ICOPS 2017 Technical Program

Session PL1: Plenary 1

Monday, May 22 08:30-08:45, Wildwood 3
Session Chair: Jose Lopez, Seton Hall University

8:30 PL1-1 (invited) HIGH-POWER MILLIMETER-WAVE SOURCES
A. D. R. Phelps
Physics, University of Strathclyde, Glasgow, United Kingdom

Session MO 1.1: Basic Plasma Phenomena I

Monday, May 22 10:00-12:00, Wildwood 9
Session Chair: Andrew S Fierro, Sandia National Laboratories

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

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

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

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

11:15 MO 1.1-5 OPTICAL EMISSION SPECTROSCOPY OF PLASMA EVOLUTION IN OVERVOLTAGED SPARK GAPS

T. R. Schmidt Jr, A. T. Elshafiey, S. Portillo
Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

11:30 MO 1.1-6 MICROPLASMA COUPLING EFFECT IN ARRAYS OF HYBRID STRUCTURE MICROCAVITIES

Y. Wang, X. Zhang, Z. He, C. Liu
Electronic and Information Engineering, Xi'an Jiaotong University, Xi'an, Shaan Xi, China

11:45 MO 1.1-7 INFLUENCE OF THE PULSED AMF ARC CONTROL ON THE VACUUM ARC AND POST ARC CHARACTERISTIC IN VACUUM INTERRUPTERS

G. Ge, M. Liao, X. Duan, Z. Huang, J. Zou
School of Electrical Engineering, Dalian University Of Technology, Dalian, China

Session MO 1.2: Laser Produced Plasmas

Monday, May 22 10:00-11:30, Wildwood 10
Session Chair: Guy Rosenzweig, MIT - PSFC

10:00 MO 1.2-1 CONFIGURATION OF WAVES IN TWO-PLASMON DECAY INSTABILITY UNDER WEAK LANDAU DAMPING OF PLASMA WAVES

G. S. Cho[1], J. Lee[1], Y. Y. Tsui[2]
[1]Department of Nanoscience and Engineering, Inje University, Gimhae, Gyeongnam, South Korea
[2]Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada

10:15 MO 1.2-2 HOT ELECTRON GENERATION AND SPATIAL ENERGY DEPOSITION BY INFRARED LASER AT SHOCK IGNITION RELEVANT INTENSITY

S. Zhang[1], C. M. Krauland[2], J. Peebles[1], J. Li[1], F. N. Beg[1], H. Reynolds[2], M. L. Hoppe Jr.[2], W. Theobald[3], D. Haberberger[3], E. Borwick[3], C. Ren[3], C. Stoeckl[3], W. Seka[3], R. Betti[3], E. M. Campbell[3], M. S. Wei[2]
[1]Department of Mechanical and Aerospace Engineering, University of California, San Diego, La Jolla, CA, United States
[2]Inertial Fusion Technology, General Atomic, San Diego, CA, United States
[3]Laboratory for Laser Energetics, University of Rochester, Rochester, NY, United States

10:30 MO 1.2-3 A STUDY OF FLAME DYNAMICS INDUCED BY A DUAL-PULSE LASER IGNITION TECHNIQUE

C. Dumitrache, C. Limbach, A. Yalin

Mechanical Engineering, Colorado State University, Fort Collins, CO, United States

10:45 MO 1.2-4 SHOCK WAVE GENERATION BY ULTRAVIOLET NANOSECOND LASER PULSES AT REDUCED PRESSURE

C. M. Limbach[1], C. Dumitrache[2], A. P. Yalin[2]

[1]Aerospace Engineering, Texas A&M University, College Station, TX, United States

[2]Mechanical Engineering, Colorado State University, Fort Collins, CO, United States

11:00 MO 1.2-5 EXPERIMENTAL STUDY OF LASER PLASMA FORMATION IN AN OPTICALLY ACCESSIBLE SWITCH

C. E. Rose, C. Dumitrache, A. P. Yalin

Mechanical Engineering, Colorado State University, Fort Collins, CO., USA

11:15 MO 1.2-6 LASER-PLASMA MODELING USING PERSEUS EXTENDED-MHD SIMULATION CODE FOR HED PLASMAS

N. D. Hamlin, C. E. Seyler

Cornell University, Ithaca, NY, United States

Session MO 1.3: Intense Beam Microwave Generation I

Monday, May 22 10:00-11:45, Wildwood 12

Session Chair: Timothy P Fleming, Air Force Research Lab

10:00 MO 1.3-1 COMPUTER SIMULATIONS OF A MEGAWATT-CLASS S-BAND COAXIAL MAGNETRON

A. D. Andreev[1], C. Walker[2]

[1]Booz Allen Hamilton, Inc., Albuquerque, NM

[2]Communications & Power Industries, LLC, Beverly, MA

10:15 MO 1.3-2 (invited) EXPERIMENTAL HOT TEST RESULTS FROM A COMPACT METAMATERIAL SLOW WAVE STRUCTURE

S. Prasad, S. Yurt, K. Shipman, D. Andreev, D. Reass, M. Fuks, E. Schamiloglu

Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

10:45 MO 1.3-3 AN EFFICIENT X-BAND CHERENKOV TYPE HIGH-POWER-MICROWAVE OSCILLATOR WITHOUT GUIDING MAGNETIC FIELD

L. Guo, T. Shu, Z. Li, J. Ju
College of Optoelectronic Science and Engineering, National University of Defence Technology, Changsha, China

