary4

Tuesday, May 27 13:00-14:00, Thurgood Marshall East-South
Session Chair: *Farhat Beg, University of California-San Diego*

13:00 PL4-1 (invited) THE HIGH-FOOT IMPLOSION CAMPAIGN ON THE NIF
O. A. Hurricane
Lawrence Livermore National Laboratory, Livermore, CA, United States

Session 2P: 1.1 Basic Plasma Phenomena Posters

Poster Session

Tuesday, May 27 14:00-15:30, Exhibit C (lower level)
Session Chair: *Keith Cartwright, Sandia National Laboratories*

2P-1 NUMERICAL STUDY ON PULSED-DC ATMOSPHERIC-PRESSURE PLASMA JET
X. Liu, D. Liu
National State Key Lab of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science and Technology, Wuhan, China

2P-2 INVESTIGATION ON ATMOSPHERIC AIR DIELECTRIC BARRIER DISCHARGE UNIFORMITY
C. Liu[1,2], A. Fridman[1,3], D. Dobrynin[1]
[1]A. J. Drexel Plasma Institute, Drexel University, Camden NJ 08103, Camden, New Jersey, United States
[2]Electrical and Computer Engineering Department,, Drexel University, Philadelphia, PA, United States
[3]Mechanical Engineering and Mechanics Department, Drexel University, Philadelphia, PA, United States

2P-3 TRANSITION OF BRANCHED POSITIVE STREAMER TO NON-BRANCHED POSITIVE STREAMER WITH INCREASE OF DISCHARGE-REPETITION RATE
Y. Inada[1], D. Shimizu[1], T. Omori[2], T. Matsumoto[2], Y. Izawa[2], K. Nishijima[2]
[1]Graduate school of Electrical Engineering, Fukuoka University, Fukuoka, Japan
[2]Department of Electrical Engineering, Fukuoka University, Fukuoka, Japan

2P-4 STOCHASTIC PHENOMENON OF STREAMER BRANCHING IN INSULATING OIL
Y. Li, H. -B. Mu, Z. -S. Chang, J. -B. Deng, G. -J. Zhang
Xi'an Jiaotong University, Xi'an, China

2P-5 DETERMINATION OF ELECTRON-PLASMA TEMPERATURE BY MEASURING THE PROPAGATION VELOCITY OF PLASMA-DIFFUSION WAVES WITH THE MIXTURE GASES OF AR-N2 IN THE ATMOSPHERIC PRESSURE PLASMA JETS
G. -H. Han[1], P. Suanpoot[2], G. Cho[1]
[1]Department of Electrophysics, Kwangwoon University, Seoul, South Korea
[2]2Maejo University Phrae Campus, Phrae Province, Thailand

2P-6 VARIABILITY OF L-BAND GPS SCINTILLATION OVER AURORAL REGION, MAITRI, ANTARCTICA
P. K. Purohit[1], P. Khatarkar[2], P. A. Khan[2], R. Atulkar[1]
[1]Space Science Laboratory, Department of Physics & Electronics, Barkatullah, Bhopal, India
[2]National Institute of Technical Teachers' Training and Research, Shamla Hills, Bhopal,462002 India, Bhopal, India

2P-7 ***MOVED TO 1F-9***

2P-8 OPTIMIZATION OF SHOCK INTENSITIES GENERATED BY HIGH CURRENT EXPLODING WIRES
J. C. Stephens, D. Ryberg, J. C. Dickens, A. A. Neuber
Center For Pulsed Power and Power Electronics, Texas Tech Center for Pulsed Power and Power Electronics, Lubbock, TX, United States

2P-9 MICROSTRUCTURE AND CORROSION BEHAVIORS OF XC48 TREATED BY RF MAGNETRON SPUTTERING TIALN ALLOYING
N. Madaoui[1,2], N. Saoula[1], A. Z. Ait Djafer[3], A. Zerizer[3]
[1]Division Milieux Ionises, Centre de De developpement des Technologies Avances, Cit du 20 aot 1956, Baba Hassen, BP n17,, Algeria
[2]Faculte de Chimie. Universit Des Sciences et de la Technologie Houari Boumediene., Laboratoire d'Electrochimie-Corrosion, Mtallurgie et Chimie Minrale., B.P 32, El Alia, Bab Ezzouar, Alger 16111, algeria
[3]Faculte des sciences d'ingenieur, universit Mhamed bougara, Laboratoire des matriaux minraux et composite, Avenue de l'Indpendance, 35000, algeria

2P-10 KINETIC SIMULATIONS OF PLASMA ENHANCED PHOTONIC CRYSTALS
J. Trieschmann, T. Mussenbrock

Department of Electrical Engineering and Information Science, Ruhr University Bochum, Bochum, Germany

2P-11 MAGNETOSONIC WAVES IN PLASMA
K. Annou
CDTA, baba hassen, Algeria

2P-12 EFFECT OF GRAZING ANGLE WITH THE MAGNETIC FIELD ON ION SPUTTERING AT THE TUNGSTEN SURFACE OF DIVERTOR PLATE
K. S. Goswami[1], S. Adhikari[2]
[1]Centre of Plasma Physics-Institute for Plasma Research, Assam, India
[2]Centre of Plasma Physics-Institute for Plasma Research, Assam, India

2P-13 EXAMINATION OF ELECTRON TEMPERATURE AND ION VELOCITY DISTRIBUTION IN PLASMA GENERATED IN THE MADHEX HELICON SOURCE
Y. -T. Sung, Y. Li, J. Scharer, M. DeVinney
Department of Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, WI, United States

2P-14 ENHANCED OPTICAL EMISSION OF LASER PRODUCED PLASMA BY A PULSED POWER DISCHARGE
W. Wei[1], J. Wu[1], Q. Wang[2]
[1]State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi, China
[2]School of Sciences, Xi'an University of Technology, Xi'an, Shaanxi, China

2P-15 ELECTRON-ACOUSTIC SOLITONS IN AN ELECTRON-BEAM PLASMA SYSTEM WITH KAPPA-DISTRIBUTED ELECTRONS
A. Danehkar[1], I. Kourakis[2], M. A. Hellberg[3]
[1]Department of Physics and Astronomy, Macquarie University, Sydney, NSW 2109, Australia
[2]Department of Physics and Astronomy, Queen's University Belfast, Belfast, BT7 1NN, United Kingdom
[3]Department of Physics, University of KwaZulu-Natal, Durban 4000, South Africa

2P-16 EFFECTS OF DIFFERENT ELECTRON PRESSURE ON PLASMA EXPANSION
B. R. Lee[1], S. E. Clark[2], D. H. H. Hoffmann[1], C. Niemann[2]
[1]Institut fuer Kernphysik, Technische Universitaet Darmstadt, Darmstadt, Germany
[2]Physics and Astronomy, University of California, Los Angeles, Los Angeles, USA

2P-17 ***WITHDRAWN*** ION ACOUSTIC SOLITONS IN MAGNETIZED DENSE PLASMAS WITH NON-RELATIVISITIC AND ULTRA-RELATIVISITIC DEGENERATE ELECTRONS
S. Mahmood, S. Sadiq, Q. ul-Haque
Theoretical Physics Division, PINSTECH, Islamabad, Pakistan

2P-18 COHERENT STRUCTURE IN CONFINED MAGNETOFLUIDS
J. V. Shebalin
Astromaterials Research Office, NASA Johnson Space Center, Houston, Texas, United States

2P-19 SPATIALLY-RESOLVED SPECTRAL ANALYSIS OF AR-NH3 PLASMA JET
Z. Chang, G. Zhang, C. Yao
School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China

Session 2P: 1.2 Computational Physics and Techniques Posters

Poster Session

Tuesday, May 27 14:00-15:30, Exhibit C (lower level)
Session Chair: *Keith Cartwright, Sandia National Laboratories*

2P-20 VERIFICATION OF EMISSION MODELS FOR FINITE ELEMENT AND FINITE DIFFERENCE TIME DOMAIN PARTICLE-IN-CELL CODES
K. L. Cartwright, M. T. Bettencourt, M. M. Hopkins, L. C. Musson, G. A. Radtke
Sandia National Laboratories, Albuquerque, NM, United States

2P-21 ACCURATE DETERMINATION OF SURFACE ELECTRIC FIELDS FOR CONFORMAL FINITE DIFFERENCE TIME DOMAIN SIMULATIONS
M. C. Lin, C. Zhou
Tech-X Corporation, Boulder, CO, United States

2P-22 ***WITHDRAWN*** DRIFT KINETIC FLUID PARTICLE METHODS FOR MAGNETIZED VLASOV EMISSION EQUILIBRIA*
R. E. Terry
Enig Associates, Inc, Bethesda, MD, United States

2P-23 A HIGH ORDER UNCONDITIONALLY STABLE MAXWELL SOLVER FOR PLASMA SIMULATIONS IN COMPLEX GEOMETRIES
Y. Güçlü, M. F. Causley, A. J. Christlieb
Department of Mathematics, Michigan State University, East Lansing, MI, United States

2P-24 POSITIVITY-PRESERVING WENO SCHEMES WITH CONSTRAINED TRANSPORT FOR IDEAL MHD
Q. Tang[1], A. Christlieb[1,2], Y. Liu[1], Z. Xu[3]
[1]Department of Mathematics, Michigan State University, East Lansing, MI, United States
[2]Department of Electrical and Computer Engineering, Michigan State University, East Lansing, MI, United States
[3]Department of Mathematical Science, Michigan Technological University, Houghton, MI, United States

2P-25 A PARTICLE IN CELL METHOD WITH AN UNCONDITIONALLY STABLE FIELD SOLVER
E. Wolf, M. Causley, A. Christlieb
Michigan State University, East Lansing, MI, United States

2P-26 EFFICIENCY OF MONTE CARLO COLLISIONAL DYNAMICS ON GPUS
C. Bardel[1], J. Verboncoeur[1], M. Y. Hur[2], H. J. Lee[2]
[1]Electrical and Computer Engineering, Michigan State University, East Lansing, United States
[2]Electrical Engineering, Pusan National University, Busan, Korea

2P-27 A HIGHER ORDER A-STABLE MAXWELL SOLVER USING SUCCESSIVE CONVOLUTION
M. F. Causley, A. J. Christlieb, Y. Guclu
Mathematics, Michigan State University, East Lansing, MI, United States

2P-28 COMPACT, HIGH-POWER TERAHERTZ SOURCE USING CYLINDRICAL GRATINGS
J. Gardelle[1], P. Modin[1], J. T. Donohue[2], H. Bluem[3], J. Jarvis[3], A. M. M. Todd[3], R. H. Jackson[3]
[1]CEA/CESTA, Le Barp, France
[2]Centre d' Etudes Nucleaires de Bordeaux, University of Bordeaux, Gradignan, France
[3]Advanced Energy Systems, Princeton, NJ, United States

2P-29 COMPARISON OF SIMULATION AND EXPERIMENT FOR CONCENTRATIONS OF RADICALS IN A PLASMA TREATED AIR STREAM
P. Stoltz[1], M. Golkowski[2]
[1]TechX Corporation, Boulder, CO, United States
[2]Electrical Engineering, University of Colorado, Denver, Denver, CO, United States

2P-30 THE APPLICATION OF KIUTTUS FORMULATION TO STUDY COAXIAL FLUX COMPRESSION GENERATORS
J. B. Javedani, T. L. Houck, B. R. Poole
Engineering/NSED, Lawrence Livermore National Laboratory, Livermore, CA, United States

2P-31 NEUTRON YIELD DETECTORS CHARACTERIZED WITH MCNP
E. S. McKee, T. Darling
Physics, University of Nevada, Reno, Reno, United States

2P-32 MULTIPACTOR CURRENT MODELLING USING AN AVERAGED VERSION OF FURMAN'S SEY MODEL
S. Rice, J. Verboncoeur
Electrical and Computer Engineering, Michigan State University, East Lansing, MI, United States

2P-33 EXAMINATION OF TWO-STREAM INSTABILITY FOR HIGH POWER BROADBAND RF AMPLIFIERS

P. Mardahl, M. Haworth, M. Lambrecht
Air Force Research Laboratory, Kirtland AFB, United States

2P-34 SIMULATION OF A FACETED MAGNETRON USING DISCRETE MODULATED CURRENT SOURCES
S. A. Fernandez-Gutierrez[1], J. Browning[1], D. Smithe[2], M. -C. Lin[2], J. Watrous[3]
[1]Department of Electrical and Computer Engineering, Boise State University, Boise, ID, United States
[2]Tech-X Corporation, Boulder, CO, United States
[3]TechFlow, Albuquerque, NM, United States

2P-35 DEVELOPMENT OF PIC-FDTD CODE FOR BEAM-WAVE INTERACTION STUDY IN 'PASOTRON'
N. Pareek[1], N. Sarkar[2], M. Ahmad[1], U. N. Pal[1], N. Kumar[1], R. P. Lavaniya[1]
[1]M.W.T., Ceeri pilani, pilani,Rajasthan, India
[2]Physics Department, Bits PILANI, pilani,Rajasthan, India

2P-36 MODELING FAILURES OF THE SNS H- ION SOURCE ANTENNA
S. A. Veitzer, K. R. C. Beckwith, J. Loverich
Tech-X Corporation, Boulder, CO, United States

2P-37 GENERAL-PURPOSE KINETIC GLOBAL MODELING FRAMEWORK FOR MULTI-PHASE CHEMISTRY
G. Parsey, Y. Güçlü, J. Verboncoeur, A. Christlieb
Michigan State University, East Lansing, MI, United States

2P-37a A FLAT PANEL DETECTOR
P. Zhang[1], Y. Tu[1], L. Yang[1], H. Tolner[1], W. Zhang[2]
[1]School of Electronic Science and Engineering,, Southeast University, Nanjing, China
[2]China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

Session 2P: 1.3 Space Plasmas Posters

Poster Session

Tuesday, May 27 14:00-15:30, Exhibit C (lower level)
Session Chair: *John E Foster, University of Michigan*

2P-38 TWO-DIMENSIONAL SIMULATIONS FOR EM WAVE PROPAGATING IN SPACE
G. Wang[1], P. Ee[2], Y. Ren[3]
[1]Department of Physics, Dalian Maritime University, Dalian, Liaoning, China
[2]Department of Electrical Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China
[3]Princeton Plasma Physics Laboratory, Princeton University, Princeton, NJ, United States

2P-39 EFFECTS OF INDUCED SCATTERING OF LOWER-HYBRID WAVES BY PLASMA PARTICLES ON THE LIFETIME OF PLASMA-SHEET TURBULENCE
M. Mithaiwala[1], L. Rudakov[2], G. Ganguli[1], C. Crabtree[1]
[1]Plasma Physics, Naval Research Laboratory, Washington, DC, United States
[2]Icarus Research Inc., Bethesda, MD, 20824

2P-40 INVESTIGATION OF EFFECTS OF GEOMAGNETIC STORMS PRODUCED BY DIFFERENT SOLAR SOURCES ON THE TOTAL ELECTRON CONTENT (TEC)
P. K. Purohit[1], A. A. Mansoori[2], P. A. Khan[3], P. Bhawre[2], S. C. Tripathi[2], A. M. Aslam[2], M. A. Waheed[2], A. K. Gwal[2]
[1]Physics, National Institute of Technical Teachers' Training and Research, Shamla Hills, Bhopal, 462002 India, Bhopal, India
[2]Physics, Barkatullah University, Bhopal, Bhopal, India
[3]Physics, Rajiv Gandhi Technical Univeristy, Bhopal, India

2P-41 EXTENDED ENERGY DEPOSITION SCENARIO IN COLLISIONLESS SOLAR POLAR CORONAL HOLE
M. Bose[1], A. Chakravarty[2], R. Bondyopadhaya[2]
[1]Department of Physics, Jadavpur University, Kolkata, Kolkata, India
[2]Department of Mathematics, Jadavpur University, Kolkata, Kolkata, India

2P-42 SPATIALLY RESOLVED OBSERVATIONS OF IONIZED GAS IN PLANETARY NEBULAE
A. Danehkar[1], Q. A. Parker[1,2]
[1]Department of Physics and Astronomy, Macquarie University, Sydney, NSW 2109, Australia
[2]Australian Astronomical Observatory, Epping, NSW 1710, Australia

Session 2P: 1.4 Partially Ionized Plasmas Posters

Poster Session

Tuesday, May 27 14:00-15:30, Exhibit C (lower level)
Session Chair: *Keith Cartwright, Sandia National Laboratories*

2P-43 ON THE I-V CHARACTERISTICS IN A REACTIVE HIGH POWER IMPULSE MAGNETRON SPUTTERING (HIPIMS)
J. T. Gudmundsson[1], F. Magnus[1,2], T. K. Tryggvason[1], S. Shayestehaminzade[1], O. B. Sveinsson[1], S. Olafsson[1]
[1]Science Institute, University of Iceland, Reykjavik, Iceland
[2]Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden

2P-44 KINETIC SIMULATION OF MODE TRANSITIONS AND HYSTERESIS EFFECTS IN LOW PRESSURE CAPACITIVE DISCHARGES
S. Wilczek[1], J. Trieschmann[1], R. P. Brinkmann[1], T. Mussenbrock[1], A. Derzsi[2], I. Korolov[2], Z. Donko[2], E. Schuengel[3], J. Schulze[3]

[1]Ruhr University Bochum, Bochum, Germany
[2]Wigner Research Center for Physics, Budapest, Hungary
[3]West Virginia University, Morgantown, USA

2P-45 THE INFLUENCE OF THE SECONDARY ELECTRON INDUCED ASYMMETRY ON THE ELECTRICAL ASYMMETRY EFFECT IN CAPACITIVELY COUPLED PLASMAS
J. Schulze[1], E. Schuengel[1], I. Korolov[2], A. Derzsi[2], Z. Donko[2]
[1]Physics, West Virginia University, Morgantown, WV, United States
[2]Solid State Physics and Optics, Hungarian Academy of Sciences, Budapest, Hungary

2P-46 LOW-FREQUENCY WAVE PROPOGATION IN PARTIALLY IONIZED PLASMAS AND A STRONG DENSITY GRADIENT IN THE HOT HELICON EXPERIMENT (HELIX)
S. H. Sears[1], J. Carr Jr.[2], R. W. VanDervort[1], G. Lusk[1], E. E. Scime[1]
[1]Physcis, West Virginia University, Morgantown, WV, United States
[2]Physics, Texas Lutheran University, Seguin, TX, United States

2P-47 ELECTRON ENERGY DISTRIBUTION FUNCTION OF CAPACITIVE COUPLED ELECTRONEGATIVE PLASMA: THE ROLE OF FLOW RATE OF ELECTRONEGATIVE GAS IN AR
Y. Xin
School of physical Science and Technology, Soochow University, Suzhou City, China