11:00 MO 1.3-4 RECENT PROGRESS OF RADIAL-LINE RELATIVISTIC KLYSTRON

F. Dang, X. Zhang, J. Ju, H. Zhong, B. Bao
National University of Defense Technology, Changsha, Hunan, China

11:15 MO 1.3-5 OUTPUT POWER IMPROVEMENT IN RELATIVISTIC BACKWARD WAVE OSCILLATOR OPERATING UNDER LOW MAGNETIC FIELD

R. Chandra, V. Sharma, S. Kalyanasundaram, S. Singh, A. Roy, J. Mondal, S. Mitra, A. Patel, R. Agarwal, A. Sharma
Accelerator & Pulse Power Division, Bhabha Atomic Research Centre, Mumbai Maharashtra, India

11:30 MO 1.3-6 PULSE LENGTHENING OF AN S-BAND REPETITIVE LONG-PULSE RELATIVISTIC BACKWARD-WAVE OSCILLATOR (RBWO)

Z. Jin, J. Zhang, B. Qian, J. Yang, X. Ge
College of optoelectronics Science and Engineering,, National University of Defense Technology, Changsha,Hunan, China

Session MO 1.4: Intense Electron and Ion Beams

Monday, May 22 10:00-12:00, Wildwood 13
Session Chairs: Sophia Gershman, ARISE Inc. and PPPL
Yevgeny Raitses, PPPL

10:00 MO 1.4-1 DESIGNING AN ELECTRON GUN FOR A HIGH EFFICIENCY IOT CAPABLE OF IONOSPHERIC HEATING

J. Appanam Karakkad[1], B. Beaudoin[1], A. H. Narayan[1], G. Nusinovich[1], A. Ting[2], C. Turner[1], T. Antonsen[1]
[1]Institute for Research in Electronics and Applied Physics, University of Maryland, Maryland, United States
[2]U.S Naval Research Laborotory, Washington,DC, United States

10:15 MO 1.4-2 (invited) AMPLIFICATION DUE TO THE TWO-STREAM INSTABILITY OF SELF-ELECTRIC AND MAGNETIC FIELDS OF AN ION OR ELECTRON BEAM PROPAGATING IN BACKGROUND PLASMA

I. D. Kaganovich, E. K. Tokluoglu, J. A. Carlsson, K. Hara, A. Powis
Princeton Plasma Physics Lab, Princeton, NJ, USA

10:45 MO 1.4-3 IRRADIATION OF MATERIALS USING SHORT, INTENSE ION BEAMS FROM AN INDUCTION ACCELERATOR

P. A. Seidl[1], Q. Ji[1], A. Persaud[1], E. Feinberg[1], X. Kong[1,2], C. Sierra[1], F. Treffert[1,3], W. L. Waldron[1], T. Schenkel[1], J. J. Barnard[4], D. P. Grote[4], A. Friedman[4], E. P. Gilson[5], I. Kaganovich[5], A. Stepanov[5]

[1]ATAP, Lawrence Berkeley National Laboratory, Berkeley, CA, United States

[2]Lanzhou University, Lanzhou, China

[3]TU Darmstadt, Darmstadt, Germany

[4]Lawrence Livermore National Laboratory, Livermore, CA, United States

[5]Princeton Plasma Physics Laboratory, Princeton, NJ, United States

11:00 MO 1.4-4 MODELING THE TRANSPORT OF INTENSE RELATIVISTIC ELECTRON BEAMS THROUGH NITROGEN GAS

I. M. Rittersdorf[1], S. B. Swanekamp[1], A. S. Richardson[1], B. V. Weber[1], D. D. Hinshelwood[1], S. L. Jackson[1], J. W. Schumer[1], R. J. Commisso[1], D. Mosher[2], P. F. Ottinger[2], J. R. Angus[3]

[1]Naval Research Laboratory, Washington, DC, United States

[2]Syntek Technologies, Inc., Arlington, VA, United States

[3]Lawrence Livermore National Laboratory, Livermore, CA, United States

11:15 MO 1.4-5 A RELATIVISTIC SELF-CONSISTENT MODEL FOR STUDYING ENHANCEMENT OF CHILD-LANGMUIR LIMIT DUE TO COUNTER-STREAMING IONS

H. Y. Hsu[1], M. C. Lin[2], J. P. Verboncoeur[3]

[1]Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan

[2]Department of Electrical and Biomedical Engineering, Hanyang University, Seoul, South Korea

[3]Department of Electrical and Computer Engineering, Michigan State University, East Lansing, Michigan, USA

11:30 MO 1.4-6 SPACE-CHARGE LIMITED CURRENT OF RELATIVISTIC BEAM IN FINITE COAXIAL DRIFT TUBE

K. Ilyenko[1], T. Yatsenko[1], G. V. Sotnikov[2], S. Portillo[3]

[1]Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine

[2]National Science Center "Kharkiv Institute for Physics and Technology" of NAS of Ukraine, Kharkiv, Ukraine

[3]Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, USA

11:45 MO 1.4-7 COMMISSIONING OF THE DRAGON-II TRIPLE PULSE LINEAR INDUCTION ACCELERATOR

J. Deng
Institute of Fluid Physics,CAEP, Mianyang,Sichuan,621900, China

Session MO 1.5: Nonequilibrium Plasma Applications I

Monday, May 22 10:00-11:45, Wildwood 14
Session Chair: Kevin Martus, William Paterson University

10:00 MO 1.5-1 (invited) PULSED DISCHARGES IN LIQUIDS: GENERATION AND APPLICATIONS

J. F. Kolb[1], C. Miron[1], R. Rataj[1], J. Kredl[1], T. Schulz[1], P. Lukes[2]
[1]INP Greifswald, Greifswald, Germany
[2]Institute of Plasma Physics, Prague, Czech Republic

10:30 MO 1.5-2 DIRECT NATRUAL GAS LIQUEFACTION VIA ATMOSPHERIC PRESSURE DBD

C. Liu[1,2], A. Fridman[1,3], A. Rabinovich[1], D. Dobrynin[1]
[1]Nyheim Plasma Institute, Camden, United States
[2]Electrical & Computer Engineering, Drexel University, Philadelphia, United States
[3]Mechanical Engineering, Drexel University, Philadelphia, United States

10:45 MO 1.5-3 DYNAMIC STALL CONTROL AT HIGH ANGLE OF ATTACK BY NS PULSED ACTUATOR

A. Starikovskiy, K. Meehan, R. Miles
Princeton University, Princeton, United States

11:00 MO 1.5-4 THE INFLUENCE OF CARRIER GAS ON NANOSECOND-PULSED PLASMA DISCHARGE GENERATED IN A WATER FILM PLASMA REACTOR

H. Wang, R. J. Wandell, B. R. Locke
Department of Chemical and Biomedical Engineering, Florida State University, Tallahassee, Florida, United States

11:15 MO 1.5-5 PLASMA ACTIVATED WATER FOR FRUITS AND VEGETABLES PRESERVATION

Y. Zheng[1], J. Zhang[1,2], J. Fang[1,2]
[1]College of Engineering, Peking University, Beijing, China
[2]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China

11:30 **MO 1.5-6 EFFECS OF BUBBLE CONTROL ON SYNTHESIS AND CHARACTERIZATION OF CARBON NANOPARTICLE IN AC SOLUTION PLASMA**

J. -G. Shin[1], H. -J. Kim[1], D. Kum[1], D. H. Kim[1], C. -S. Park[1], H. -S. Tae[1], J. H. Seo[2], B. J. Shin[3]

[1]School of Electronics Engineering, College of IT Engineering, Kyungpook National University, Daegu, South Korea

[2]Department of Electronics Engineering, Incheon National University, Incheon, South Korea

[3]Department of Electronics Engineering, Sejong University, Seoul, South Korea

Session MO 1.6: Chemical production, modification, and destruction

Monday, May 22 10:00-12:00, Wildwood 15

Session Chair: Greg Fridman, Drexel University

10:00 **MO 1.6-1 PURE AND EFFICIENT H2 PRODUCTION FROM H20 USING A LOW POWER AL/AL2O3 MICROPLASMA CHIP REACTOR**

Z. S. Wiersma[1], Z. Dai[2], S. -J. Park[2], J. G. Eden[2]

[1]Chemistry, University of Illinois at Urbana-Champaign, Urbana, IL, United States

[2]Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

10:15 **MO 1.6-2 EXTRACTION OF METABOLITES FROM MICROALGAE WITH SPARK DISCHARGES**

K. Zocher[1], R. Banaschik[1], J. Volzke[1], K. Wende[1], M. Lalk[2], J. F. Kolb[1]

[1]Plasma Life Science, Leibniz Institute for Plasma Science and Technology, Greifswald, Germany

[2]Institute of Biochemistry, University of Greifswald, Greifswald, Germany

10:30 **MO 1.6-3 PLASMA LIQUID CHEMISTRY OF PULSE DISCHARGES GENERATED IN WATER DEPENDING ON PULSE DURATION AND GROUND ELECTRODE MATERIALS**