2P-48 ***WITHDRAWN*** MEASUREMENT OF EFFECTIVE SHEATH WIDTH AROUND CUTOFF PROBE IN LOW-PRESSURE PLASMAS
S. You[1], D. Kim[2], J. H. Kim[1], W. Y. Oh[2]
[1]vacuum center, kriss, daejeon, South Korea
[2]Mechanical eng, kaist, daejeon, South Korea

Session 2P: 1.5 Dusty & Strongly-Coupled Plasmas Posters

Poster Session

Tuesday, May 27 14:00-15:30, Exhibit C (lower level)
Session Chair: *Keith Cartwright, Sandia National Laboratories*

2P-49 A STUDY ON DUST ION ACOUSTIC WAVES: FROM THEORY TO LABORATORY EXPERIMENT
N. C. Adhikary, H. Bailung
Physical Sciences Division, Institute of Advanced Study in Science and Technology, Guwahati, India

2P-50 MAGNETIC SHEAR DRIVEN E X B INSTABILITY
M. Bose[1], R. Bhattacharyya[1], S. K. Das[2]

[1]Physics, Jadavpur University, , Kolkata-700032, India
[2]Mathematics, Prince Georges Community College, Largo, Maryland 20774, United States

2P-51 ***WITHDRAWN*** EFFECTS OF DOUBLE TEMPERATURE IONS ON CYLINDRICAL AND SPHERICAL DUST-ACOUSTIC SHOCK WAVES IN COMPLEX PLASMAS
K. -E. Hasin[1,2], I. Tasnim[2], M. M. Masud[1], A. A. Mamun[2]
[1]Physics, Bangladesh University of Engineering and Technology (BUET),, Dhaka, Bangladesh
[2]Physics, Jahangirnagar University, Dhaka, Bangladesh

2P-52 EXTERNALLY CONTROLLED CHARGED PARTICLES AND MEASUREMENT THEIR COLLECTIVE RESPONSE
Y. Nishio, O. Sakai
Electronic Science and Engineering, Kyoto University, Kyoto, Japan

2P-53 DUST PARTICLES CHARGE EXPERIMENTAL EVALUATION IN LASER INDUCED HIGH PRESSURE COLLOID PLASMA FLOWS
E. Y. Loktionov, Y. S. Protasov, Y. Y. Protasov
Bauman Moscow State Technical University, Moscow, Russian Federation

2P-54 SCATTERING AND BOUND-STATE TRAJECTORIES WITH EFFECTIVE QUANTUM POTENTIALS
G. Dharuman[1], J. Verboncoeur[1], A. Christlieb[2], M. S. Murillo[3]
[1]Department of Electrical and Computer Engineering, Michigan State University, East Lansing, MI, United States
[2]Department of Mathematics, Michigan State University, East Lansing, MI, United States
[3]Computational Physics and Methods Group, Los Alamos National Laboratory, East Lansing, MI, United States

2P-55 THE EFFECT OF HEAT RELEASE ON RADIAL SUSTENANCE OF DUST PARTICLES IN GLOW DISCHARGE
D. N. Polyakov, V. V. Shumova, L. M. Vasilyak
Joint Institute for High Temperatures RAS, Moscow, Russian Federation

2P-56 FORMATION OF STRUCTURES FROM DUSTY CLUSTERS IN CRYOGENIC PLASMA OF GLOW DISCHARGE
D. N. Polyakov, V. V. Shumova, L. M. Vasilyak
Joint Institute for High Temperatures RAS, Moscow, Russian Federation

2P-57 BREATHING MODE OF DUST CLOUD IN A COGENERATED DUSTY PLASMA
M. Bose[1], S. Sarkar[1], J. K. Atul[1], M. Mondal[1], S. Mukherjee[2]
[1]Associate Professor, Department of Physics, Jadavpur University, Kolkata, Kolkata, India
[2]FCIPT, Institute for Plasma Research, Gandhinagar, 382428, Gandhinagar, India

Session 2P: 3.1 Plasma, Ion, and Electron Sources Posters

Poster Session

Tuesday, May 27 14:00-15:30, Exhibit C (lower level)
Session Chair: *Evgeniya H Lock, Naval Research Laboratory*

2P-58 CHARACTERIZATION OF NON-THERMAL ATMOSPHERIC PRESSURE PLASMA JET IN HELIUM, ARGON AND OXYGEN GAS MIXTURES*
M. Thiyagarajan, C. Nicula, A. Sarani
Plasma Engineering Research Lab (PERL), Texas A&M University - Corpus Christi, Corpus Christi, Texas, United States

2P-59 PIEZOELECTRIC SYSTEM FOR THE GENERATION OF ENERGETIC PARTICLES
B. B. Gall[1], S. D. Kovaleski[1], P. Norgard[1], J. A. VanGordon[1], J. W. Kwon[1], G. E. Dale[2]
[1]Electrical and Computer Engineering, University of Missouri, Columbia, MO, United States
[2]High Power Electrodynamics Group, Los Alamos National Laboratory, Los Alamos, NM, United States

2P-60 AMPLITUDE- AND FREQUENCY-MODULATED PIEZOELECTRIC TRANSFORMER FOR CHARGED PARTICLE BEAM ACCELERATION
B. B. Gall[1], S. D. Kovaleski[1], P. Norgard[1], J. A. VanGordon[1], J. W. Kwon[1], G. E. Dale[2]
[1]Electrical and Computer Engineering, University of Missouri, Columba, MO, United States
[2]High Power Electrodynamics Group, Los Alamos National Laboratory, Los Alamos, NM, United States

2P-61 LOW-RESISTANCE HIGH-CURRENT DISCHARGE INITIATION IN A VACUUM DIODE
A. Zherlitcyn, B. Kovalchuk, N. Pedin
Institute of High Current Electronics, Tomsk, Russian Federation

2P-62 PLASMA-FILLED DIODE POWER INCREASE DUE TO THE GROWTH OF THE CURRENT RISE RATE
A. Zherlitcyn, B. Kovalchuk, N. Pedin
Institute of High Current Electronics, Tomsk, Russian Federation

2P-63 EVALUATION OF RADIATION DOSE PARAMETERS OF ELECTROPHYSICAL FACILITY GAMMA-4
K. V. Strabykin, N. V. Zavyalov, V. S. Gordeev, A. V. Grishin, S. Y. Puchagin, A. L. Mozgovoy, Y. S. Berdnikov, D. O. Mansurov, M. A. Moisejevskikh
RFNC-VNIIEF, Sarov, Nizhny Novgorod region, Russian Federation

2P-64 VAPOR SHIELD MODELS IN ELECTROTHERMAL CAPILLARY DISCHARGES AND COMPARISON WITH EXPERIMENTS
N. M. Almousa, M. A. Bourham
Nuclear Engineering, North Carolina State University, Raleigh, NC, United States

2P-65 CHARACTERIZATION OF CESIUM VAPOR DELIVERY SYSTEM FOR NEGATIVE ION SOURCES
G. Bansal, K. Pandya, J. Soni, A. Gahlaut, M. Bandyopadhyay, A. Chakraborty
Institute for Plasma Research, Gandhinagar, Gujarat, India

2P-66 STUDY ON THE PHYSICAL MECHANISM OF A PLASMA THRUSTER WITH WIDE RANGE OF THRUST
H. Liu, H. Wu, H. Li, X. Li, S. Xie, T. Huang, D. Yu
Harbin institute of Technology, Harbin, China

2P-67 THE ATMOSPHERIC PLASMA OF THE GROUND DURING THE DOPING PROCESS TREND ANALYSIS STUDY ON THE CURRENT PASS
S. Kim, M. S. Yun, T. H. Jo, J. I. Park, H. J. Park, G. Cho, E. Choi, G. -C. Kwon
Department of Electrical and Biological Physics, Seoul, South Korea

2P-68 ***WITHDRAWN*** INDIRECT ONLINE PLASMA CHARACTERIZATION THROUGH ELECTRICAL PARAMETERS FOR INDUCTIVELY COUPLED PLASMA SOURCES
D. Sudhir, M. Bandyopadhyay, A. Chakraborty
ITER-India, Institute for Plasma Research, Gandhinager, India

2P-69 DESIGN OF ELECTROPHYSICAL FACILITY GAMMA-4
K. V. Strabykin, N. V. Zavyalov, V. S. Gordeev, V. T. Punin, A. V. Grishin, S. T. Nazarenko, V. S. Pavlov, V. A. Demanov, T. F. Shihanova, A. V. Kozachek, D. A. Kalashnikov, S. L. Glushkov, S. Y. Puchagin, D. O. Mansurov, R. A. Mayorov, V. L. Mayornikova, B. P. Mironychev
RFNC-VNIIEF, Sarov, Nizhny Novgorod region, Russian Federation

2P-70 REP-RATE OPERATION OF A ~200 KV SEALED-TUBE REFLEX-TRIODE VIRCATOR AT ~200 A/CM2
J. M. Parson, J. -W. B. Bragg, M. Taylor, D. Barnett, P. Kelly, C. F. Lynn, S. Holt, J. C. Dickens, A. A. Neuber, J. J. Mankowski
Electrical and Computer Engineering, Texas Tech University, Lubbock, TX, United States

2P-71 MICROWAVE PLASMA SOURCES BY USING PULSE MODE SSPA
H. S. Lee[1], J. J. Choi[1], G. S. Cho[2], E. H. Choi[2]
[1]Department of wireless Communications Engineering, Kwangwoon University, Seoul, South Korea
[2]Department of Electrophysics, Kwangwoon University, Seoul, South Korea

2P-72 THE DISCHARGE MODE TRANSITION OF VACUUM ARC INDUCED BY A TRIGGER RESISTANCE
C. Lan, L. Zheng, J. Long, Y. Peng, J. Li, Z. Yang, P. Dong
Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, Sichuan, China

2P-73 ROLE OF POSITIVE IONS ON THE SURFACE PRODUCTION OF NEGATIVE IONS IN A FUSION PLASMA REACTOR TYPE NEGATIVE ION SOURCE - INSIGHTS FROM A 3D PARTICLE-IN-CELL MONTE-CARLO COLLISIONS MODEL
G. Fubiani, J. -P. Boeuf
GREPHE, CNRS/LAPLACE University of Toulouse 3, Toulouse, France

2P-74 EFFECT OF A DC PREIONIZATION SOURCE ON ENERGY DEPOSITION IN A PULSED INDUCTIVE PLASMA
R. A. Pahl, J. L. Rovey
Aerospace Engineering, Missouri University of Science and Technology, Rolla, MO, United States

2P-75 A MICROWAVE MICROGAP PLASMA SOURCE FOR USE IN A PLASMA LINE SYSTEM
T. R. Brubaker[1], S. G. Bilen[1], S. D. Knecht[2]
[1]Electrical Engineering, The Pennsylvania State University, State College, PA, United States
[2]Applied Research Laboratory, The Pennsylvania State University, State College, PA, United States

2P-76 PERVEANCE OF A HIGH-IMPEDANCE DIODE WITH BLADE EXPLOSIVE EMISSION CATHODES
G. E. Remnev, M. I. Kaikanov
Tomsk Polytechnic University, Tomsk, Russian Federation

Session 2P: 3.2 Intense Electron and Ion Beams Posters

Poster Session

Tuesday, May 27 14:00-15:30, Exhibit C (lower level)
Session Chair: *Mark Sinclair, Atomic Weapons Establishment*

2P-77 ***WITHDRAWN*** SELF-MAGNETIC PINCH DIODE EXPERIMENTS AT 2.0 MV
J. J. Leckbee, M. D. Johnston, M. L. Kiefer, B. V. Oliver, T. J. Webb
Sandia National Laboratories, Albuquerque, NM, United States

2P-78 SPECTRAL CHARACTERISTICS OF THE SMP DIODE FOR RADIOGRAPHIC APPLICATIONS
T. J. Webb[1], J. J. Leckbee[1], M. L. Kiefer[1], M. D. Johnston[1], D. R. Welch[2]
[1]Sandia National Laboratories, Albuquerque, NM, United States
[2]Voss Scientific, Albuquerque, NM, United States

2P-79 EFFECT OF ROD MATERIAL ON THE IMPEDANCE BEHAVIOR OF SMALL ASPECT RATIO ROD PINCHES

V. J. Harper-Slaboszewicz, J. Leckbee, P. W. Lake, A. L. McCourt
Sandia National Laboratories, Albuquerque, NM, United States

2P-80 REDESIGN OF THE MINI B LARGE AREA DIODE
D. W. Goude
HTC, Atomic Weapons Establishment, Reading, United Kingdom

2P-81 EXPERIMENTAL AND SIMULATION STUDY OF ELECTRIC FIELD SCREENINGS OF CARBON FIBER FIELD EMITTERS
W. Tang[1], D. Shiffler[1], M. LaCour[2], K. Golby[2], T. Knowles[3]
[1]Directed Energy Directorate, Air Force Research Laboratory, Albuquerque, NM, United States
[2]SAIC, Inc., Albuquerque, NM, United States
[3]Energy Science Laboratories, Inc., San Diego, CA, United States

2P-82 SELF-FOCUSED TRANSPORT OF A HIGH NU/GAMMA ELECTRON BEAM FOR MATERIALS SURFACE MODIFICATION
M. C. Myers[1], D. V. Rose[2], F. Hegeler[3], M. F. Wolford[1], J. D. Sethain[1]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]Voss Scientific, Albuquerque, NM, United States
[3]Commonwealth Technology, Inc., Alexandria, VA, United States

2P-83 INVESTIGATION OF RADIALLY CONVERGING ELECTRON BEAMS GENERATED BY GESA IV
W. An[1], A. Weisenburger[1], R. Fetzer[1], V. Engelko[2], A. Shlapakovski[3]
[1]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
[2]Efremov Institute of Electrophysical Apparatus, St. Petersburg, Russia
[3]Physics Department, Technion, Haifa, Israel

2P-84 THERMAL EFFECT OF LOW-ENERGY HIGH-CURRENT PULSED ELECTRON BEAM ON TITANIUM ALLOY STRUCTURE
O. M. Stepanova[1,2], A. V. Panin[3], M. S. Kazachenok[3], O. M. Kretova[3]
[1]National Research Tomsk Polytechnic University, Tomsk, Russia
[2]Saint-Petersburg State University, Saint-Petersburg, Russia
[3]Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia

2P-85 EVALUATION OF ELECTRON BEAM FOR FLYER ACCELERATION BY INTENSE PULSED POWER SUPPLY
F. Tamura, N. Takakura, T. Itoh, T. Kudo, R. Hayashi, K. Takahashi, T. Sasaki, T. Aso, T. Kikuchi, N. Harada, W. Jiang, K. Kashine, A. Tokuchi
Electrical, Electronics and Information Engeering, Nagaoka University of Technology, Nagaoka, Niigata, Japan

2P-86 IMPROVEMENT IN THE PERFORMANCE STATISTICS OF A BLUMLEIN IN DOUBLE PULSE MODE

Y. I. Isakova, A. I. Pushkarev, I. P. Khaylov
High Technology Physics Institute, Tomsk Polytechnic University, Tomsk, Russian Federation

2P-87 SECTIONED VACUUM INSULATOR OF GAMMA-4 FACILITY MODULE
K. V. Strabykin, N. V. Zavyalov, V. S. Gordeev, A. V. Grishin, S. Y. Puchagin, Y. S. Berdnikov, S. T. Nazarenko, V. S. Pavlov, V. A. Demanov
RFNC-VNIIEF, Sarov, Nizhny Novgorod region, Russian Federation

2P-88 THE ABLATION EFFECTS OF NI TARGET IRRADIATED BY INTENSE-PULSED ION BEAM
D. Wu, J. Y. Du, J. Wang, C. D. Bu, Q. C. Ji, W. Wang
College of Physical Science and Technology, Dalian University, Dalian, China

2P-89 OPTIMIZATION OF TWO-DIMENSIONAL GRID ELECTRODE GEOMETRY FOR BALLISTIC-MODE PLASMA IMMERSION ION IMPLANTATION
C. Yi[1], W. Namkung[2], M. Cho[3]
[1]Dept. physics, Pohang University of Science and Technology, Pohang, Gyungbuk, South Korea
[2]Pohang Accelerator Laboratory, Pohang, Gyungbuk, South Korea
[3]Dept. of physics and Division of Advanced Nuclear, Pohang University of Science and Technology, Pohang, Gyungbuk, South Korea

2P-90 ENERGY DISSIPATION ON LONGITUDINAL-TRANSVERSE DIRECTIONS IN ELECTRON BEAM COMPACT SIMULATOR FOR ENERGY DRIVER RESEARCHES IN HEAVY ION INERTIAL FUSION
T. Kikuchi[1], Y. Sakai[2], K. Horioka[2], K. Takahashi[1], T. Sasaki[1], N. Harada[1]
[1]Nagaoka University of Technology, Nagaoka, Niigata, Japan
[2]Tokyo Institute of Technology, Yokohama, Kanagawa, Japan

2P-91 CHARACTERISTICS OF INTENSE PULSED HEAVY ION BEAM BY BIPOLAR PULSE ACCELERATOR
K. Okajima, H. Ohashi, H. Ito
University of Toyama, Toyama, Japan

2P-92 EXPERIMENTAL INVESTIGATION OF STRUCTURE, SPECTRAL AND ENERGY CHARACTERISTICS OF INTENSE MULTIPLE-VELOCITY ELECTRON BEAMS
Y. A. Kalinin, A. V. Starodubov
Department of Physics of nonlinear systems, Saratov State University, Saratov, Russian Federation

2P-93 WAKEFIELD EXCITATION IN DIELECTRIC WAVGUIDES BY A SEQUENCE OF RELATIVISTIC ELECTRON BUNCHES
I. N. Onishchenko, V. A. Kiselev, G. V. Sotnikov
NSC/KIPT, Kharkov, Ukraine

2P-94 GENERATION, TRANSFORMATION AND TRANSPORT OF SUB-MICROSECOND LOW ENERGY HIGH POWER ION BEAMS
A. V. Petrov[1], P. S. Anan'in[1], A. A. Sinebrukhov[1], Y. P. Usov[1], I. F. Isakov[2], V. M. Matvienko[2], M. Anderson[2], P. Feng[2], V. M. Bystriskii[3], J. Yampolsky[3], J. K. Walters[3]
[1]Tomsk Polytechnic University, Tomsk, Russian Federation
[2]University of California, Irvine, CA, USA
[3]TriAlpha Energy Inc., Foothill Ranch, CA, USA

Session 4A: High Energy Density Matter

Tuesday, May 27 15:30-17:30, Thurgood Marshall North
Session Chair: *Alla Safronova, University of Nevada, Reno*

15:30 4A-1 (invited) LABORATORY MODELING OF ROTATION IN ACCRETING ASTROPHYSICAL OBJECTS USING PULSED POWER PLASMA ACCELERATORS
A. S. Chuvatin[1], A. S. Safronova[2], V. L. Kantsyrev[2], A. A. Esaulov[2], I. Shrestha[2], V. V. Shlyaptseva[2], M. E. Weller[2], A. Stafford[2], V. A. Gasilov[3], A. S. Boldarev[3], O. G. Olkhovskaya[3], G. A. Bagdasarov[3], I. V. Gasilova[3], E. Y. Dorofeeva[3], F. Zucchini[4], J. Grunenwald[4], T. Maillard[4]
[1]Laboratoire de Physique des Plasmas, Ecole Polytechnique, 91128 Palaiseau, France
[2]University of Nevada Reno, NV 89557, USA
[3]Keldysh Institute of Applied Mathematics, 125047 Moscow, Russia
[4]CEA, DAM, 46500 Gramat, France

16:00 4A-2 DIAGNOSTICS OF A CONVERGING STRONG SHOCK WAVE GENERATED BY UNDERWATER EXPLOSION OF SPHERICAL WIRE ARRAY
O. Antonov, S. Efimov, V. T. Gurovich, Y. E. Krasik
Physics, Technion- Israel Institute of Technology, Haifa, Israel

16:15 4A-3 THE DYNAMICS OF STRONGLY MAGNETIZED PLASMA JETS ON COBRA
P. A. Gourdain, L. Atoyan, T. Byvank, P. DeGrouchy, J. B. Greenly, D. A. Hammer, B. R. Kusse, W. Potter, S. A. Pikuz, P. C. Schrafel, C. E. Seyler, T. A. Shelkovenko
Laboratory of Plasma Studies, Cornell University, Ithaca, NY, United States

16:30 4A-4 EMISSION SPECTRA OF WARM DENSE MATTER PLASMAS
G. Miloshevsky, A. Hassanein
Purdue University, West Lafayette, United States

16:45 4A-5 X-RAY SPECTROSCOPY OF HIGH-Z ELEMENTS ON NIKE
Y. Aglitskiy[1], J. Weaver[2], M. Karasik[2], V. Serlin[2], S. Obenschain[2], Y. Ralchenko[3]
[1]Leidos @ Naval Research Laboratory, Reston, VA, United States
[2]Plasma Physics Division, Naval Research Laboratory, Washington, DC, Unoted States
[3]National Institute of Standards and Technology, Gaithersberg, MD, United States

17:00 4A-6 ANALYSIS AND COMPARISON OF X-RAY IMAGE AND X-RAY BURST FEATURES OF HIGH INTENSITY LASER BEAM JETS INTERACTION EXPERIMENTS ON THE LEOPARD LASER AT UNR
K. A. Schultz, V. L. Kantsyrev, A. S. Safronova, J. J. Moschella, V. V. Shlyaptseva, M. E. Weller, E. E. Petkov, I. K. Shrestha, A. Stafford, M. C. Cooper
University of Nevada, Reno, NV, United States

17:15 4A-7 COMPUTATIONAL STUDY OF LASER-ACCELERATED PROTON BEAM TRANSPORT IN SOLID DENSITY MATTERS
J. Kim[1], B. Qiao[1], C. McGuffey[1], F. Beg[1], M. Wei[2], M. Foord[3]
[1]University of California, San Diego, La Jolla, CA, United States
[2]General Atomics, San Diego, CA, United States
[3]Lawrence Livermore National Laboratory, Livermore, CA, United States

Session 4B: FIR, Optical and X-ray Diagnostics

Tuesday, May 27 15:30-17:30, Thurgood Marshall South
Session Chair: *Simon Bott-Suzuki, U. C. San Diego*

15:30 4B-1 (invited) MEASUREMENTS OF ELECTRON DENSITY AND ELECTRIC FIELD IN PLASMA PRODUCED IN NANOSECOND DISCHARGE IN PRESSURIZED GASES
S. Yatom[1], E. Stambulchik[2], S. Tskhai[3], Y. E. Krasik[1]
[1]Department of Physics, Technion- Israel Institute of Technology, Haifa, Israel
[2]Faculty of Physics, Weizmann Institute of Science, Rehovot, Israel
[3]Lebedev Physics Institute, Russian Academy of Sciences, Moscow, Russia

16:00 4B-2 TALBOT-LAU MOIRE X-RAY DIAGNOSTIC FOR HIGH ENERGY DENSITY PLASMAS
M. P. Valdivia, D. Stutman, M. Finkenthal
Physics and Astronomy, The Johns Hopkins University, Baltimore, MD, United States

16:15 4B-3 CHARACTERIZATION OF DYNAMIC AND STRUCTURED PLASMA USING LASER-COLLISION INDUCED FLUORESCENCE
E. V. Barnat[1], B. R. Weatherford[1], V. I. Kolobov[2], A. A. Hubble[3], J. E. Foster[3]
[1]Sandia National Laboratories, Albuquerque, New Mexico, United States
[2]CFD Research Corporation, Huntsville, Alabama, United States
[3]University of Michigan, Ann Arbor, Michigan, United States

16:30 4B-4 CHARACTERIZING THE PHOTON SPECTRUM GENERATED IN THE DARHT AXIS-I DIODE
J. E. Coleman, D. C. Moir, C. A. Ekdahl, J. B. Johnson, B. T. McCuistain, M. T. Crawford
Los Alamos National Laboratory, Los Alamos, NM, United States

16:45 4B-5 HARD X-RAY SPECTRAL ENERGY DISTRIBUTIONS FROM PULSED POWER GENERATORS MEASURED BY TRANSMISSION CRYSTAL SPECTROMETERS
J. F. Seely[1], U. Feldman[1], B. Weber[2], J. Schumer[2]
[1]Artep Inc., Ellicott City, MD, United States
[2]Naval Research Laboratory, Washington, DC, United States

17:00 4B-6 WARM AND HARD X-RAY DIAGNOSTICS FOR THE Z FACILITY*
C. A. Coverdale, L. A. McPherson, K. S. Blesener, G. A. Rochau, M. Kernaghan, V. Harper-Slaboszewicz, T. Flanagan, S. Hansen, G. Dunham, D. J. Ampleford, B. Jones, M. E. Cuneo
Sandia National Labs, Albuquerque, NM, United States

17:15 4B-7 STUDY OF 1 MA WIRE ARRAY Z PINCHES USING X-RAY RADIOGRAPHY AND UV LASER DIAGNOSTICS
A. A. Anderson, V. V. Ivanov, A. L. Astanovitskiy, P. Wiewior, O. Chalyy
Department of Physics, University of Nevada Reno, Reno, NV, United States

Session 4C: Dusty & Strongly-Coupled Plasmas

Tuesday, May 27 15:30-17:30, Thurgood Marshall East
Session Chair: *Michael Murillo, Los Alamos National Laboratory*

15:30 4C-1 MOBILITY IN A STRONGLY COUPLED DUSTY PLASMA
J. Goree, B. Liu
Physics and Astronomy, University of Iowa, Iowa City, Iowa, United States

15:45 4C-2 EFFECTIVE QUANTUM POTENTIALS FOR MOLECULAR DYNAMICS SIMULATION OF NON-IDEAL PLASMAS
G. Dharuman[1], J. Verboncoeur[1], A. Christlieb[2], M. S. Murillo[3]
[1]Department of Electrical and Computer Engineering, Michigan State University, East Lansing, MI, United States
[2]Department of Mathematics, Michigan State University, East Lansing, MI, United States
[3]Computational Physics and Methods Group, Los Alamos National Laboratory, Los Alamos, NM, United States

16:00 4C-3 MOLECULAR DYNAMICS INVESTIGATIONS OF THE ABLATOR/FUEL INTERFACE DURING EARLY STAGES OF INERTIAL CONFINEMENT FUSION
L. G. Stanton[1], M. S. Murillo[2], J. N. Glosli[1]
[1]Lawrence Livermore National Laboratory, Livermore, CA, United States
[2]Los Alamos National Laboratory, Los Alamos, NM, United States

16:15 4C-4 EXPERIMENTAL MEASUREMENT OF VELOCITY CORRELATIONS FOR TWO MICROPARTICLES WITH ION WAKES
A. K. Mukhopadhyay, J. Goree
Physics & Astronomy, University of Iowa, Iowa City, IA, United States

16:30 4C-5 MICROPARTICLE INJECTION EFFECTS ON MICROWAVE TRANSMISSION THROUGH AN OVERLY DENSE PLASMA LAYER
E. D. Gillman, B. Amatucci
U.S. Naval Research Laboratory, Washington, DC, United States

16:45 ***WITHDRAWN*** 4C-6 TIME DEPENDENT NONPLANAR DIA SHOCK WAVES IN MULTI-COMPONENT DUSTY PLASMAS WITH DISTINCT TEMPERATURE SUPERTHERMAL ELECTRONS
M. M. Masud
Department of Physics, Bangladesh University of Engineering & Technology (BUET), Dhaka, Bangladesh

17:00 4C-7 MATCHING BETWEEN AIRFLOW AND ELECTRIC FIELD DISTRIBUTION IN ELECTROSTATIC PRECIPITATORS
Z. Kexin, Z. Chaohai, T. Jingfeng
school of electrical engineering and automation, Harbin Institute of Technology, Heilongjiang, China

Session 4D: Laser Produced Plasmas and Fusion Concepts (combined)

Tuesday, May 27 15:30-17:30, Thurgood Marshall West
Session Chair: *Zulfikar Najmudin, Imperial College London*

15:30 4D-1 MODELING OF NON-LTE ATOMIC PHYSICS PROCESSES DURING THE INTERACTION OF THIN FOILS WITH SHORT PULSE LASER
G. M. Petrov, J. Davis
Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States

15:45 4D-2 TIME-RESOLVED SPECTROSCOPY AND MODELING OF UNDERWATER LASER IONIZATION AND FILAMENTATION FOR ELECTRICAL DISCHARGE GUIDING
T. G. Jones, M. H. Helle, D. Kaganovich, J. Penano, T. Ting
Plasma Physics Div., U.S. Naval Research Laboratory, Washington, DC, United States

16:00 4D-3 PLASMA KINETICS IN ULTRASHORT PULSE LASER FILAMENT: TIME RESOLVED SPECTRAL MEASUREMENT
A. Schmitt-Sody[1], A. Lucero[2], W. White[1], D. Shiffler[1]
[1]Air Force Research Laboratory, Kirtland AFB, NM, United States
[2]Boeing, Kirtland AFB, NM, United States

16:15 4D-4 BETATRON X-RAY SPECTRA RECORDED BY A TRANSMISSION CRYSTAL SPECTROMETER IN THE 10 KEV TO 70 KEV PHOTON ENERGY RANGE
J. F. Seely[1], U. Feldman[1], L. Hudson[2], J. Glover[2], A. Henins[2], D. Neely[3], D. Rusby[3], Z. Najmudin[4], N. Lopes[4], J. Woods[4]
[1]Artep Inc., Ellicott City, United States
[2]National Institute of Standards and Technology, Gaithersburg, United States

[3]Rutherford Appleton Laboratory, Chilton, UK
[4]Imperial College London, London, UK

16:30 4D-5 COMPREHENSIVE 3D SIMULATION OF LASER/TARGET INTERACTIONS FOR VARIOUS APPLICATIONS
T. Sizyuk, A. Hassanein
NE, Purdue University, West Lafayette,IN, United States

16:45 4D-6 USING THE STRONG MAGNETIC FIELD TO PROMOTE THE IGNITION PROCESS IN MAGNETO-INERTIAL FUSION
X. -J. Yang, S. -C. Wang
1 Department, Institute of Applied Physics & Computational Mathematics, Beijing, China

17:00 4D-7 SIMULATION OF SADDLE COIL AND HELICAL WINDING MAGNETIC FIELD PERTURBATION IN THE IR-T1 TOKAMAK
Y. Adltalab, P. Khorshid, E. Abizi Moghaddam
Dept of Physics, Mashhad Branch, Islamic Azad University, Mashhad, Iran

17:15 4D-8 VLASOV-FOKKER-PLANCK MODELING OF PLASMA NEAR HOHLRAUM WALLS HEATED WITH NANOSECOND LASER PULSES CALCULATED USING THE RAY TRACING EQUATIONS
A. S. Joglekar, A. G. R. Thomas
Dept. of Nuclear Eng. & Rad. Sciences, University of Michigan, Ann Arbor, MI, United States

Session 4E: Generators and Networks, Compact and Rep-Rated Pulsed Power

Tuesday, May 27 15:30-17:30, Hoover
Session Chair: *Juergen Kolb, INP Greifswald*

15:30 4E-1 (invited) DEVELOPMENT OF AN AIR INSULATED LTD PULSER FOR RADIOGRAPHY APPLICATION
F. Bayol[1], C. Gaston[1], P. Mouly[1], V. Zacharewicz[1], K. Van de Wiel[1], M. Sinclair[2], S. Briscall[2], S. Hill[2], A. Jones[2], L. Rickard[2], M. Weeks[2]
[1]ITHPP, Thegra, France
[2]AWE, Reading, United Kingdom

16:00 4E-2 INDUCTIVE STORAGE MACHINES: THEORETICAL PREDICTIONS AND EXPERIMENTAL REALITY
B. M. Novac[1], A. Neuber[2], J. H. Goforth[3]
[1]School of Electronics, Electrical and Systems Engineering, Loughborough University, Loughborough, United Kingdom
[2]Department of Electrical & Computer Engineering, Texas Tech University, Lubbock, TX, USA
[3]Los Alamos National Laboratory, Los Alamos, NM, USA

16:15 4E-3 CHARACTERIZATION AND ANALYSIS OF A PULSE FORMING NETWORK BASED 11 STAGE MARX SYSTEM FOR A HIGH POWER MICROWAVE, PLASMA AND BEAM PHYSICS TEST STAND
A. Kuskov, S. Horne, E. Schamiloglu, J. Lehr, S. Portillo
University of New Mexico, Albuqueque, NM, United States

16:30 4E-4 SOLID-STATE LTD AND ITS APPLICATION TO GAS DISCHARGE
W. Jiang, T. Sugai, H. Sugiyama, A. Tokuchi
Extreme Energy-Density Research Institute, Nagaoka University of Technology, Nagaoka, Japan

16:45 4E-5 ***MOVED TO 1P-89a***

17:00 4E-6 COMPACT HIGH-VOLTAGE, LOW-IMPEDANCE NANOSECOND PULSE GENERATORS FOR BIOMEDICAL APPLICATIONS
Y. Liang[1], K. Zocher[2], F. Koch[2], J. Zhuang[2], J. Zhang[1], J. Fang[1], J. Kolb[2]
[1]Bio-Med-X Center, Peking University, Beijing, China
[2]Leibniz Institute for Plasma Science and Technology, Greifswald, Germany

17:15 4E-7 NANOSECOND PULSED ELECTRIC FIELDS INDUCE INTRACELLULAR OXIDATION
S. Wu[1], B. Su[2], J. Zhang[2], J. Fang[2]
[1]College of Engineering, Peking University, Beijing, China
[2]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China

Session 4F: Robert Barker Memorial Session

Tuesday, May 27 15:30-17:30, Coolidge
Session Chairs: *John W Luginsland, Air Force Office of Scientific Research*
Brendan B. Godfrey, University of Maryland

15:30 4F-1 (invited) ROBERT BARKER MEMORIAL SESSION
J. Luginsland, B. Godfrey
AFOSR/RTB, Air Force Office of Scientific Research, Arlington, VA, United States

16:00 4F-2 (invited) PLASMA MEDICINE: THE ADVENT OF THE PLASMA KILL - PLASMA HEAL PARADIGM
M. Laroussi
ECE Deaprtment, Old Dominion University, Norfolk, United States

16:20 4F-3 (invited) ATMOSPHERIC-PRESSURE PLASMA AND PLASMA RAMPARTS
K. Becker[1], E. Kunhardt[2]
[1]Applied Physics and Mechanical and Aerosopace Engineering, NYU Polytechnic School of Engineering, Brooklyn, NY, United States
[2]Applied Physics, NYU Polytechnic School of Engineering, Brooklyn, NY, United States

16:50 4F-4 (invited) HIGH POWER MICROWAVE SCIENCE
E. Schamiloglu
Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

17:20 4F-5 (invited) SELECTED PULSED POWER EFFORTS IN US ACADEMIA OVER THE PAST TWO DECADES
A. A. Neuber, J. C. Dickens, J. J. Mankowski, L. Hatfield, H. Krompholz, M. Kristiansen
Center for Pulsed Power & Power Electronics, Texas Tech University, Lubbock, TX, United States

17:40 4F-6 (invited) A SHORT RETROSPECTIVE ON THE IMPACT OF DR ROBERT BARKER ON PLASMA SCIENCE THE MAGIC USERS GROUP AND PLASMA SIMULATION
L. D. Ludeking, A. J. Woods
Alliant Techsystem, LLC, Newington, VA, United States

Session PL5: Plenary5: PSAC Award

Wednesday, May 28 08:00-09:00, Thurgood Marshall East-South
Session Chair: *Bryan V. Oliver, Sandia National Laboratories*

8:00 PL5-1 (invited) DENSITY FUNCTIONAL METHODS FOR HIGH ENERGY DENSITY PLASMAS AND WARM DENSE MATTER
M. P. Desjarlais
Sandia National Laboratories, Albuquerque, NM, United States

Session 5A: Partially Ionized Plasmas

Wednesday, May 28 9:30 - 12:00, Thurgood Marshall North
Session Chair: *Nathaniel Lockwood*

9:30 5A-1 A PARTICLE-IN-CELL/MONTE CARLO SIMULATION OF A CAPACITIVELY COUPLED CHLORINE DISCHARGE
S. Huang[1], J. T. Gudmundsson[1,2]
[1]University of Michigan - Shanghai Jiao Tong University Joint Institute, Shanghai Jiao Tong University, Shanghai, China
[2]Science Institute, University of Iceland, Reykjavik, Iceland

9:45 5A-2 ELECTRON HEATING AND CONTROL OF ION PROPERTIES IN CAPACITIVE DISCHARGES DRIVEN BY CUSTOMIZED VOLTAGE WAVEFORMS
J. Schulze[1], E. Schuengel[1], A. Derzsi[2], I. Korolov[2], Z. Donko[2]
[1]Physics, West Virginia University, Morgantown, WV, United States
[2]Solid State Physics and Optics, Hungarian Academy of Sciences, Budapest, Hungary