R. Banaschik[1], C. Miron[1], H. Jablonowski[1], A. Pipa[1], K. Fricke[1], J. Kredl[1], T. Schulz[1], K. -D. Weltmann[1], J. F. Kolb[1], P. Lukes[2], P. Bednarski[3]

[1]Leibniz Institute for Plasma Science and Technology, Greifswald, Germany

[2]Institute of Plasma Physics, Prague, Czech Republic

[3]University of Greifswald, Greifswald, Germany

10:45 MO 1.6-4 THE KINETIC MECHANISMS OF DIFFUSE NANOSECOND PULSED DISCHARGE IN THE DEGRADATION OF HCHO

L. Zhang[1,2], D. Yang[1,2], S. Wang[1,2], J. Feng[1,2], W. Wang[1,2]
[1]Key Lab of Materials Modification,Ministry of Education, Dalian University of Technology, Dalian, China
[2]School of Phyiscs, Dalian University of Technology, Dalian, China

11:00 MO 1.6-5 COMBINING CATALYSIS WITH PULSED PLASMA FOR VOLATILE ORGANIC COMPOUNDS ABATEMENT

Z. Xiao, C. Hao, J. Qiu, D. Xu, K. Liu
Dept.of Light Sources & Illuminating Engineering, Fudan University, ShangHai, China

11:15 MO 1.6-6 PLASMA GAS CLEANING PROCESS FOR THE CONVERSION OF BIOMASS TAR MODEL COMPOUNDS INTO SYNGAS

S. Liu, D. Mei, Y. Ma, X. Tu
Electrical Engineering and Electronics, University Liverpool, Liverpool, United Kingdom

11:30 MO 1.6-7 HYDROGEN PEROXIDE FORMATION AT PLASMA-WATER INTERFACE UNDER POSITIVE DC STREAMER AND PULSED CORONA DISCHARGE

Y. Zhao, T. Wang, S. MacGregor, M. Wilson, I. Timoshkin
Electronic And Electrical Engineering, University of Strathclyde, GLASGOW, United Kingdom

11:45 MO 1.6-8 THE ROLE OF NITROGEN AS A THIRD-BODY COLLIDER IN INDUSTRIAL OZONE GENERATION

D. E. Guerrero[1], A. Freilich[1], J. L. Lopez[1], L. Ramoino[2], S. Seyrling[2]
[1]Physics, Seton Hall University, South Orange, NJ, USA
[2]Ozonia International Ozone, Degremont Technologies, Duebendorf, Switzerland

Session PL2: Plenary 2

Monday, May 22 13:30-14:30, Wildwood 3
Session Chair: Kurt Becker, NYU Tandon School of Engineering

13:30 PL2-1 (invited) PULSED DBD: PHYSICS AND NEW APPLICATIONS FROM NATURAL GAS LIQUEFACTION TO CANCER VACCINATION

A. Fridman
Drexel Plasma Institute, Drexel University, Philadelphia, PA, United States

Session MO Posters: MO P1
Poster Session

Monday, May 22 14:30-16:00, Poster Room

Session Chair: Ricky Tang, Sandia National Laboratories

MO Posters-1 QUANTUM SCALE GAS BREAKDOWN

A. M. Darr, A. M. Loveless, A. L. Garner

Purdue University, West Lafayette, IN, United States

MO Posters-2 SCALING LAWS FOR AC BREAKDOWN VOLTAGE IN MICRODISCHARGES

A. M. Loveless, A. L. Garner

Nuclear Engineering, Purdue University, West Lafayette, IN, United States

MO Posters-3 INVESTIGATING THE EFFECTS OF SECONDARY ELECTRON EMISSION ON STREAMER FORMATION NEAR DIELECTRIC PARTICLES USING A PIC-DSMC CODE

A. K. Jindal, C. H. Moore, R. E. Jorgenson

Sandia National Laboratories, Albuquerque, NM, United States

MO Posters-4 KINETIC SIMULATIONS OF BREAKDOWN AND SHEATH FORMATION IN A DENSE PLASMA FOCUS DEVICE

J. R. Angus, D. P. Higginson, A. J. Link, A. E. Schmidt

Lawrence Livermore National Laboratory, Livermore, CA, United States

MO Posters-5 FIRST PLASMA CHARACTERIZATION RESULTS IN A COMPACT PERMANENT RING MAGNET BASED HELICON PLASMA SOURCE

A. Pandey[1], M. Bandyopadhyay[1,2], D. Sudhir[2], A. Chakraborty[2]

[1]Institute for Plasma Research, Gujarat, India

[2]ITER-India, Gujarat, India

MO Posters-6 STUDY OF PLASMA SERIES RESONANCE EFFECT IN DUAL FREQUENCY CAPACITIVE DISCHARGE

P. Saikia, H. Bhuyan, M. Favre, M. Escolona

Institute of Physics, Pontificia Universidad Catolica de Chile, Av. Vicuna Mackenna 4860, Santiago, Santiago, Chile