10:00 5A-3 (invited) Nonlocal Kinetic Theory Of Plasma Discharges
I. D. Kaganovich[1], A. V. Khrabrov[1], Y. Raitses[1], D. Sydorenko[2], V. I. Demidov[3], I. Schweigert[4], A. S. Mustafaev[5]
[1]PPPL, Princeton, NJ, United States
[2]University of Alberta, Edmonton, Alberta, Canada
[3]West Virginia University, Morgantown, WV, United States
[4]Institute of Theoretical and Applied Mechanics, Novosibirsk, Russia
[5]National Mineral Resources University, Saint-Petersburg, Russia

10:30 5A-4 GLOBAL MODELING OF HIPIMS SYSTEMS: TRANSITION FROM HOMOGENEOUS TO SELF ORGANIZED DISCHARGES
S. Gallian[1], J. Trieschmann[1], T. Mussenbrock[1], W. N. G. Hitchon[2], R. P. Brinkmann[1]
[1]Theoretical Electrical Engineering, Ruhr University Bochum, Bochum, Germany
[2]Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, USA

10:45 5A-5 2D PIC-DSMC SIMULATION OF MICROSCALE BREAKDOWN AFTER VACUUM SEAL FAILURE
C. H. Moore, M. M. Hopkins, J. J. Boerner, S. G. Moore, P. S. Crozier, L. C. Musson
Sandia National Labs, Albuquerque, NM, United States

11:00 5A-6 NOBLE GAS META-STABLE STATE EXCITATION USING CARBON NANO-TUBE FIBER CATHODES
N. P. Lockwood[1], G. A. Pitz[1], S. B. Fairchild[1], M. A. Lange[2]
[1]Air Force Research Laboratory, Kirtland AFB, NM, United States
[2]TechFlow Scientific, Albuquerque, NM, United States

11:15 5A-7 CONTROL OF PLASMA UNIFORMITY WITH DUAL PHASE VERY HIGH FREQUENCY CAPACITIVELY COUPLED PLSAMAS
J. S. Kim, H. -J. Lee, H. J. Lee
Department of Electrical Engineering, Pusan National University, Busan, South Korea

11:30 5A-8 COMPARISON OF ION VELOCITY SPECTRA OF PLASMA BUNCHES EJECTING FROM THE CHANNELS OF NANOSECOND BREAKDOWN AND VACUUM SURFACE FLASHOVER IN KCL SINGLE CRYSTALS
I. F. Punanov[1], R. V. Emlin[1], P. A. Morozov[1], S. O. Cholakh[2]
[1]Dielectrics Physics Group, Institute of Electrophysics of the Ural Division of the Russian Academy of Sciences, Yekaterinburg, Russian Federation
[2]Institute of Physics and Technology, Ural Federal University, Yekaterinburg, Russian Federation

11:45 5A-9 CONTINUUM RADIATION AS AN ELECTRON DENSITY DIAGNOSTIC IN MICROWAVE-GENERATED MICROPLASMAS
A. R. Hoskinson
Electrical & Computer Engineering, Tufts University, Medford, MA, United States

Session 5B: Radiation Physics, X-ray lasers

Wednesday, May 28 9:30 - 12:00, Thurgood Marshall South
Session Chair: *Arati Dasgupta, Naval Research Laboratory*

9:30 5B-1 (invited) THE EFFECT OF ADDING A CENTER JET TO ARGON GAS PUFF IMPLOSIONS AT THE Z FACILITY
A. J. Harvey-Thompson[1], B. Jones[1], C. A. Jennings[1], D. J. Ampleford[1], D. C. Lamppa[1], S. B. Hansen[1], C. A. Coverdale[1], M. R. Gomez[1], G. A. Rochau[1], D. W. Johnson[1], M. C. Jones[1], N. W. Moore[1], T. Flanagan[1], J. Reneker[1], M. R. Jober[1], L. Lucero[1], M. E. Cuneo[1], J. W. Thornhill[2], J. L. Giuliani[2], A. Dasgupta[2]
[1]Sandia National Laboratories, Albuquerque, NM, United States
[2]Naval Research Laboratory, Washington, DC, United States

10:00 5B-2 X-RAY GENERATION FROM GAS-PUFF JETS IRRADIATED BY UNR LEOPARD LASER
V. L. Kantsyrev, A. S. Safronova, I. Shrestha, J. J. Moschella, V. V. Shlyaptseva, K. A. Schultz, W. Cline, P. Wiewior, M. E. Weller, E. E. Petkov, A. Stafford, M. C. Cooper, O. Chalyy, V. Nalajala
Department of Physics, University of Nevada, Reno, Reno,NV, United States

10:15 5B-3 SCALING AND ENHANCEMENT OF NON-THERMAL LINE EMISSION ON Z TO hν ~ 22 KEV*
D. J. Ampleford[1], S. B. Hansen[1], C. A. Jennings[1], B. Jones[1], T. C. Webb[1], V. Harper-Slaboszewicz[1], M. E. Cuneo[1], G. A. Rochau[1], C. A. Coverdale[1], A. J. Harvey-Thompon[1], D. B. Sinars[1], J. K. Moore[1], T. M. Flanagan[1], N. Ouart[2], A. Dasgupta[2], J. Giuliani[2], A. L. Velikovich[2], J. P. Apruzese[2], J. P. Chittenden[3], N. Niasse[3], B. Appelbe[3]
[1]Sandia National Laboratories, Albuquerque, NM, United States
[2]Naval Research Laboratory, Washington, DC, United States
[3]Imperial College London, London, United Kingdom

10:30 5B-4 CHARACTERISTICS OF THE ELECTRON BEAM DRIVEN K-SHELL EMISSION FROM BRASS WIRE ARRAY IMPLOSIONS ON THE ZEBRA GENERATOR
N. Ouart[1], J. Giuliani[1], A. Dasgupta[1], G. Petrov[1], A. Safronova[2], V. Kantsyrev[2], A. Esaulov[2], I. Shrestha[2], M. Weller[2], V. Shlyaptseva[2], K. Schultz[2], A. Stafford[2], M. Cooper[2], D. Ampleford[3], S. Hansen[3], J. Apruzese[4], R. Clark[5]
[1]Naval Research Laboratory, Washington DC, United States
[2]University of Nevada, Reno, Reno, NV, United States
[3]Sandia National Laboratories, Albuquerque, NM, United States
[4]Engility Corp., Chantilly, VA, United States
[5]Berkeley Research Associates, Beltsville, MD, United States

10:45 5B-5 ALUMINUM K-ALPHA EMISSION FROM AN INTENSE UHF LASER-GENERATED PLASMA
T. B. Petrova[1], J. Davis[1], G. M. Petrov[1], N. Ouart[1], J. L. Giuliani[1], A. L. Velikovich[1], K. G. Whitney[2], A. Maksimchuk[3], A. G. R. Thomas[3], K. Krushelnik[3]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States

[2]Berkeley Research Scholars, Beltsville, MD, United States
[3]Center for Ultrafast Optical Science, University of Michigan, Ann Arbor, MI, United States

11:00 5B-6 RADIATIVE PRECURSORS DRIVEN BY CONVERGING BLAST WAVES IN NOBLE GASES
G. C. Burdiak[1], S. V. Lebedev[1], S. Bland[1], F. Suzuki-Vidal[1], G. F. Swadling[1], L. Suttle[1], M. Bennet[1], R. J. R. Williams[2], K. Blesener[3]
[1]Plasma Physics Group, Imperial College London, London, United Kingdom
[2]Atomic Weapons Establishment, Aldermaston, United Kingdom
[3]Laboratory of Plasma Studies, Cornell University, New York, USA

11:15 5B-7 ANALYSIS OF K-SHELL HED PLASMAS IN X-PINCH AND LASER EXPERIMENTS AT UNR
A. Stafford[1], A. S. Safronova[1], V. L. Kantsyrev[1], M. E. Weller[1], V. V. Shlyaptseva[1], P. Wiewior[1], I. Shrestha[1], G. C. Osborne[1], S. F. Keim[1], A. S. Chuvatin[2]
[1]University of Nevada, Reno, Reno, NV, United States
[2]Laboratoire de Physique des Plasmas, Ecole Polytechnique, Palaiseau, France

11:30 5B-8 GENERATION AND CONTROL OF STRONG HALF CYCLE THZ RADIAITON WITH ULTRASHORT LASER
W. J. Ding, W. S. Koh
A*STAR, Institute of High Performance Computing, Singapore, Singapore

Session 5C: High Pressure and Thermal Plasma Processing

Wednesday, May 28 9:30 - 12:00, Thurgood Marshall East
Session Chair: *Tim Grotjohn, Michigan State University*

9:30 5C-1 SIMPLE MODEL FOR ATMOSPHERIC MICROPLASMA SHEATH
K. G. Xu[1], L. T. Williams[2]
[1]Mechanical & Aerospace Engineering, University of Alabama in Huntsville, Huntsville, AL, United States
[2]Self, Alexandria, VA, United States

9:45 5C-2 DYNAMICS OF REPETITIVE PLASMA BULLETS IN He PLASMA JETS INTO AIR
N. Y. Babaeva[1], S. Norberg[2], M. J. Kushner[1]
[1]Electrical Engineeirng and Computer Science Department, University of Michigan, Ann Arbor, MI, United States
[2]Mechanical Engineering Department, University of Michigan, Ann Arbor, MI, United Sates

10:00 5C-3 EXPERIMENTAL METHODS ENABLING THE EFFICIENT CONTROL OF HIGH PRESSURE MICROWAVE DISCHARGES
J. Asmussen[1], S. Nad[1,2]
[1]Electrical and Computer Engineering, Michigan State University, East Lansing Michigan,

United States
[2]Physics and Astronomy, Michigan State University, East Lansing Michigan, United States

10:15 5C-4 CONTROL OF SPECTRUM FOR IMPROVEMENT OF COLOR RENDERING AFFECTED BY METAL VAPOR MIXED WITH WALL-STABLIZED ARGON ARC
T. Iwao, E. Mitsuyasu, S. Yamamoto, M. Yumoto
Tokyo City University, Tokyo, Japan

10:30 5C-5 REATTACHMENT MODEL OF THE ANODE SPOT OF A NON-TRANSFERRED DC ARC
V. Nemchinsky
Keiser University, Fort Lauderdale, FL, United States

10:45 5C-6 PENETRATION DEPTH IN WELDING POOL AFFECTED BY CURRENT INCREMENT RATIO IN PULSED ARC
S. Yamamoto, T. Momii, T. Iwao, M. Yumoto
Tokyo City University, Tokyo, Japan

11:00 5C-7 MODES OF OSCILLATION IN DC DRIVEN HIGH PRESSURE MICROPLASMA DISCHARGE
R. Mahamud, M. Mobil, T. Farouk
Mechanical Engineering, University of South Carolina, Columbia, SC, United States

Session 5D: Plasma Thrusters II

Wednesday, May 28 9:30 - 12:00, Thurgood Marshall West
Session Chairs: *John E Foster, University of Michigan*
Konstantin Matyash, Greifswald University

9:30 5D-1 (invited) OVERVIEW OF VARIOUS MECHANISMS LEADING TO OSCILLATIONS AND INSTABILITIES IN HALL PLASMAS: APPLICATIONS TO HALL THRUSTERS
A. Smolyakov
University of Saskatchewan, Saskatoon, Saskatoon, Canada

10:00 5D-2 (invited) MODE TRANSITION CHARACTERISTICS AND OSCILLATION FREQUENCIES IN HALL EFFECT THRUSTERS
M. J. Sekerak, B. W. Longmier, A. D. Gallimore
Aerospace Engineering, University of Michigan, Ann Arbor, MI, United States

10:30 5D-3 DISCHARGE OSCILLATION MODE TRANSITION OF A HALL THRUSTER
K. Hara, I. D. Boyd, M. J. Sekerak, A. D. Gallimore
Department of Aerospace Engineering, University of Michigan, Ann Arbor, United States

10:45 5D-4 DRIVING LOW FREQUENCY AZIMUTHAL OSCILLATIONS IN A HALL THRUSTER
S. Keller, Y. Raitses, A. Diallo, Y. Shi
Princeton Plasma Physics Laboratory, Princeton, NJ, United States

11:00 5D-5 3D PIC simulation of the rotating spoke in a Hall thruster
K. Matyash, R. Schneider, O. Kalentev
Greifswald University, Greifswald, 17487, Germany

11:15 5D-6 TIME-RESOLVED LASER-INDUCED FLUORESCENCE MEASUREMENTS IN THE PLUME OF A 6 KW HALL THRUSTER WITH UNPERTURBED OSCILLATIONS
C. J. Durot, A. D. Gallimore
University of Michigan, Ann Arbor, United States

11:30 5D-7 THEORETICAL MODEL OF SUPPRESSION OF ELECTRON INSTABILITY IN HALL THRUSTERS BY BOUNDARY FEEDBACK SYSTEM
A. Kapulkin[1], E. Behar[2]
[1]Asher Space Research Institute of Technion-Israel Institute of Tecnology, Haifa, Israel
[2]Asher Space Research Institute of Technion-Israel Institute of Technology, Haifa, Israel

11:45 5D-8 UNDERSTANDING THE DISCHARGE CURRENT DISTRIBUTION AND UPPER OPERATIONAL LIMIT OF A HIGH POWER, GRIDDED ION THRUSTER
J. E. Foster[1], E. Viges[2], C. Davis[2], N. Arthur[1]
[1]Nuclear Engineering, University of Michigan, Ann Arbor, Mi, United States
[2]Electrodynamics Applications Inc., Ann Abor, Mi, Unied States

Session 5E: Intense Electron and Ion Beams I

Wednesday, May 28 9:30 - 12:00, Hoover
Session Chair: *Aled Jones, Atomic Weapons Establishment*

9:30 5E-1 POWER POSITRON BEAMS AS A NEW BRANCH OF BEAMING
V. V. Gorev
Kurchatov Institute, Moscow, Russian Federation

9:45 5E-2 BREAKDOWN CHARACTERISTICS OF PSEUDOSPARK UNDER NANOSECOND PULSED VOLTAGES
Z. Jia
Xi'an Jiaotong University, Xi'an, Shaanxi, China

10:00 5E-3 (invited) INVESTIGATION OF THE ANGULAR SCATTERING MODEL ON THE ELECTRON RUNAWAY CONDITION
S. B. Swanekamp[1], A. S. Richardson[1], J. Angus[1], K. L. Cartwright[2], T. D. Pointon[2], B. V. Oliver[2], D. Mosher[3]

[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]Sandia National Laboratories, Albuquerque, NM, United States
[3]Engility Corp, Chantilly, VA, United States

10:30 5E-4 DESIGN OF ELECTRON GUN AND NOVEL PPM FOCUSING SYSTEM FOR W-BAND SHEET BEAM TWT
P. C. Panda[1,2], V. Srivastava[1], A. Vohra[2]
[1]Microwave Tubes Division, CSIR-Central Electronics Engineering Research Institute, Pilani, Rajasthan, Pilani, Rajasthan, India
[2]Department of Electronic Science, Kurukshetra University, Kurukshetra, Haryana, India

10:45 5E-5 POWER OF MICROWAVE RADIATION OF THE RELATIVISTIC ELECTRON BEAM WITH VIRTUAL CATHODE IN THE EXTERNAL MAGNETIC FIELD
S. A. Kurkin[1], A. E. Hramov[2], A. A. Koronovskii[1]
[1]Faculty of Nonlinear Processes, Saratov State University, Saratov, Russian Federation
[2]Saratov State Technical University, Saratov, Russian Federation

11:00 5E-6 EQUILIBRIUM OF HIGH-CURRENT ELECTRON BEAM IN HYBRID COAXIAL MAGNETOSTATIC UNDULATOR
T. Yatsenko[1], K. Ilyenko[2]
[1]Department of Vacuum Electronics, Institute for Radiophysics and Electronics, NAS of Ukraine, Kharkiv, Ukraine
[2]Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

11:15 5E-7 MIXING IN PHASE--SPACE DUE TO THE TWO-STREAM INSTABILITY OF ION AND ELECTRON BEAMS PROPAGATING IN BACKGROUND PLASMA
I. D. Kaganovich[1], D. Sydorenko[2], E. Tokluoglu[1], E. A. Startsev[1]
[1]Princeton Plasma Physics Laboratory, Princeton, NJ, United States
[2]University of Alberta, Edmonton, Alberta, Canada

11:30 5E-8 EMITTANCE GROWTH IN LINEAR INDUCTION ACCELERATORS
C. Ekdahl, M. Schulze
Los Alamos National laboratory, Los Alamos, NM, United States

11:45 5E-9 ADVANCED GAS CHEMISTRY MODEL FOR GASSES DISTURBED BY AN INTENSE ELECTRON BEAM
J. R. Angus[1], S. A. Richardson[1], J. W. Schumer[1], S. B. Swanekamp[1], D. Mosher[2], P. F. Ottinger[2]
[1]Plasma Physics, Naval Research Laboratory, Washington, DC, United States
[2]Engility Corportation, Chantilly, VA, United States

Session 5F: Codes & Modeling I

Wednesday, May 28 9:30 - 12:00, Coolidge
Session Chair: *John J Petillo, Leidos*

9:30 5F-1 NONUNFIROM SPACE CHARGE LIMITED CURRENT FROM A PROTRUSIVE CATHODE
Y. -B. Zhu, L. K. R. Ang
Engineering Product Developement, Singapore University of Technology and Design, Singapore, Singapore

9:45 5F-2 MODELING HIGH AVERAGE CURRENT AND HIGH BUNCH CHARGE BEAMS IN MICHELLE-EBEAM
S. Ovtchinnikov[1], J. Petillo[1], B. Koltenbah[2]
[1]Leidos Corporation, Billerica, MA, United States
[2]The Boeing Company, Seattle, WA, United States

10:00 5F-3 NONLINEAR HEAT TRANSFER IN BEAM OPTICS ANALYZER
T. Bui, R. L. Ives, M. Read, D. Marsden, P. Ferguson
Calabazas Creek Research, Inc., Mountain View, CA, United States

10:15 5F-4 MODELING FIELD EMISSION ARRAY TIPS USING THE MICHELLE GUN CODE ALGORITHM
J. J. Petillo[1], D. N. Panagos[1], K. L. Jensen[2]
[1]Center for Electromagnetics, Leidos Corp, Billerica, MA, United States
[2]Electromagnetics Technology Branch, Naval Research Laboratory, Washington, DC, United States

10:30 5F-5 BACKSCATTERED ELECTRONS FROM X-RAY TARGET
T. Bui[1], R. L. Ives[1], D. Hart[2]
[1]Calabazas Creek Research, Inc., Mountain View, United States
[2]King's College, London, England

10:45 5F-6 ON THE IMPORTANCE OF N4+ IONS IN THE CHEMISTRY OF A HE-N MICROJET DISCHARGE.
D. Eremin, T. Hemke, R. P. Brinkmann, T. Mussenbrock
Ruhr-University Bochum, Bochum, Germany

11:00 5F-7 OBSERVATION OF ELECTROMAGNETIC EFFECT IN LARGE-AREA CAPACITIVELY COUPLED DISCHARGES
H. Bae, H. -J. Lee, H. J. Lee
Department of Electrical Engineering, Pusan National University, Busan, South Korea

11:15 5F-8 NUMERICAL STUDY OF THE MODE PROPAGATION IN A MICROWAVE DRIVEN PLASMA DISCHARGE
D. Szeremley, T. Mussenbrock, R. P. Brinkmann, D. Eremin
Ruhr Universitt Bochum Lehrstuhl Theoretische Elektrotechnik, Bochum, Germany

11:30 5F-9 ELECTRO MAGNETIC WAVE PROPAGATION IN THE PLASMA LAYER OF A REENTRY VEHICLE

M. Kundrapu[1], J. Loverich[1], K. Beckwith[1], P. Stoltz[1], A. Shashurin[2], M. Keidar[2]
[1]Tech-X Corporation, Boulder, CO, USA
[2]Department of Mechanical and Aerospace Engineering, The George Washington University, Washington, DC, USA

11:45 5F-10 METHOD OF THE CALCULATION OF SPECTRUM OF LYAPUNOV EXPONENTS FOR THE ANALYSIS OF DYNAMICS OF BEAM-PLASMA SYSTEMS
S. A. Kurkin[1], N. S. Frolov[1], V. A. Maximenko[1], A. E. Hramov[2], A. A. Koronovskii[1]
[1]Faculty of Nonlinear Processes, Saratov State University, Saratov, Russian Federation
[2]Saratov State Technical University, Saratov, Russian Federation

Session PL6: Plenary6

Wednesday, May 28 13:00-14:00, Thurgood Marshall East-South
Session Chair: *Carl Ekdahl, Los Alamos National Laboratory*

13:00 PL6-1 (invited) APPLICATION OF TW-LEVEL PULSED POWER TO THE PROBLEM OF FINDING FISSILE MATERIAL
R. J. Commisso
Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States

Session 3P: 2.1 Intense Beam Microwave Generation Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chair: *Wilkin Tang, Air Force Research Laboratory*

3P-1 INVESIGATION AND OPTIMIZATION OF THE DOUBLE-GAP VIRCATOR IN CST PARTICLE STUDIO
S. A. Kurkin[1], A. E. Hramov[2], A. A. Koronovskii[1], A. O. Rak[3]
[1]Faculty of Nonlinear Processes, Saratov State University, Saratov, Russian Federation
[2]Saratov State Technical University, Saratov, Russian Federation
[3]Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus

3P-2 ***WITHDRAWN*** RADIATION OF A WAKEFIELD EXCITED BY AN ELECTRON BUNCH TRAIN IN A SECTION OF A DIELECTRIC WAVEGUIDE
G. V. Sotnikov, K. V. Galaydych, R. R. Kniaziev, P. I. Markov, I. N. Onishchenko
NSC Kharkov Institute of Physics and Technology, Kharkov, Ukraine

3P-3 HOMOGENIZATION OF AN ELECTRON BEAM BY SCATTERING IN AN ALUMINUM FOIL
K. Pepitone, J. Gardelle, P. Modin
CEA/CESTA, Le Barp, France

3P-4 BRILLOUIN FLOW IN RECIRCULATING PLANAR MAGNETRON
D. H. Simon, Y. Y. Lau, M. Franzi, G. Greening, R. M. Gilgenbach
Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

Session 3P: 2.2 Fast Wave Devices Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chair: *Jeffrey P Calame, Naval Research Laboratory*

3P-5 A COMPUTATIONAL EFFICIENT SIMULATION TOOL FOR GYROTRONS
X. Li[1], Y. Alfadhl[1], X. Chen[1], S. Yu[2], Q. Zhao[2], Y. Zhang[2]
[1]School of Electronic Engineering and Computer Science, Queen Mary University of London, London, United Kingdom
[2]School of Physical Electronics, University of Electronic Science and Technology of China, Chengdu, China

3P-6 STUDIES ON BOUNDARY CONDITIONS FOR GYROTRON INTERACTION MODELING
K. A. Avramidis[1], T. -M. Tran[2], S. Brunner[2], C. Wu[1], S. Alberti[2], J. Jelonnek[1]
[1]IHM, Karlsruhe Institute of Technology, Karlsruhe, Germany
[2]CRPP, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland

Session 3P: 2.3 Slow-Wave Devices Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chair: *John Pasour, Naval Research Laboratory*

3P-7 GIGAWATT-CLASS RADIATION OF TM01 MODE FROM A KU-BAND OVERMODED CERENKOV-TYPE HIGH POWER MICROWAVE GENERATOR
H. Zhang, T. Shu, J. Ju
College of Optoelectronic Science and Engineering, National University of Defense Technology, Changsha, China

3P-8 EXPERIMENTAL VERIFICATION PLAN FOR A 70% EFFICIENT RELATIVISTIC MAGNETRON WITH DIFFRACTION OUTPUT (MDO)
C. Leach, S. Prasad, M. Fuks, J. Buchenauer, J. McConaha, E. Schamiloglu
Electrical and Computer Engineering Dept., University of New Mexico, Albuquerque, United States

3P-9 EXPERIMENTAL STUDY OF TRANSPARENT TWT WITH THE MODULATION OF AN ELECTRON BEAM NEAR THE CATHODE
Y. A. Kalinin, A. V. Starodubov
Department of Physics of nonlinear systems, Saratov State University, Saratov, Russian Federation

3P-10 A DUAL-FREQUENCY SLOW WAVE AMPLIFIER
P. Zhang[1], D. Simon[1], Y. Y. Lau[1], G. Greening[1], M. Franzi[1], R. M. Gilgenbach[1], B. Hoff[2]
[1]Nuclear Engineering and Radiological Sciences, University of Michigan - Ann Arbor, Ann Arbor,MI, United States
[2]Air Force Research Laboratory, Albuquerque,NM, United States

3P-11 ENHANCEMENT OF SMITH-PURCEL RADIATIONS BY SELF-BUNCHED ELECTRON BEAMS IN OVERSIZED BACKWARD WAVE OSCILLATORS
K. Ogura, K. Yambe, T. Iwasaki, S. Magori, J. Kojima
Graduate School of Science and Technology, Niigata University, Niigata, Japan

3P-12 DESIGN OF PHASE VELOCITY TAPERING OF W-BAND FOLDED WAVEGUIDE TRAVELLING WAVE TUBES FOR EFFICIENCY ENHANCEMENT
Y. Hu, J. Feng, J. Liu, T. Li, J. Cai, X. Wu
Beijing Vacuum Electronics Research Institute, Beijing, China

Session 3P: 2.4 Vacuum Microelectronics & THz Devices Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chair: *Wilkin Tang, Air Force Research Laboratory*

3P-13 SYNCHRONIZATION OF THZ SPACE-CHARGE OSCILLATION IN ARRAYS OF VACUUM MICRODIODES
K. Torfason, M. Ilkov, A. Manolescu, A. Valfells
School of Science and Engineering, Reykjavik University, Reykjavik, Iceland

3P-14 REACHING HIGH FREQUENCIES IN A SMITH-PURCELL FEL WITH A MULTI-CHANNEL GRATING
J. Gardelle[1], P. Modin[1], J. T. Donohue[2]
[1]CEA/CESTA, Le Barp, France
[2]CNRS/IN2P3, Gradignan, France

3P-15 MOLECULAR DYNAMICS SIMULATIONS OF FIELD EMISSION FROM A PLANAR NANODIODE AND PROLATE SPHEROIDAL TIP
K. Torfason, A. Manolescu, A. Valfells
School of Science and Engineering, Reykjavik University, Reykjavik, Iceland

3P-16 FEATURES OF WAVE PROCESSES IN PREMODULATED ELECTRON BEAM AND ITS INTERACTION WITH ELECTROMAGNETIC FIELD
G. M. Krasnova
Saratov State University, Saratov, Russian Federation

Session 3P: 2.5 Codes & Modeling Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chair: *Wilkin Tang, Air Force Research Laboratory*

3P-17 NUMERICAL INVESTIGATIONS ON THE NANOSECOND ELECTRICAL EXPLOSION OF SINGLE ALUMINUM WIRE IN VACUUM
K. Wang, Z. Shi, Y. Shi, J. Wu, S. Jia
Dept. of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China

3P-18 COLLISIONAL-RADIATIVE MODEL FOR THE DIAGNOSTICS OF LOW PRESSURE INDUCTIVELY COUPLED KRYPTON PLASMA
R. Srivastava[1], D. Goyal[1], R. K. Gangwar[2], L. Stafford[2]
[1]Physics Department, Indian Institute of Technology Roorkee, Roorkee-247667, India
[2]Dpartement de Physique, Universit de Montral, Montral (Qubec)-H3C 3J7, Canada

3P-19 PERFORMANCE AND SCALABILITY OF PARALLEL PIC AND FLUID CODES ON XEON PHI BASED SUPERCOMPUTERS
E. Hallman, K. Beckwith, P. Stoltz
Tech-X Corporation, Boulder, CO, United States

3P-20 RF MODELS FOR PLASMA-SURFACE INTERACTIONS: SHEATH BOUNDARY CONDITIONS WITH DIELECTRICS
T. G. Jenkins, D. N. Smithe
Tech-X Corporation, Boulder, CO, United States

3P-21 FIELD EMISSION CURRENT FROM SINGLE WALLED CARBON NANOTUBES WITH ADSORBATES AND DEFECTS FOR SEVERAL CHIRALITIES: A DENSITY FUNCTIONAL STUDY
T. P. Fleming
Directed Energy Directorate, Air Force Research Lab, Albuquerque, NM, United States

3P-22 APPLICATION OF VORPAL SOFTWARE TO CARRIER MODELING IN SOLID STATE DEVICES
D. Smithe, D. Dimitrov, D. Meiser
Tech-X Corporation, Boulder, CO, United States

3P-23 NUMERICAL STUDIES OF ELECTRODE PLASMA FORMATION AND EXPANSION IN HIGH POWER CHARGED PARTICLE BEAM DIODES
I. M. Rittersdorf, S. B. Swanekamp, R. J. Allen, J. W. Schumer
Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States

Session 3P: 2.7 Microwave Plasma Interaction Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chair: *Wilkin Tang, Air Force Research Laboratory*

3P-24 OPERATION CHARACTERISTICS OF A 12-CAVITY RELATIVISTIC MAGNETRON WITH DIFFRACTION OUTPUT WHEN CONSIDERING SECONDARY AND BACKSCATTERED ELECTRONS EMISSION
M. Liu[1], E. Schamiloglu[2], M. Fuks[2], B. Li[1], C. Liu[1]
[1]Key Laboratory of Physical Electronics and Devices of the Ministry of Education, xi'an jiaotong university, xi'an, China
[2]Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, USA

3P-25 AXIAL LEAKAGE CURRENT REDUCTION IN A 12-CAVITY RISING-SUN RELATIVISTIC MAGNETRON WITH A "F" TRANSPARENT CATHODE
M. Liu[1], E. Schamiloglu[2], F. Mikhail[2], B. Li[1], C. Liu[1]
[1]Key Laboratory of Physical Electronics and Devices of the Ministry of Education, xi'an jiaotong university, xi'an, China
[2]Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, USA

3P-26 RAPID FORMATION OF DISTRIBUTED PLASMA DISCHARGES USING X-BAND MICROWAVES
X. Xiang, P. Carrigan, J. Booske, J. Scharer
Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, United States

3P-27 ELECTRON EXCURSION VERSUS SCATTERING MECHANISM IN A CROSS-FIELD DIODE
B. S. Stutzman[1], J. P. Verboncoeur[2]
[1]Science, US Coast Guard Academy, New London, CT, United States
[2]Electrical and Computer Engineering, Michigan State University, East Lansing, MI, United States

3P-28 INTERACTION OF MICROWAVES GENERATED IN AIR
M. M. Kekez
2104, Alta Vista Drive, HEFTI - High-Energy Frequency Tesla Inc., Ottawa, Canada

3P-29 MICROWAVE BREAKDOWN OF AIR AT LOW PRESSURE WITH A 5 NS, 35 GHZ PULSE
S. Prasad, J. McConaha, C. Leach, E. Schamiloglu
Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

Session 3P: 5.1 Nonequilibrium Plasma Applications Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chairs: *Xinpei Lu, Huazhong University of Science and Technology, China*
Paul Chu, City University of Hong Kong

3P-30 EFFECT OF AIRFLOWS ON A REPETIVE
J. Tang, Y. Huo, N. Li
Harbin Institute of Technology, Harbin, China

3P-31 ***WITHDRAWN*** ELECTROPHYSICAL METHODS OF BACTERIOLOGICAL DISINFECTION OF WATER MEDIUM
E. J. Gurbanov
Science and techniques, Azersu OJSC, Baku, Azerbaijan

3P-32 MODELING OF AN ELECTRON BEAM GENERATED AR-N2 PLASMA FOR PLASMA PROCESSING
G. M. Petrov, D. R. Boris, T. B. Petrova, E. H. Lock, R. F. Fernsler, S. G. Walton
Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States

3P-33 A BATTERY-OPERATED ATMOSPHERIC-PRESSURE PLASMA WAND FOR BIOMEDICAL APPLICATIONS
X. Lu, X. Pei
CEEE, HuaZhong University of Science & Technology, WuHan, China

3P-34 DEPOSITION OF THE SILICON FILMPS FROM PLASMA ABLATION FORMED BY A HIGH POWER ION BEAM
G. Remnev, G. Kholodnaya, R. Sazonov, D. Ponomarev
Tomsk Polytechnic University, Tomsk, Russian Federation

3P-35 ELECTRICAL AND OPTICAL CHARACTERIZATION OF DBD BASED XECL UV EXCIMER SOURCE
P. Gulati[1], U. N. Pal[1], M. Kumar[1], R. Prakash[1], V. Vyas[2]
[1]Plasma Devices, Central Electronic Engineering Research Institute, Rajasthan, India
[2]Physics Department, Banasthali University, Rajasthan, India

3P-36 ELECTRON HEATING, MODE TRANSITIONS, AND ASYMMETRY EFFECTS IN DUSTY SINGLE- AND DUAL-FREQUENCY CAPACITIVE DISCHARGES
E. Schuengel[1], S. Mohr[2], S. Iwashita[2], J. Schulze[1], U. Czarnetzki[2]
[1]Physics, West Virginia University, Morgantown, WV, United States
[2]Institute for Plasma and Atomic Physics, Ruhr University Bochum, Bochum, Germany

3P-37 VOLUME PROCESSING OF GAS USING TWO-DIMENSIONAL MICROPLASMA ARRAYS
Y. Wu, A. R. Hoskinson, J. Hopwood
Electrical and Computer Engineering, Tufts University, Medford, United States

3P-38 A HIGH VOLTAGE NANOSECOND PULSER WITH VARIABLE PULSE WIDTH AND PULSE REPETITION FREQUENCY CONTROL FOR NONEQUILIBRIUM PLASMA APPLICATONS
T. M. Ziemba, K. E. Miller, J. R. Prager, J. G. Carscadden, I. Slobodov
Eagle Harbor Technologies, Inc, Seattle,WA, United States

Session 3P: 5.2 High Pressure and Thermal Plasma Processing Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chairs: *Xinpei Lu, Huazhong University of Science and Technology, China*
Paul Chu, City University of Hong Kong

3P-39 SPECTRUM AND NUMBER FOR CATHODE SPOT WITH CHANGING CURRENT
K. Ogura, S. Yamamoto, T. Iwao, M. Yumoto
Tokyo City University, Tokyo, Japan

3P-40 ELECTRICAL FIELD AFFECTED BY CURRENT DECREMENT RATIO AT BASE CURRENT
D. Suzuki, T. Iwao, M. Yumoto
Tokyo City University, Tokyo, Japan

3P-41 HEAT FLUX AFFECTED BY CURRENT INCREMENT RATIO IN PULSED ARC MIXED OXYGEN
K. Sone, Y. Goto, T. Iwao, M. Yumoto
Tokyo City University, Tokyo, Japan

3P-42 TEMPERATURE DIFFERENCE BETWEEN CONSTANT AND PULSED ARC AFFECTED BY CURRENT INCREMENT RATIO AT PEAK CURRENT NEAR ANODE
H. Mitsubori, Y. Saito, T. Iwao, M. Yumoto
Tokyo City University, Tokyo, Japan

Session 3P: 5.3 Plasma Thrusters Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chairs: *JP Sheehan, University of Michigan*
Alexander Kapulkin, Asher Space Research Institute of Technion-Israel Institute of Tecnology

3P-43 EXPERIMENTAL INVESTIGATION OF RECOIL MOMENTUM GENERATION EFFICIENCY UNDER NIR FEMTOSECOND LASER ABLATION OF REFRACTORY METALS IN VACUUM
E. Y. Loktionov[1], A. V. Ovchinnikov[2], Y. S. Protasov[1], Y. Y. Protasov[1], D. S. Sitnikov[2]
[1]Bauman Moscow State Technical University, Moscow, Russian Federation
[2]Joint Institute for High Temperatures of RAS, Moscow, Russian Federation

3P-44 PLASMA MEASUREMENTS OF THE PLUME OF A NEW MINIATURE HELICON THRUSTER
I. Reese[1], J. P. Sheehan[2], B. Longmier[2]
[1]Applied Physics, University of Michigan, Ann Arbor, MI, United States
[2]Aerospace Engineering, University of Michigan, Ann Arbor, MI, United States

3P-45 QUASI-ONE-DIMENSIONAL SIMULATIONS OF MAGNETIC NOZZLES FOR PLASMA THRUSTER APPLICATIONS
F. H. Ebersohn[1], J. P. Sheehan[1], B. W. Longmier[1], J. V. Shebalin[2]
[1]Aerospace Engineering, University of Michigan, Ann Arbor, MI, United States
[2]Astromaterials Research Office, NASA Johnson Space Center, Houston,TX, United States

3P-46 PLASMA-BASED THRUSTER: ELECTROSTATIC AND ELECTROMAGNETIC COUPLING
M. Jugroot, A. Christou
Mechanical and Aerospace Eng., Royal Military College of Canada, Kingston, ON, Canada

3P-47 PLUME CONTROL OF A PLASMA THRUSTER
H. Liu, H. Wu, H. Li, X. Li, S. Xie, T. Huang, D. Yu
Harbin institute of Technology, Harbin, China