MO Posters-7 CHARACTERISTICS OF INDUCTIVELY COUPLED PLASMA IN DIFFERENT POWER AND PRESSURE

F. Lei, J. Zhang, X. T. Liu

xidian University, Xi'an, China

MO Posters-8 NONLINEAR ELECTRON CYCLOTRON OSCILLATIONS AND CROSS-FIELD TRANSPORT IN EXB DISCHARGES

S. Janhunen[1], O. Chapurin[1], O. Koshkarov[1], I. Romadanov[1], A. Smolyakov[1], D. Sydorenko[2], I. Kaganovich[3], Y. Raitses[3]

[1]Department of Physics and Engineering Physics, University of Saskatchewan, Saskatoon, Canada

[2]Centennial Centre for Interdisc Science, University of Alberta, Edmonton, Canada

[3]Theory, Princeton Plasma Physics Lab, Princeton, USA

MO Posters-9 INVESTIGATION OF FILAMENTATION INSTABILITY IN QUANTUM MAGNETIZED PLASMA WITH THE PRESENCE OF HELICAL MAGNETIC FIELD

M. Alimohamadi

Department of Physics, Farhanigan University,Tehran,Iran, Tehran, Iran

MO Posters-10 RELATIVISTIC WAVE-BREAKING LIMIT OF ELECTROSTATIC WAVES IN COLD ELECTRON-POSITRON-ION PLASMAS

M. Karmakar[1], C. Maity[2], N. Chakrabarti[1], S. Sengupta[3]

[1]Plasma Physics, Saha Institute of Nuclear Physics, Kolkata, India

[2]Physics, Government General Degree College Singur, Singur, India

[3]Plasma Physics, Institute for Plasma Research, Gandhinagar, India

MO Posters-11 EXPERIMENTAL STUDY OF PROPAGATION OF SMALL SCALE STRUCTURE IN EMHD PLASMA

G. Joshi[1,2], G. Ravi[1]

[1]FCIPT, Institute for Plasma Research, Gandhinagar,Gujarat, India

[2]Nirma University, Ahmedabad, Gujarat, India

MO Posters-12 SPECTROSCOPIC INVESTIGATIONS OF VACUUM ARCS FROM DIFFUSE MODE TO ANODE SPOT MODE

Z. Wang

Electrical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China

MO Posters-13 SIMULTANEOUS PARTICLE IMAGE VELOCIMETRY (PIV)-SCHLIEREN PHOTOGRAPHY OF FLUID FLOW IN LIQUID INDUCED BY PLASMA-DRIVEN INTERFACIAL FORCES

J. C. Lai, J. E. Foster

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

MO Posters-14 PLASMA STABILIZED COMBUSTION OVER A LARGE RANGE OF THROUGHPUT WITH VARYING FUEL COMPOSITIONS

J. Pleis

Clearsign Combustion Corp., Seattle, WA, United States

MO Posters-15 MICRODISCHARGE SPECIES EVOLUTION IN A 2-DIMENSIONAL PACKED BED REACTOR

K. W. Engeling, J. Kruszelnicki, M. J. Kushner, J. E. Foster
University of Michigan, Ann Arbor, Michigan, United States

Session MO Posters: MO P2
Poster Session

Monday, May 22 14:30-16:00, Poster Room
Session Chair: Juan Trelles, U Mass Lowell

MO Posters-16 THE ACCURATE COMPUTATIONAL ANALYSIS OF THE NON-LINEAR ELECTRON HEAT CONDUCTION WITH INVERSE-BREMSSTRAHLUNG ENERGY SOURCES IN HIGH-TEMPERATURE LASER FUSION PLASMAS

M. Oloumi, M. Habibi, H. Hosseinkhani
Plasma and Nuclear Fusion Research School, Nuclear Science and Technology Research Institute, AEOI,, Tehran, Iran

MO Posters-17 THREE-DIMENSIONAL WEDGE SIMULATION OF AN IONIZATION WAVE IN NITROGEN/HELIUM GAS

A. S. Fierro, C. H. Moore, M. M. Hopkins
Sandia National Laboratories, Albuquerque, NM, United States

MO Posters-18 A PARALLELIZATION METHOD FOR TIME PERIODIC STEADY STATE IN SIMULATION OF RADIO FREQUENCY SHEATH DYNAMICS

D. -C. Kwon[1], S. -S. Shin[2], D. -H. Yu[2]
[1]National Fusion Research Institute, Gunsan, Jeonbuk, South Korea
[2]Kyoungwon Tech, Seongnam, Gyeonggi, South Korea

MO Posters-19 OPTIMIZING FAST DISCHARGES FOR HIGH SPEED TIME VARYING PLASMA ANTENNTA USING PARTICLE IN CELL SIMULATIONS*

R. M. Kingsley Shadi
Electrical Engineering, University of Colorado Denver, Denver, United States

MO Posters-20 BOLTZMAN EQUATION SOLVER COUPLED TO A KINETIC GLOBAL MODEL FRAMEWORK

J. Krek[1], G. Parsey[2], J. Verboncoeur[1]
[1]Computational Mathematics, Science and Engineering (CMSE), Michigan State University, East Lansing, MI, United States
[2]Department of Physics and Astronomy, Electrical and Computational Engineering, Michigan State University, East Lansing, MI, United States