3P-48 STUDY ON DISCHARGE OSCILLATION IN A CUSPED FIELD THRUSTER
S. Xu, H. Liu, H. Wu, H. Li, S. Xie
Harbin institute of Technology, Harbin, China

3P-49 ***WITHDRAWN*** MAGNETIC FIELD ANGLE EFFECTS ON SHEATH FORMATION NEAR A FLAT PLATE SURFACE WITH APPLICATIONS TO HALL THRUSTERS
J. N. Lukas, M. Keidar
The George Washington University, Washington, DC, United States

3P-50 PLASMA ADIABATICITY IN A DIVERGING MAGNETIC NOZZLE
J. P. Sheehan[1], B. W. Longmier[1], E. A. Bering[2], C. S. Olsen[3], J. P. Squire[3], M. D. Carter[3], L. D. Cassady[3], F. R. Chang Diaz[3], T. W. Glover[3], A. V. Ilin[3], M. G. Ballenger[4]
[1]Aerospace Engineering, University of Michigan, Ann Arbor, MI, United States
[2]Physics, University of Houston, Houston, TX, United States
[3]Ad Astra Rocket Company, Webster, TX, United States
[4]Space Exploration Technologies, McGregor, TX, United States

Session 3P: 5.4 Plasma for Lighting, Displays, & Microdischarges Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chairs: *Xinpei Lu, Huazhong University of Science and Technology, China*
Paul Chu, City University of Hong Kong

3P-51 IGNITION DYNAMICS IN MICROWAVE-GENERATED MICROPLASMAS
A. R. Hoskinson, A. Yared, J. Hopwood
Electrical & Computer Engineering, Tufts University, Medford, MA, United States

3P-52 FREE CONVECTION IN A ELECRODELESS MICROWAVE LAMP
T. I. Frolova, G. I. Churyumov
Department Physical Foundations of Electronic Engineering, Kharkiv National University of Radio Electronics, Kharkiv, Ukraine

3P-53 MODELING AND CHARACTERIZATION OF AN INDIUM(I)IODIDE-ARGON LOW PRESSURE LAMP
C. M. Oeguen, K. Haehre, R. Kling
Light Technology Institute, Karlsruhe Institute of Technology, Karlsruhe, Germany

3P-54 ***MOVED TO 3A-9***

3P-55 CONTROLLING SURFACE DISCHARGE PATTERNS AND PLASMA CHEMISTRY WITH A HEXAGONAL ELECTRODE STRUCTURE AND GAS COMPOSIITON
L. Gao[1], H. Ding[1], M. Kong[2]
[1]School of Physics and Optoelectronic Engineering, Key Laboratory of Materials Modification by Laser, Ion and Electron Beams, Chinese Ministry of Education, Dalian University of Technology, Dalian, China
[2]Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA, USA

3P-56 PLASMA PACKET PROPAGATION IN MICROCHANNELS
H. J. Yang, J. H. Cho, S. -J. Park, J. G. Eden
Department of Electrical and Computer Engineering, University of Illinois, Urbana, IL, United States

3P-57 DIAGNOSTICS OF ATMOSPHERIC PRESSURE MICROWAVE GENERATED MICRO-PLASMA BY USING OPTICAL EMISSION SPECTROSCOPY
P. Liu, T. A. Grotjohn
Electrical & Computer Engineering, Michigan State University, East Lansing, MI, United States

3P-58 INVESTIGATION OF POWER BALANCE IN MICRO DIELECTRIC BARRIER GLOW DISCHARGE WITH ULTRA-HIGH DRIVING FREQUENCY
J. Y. Lee[1], H. Bae[1], J. P. Verboncoeur[2], H. J. Lee[1,2]
[1]Department of Electrical Engineering, Pusan National University, Busan, South Korea
[2]Department of Electrical and Computer Engineering, Michigan State University, East Lansing, USA

Session 3P: 5.5 Environmental and Industrial Applications Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chairs: *Xinpei Lu, Huazhong University of Science and Technology, China*
Paul Chu, City University of Hong Kong

3P-59 SHOCKWAVE GENERATION BY A SEMICONDUCTOR BRIDGE OPERATION IN WATER
E. Zvulun, G. R. Toker, V. T. Gurovich, Y. E. Krasik
Physics, Technion - Israel Institute of Technology, Haifa, Israel

3P-60 BLAST-HOLE ELECTRO-FRACTURE OF CONCRETE LUMPS
N. S. Kuznetsova, A. S. Yudin, V. V. Lopatin
Department of High Voltage Engineering and Electrophysics, National Research Tomsk Polytechnic University, Tomsk, Russian Federation

3P-61 CONCRETE MONOLITH SPLITTING OFF BY MULTI-BOREHOLE ELECTRO-BLAST
A. Yudin, N. Kuznetsova, V. Lopatin
Department of High Voltage Engineering and Electrophysics, National Research Tomsk Polytechnic University, Tomsk, Russian Federation

3P-62 APPLICATION OF SHOCK WAVE GENERATED WITH UNDERWATER DISCHARGE IN MINE GAS DRAINAGE
Y. Z. Zhao[1], H. H. Zhou[2], M. J. Liu[1], Y. M. Zhang[2]
[1]Xian GuanTong Energy technology co., LTD, Xi'an, Shaanxi, China
[2]State Key Laboratory of Electrical Insulation for Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi, China

3P-63 AMELIORATION OF PETROPHYSICAL PROPERTY WITH SHOCK WAVES GENERATED BY UNDERWATER ELECTRICAL WIRE EXPLOSION
H. B. Zhou[1], Y. Z. Zhao[2], J. W. Wu[1], Q. J. Liu[2], Y. M. Zhang[1]
[1]State Key Laboratory of Electrical Insulation for Power Equipment, Xi'an Jiaotong University, Xi'an Shaanxi, China
[2]Xian GuanTong Energy technology co., LTD, Xi'an Shaanxi, China

3P-64 BREAKDOWN VOLTAGE SCALING RELATION OF ISOLATED GAS BUBBLES IN LIQUID WATER
S. N. Gucker, J. E. Foster
University of Michigan, Ann Arbor, MI, United States

3P-65 NUMERICAL SIMULATION OF ENERGY DEPOSITION IMPROVMENTS IN EXPLODING WIRE BY USING PARALLEL WIRE
H. T. Shi, X. B. Zou, S. Zhao, X. L. Zhu, X. X. Wang
Department of Electrical Engineering, Tsinghua Universiy, Beijing, China

3P-66 DEPOSITION OF CRYSTALLINE SILICON THIN FILMS IN ELECTRICALLY ASYMMETRIC CAPACITIVELY COUPLED PLASMAS
E. Schuengel[1], R. Hofmann[2], S. Mohr[2], J. Schulze[1], U. Czarnetzki[2]
[1]Physics, West Virginia University, Morgantown, WV, United States
[2]Institute for Plasma and Atomic Physics, Ruhr University Bochum, Bochum, Germany

3P-67 CRYSTALLIZING COMPOUND FILM ON PLASTICS BY ION IRRADIATION IN PLASMA
N. Sakudo, N. Ikenaga, K. Matsui, N. Sakumoto, Y. Kishi, Z. Yajima
Kanazawa Institute of Technology, Hakusan, Ishikawa, Japan

3P-68 OPTIMIZATION OF DIELECTRIC BARRIER DISCHARGE REACTORS FOR HIGH-SPEED SURFACE TREATMENT OF POLYMER SUBSTRATE
M. Hur, D. J. Kim, W. S. Kang, Y. -H. Song
Korea Institute of Machinery & Materials, Daejeon, South Korea

3P-69 COMPARATIVELY PLASMA DEPOSITION OF PEDOT THIN FILMS
M. Kiristi[1], F. Bozduman[2], E. Teke[2], A. Uygun Oksuz[1], L. Oksuz[2]
[1]Chemistry Department, Suleyman Demirel University, Isparta, Turkey
[2]Physics Department, Suleyman Demirel University, Isparta, Turkey

3P-70 INVESTIGATION ON ENDURANCE OF HYDROPHILIC PROPERTY OF CARBON FIBERS TREATED BY AIR DIELECTRIC BARRIER DISCHARGE
T. Kitagawa, T. Kakami, N. Osawa, M. Tanaka, H. Saito, Y. Yoshioka
Kanazawa Institute of Technology, Nonoichi, Ishikawa, Japan

3P-71 UNIFORM DEPOSITION OF ZIRCONIUM DIOXIDE LAYERS BY ATMOSPHERIC-PRESSURE PLASMA-ENHANCED CHEMICAL VAPOR DEPOSITION

J. -O. Lee, W. S. Kang, M. Hur, Y. -H. Song
Korea Institute of Machinery and Materials, Daejeon, South Korea

3P-72 EFFECT OF PULSE REPETITION ON PULSED PLASMA NITRIDING OF AISI 4340 STEEL AND ITS FATIGUE CRACK GROWTH (FCG) AND POLARIZATION STUDIES
J. P. Arul Mozhi Varman[1], M. Balasubramanian[1], U. Huchel[2]
[1]MME, Indian Institute of Technology - Madras, Chennai, Tamilnadu, India
[2]Design, Eltropuls, GmbH, Germany

3P-73 RADIOMETRIC AND ELECTRICAL CHARACTERIZATION OF MEDIUM-POWER INDUCTIVELY COUPLED UV-RADIATION SOURCE
K. Haehre, C. M. Oeguen, R. Kling
Light Technology Institute, Karlsruhe Institute of Technology, Karlsruhe, Baden-Wuerttemberg, Germany

3P-74 NEW SEMICONDUCTOR BASED BLUMLEIN MODULATOR FOR NON-THERMAL PLASMA DISCHARGES IN WATER
J. Mendes[1,2], L. Redondo[1,2], M. Pereira[3]
[1]Lisbon Engineering Superior Institute, ISEL, Lisbon, Portugal
[2]Pulsed Power Advanced Applications Research Group, Lisbon, Portugal
[3]EnergyPulse Systems, Lisbon, Portugal

3P-75 HEAVY-ION MICRO-BEAM USE FOR TRANSIENT FAULT INJECTION IN VLSI CIRCUITS
S. M. Sondon
GISEE, Universidad Nacional del Sur, Bahia Blanca, Argentina

3P-76 REMOVAL OF CARBON MONOXIDE BY LOW TEMPERATURE PLASMA-CATALYSIS
K. -T. Kim, S. Jo, J. O. Lee, D. H. Lee, Y. H. Song
Department of Plasma Engineering, Korea Institute of Machinery & Materials, Daejeon, South Korea

3P-77 Removal of dilute hydrogen sulfide gas in air on a large scale using wet-electrostatic precipitator system
H. W. Park[1], S. Choi[2], D. W. Park[1]
[1]Department of Chemistry and Chemical Engineering, INHA University, Incheon, South Korea
[2]Regional Innovation Center for Environmental Technology of Thermal Plasma, Incheon, South Korea

3P-78 DECREASE IN DINITROGEN MONOXIDE (N_2O) GENERATION OF AIR-FED OZONE GENERATOR USING ATMOSPHERIC PRESSURE TOWNSEND DISCHARGE
T. Tsuji, Y. Morimoto, D. Funaki, N. Osawa, Y. Yoshioka
Kanazawa Institute of Technology, Nonoichi, Ishikawa, Japan

3P-79 ATMOSPHERIC PRESSURE RESISTIVE BARRIER LOW TEMPERATURE PLASMA TREATMENT FOR FOOD INDUSTRY*
M. Thiyagarajan, X. Gonzales
Plasma Engineering Research Lab (PERL), Texas A&M University - Corpus Christi, Corpus Christi, Texas, United States

3P-79a RAPID ALLERGEN INACTIVATION USING ATMOSPHERIC PRESSURE COLD PLASMA
Y. Liang[1], Y. Wu[2], K. Wei[2], W. Li[1], M. Yao[2], J. Zhang[1]
[1]College of Engineering, Peking University, Beijing, China
[2]College of Environmental Sciences and Engineering, Peking University, Beijing, China

Session 3P: 5.6 Plasma Medicine & Biological Effects Posters

Poster Session

Wednesday, May 28 14:00-15:30, Exhibit C (lower level)
Session Chair: *Magesh Thiyagarajan, Texas A&M University - Corpus Christi*

3P-80 ***WITHDRAWN*** STORAGE AT LOW TEMPERATURE OF WATER ACTIVATED BY ALTERNATING CURRENT COLD PLASMA
Y. Tian[1], R. Ma[1], Q. Zhang[1], J. Zhang[1,2], J. Fang[1,2]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China
[2]College of Engineering, Peking University, Beijing, China

3P-81 IN VITRO ANTICANCER ACTIVITY OF A NOVEL COMPOUND FROM THE PHYSICALLY ENGINEERED CANDIDA ALBICANS WITH NANOSECOND PULSED ELECTRIC FIELDS (NSPEFS)
J. Guo[1], X. Yang[1], Y. Han[1], J. Li[1], J. Zhang[1,2], J. Fang[1,2]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China
[2]College of Engineering, Peking University, Beijing, China

3P-82 CELL APOPTOSIS INDUCED BY ATMOSPHERIC PRESSURE PLASMA
Y. Yang, Z. Xiong, F. Zou, X. Lu
School of Electrical and Electronics Engineering, Huazhong University of Science and Technology, Wuhan, China

3P-83 INDUCTION OF APOPTOSIS IN HUMAN MYELOID LEUKEMIA CELLS BY REMOTE EXPOSURE OF RESISTIVE BARRIER COLD PLASMA*
M. Thiyagarajan, H. Anderson, X. Gonzales
Plasma Engineering Research Lab (PERL), Texas A&M University - Corpus Christi, Corpus Christi, Texas, United States

3P-84 A GENOME-WIDE PROFILING OF CELL RESPONSE MECHANISMS TO NON-THERMAL PLASMA TREATMENT
H. Feng[1], F. Li[1], R. Ma[1], Y. Tian[1], F. Suo[2], W. Zhu[3], J. Fang[1], L. -L. Du[2], J. Zhang[1]
[1]Peking University, Beijing, China
[2]National Institute of Biological Sciences, Beijing, China
[3]SaintPeter's University, NJ, USA

3P-85 ***MOVED TO 6D-6***

3P-86 STERILIZATION OF MICRO-ORGANISM SPOERS USING ATMOSPHERIC-PRESSURE PLASMA WITHOUT HARMUFUL BY-PRODUCTS
K. Matsui, N. Ikenaga, N. Sakudo
Research Laboratory for Integrated Technological Systems, Kanazawa Institute of Technology, Hakusan, Ishikawa, Japan

3P-87 MOLECULAR DYNAMICS SIMULATIONS OF COLD ATMOSPHERIC PLASMA INTERACTIONS WITH LIPID BILAYERS
R. S. Brayfield II[1], P. Oroskar[2], K. Hinkle[2], S. Murad[2], A. Y. Grama[3], A. L. Garner[1]
[1]School of Nuclear Engineering, Purdue University, West Lafayette, IN, United States
[2]Department of Chemical Engineering, University of Illinois, Chicago, IL, United States
[3]Department of Computer Sciences, Purdue University, West Lafayette, IN, United States

3P-88 SIMULATION OF A CAPACITIVELY COUPLED ATMOSPHERIC PRESSURE WATER VAPOR PLASMA
Z. Kechidi[1], W. G. B. Graham[2], A. H. Belbachire[3]
[1]Faculty of Sciences and technology, LREA laboratory university of Medea, Algeria, Medea, Algeria
[2]Centre for Plasma Physics, Queen's University Belfast, Belfast, Northern Ireland, UK
[3]Dpartement de Physique,USTO, Laboratoire d'Analyse et d'Application des Rayonnements(LAAR), Oran, Algeria

3P-89 RF PLASMA NANOCOATING OF PEDOT ONTO CHITOSAN POWDERS FOR NANOFIBER APPLICATIONS
M. Kiristi[1], F. Bozduman[2], E. Teke[2], A. Uygun Oksuz[1], L. Oksuz[2]
[1]Chemistry Department, Suleyman Demirel University, Isparta, Turkey
[2]Physics Department, Suleyman Demirel University, Isparta, Turkey

Session 6A: Basic Plasma Phenomena II

Wednesday, May 28 15:30-17:30, Thurgood Marshall North
Session Chair: *Keith Cartwright, Sandia National Laboratories*

15:30 6A-1 SPATIAL DISTRIBUTION MEASUREMENT OF PLASMA PARAMETERS USING SPECTRAL IMAGE PROCESSING

T. Matsumoto, Y. Izawa, K. Nishijima
faculty of electrical engineering, Fukuoka University, Fukuoka, Japan

15:45 6A-2 STROBOSCOPIC IMAGING OF STREAMERS PROPAGATING ALONG DIELECTRIC SURFACES
D. J. M. Trienekens[1], S. Nijdam[1], T. Christen[2], G. M. W. Kroesen[1], U. M. Ebert[3]
[1]Elementary Processes in Gas Discharges, Eindhoven University of Technology, Eindhoven, Netherlands
[2]ABB Switzerland Ltd., Baden-Datwill, Switzerland
[3]Multiscale Dynamics, CWI, Amsterdam, Netherlands

16:00 6A-3 (invited) DYNAMICS OF FORMATION OF THE BLUE CORE MODE IN ARGON HELICON PLASMAS
S. C. Thakur, C. Brandt, L. Cui, J. Gosselin, G. R. Tynan
Center for Energy Research, University of California at San Diego, La Jolla, United States

16:30 6A-4 NANOSECOND PULSED DISCHARGE IN LIQUID: INITIATION MECHANISM AND DIAGNOSTICS
Y. Seepersad, D. Dobrynin, A. Fridman, M. Pekker
Drexel Plasma Institute, Camden, NJ, United States

16:45 6A-5 PRESHEATH AND DOUBLE LAYER-LIKE STRUCTURES IN THE CORE OF AN ARGON HELICON PLASMA SOURCE WITH UNIFORM MAGNETIC FIELDS
M. U. Siddiqui, N. Hershkowitz
Engineering Physics, University of Wisconsin - Madison, Madison, WI, United States

17:00 6A-6 EXPERIMENTAL OBSERVATION OF STANDING WAVE EFFECT IN LOW-PRESSURE 200 MHZ CAPACITIVE DISCHARGES
Y. Liu, F. Gao, J. Liu, Y. Wang
School of Physics and Optoelectronic Technology, Dalian University of Technology, Dalian, China

17:15 6A-7 INVESTIGATION OF POSSIBLE SHEATH DISAPPEARANCE NEAR AN ELECTRODE BIASED AT THE PLASMA POTENTIAL
C. -S. Yip[1], N. Hershkowitz[1], G. Severn[2]
[1]Engineering Physics, University of Wisconsin - Madison, Madison, WI, United States
[2]Physics, University of San Diego, San Diego, CA, United States