MO Posters-21 UNCERTAINTY QUANTIFICATION IN GLOBAL MODELING OF PLASMA ASSISTED COMBUSTION

G. M. Parsey[1,2], J. Verboncoeur[2,3], A. Christlieb[3]
[1]Dept. of Physics and Astronomy, Michigan State University, East Lansing, MI, United States
[2]Dept. of Electrical and Computer Engineering, Michigan State University, East Lansing,MI, United States
[3]Dept. of Computational Mathematics, Science, and Engineering, Michigan State University, East Lansing, MI, United States

MO Posters-22 ION-NEUTRAL ELASTIC SCATTERING CROSS SECTIONS FOR KINETIC PLASMA SIMULATIONS IN ALEPH

J. L. Pacheco, R. Hooper, J. J. Boerner, A. M. Grillet, T. P. Hughes
Sandia National Laboratories, NM, United States

Session MO Posters: MO P3
Poster Session

Monday, May 22 14:30-16:00, Poster Room
Session Chairs:

MO Posters-23 NONLINEAR PROPAGATION OF WHISTLER PULSE IN MAGNETIZED QUANTUM PLASMA

P. Kumar, S. Singh, N. Ahmad
Department of Physics, University of Lucknow, LUCKNOW, India

MO Posters-24 GENERATION AND CONTROL OF REACTIVE OXYGEN AND NITROGEN SPECIES IN COLD ATMOSPHERIC PRESSURE ARGON PLASMA JET: AN EMISSION SPECTROSCOPIC STUDY

S. Ghorui, N. Tiwari
Laser & Plasma Technology Division, Bhabha Atomic Research Centre, Mumbai, India

MO Posters-25 DUST ACOUSTIC WAVES IN Q-NONEXTENSIVE POSITIVE-NEGATIVE IONS DUSTY PLASMA

M. Alimohamadi
Department of Physics, Farhanigan University, Tehran, Iran

MO Posters-26 ION-TEMPERATURE EFFECT ON COLLISIONAL MAGNETIZED DUSTY PLASMA SHEATH

S. Bhandari
Central Department of Physics, Tribhuvan University, Kathmandu, Nepal., Kathmandu, Nepal

MO Posters-27 LUMINESCENCE FLASH AND TEMPERATURE DETERMINATION OF THE PULSED DISCHARGE INDUCED BUBBLE

L. Zhang, X. Zhu, H. Yan, Y. Huang, Z. Liu, K. Yan
Department of chemical and biological engineering Zhejiang University, Hangzhou, China, Hangzhou, None Selected

MO Posters-28 STUDY OF PLASMA CONDITIONS DURING BOW-SHOCK FORMATION IN COLLIDING JET EXPERIMENTS

G. W. Collins IV, J. C. Valenzuela, F. N. Beg
University of California San Diego, San Diego, CA, United States

MO Posters-29 VLASOV SIMULATIONS OF FAST STOCHASTIC ELECTRON HEATING NEAR THE UPPER HYBRID LAYER

D. C. Speirs[1], B. Eliasson[1], K. Ronald[1], L. K. S. Daldorff[2], A. Najmi[2]
[1]Department of Physics, University of Strathclyde, Glasgow, Scotland, United Kingdom
[2]Applied Physics Laboratory, The John Hopkins University, Laurel, Maryland, U.S.A

MO Posters-30 SPACECRAFT-CHARGING MITIGATION OF A HIGH-POWER ELECTRON BEAM EMITTED BY A MAGNETOSPHERIC SPACECRAFT

F. Lucco Castello[1], G. L. Delzanno[1], J. E. Borovsky[2], O. Leon[3], G. Miars[3], B. E. Gilchrist[3]
[1]Los Alamos National Laboratory, Los Alamos, NM, United States
[2]Space Science Institute, Boulder, CO, United States
[3]University of Michigan, Ann Arbor, MI, United States

Session MO Posters: MO P9
Poster Session

Monday, May 22 14:30-16:00, Poster Room
Session Chair: Xin Tu, University Liverpool

MO Posters-31 CONTRASTING CHARACTERISTICS OF AQUEOUS REACTIVE SPECIES INDUCED BY CROSS-FIELD AND LINEAR-FIELD PLASMA JETS

H. Xu[1], C. Chen[1], D. Liu[1], X. Wang[1], M. G. Kong[2]
[1]State Key Laboratory of Electrical Insulation and Power Equipment Power Equipment, Xi'an, Shaanxi, China
[2]Department of Electrical and Computer Engineering, Norfolk, Virginia, America