Session 6B: Slow-Wave Devices II

Wednesday, May 28 15:30-17:30, Thurgood Marshall South
Session Chair: *Khanh T Nguyen, Beam-Wave Research, Inc.*

15:30 6B-1 (invited) 1.7 KW POWER BOOSTER TWT AT 35 GHZ
B. Levush[1], D. Abe[1], A. Vlasov[1], I. Chernyavskiy[1], S. Cooke[1], J. Pasour[1], J. Legarra[2], K. Nguyen[2], D. Pershing[2], E. Wright[2], J. Hanna[2], A. Garcia[3], T. Kimura[3], P. Lugos[3], C. Meyer[3], J. Ramirez-Aldana[3], R. Stockwell[3], R. Begum[3], D. Chernin[4]
[1]Electronics Scince and Technology Division, Naval Research Laboratory, Washington, DC, United States
[2]Beam-Wave Research, Bethesda, MD, United States
[3]Communications and Power Industries, Palo Alto, CA, Unites States
[4]Leidos, Reston, VA, United States

16:00 6B-2 DESIGN OF A HIGH POWER S-BAND BACKWARD-WAVE OSCILLATOR WITH A METAMATERIAL INTERACTION CIRCUIT
J. S. Hummelt, S. M. Lewis, W. C. Guss, M. A. Shapiro, R. J. Temkin
MIT, Cambridge, MA, United States

16:15 6B-3 RELATIVISTIC BWO WITH GAUSSIAN BEAM EXTRACTED RADIALLY USING AN ELECTROMAGNETIC BANDGAP MEDIUM
A. Elfrgani, E. Schamiloglu
Department Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM 87131, United States

16:30 6B-4 INITIAL CHARACTERIZATION OF A MODULAR MAGNETICALLY INSULATED LINE OSCILLATOR TEST BED
S. Portillo, A. Kuskov, S. Horne, J. Lehr, E. Schamiloglu
Electrical Engineering, University of New Mexico, Albuquerque, NM, United States

16:45 6B-5 NOVEL ASYMMETRIC HIGH EFFICIENT MULTI-STAGE DEPRESSED COLLECTOR FOR SPACE TRAVELING WAVE TUBES
A. M. Latha[1,2], P. C. Panda[2], S. K. Ghosh[1,2]
[1]Academy of Scientific and Innovative Research, New Delhi, India
[2]CSIR-Central Electronics Engineering Research Institute, Pilani, India

17:00 6B-6 DESIGN AND SIMULATION OF CLOVERLEAF TWT SLOW WAVE STRUCTURE
P. D. Gensheimer[1], R. W. Ziolkowski[2], D. A. Shiffler[1]
[1]RDH, AFRL, Kirtland AFB, NM, United States
[2]ECE, University of Arizona, Tucson, AZ, United States

Session 6C: X- and Z-Pinches II

Wednesday, May 28 15:30-17:30, Thurgood Marshall East
Session Chair: *Adam J Harvey-Thompson, Sandia National Laboratories*

15:30 6C-1 THE MAGNETIZED NOH PROBLEM WITH BOTH AXIAL AND AZIMUTHAL MAGNETIC FIELDS

J. L. Giuliani[1], A. L. Vekikovich[1], Y. K. Chong[1], W. Thornhill[1], S. T. Zalesak[2], P. Tzeferacos[3], D. Lamb[3]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, USA
[2]Berkeley Research Associates, Beltsville, MD, USA
[3]Flash Center for Computational Science, University of Chicago, Chicago, IL, USA

15:45 6C-2 EFFECTS OF AXIAL MAGNETIC FIELD ON MHD INSTABILITIES IN CYLINDRICAL LINERS
Y. Y. Lau[1], M. R. Weis[1], P. Zhang[1], R. M. Gilgenbach[1], M. Hess[2], K. J. Peterson[2]
[1]Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States
[2]Sandia National Laboratories, Albuquerque, NM, United States

16:00 6C-3 FEEDTHROUGH OF THE MAGNETO-RAYLEIGH-TAYLOR INSTABILITY IN THE PRESENCE OF A SHOCK
M. R. Weis[1], Y. Y. Lau[1], R. M. Gilgenbach[1], M. Hess[2], K. J. Peterson[2]
[1]Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States
[2]Sandia National Laboratories, Albuquerque, NM, United States

16:15 6C-4 DOUBLE PLANAR WIRE ARRAYS AT ENHANCED CURRENT ON ZEBRA
A. S. Safronova[1], V. L. Kantsyrev[1], I. Shrestha[1], M. E. Weller[1], V. V. Shlyaptseva[1], A. Stafford[1], M. Lorance[1], A. A. Esaulov[1], A. S. Chuvatin[2], C. A. Coverdale[3], B. Jones[3], D. J. Ampleford[3]
[1]Department of Physics, University of Nevada, Reno, Reno,NV, United States
[2]Laboratoire de Physique des Plasmas, Ecole Polytechnique, Palaiseau, France
[3]Sandia National Laboratories, Albuquerque,NM, United States

16:30 6C-5 THOMSON SCATTERING MEASUREMENTS OF SUPERSONIC TUNGSTEN PLASMA FLOW INTERPENETRATION IN WIRE ARRAY Z-PINCHES
G. F. Swadling[1], S. V. Lebedev[1], G. Burdiak[1], L. Suttle[1], S. Patankar[1], R. A. Smith[1], M. Bennett[1], G. N. Hall[1], F. Suzuki-Vidal[1], J. Yuan[1], A. J. Harvey-Thompson[2], W. Rozmus[3]
[1]Imperial College London, London, United Kingdom
[2]Sandia National Laboratories, Albuquerque, NM, USA
[3]University of Alberta, Edmonton,Alberta, Canada

16:45 6C-6 NUMERICAL AND EXPERIMENTAL INVESTIGATIONS ON THE INTERACTION OF LIGHT WIRE-ARRAY Z-PINCHES WITH EMBEDDED HEAVY FOAM CONVERTERS
D. Xiao[1], N. Ding[1], F. Ye[2], J. Ning[2], Q. Hu[2], F. Chen[2], Y. Qin[2], R. Xu[2], Z. Li[2], S. Sun[1]
[1]Institute of Applied Physics and Computational Mathematics, Beijing, China
[2]Institute of Nuclear Physics and Chemistry, China Academy of Engineering Physics, Mianyang, China

Session 6D: Plasma Medicine & Biological Effects I

Wednesday, May 28 15:30-17:30, Thurgood Marshall West
Session Chair: *Allen L Garner, Purdue University*

15:30 6D-1 DIELECTRIC BARRIER DISCHARGE LAMP FOR DECONTAMINATION PURPOSE
B. Caillier[1], C. Muja[1], A. S. Kone[1], P. Guillot[1], J. Dexpert-Ghys[2], J. M. A. Caiut[3]
[1]DPHE, Universit de Toulouse, CUFR J.-F. Champollion, Albi, France
[2]CEMES, Universit de Toulouse, Toulouse, France
[3]Department of Chemistry, University of So Paulo, Ribeiro Preto-SP, Brazil

15:45 6D-2 CONTROLLING FILAMENT PATTERING BY MICROSECOND-PULSED DIELECTRIC BARRIER DISCHARGE PLASMA FOR BIOMEDICAL APPLICATIONS
N. Chernets[1], E. Silagi[2], G. Fridman[1], G. Friedman[1], A. Fridman[1], T. A. Freeman[2]
[1]A.J. Drexel Plasma Institiute, A.J. Drexel Plasma Institiute, Philadelphia, United States
[2]Orthopaedic Surgery, Thomas Jefferson University, Philadelphia, United States

16:00 6D-3 LONG TERM EXPOSURE OF ATMOSPHERIC DIELECTRIC BARRIER DISCHARGES ONTO WET TISSUE
W. Tian[1], M. J. Kushner[2]
[1]Nuclear Engineering and Radiological Sciences Department, University of Michigan, Ann Arbor, MI, United States
[2]Electrical Engineering and Computer Science Department, University of Michigan, Ann Arbor, MI, United States

16:15 6D-4 CONTRIBUTION OF ELECTRIC FIELDS AND ACTIVE SPECIES IN NANOSECOND PULSED DBD PLASMA TREATMENT FOR STIMULATION OF MURINE MESENCHYMAL C3H10T1/2 CELLS
A. Lin[1], N. Chernets[2], D. Dobrynin[1], G. Fridman[1], T. Freeman[2], A. Fridman[1], V. Miller[1]
[1]Drexel Plasma Institute, Camden, NJ, United States
[2]Thomas Jefferson University, Philadelphia, PA, United States

16:45 6D-5 SYNERGISTIC ANTIBACTERIAL EFFECTS OF LOW TEMPERATURE PLASMA COMBINED WITH PULSED ELECTRIC FIELDS
Q. Zhang[1], J. Zhuang[1], T. V. Woedtke[1], J. Zhang[2], J. Fang[2], K. -D. Weltmann[1], J. F. Kolb[1]
[1]Leibniz-Institute for Plasma Science and Technology, Greifswald, Germany
[2]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China

17:00 6D-6 EFFECTS OF GROWTH MEDIUM TREATED BY PLASMA PENCIL ON THE VIABILITY OF SCABER CANCER CELLS
S. Mohades, N. Barekzi, H. Razavi, M. Laroussi
Laser and Plasma Engineering Institute, Old Dominon University, Norfolk, VA, United States

17:15 6D-7 THE ELECTROPHYSIOLOGICAL EFFECT OF NANOSECOND PULSED ELECTRIC FIELDS ON MAGNETIC FLUID HYPERTHERMIA TO TREAT HELA CELLS
S. Zuo[1], R. Zhang[2], R. Wang[1], J. Zhang[1,2], J. Fang[1,2]

[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China
[2]College of Engineering, Peking University, Beijing, China

Session 6E: Vacuum Microelectronics and THz Devices and Non-Fusion Microwave Systems (combined)

Wednesday, May 28 15:30-17:30, Hoover
Session Chair: *Nicholas M Jordan, University of Michigan*

15:30 6E-1 NEW SCALING OF ELECTRON THERMIONIC EMISSION FROM GRAGHENE
S. J. Liang, L. K. Ang
Engineering Product Developement, Singapore University of Technology and Design, Singapore, Singapore

15:45 6E-2 OBSERVATION OF COHERENT SMITH-PURCELL EMISSION AT 32 GHZ FROM A MULTI-CHANNEL-GRATING WITH SIDEWALLS
J. Gardelle[1], P. Modin[1], J. Donohue[2]
[1]CEA/CESTA, Le Barp, France
[2]CNRS/IN2P3, Gradignan, France

16:00 6E-3 EXPERIMENTAL DEMONSTRATION OF A HIGH POWER SMITH-PURCELL SOURCE USING A CYLINDRICAL GRATING
H. Bluem[1], J. Jarvis[1], A. M. M. Todd[1], R. H. Jackson[1], J. Gardelle[2], P. Modin[2], J. T. Donohue[3]
[1]Advanced Energy Systems, Princeton, NJ, United States
[2]CEA/CESTA, Le Barp, France
[3]Centre d' Etudes Nucleaires de Bordeaux, University of Bordeaux, Gradignan, France

16:15 6E-4 THE THEORY OF ELECTRON-WAVE DEVICES FOR SHORT-WAVELENGTH PART OF THE MICROWAVE RANGE
D. I. Trubetskov, A. V. Titov
Saratov State University, Saratov, Russian Federation

16:30 6E-5 PERFORMANCE OF ST707 GETTER MATERIAL IN A REP-RATED HIGH POWER MICROWAVE SEALED-TUBE VIRCATOR UNDER UHV CONDITIONS
P. Kelly, J. M. Parson, C. Lynn, M. Taylor, J. C. Dickens, A. Neuber, J. Mankowski
Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, United States

16:45 6E-6 MILLIMETER-WAVE SINTERING OF CERAMICS WITH APPLIED PRESSURE
A. W. Fliflet, B. Y. Rock, M. A. Imam
Materials Science and Technology Directorate, Naval Research Laboratory, Washington, DC, United States

17:00 6E-7 STUDY OF MULTIPACTOR LOADING IN X-BAND DIELECTRIC-LOADED ACCELERATING STRUCTURES
S. H. Gold[1], C. Jing[2,3], W. Gai[3], A. Kanareykin[2], A. K. Kinkead[4]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]Euclid Techlabs LLC, Rockville, MD, United States
[3]Argonne National Laboratory, Argonne, IL, United States
[4]Icarus Research, Inc., Bethesda, MD, United States

17:15 6E-8 A 28 GHZ 200 KW GENERATION AND LAUNCHING SYSTEM FOR ECH/ EBW ON PROTO-MPEX AT ORNL
T. S. Bigelow, J. B. Caughman, C. L. Dukes, R. H. Goulding, J. Rapp, S. J. Diem, T. M. Biewer
Fusion Energy, ORNL, Oak Ridge, TN, United States

Session PL7: Plenary7

Thursday, May 29 08:00-09:00, Thurgood Marshall East-South
Session Chair: *Chunqi Jiang, Old Dominion University*

8:00 PL7-1 (invited) PLASMA SURFACE ENGINEERING OF BIOMATERIALS
P. K. Chu
Department of Physics and Materials Science, City University of Hong Kong, Kowloon, Hong Kong

Session 7A: Environmental and Industrial Applications

Thursday, May 29 9:30 - 12:00, Thurgood Marshall North
Session Chair: *Paul Chu, City University of Hong Kong*

9:30 7A-1 (invited) DEGRADATION OF SELECTED PHARMACEUTICALS WITH PULSED CORONA DISCHARGES GENERATED IN WATER
R. Banaschik[1], P. Lukes[2], K. -D. Weltmann[1], J. F. Kolb[1]
[1]Leibniz Institute for Plasma Science and Technology, Greifswald, Germany
[2]Department of Pulse Plasma Systems, Institute of Plasma Physics, Prague, Czech Republic

10:00 7A-2 REMOVAL OF DYES FROM SYNTHETIC WASTEWATER BY PLASMACHEMICAL COAGULATION
S. Nzali[1], S. Laminsi[2], D. Njopouwo[2]
[1]School of Wood, Water and Natural Resources, Faculty of Agronomy and Agricultural Sciences, University of Dschang/Ebolowa Campus, Ebolowa, Cameroon
[2]Inorganic Chemistry, University of Yaounde I, Yaounde, Cameroon

10:15 7A-3 ORGANIC SYNTHESIS WITH CONTINUOUS FLOW WATER FILM PULSED PLASMA DISCHARGE
R. J. Wandell[1], S. Bresch[2], I. V. Alabugin[2], B. R. Locke[1]

[1]Department of Chemical and Biomedical Engineering, Florida State University, Tallahassee, FL, United States
[2]Department of Chemistry and Biochemistry, Florida State University, Tallahassee, FL, United States

10:30 7A-4 STUDY OF WATER TREATMENT BY USING UNDERWATER PULSED DISCHARGE PLASMA
T. Sakugawa, H. Akiyama
Institute of Pulsed Power Science, Kumamoto University, Kumamoto, Japan

10:45 7A-5 SHOCK WAVES GENERATED BY UNDERWATER PULSE DISCHARGE WITH CU WIRE OF DIFFERENT PARAMETER
H. B. Zhou[1], R. Y. Han[1], Q. J. Liu[1], Y. M. Zhang[1], Y. Z. Zhao[2], M. J. Liu[2]
[1]State Key Laboratory of Electrical Insulation for Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi, China
[2]Xian GuanTong Energy technology co., LTD, Xi'an, Shaanxi, China

11:00 7A-6 MODULAR MICROPLASMA OZONE GENERATORS FOR WATER TREATMENT SYSTEM
J. H. Cho[1,2], M. H. Kim[2], C. M. Herring[2], S. -J. Park[1,2], J. G. Eden[1,2]
[1]Department of Electrical and Computer Engineering, University of Illinois, Urbana, IL, United States
[2]EP Purification, Inc., Champaign, IL, United States

11:15 7A-7 IN-SITU EMISSION SPECTROSCOPY AND PLASMACHEMICAL ANALYSIS OF CARBON DIOXIDE DISSOCIATION IN ATMOSPHERIC PRESSURE MICROCHANNEL PLASMA
C. Shin, Z. Dai, S. -J. Park, J. G. Eden
Department of Electrical and Computer Engineering, University of Illinois, Urbana, IL, United States

11:30 7A-8 ***MOVED TO 3P-79a***

11:45 7A-9 INACTIVATION OF NEWCASTLE DISEASE VIRUS BY COLD PLASMA
G. Wang[1], Q. Zhang[1], J. Zhang[1], R. Zhu[2], L. Yang[2], B. Yang[2], J. Fang[3]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China
[2]Institute of Animal Sciences of CAAS, Beijing, China
[3]College of Engineering, Peking University, Beijing, China

Session 7B: Microwave Plasma Interaction

Thursday, May 29 9:30 - 12:00, Thurgood Marshall South
Session Chair: *Sarita Prasad, University of New Mexico*

9:30 7B-1 TUNABLE PLASMA-BASED MICROWAVE WAVEGUIDE TIME DELAY
N. Lei, J. Verboncoeur, J. Albrecht, L. Harle
Electrical Engineering, Michigan State University, East Lansing, United States

9:45 7B-2 REDUCTION OF HIGH POWER MICROWAVE BREAKDOWN DELAY TIMES USING MULTIPLE PASSES THROUGH A TE111 RESONATOR
S. Beeson[1], S. Lin[2], J. Dickens[1], A. Neuber[1]
[1]Texas Tech Univeristy, Lubbock, TX, United States
[2]Xi'an Jiaotong University, Xi'an, China

10:00 7B-3 (invited) NON-EQUILIBRIUM PLASMAS IN FUEL-AIR MIXTURES GENERATED BY HALF OF A MICROWAVE
M. Gundersen, Y. -H. Lin, A. Kuthi, W. Schroeder, D. Singleton, J. Sanders
Electrical Engineering, University of Southern California, Los Angeles, United States

10:30 7B-4 SPATIALLY AND TEMPORALLY RESOLVED CHARACTERIZATION OF AN AIR BREAKDOWN PLASMA USING A 110 GHZ, 1.4 MW GYROTRON*
S. C. Schaub, J. S. Hummelt, W. C. Guss, M. A. Shapiro, R. J. Temkin
Plasma Science and Fusion Center, MIT, Cambridge, MA, United States

10:45 7B-5 INVESTIGATING THE IMPACT METAMATERIALS HAVE ON BREAKDOWN DELAY IN PLASMA FORMATION IN HIGH POWER MICROWAVE EXPERIMENTS
B. Kupczyk, X. Xiang, P. Carrigan, J. Scharer, J. Booske
Department of Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, WI, United States