MO Posters-32 EFFECT OF PROJECTILE CHARGE ON E-/E+ IMPACT SINGLE IONIZATION CROSS SECTION OF PLASMA RELEVANT MOLECULE TARGETS

P. Singh
Physics, Sir Padampat Singhania University, Udaipur, Rajasthan, India, India

MO Posters-33 NEW DATA FOR MODELING HYPERSONIC RE-ENTRY INTO EARTH'S ATMOSPHERE: ELECTRON-IMPACT IONIZATION OF ATOMIC NITROGEN

C. Ciccarino[1], D. W. Savin[2]
[1]Seton Hall University, South Orange, NJ, United States
[2]Columbia University, New York, NY, United States

MO Posters-34 COLLISIONAL DEACTIVATION OF N2(C3PU) AND N2+(B2S+U) BY HYDROCARBON MOLECULES IN AFTERGLOW OF THE PICOSECOND DISCHARGE

A. Starikovskiy
Princeton University, Princeton, United States

MO Posters-35 A STUDY ON THE EFFECT OF ATMOSPHERIC-PRESSURE PLASMA TREATMENT ON THE HYDROPHILICITY OF POLYAMIDE-IMIDE FABRIC MATS

H. S. Cho, K. Y. Rhee
Department of Mechanical Engineering, Kyunghee University, Yongin-si, South Korea

MO Posters-36 A STUDY ON THE EFFECT OF ATMOSPHERIC-PRESSURE PLASMA TREATMENT ON THE HYDROPHILICITY OF POLYAMIDE-IMIDE FABRIC MATS

H. S. Cho, K. Y. Rhee
Department of Mechanical Engineering, Kyung Hee University, Yongin-si, South Korea

MO Posters-37 EFFECT OF AIR IMPURITY ON SIMILARITY LAW IN HELIUM GLOW DISCHARGE AT LOW PRESSURE

X. Zou, X. Yang, Y. Fu, H. Luo, S. Yang, X. Wang
Department of Electrical Engineering, Tsinghua University, Beijing, China

MO Posters-38 SPECIES DYNAMICS IN PROMPT CYCLICAL HYDROGEN DISCHARGES

R. E. Terry
Independent Research Professional LLC, Columbia, MD, United States

MO Posters-39 CO2 HYDROGENATION IN A TEMPERATURE CONTROLLED PLASMA-CATALYTIC REACTOR

Y. Zeng, L. Wang, A. Bryony, X. Tu

University Liverpool, Liverpool, United Kingdom

MO Posters-40 PLASMA-CATALYST COUPLING FOR ENHANCED OXIDATION OF ETHYL ACETATE OVER V2O5/TIO2 NANOFIBER CATALYST

X. Zhu[1], X. Gao[1], X. Tu[2]
[1]State Key Laboratory of Clean Energy Utilization, Zhejiang University, Hangzhou, China
[2]Department of Electrical Engineering and Electronics, University Liverpool, Liverpool, United Kingdom

MO Posters-41 CHARACTERISTICS OF A HIGH-PRESSURE PULSED ARC DISCHARGE ENVIRONMENT

R. Tang, E. Barnat, A. Fierro, M. Hopkins
Sandia National Laboratories, Albuquerque, United States

Session MO Posters: MO P6
Poster Session

Monday, May 22 14:30-16:00, Poster Room
Session Chair: Ming Xu, Xi'an University of Technology

MO Posters-42 INFLUENCE OF MAGNETIC ARC BLOW ON CONTACT EROSION IN VACUUM INTERRUPTERS

G. Ge, M. Liao, X. Duan, G. Lu, J. Zou
School of Electrical Engineering, Dalian University of Technology, Dalian, China

MO Posters-43 TRANSIENT MODELING OF FAST VACUUM ARC IN SMALL-SIZE TRIGATRON

Z. Yang, L. Wang, X. Zhang, S. Jia
Xi'an Jiaotong University, Xi'an,Shaanxi, China

MO Posters-44 OUPUT CHARACTERISTICS OF HIGH-POWER GAAS PHOTOCONDUCTIVE SEMICONDUCTOR SWITCHES UNDER THE CAPACITIVE AND TRANSMISSION LINE ENERGY STORAGE MODES

C. Ma, Y. Ji, H. Liu, W. Shi, M. Xu, L. Hou
Xi'an University of Technology, Xi'an, Shaanxi

MO Posters-45 FAST RISING EDGE BILATERAL SYMMETRY OUTPUT USING GAAS PHOTOCONDUCTIVE SWITCH

L. Hong, W. M. Lin, G. H. Meng, L. Z. Wu, T. J. Hong, S. Wei, M. Cheng, X. Ming, H. Lei
Applied Physics Department, Xi'an Uniecersity of Technology, Xi'an Shaanxi, China