11:00 7B-6 NUMERICAL SIMULATIONS OF MICROWAVE ENERGY EXTRACTION FROM A HIGH-GAIN, HIGH-POWER PULSE COMPRESSOR WITH A PLASMA SWITCH
A. S. Shlapakovski[1], L. Beilin[1], Y. P. Bliokh[1], M. Donskoy[1], Y. Hadas[2], E. Schamiloglu[3], Y. E. Krasik[1]
[1]Physics Dept., Technion, Haifa, Israel
[2]Applied Physics Dept., Rafael, Haifa, Israel
[3]ECE Dept., University of New Mexico, Albuquerque NM, USA

11:15 7B-7 NANOSECOND-FRAME IMAGING OF PLASMA DISCHARGE IN A MICROWAVE PULSE COMPRESSOR INTERFERENCE SWITCH
L. Beilin[1], A. Shlapakovski[1], M. Donskoy[1], Y. E. Krasik[1], Y. Hadas[2]
[1]Physics Department, Technion, Haifa, Israel
[2]Department of Applied Physics, Rafael, Haifa, Israel

11:30 7B-8 PARTICLE-IN-CELL SIMULATION ON HIGH-POWER MICROWAVE FLASHOVER AND BREAKDOWN WITH WINDOW OUTGASSING
Y. Dong, Z. Dong, Q. Zhou, W. Yang, H. Zhou
Insitute of Applied Physics and Computational Mathematics, Beijing, China

11:45 7B-9 A NOVEL AND ACCURATE TDFIT-PIC CODE FOR THE MULTIPACTOR SIMULATIONS
J. W. You[1], J. F. Zhang[1], T. J. Cui[1], H. G. Wang[2]
[1]School of Information and Engineering, Southeast University, Nanjing, China
[2]Xi'an Jiaotong University, Xi'an, China

Session 7C: Codes & Modeling II

Thursday, May 29 9:30 - 12:00, Thurgood Marshall East
Session Chair: *Tom Antonsen, University Of Maryland*

9:30 7C-1 MAGIC3D FDTD EM-PIC CODE NON-CONFORMAL GEOMETRY (CUT CELL) IMPLEMENTATION
A. J. Woods, L. D. Ludeking
Alliant Techsystems Operations, LLC (ATK), Newington, VA, United States

9:45 7C-2 PARALLEL PARAMETRIC DESIGN OPTIMIZATION FOR RF AMPLIFIERS WITH 3D EM-PIC
G. M. Stantchev[1], S. J. Cooke[1], T. M. Antonsen, Jr.[2]
[1]Naval Research Laboratory, Washington, DC, United States
[2]Leidos Corp., Reston, VA, United States

10:00 7C-3 MODELING OF DRIVE INDUCED OSCILLATIONS: CAPABILITIES AND LIMITATIONS
A. N. Vlasov[1], I. A. Chernyavskiy[1], J. P. Calame[1], B. Levush[1], T. M. Antonsen, Jr.[2]
[1]Naval Research Laboratory, Washington, DC, United States
[2]Leidos Inc., Reston, VA, United States

10:15 7C-4 USING WHOLE STRUCTURE MODES IN THE LARGE-SIGNAL MODELING OF TWTS WITH ARBITRARY SLOW-WAVE STRUCTURES
I. A. Chernyavskiy[1], A. N. Vlasov[1], S. J. Cooke[1], B. Levush[1], T. M. Antonsen[2]
[1]U.S. Naval Research Laboratory, Washington, DC, United States
[2]Leidos, Reston, VA, United States

10:30 7C-5 RF AMPLIFIER DESIGN USING 3D EM-PIC
S. J. Cooke[1], G. M. Stantchev[1], T. M. Antonsen Jr.[2], J. J. Petillo[3], S. G. Ovtchinnikov[3], C. Kostas[3], D. N. Panagos[3]
[1]Naval Research Laboratory, Washington, DC, United States
[2]Leidos, Reston, VA, United States
[3]Leidos, Billerica, MA, United States

10:45 7C-6 3-D MODELING OF ELECTRON BEAM DEVICES
L. Ives, M. Read, T. Bui
Calabazas Creek Research, Inc., San Mateo, CA, United States

11:00 7C-7 HOT TEST OF GYROTRON CAVITY INTERACTION USING A 3D CFDTD PIC METHOD
M. C. Lin[1], D. N. Smithe[1], W. C. Guss[2], R. J. Temkin[2]
[1]Beams Interaction Group, Tech-X Corporation, Boulder, CO, United States
[2]Department of Physics and the Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA, United States

11:15 7C-8 VIRTUAL PROTOTYPING OF A 5 MW CONVENTIONAL MAGNETRON
M. Lambrecht, P. Mardahl, N. Lockwood
Air Force Research Laboratory, Kirtland AFB, NM, United States

11:30 7C-9 PARTICLE WAVE INTERACTION USING CAVITY MODAL EXPANSION WITH AN APPLICATION ON SIMULATIONS OF VIRTUAL CATHODE OSCILLATOR
A. F. Abdel-Rahman, T. M. Abuelfadl
Electronics and Electrical Communications Department, Faculty of Engineering, Cairo University, Giza, Egypt

Session 7D: Plasma Medicine & Biological Effects II

Thursday, May 29 9:30 - 12:00, Thurgood Marshall West
Session Chair: *Chunqi Jiang, Old Dominion University*

9:30 7D-1 THE TYPE OF DNA DAMAGE INDUCED BY DBD PLASMA VARIES DEPENDING ON THE UNIFORMITY OF DISCHARGE
J. Azizkhan-Clifford[1], V. Limonnik[1], D. Dobrynin[2]
[1]Biochemistry and Molecular Biology, Drexel University College of Medicine, Philadelphia, PA, United States
[2]Drexel Plasma Institute, Drexel University, Philadelphia, PA, United States

9:45 7D-2 DOUBLE JET ATMOSPHERIC PRESSURE PLASMA AS A DECONTAMINATING AGENT
A. -A. H. Mohamed[1,2], M. S. Benghanem[1], S. M. Al Shariff[3], S. A. Ouf[4,5]
[1]Physics Department/ Faculty of Science, Taibah University, Almadinah Almunawwarah, Saudi Arabia
[2]Physics Department/ Faculty of Science, Beni-Suef University, Beni-Suef, Egypt
[3]Electrical Engineering Department/ Faculty of Engineeringof Science, Taibah University, Almadinah Almunawwarah, Saudi Arabia
[4]Biology Department, Faculty of Science, Taibah University, Almadinah Almunawwarah, Saudi Arabia
[5]Biology Department, Faculty of Science, Cairo University, Giza, Egypt

10:00 7D-3 A NOVEL NANOSECOND PULSED PLASMA BRUSH FOR BIOMEDICAL APPLICATIONS
J. Lane, M. Malik, C. Edelblute, L. Heller, K. Schoenbach, C. Jiang

Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA, United States

10:15 7D-4 EFFECTIVENESS OF SURFACE DIELECTRIC BARRIER DISCHARGE (SDBD) WITH FLOW CONTROL FOR BIOLOGICAL DECONTAMINATION
K. K. Pai[1], C. T. Timmons[2], S. Karumuri[1], J. D. Jacob[1], G. Zhang[3], L. Ma[2]
[1]Department of Mechanical and Aerospace Engineering, Oklahoma State University, Stillwater, Oklahoma, United States
[2]Department of Entomology and Plant Pathology, Oklahoma State University, Stillwater, Oklahoma, United States
[3]Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland, United States

10:30 7D-5 SURFACE FUNCTIONALIZATION OF GRAPHITE-ENCAPSULATED GOLD NANOPARTICLES FOR MULTIPLE BIOMEDICAL APPLICATIONS USING RF PLASMA
E. Yang[1], H. Chou[2], M. Nagatsu[1,2]
[1]Graduate School of Science and Technology, Shizuoka University, Hamamatsu, Japan
[2]Graduate School of Engineering, Shizuoka University, Hamamatsu, Japan

10:45 7D-6 (invited) BIOLOGICAL AND CHEMICAL EFFECTS OF WATER ACTIVATED BY COLD PLASMA ABOVE AND BENEATH THE WATER SURFACE
Y. Tian[1], R. Ma[1], Q. Zhang[1], J. Zhang[1,2], J. Fang[1,2]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China
[2]College of Engineering, Peking University, Beijing, China

11:15 7D-7 PROLONGED PRESERVATION AND INACTIVATION OF SURFACE-BORNE MICROORGANISMS OF FRESH FRUITS BY NON-THERMAL PLASMA ACTIVATED WATER
R. Ma[1], Y. Tian[1], J. Guo[1], H. Feng[2], J. Zhang[2], J. Fang[2]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China
[2]College of Engineering, Peking University, Beijing, China

11:30 7D-8 EVALUATION OF COLD PLASMA TREATMENT AND SAFETY IN DISINFECTING 21-DAY ROOT CANAL ENTEROCOCCUS FAECALIS BIOFILM IN VITRO
Y. Li[1], G. Wang[1], J. Zhang[1,2], J. Fang[1,2], J. Pan[3], W. Zhu[4]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China
[2]College of Engineering, Peking University, Beijing, China
[3]School and Hospital of Stomatology, Peking University, Beijing, China
[4]Dept. of Applied Science and Technology, Saint Peters University, Jersey City, USA

11:45 7D-9 ANTIMICROBIAL COPPER COATINGS ON TEMPERATURE LABILE SURFACES DEPOSITED WITH A DC PLASMA JET OPERATED WITH AIR
J. Kredl[1], A. Quade[1], S. Mueller[1], S. Peglow[1], M. Polak[1], J. F. Kolb[1], K. -D. Weltmann[1], S. Drache[2], R. Hippler[2]

[1]Leibniz Institute for Plasma Science and Technology, Greifswald, Germany
[2]Institute of Physics, Ernst-Moritz-Arndt University, Greifswald, Germany

Session 7E: Intense Electron and Ion Beams II

Thursday, May 29 9:30 - 12:00, Hoover
Session Chair: *Aled Jones, Atomic Weapons Establishment*

9:30 7E-1 (invited) SCALING OF SMP DIODE PERFORMANCE WITH GEOMETRY AND VOLTAGE
M. L. Kiefer[1], M. D. Johnston[1], T. J. Webb[1], J. J. Leckbee[1], T. J. Renk[1], B. V. Oliver[1], M. G. Mazarakis[1], D. S. Nielsen[1], D. Ziska[1], P. W. Lake[1], N. L. Bennett[2], R. E. Gignac[2], C. C. Smith[2], D. W. Droemer[2], D. R. Welch[3]
[1]Sandia National Laboratories, Albuquerque, NM, United States
[2]National Security Technologies, LLC, Las Vegas, NV, United States
[3]Voss Scientific, LLC, Albuquerque, NM, United States

10:00 7E-2 IMPEDANCE BEHAVIOR IN THE SELF-MAGNETIC PINCH (SMP) DIODE ON THE RITS-6 ACCELERATOR
T. J. Renk[1], M. D. Johnston[1], J. J. Leckbee[1], T. J. Webb[1], M. G. Mazarakis[1], M. L. Kiefer[1], N. L. Bennett[2]
[1]Sandia National Laboratories, Albuquerque, NM, United States
[2]National Security Technologies, LLC, Las Vegas, NV, United States

10:15 7E-3 POWER FLOW MEASUREMENTS IN A SMALL DIAMETER MAGNETICALLY-INSULATED TRANSMISSION LINE FOR FLASH RADIOGRAPHY*
J. C. Zier[1], D. D. Hinshelwood[1], C. Boyer[2], G. Cooperstein[3], J. W. Schumer[1], S. B. Swanekamp[1]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]Engility Corporation, Chantilly, VA, United States
[3]Independent Contractor, Engility Corporation, Chantilly, VA, United States

10:30 7E-4 PLASMA DYNAMICS IN THE SELF-MAGNETIC-PINCH DIODE
N. L. Bennett[1], M. D. Crane[1], C. C. Smith[1], D. W. Droemer[1], D. R. Welch[2], M. D. Johnston[3], J. J. Leckbee[3], M. G. Mazarakis[3], M. L. Keifer[3], T. J. Renk[3], T. J. Webb[3]
[1]National Security Technologies, LLC, Las Vegas, NV, United States
[2]Voss Scientific, LLC, Albuquerque, NM, US
[3]Sandia National Laboratories, Albuquerque, NM, US

10:45 7E-5 DIRECT MEASUREMENT OF THE BI-POLAR ION CURRENT AND ANODE-CATHODE (A-K) VOLTAGE IN A SELF-MAGNETIC PINCH (SMP) DIODE.*
M. G. Mazarakis[1], S. R. Cordova[1], M. E. Cuneo[1], M. D. Johnston[1], M. L. Kiefer[1], J. J. Leckbee[1], D. S. Nielsen[1], B. V. Oliver[1], T. J. Renk[1], M. Sceiford[1], T. J. Webb[1], D. Ziska[1], S. C. Simpson[1], N. Bennett[2], M. D. Crain[2], D. W. Droemer[2], R. E. Cignac[2], G. A. Lare[2], I. Molina[2], D. R. Welch[3], T. M. Romero[2], C. C. Smith[2], F. L. Wilkins[2]
[1]1656, Sandia National Laboratories, albuquerque, NM, United States

[2]National Security Technologies, LLC, , Las Vegas, NV 89193, United States
[3]Voss Scientific, LLC, Albuquerque, NM 87108, United States

11:00 7E-6 EXPERIMENTS WITH CYLINDRICAL REFLEX TRIODES CONNECTED IN SERIES
B. V. Weber[1], E. C. Featherstone[2], D. G. Phipps[1], R. J. Commisso[1]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]Engility Corp, Chantilly, VA, United States

11:15 7E-7 ELECTRIC CHARACTERISTICS OF HIGH-CURRENT SELF-MAGNETIC PINCH DIODE OF PULSED ELECTRON ACCELERATOR "GAMMA-1"
K. V. Strabykin, N. V. Zavyalov, V. S. Gordeev, V. T. Punin, A. V. Grishin, S. T. Nazarenko, V. S. Pavlov, V. A. Demanov, D. A. Kalashnikov, A. V. Kozachek, S. Y. Puchagin, M. A. Moisejevskikh, D. O. Mansurov, B. P. Mironychev, R. A. Mayorov, V. L. Mayornikova
RFNC-VNIIEF, Sarov, Nizhny Novgorod region, Russian Federation

11:30 7E-8 STUDY OF THE HOMOGENEITY OF AN ELECTRON BEAM USING CERENKOV EMISSION
K. Pepitone, J. Gardelle, P. Modin
CEA/CESTA, Le Barp, France

11:45 7E-9 DEVELOPMENT OF AN INTENSE ION-BEAM SOURCE FOR SIMULATING COLD-X-RAY INDUCED EFFECTS IN MATERIALS
D. D. Hinshelwood[1], G. Cooperstein[2], D. Mosher[2], D. G. Phipps[1], S. J. Stephanakis[2], G. L. Paderewski[3], M. T. Lynch[3], G. C. Williams[3], R. H. Burrell[4], C. L. Seymour[4]
[1]Naval Research Lab, Washington, DC, United States
[2]Consultant to NRL through Engility, Chantilly, VA, United States
[3]Exelis Inc., Colorado Springs, CO, United States
[4]Atomic Weapons Establishment, Aldermaston, United Kingdom

Session 7F: Computational Physics and Techniques II

Thursday, May 29 9:30 - 12:00, Coolidge
Session Chair: *Kim Nichols, University of New Mexico*

9:30 7F-1 (invited) STUDY OF NON-MAXWELLIAN ELECTRON ENERGY DISTRIBUTION FUNCTIONS FOR AN OXYGEN DISCHARGE
D. A. Toneli[1], R. S. Pessoa[2], M. Roberto[1]
[1]Physics Department, Technological Institute of Aeronautics, Sao Jose dos Campos, SP, Brazil
[2]Institute of Research and Development, Paraiba Valley University, Sao Jose dos Campos, SP, Brazil

10:00 ***Now 30 min talk*** 7F-2 SIMULATION OF A PHASE CONTROLLED MAGNETRON USING A MODULATED, ADDRESSABLE CATHODE
J. Browning[1], S. Fernandez-Gutierrez[1], D. Smithe[2], M. -C. Lin[2], J. Watrous[3]

[1]Electrical Engineering, Boise State University, Boise, ID, United States
[2]TechX, Boulder, CO, United States
[3]TechFlow, Albuquerque, NM, United States

10:15 7F-3 ***MOVED TO 2P-37a***

10:30 7F-4 COLD TEST OF GYROTRON CAVITY MODES USING A 3D CFDTD METHOD
M. C. Lin[1], D. N. Smithe[1], E. Choi[2], K. R. Chu[3], W. C. Guss[4], R. J. Temkin[4]
[1]Beams Interaction Group, Tech-X Corporation, Boulder, CO, United States
[2]School of Electrical and Computer Engineering, Ulsan National Institute of Science and Technology, Ulsan, Korea
[3]Department of Physics, National Taiwan University,, Taipei, Taiwan
[4]Department of Physics and the Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA, United States

10:45 7F-5 RELATIVISTIC MODELING CAPABILITIES IN 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

11:00 7F-6 SIMULATION OF CATHODE PLASMA EXPANSION IN MAGNETICALLY-INSULATED TRANSMISSION LINES
C. H. Thoma, T. C. Genoni, D. R. Welch
Voss Scientific, LLC, Albuquerque, NM, United States

11:15 7F-7 THE CONFORMAL PARTICLE-IN-CELL SIMULATION OF THE ECCENTRIC COAXIAL MAGNETICALLY INSULATED TRANSMISSION LINE
H. Wang, Y. Li, W. Luo, C. Liu
Xi'an Jiaotong University, Xi'an, China

11:30 7F-8 USING THE HIGDON OPERATOR FOR THE DUAL PHASE VELOCITY BOUNDARY AND THE SIMULATION OF INTERMODULATION
L. D. Ludeking, A. J. Woods
Alliant Techsystem, LLC, Newington, VA, United States

11:45 7F-9 A HYBRID FINITE ELEMENT-FINITE DIFFERENCE ELECTROMAGNETIC PARTICLE-IN-CELL SIMULATION FRAMEWORK
C. S. Meierbachtol[1], A. D. Greenwood[1], J. P. Verboncoeur[2], B. Shanker[2], A. J. Christlieb[3]
[1]Directed Energy Directorate, Air Force Research Laboratory, Kirtland AFB, NM, United States
[2]Department of Electrical and Computer Engineering, Michigan State University, East Lansing, MI, United States
[3]Department of Mathematics, Michigan State University, East Lansing, MI, United States