MO Posters-46 KINETIC SIMULATION OF BREAKDOWN TIME VARIATION FOR GAPS FILLED WITH DIELECTRIC PARTICLES

C. H. Moore, A. S. Fierro, R. E. Jorgenson, H. P. Hjalmarson, A. K. Jindal, M. M. Hopkins, P. G. Clem, L. B. Biedermann
Sandia National Labs, Albuquerque, NM, United States

MO Posters-47 RESEARCH ON THE MATCHING PRINCIPLE OF PSEDUOSPARK SWITCH AND MAGNETIC SWITCH

J. Yan, S. Shen, R. Han, L. Cheng, Y. Wang, K. Qian, W. Ding
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, Shannxi*, China

MO Posters-48 INVESTIGATION OF THE EFFECT ON THE BLOCKING POTENTIAL ELECTRODE IN A PSEUDOSPARK SWITCH

J. Yan, S. Shen, L. Cheng, Y. Wang, R. Han, K. Qian, W. Ding
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, Shannxi*, China

Session MO Posters: MO P5
Poster Session

Monday, May 22 14:30-16:00, Poster Room
Session Chair: Cheng Zhang, Institute of Electrical Engineering, Chinese Academy of Sciences

MO Posters-49 OPTICAL PROPERTIES OF TIXCYOZ COMPOSITE NANOPOWDER OBTAINED BY PULSED PLASMA CHEMICAL METHOD

G. E. Kholodnaya, R. V. Sazonov, D. V. Ponomarev, F. V. Konusov
High Technology Physics Institute, Tomsk Polytechnic University, Tomsk, Russian Federation

MO Posters-50 ELEMENTARY STUDY OF THE PULSE DISCHARGE BETWEEN TWO ELECTRODES WITH AN INTERFACE BETWEEN AIR AND WATER

R. Han, J. Wu, K. Qian, H. Zhou, J. Yan, W. Ding
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, China

MO Posters-51 LIGHT EMISSION CHARACTERISTICS AT DIFFERENT STAGES OF WIRE EXPLOSION PROCESS IN AIR

R. Han, J. Wu, K. Qian, J. Yan, W. Ding
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, China

MO Posters-52 UNDERWATER SHOCK WAVE CHARACTERISTICS PRODUCED BY VAPORIZATION PROCESS OF DIFFERENT METAL WIRES

R. Han, H. Zhou, J. Wu, K. Qian, W. Ding
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, China

MO Posters-53 NANOSECOND BREAKDOWN IN POROUS ALUMINA CERAMICS SATURATED WITH PERFLUORINATED LIQUIDS

I. F. Punanov[1], R. V. Emlin[1], P. A. Morozov[1], S. O. Cholakh[2]
[1]Institute of Electrophysics of the Ural Division of the Russian Academy of Sciences, Yekaterinburg, Russian Federation
[2]Ural Federal University, Yekaterinburg, Russian Federation

MO Posters-54 SUPPRESSION OF SURFACE CHARGE ACCUMULATION ON EPOXY RESIN BY ATMOSPHERIC-PRESSURE PLASMA

C. Cui, S. Zhang, B. Hai, C. Zhang, T. Shao
Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China

MO Posters-55 LIQUID DIELECTRIC BREAKDOWN STUDY UNDER SUB MICROSECOND PULSE CONDITIONS USING TESLA BASED PULSE GENERATOR

V. P. Gajula
Pulsed power division, Institute for Plasma Reseach, Gandhinagar, India

MO Posters-56 RESEARCH ON CALCULATION AND CHARACTERISTICS OF SURFACE CHARGE ON EPOXY COMPOSITE INSULATION UNDER DC VOLTAGE

J. -Y. Xue, H. Wang, Y. -B. Wang, G. -Q. Su, H. -B. Mu, J. -B. Deng, G. -J. Zhang
Xi'an Jiaotong University, Xi'an,Shaanxi, China

MO Posters-57 RESEARCH AND PREDICTION OF THE LIFETIME FOR HIGH VOLTAGE CERAMIC CAPACITORS UNDER REPETITIVE PULSES

J. Yan, K. Qian, L. Cheng, Y. Wang, R. Han, Z. Li, W. Ding
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, Shannxi*, China

MO Posters-58 THE INFLUENCE OF METAL PARTICLES ON THE INSULATING PROPERTIES OF SF6 GAS

N. Kartalovic[1], K. Stankovic[2], D. Brajovic[3]
[1]Institute of Electrical Engineering "Nikola Tesla", Belgrade, Serbia
[2]Faculty of Electrical Engineering, University of Belgrade, Serbia, Belgrade, Serbia
[3]High School of Technical Sciences ï¿½Čačakï¿½, Čačak, Serbia

MO Posters-59 DEGRADATION OF OIL IMPREGNATED CELLULOSE BOARD DUE TO SURFACE DISCHARGES: EXPERIMENTAL RESULTS WITH SOME THEORTICAL CONSIDERATIONS

C. Thirumurugan[1], G. B. Kumbhar[2], R. Oruganti[1]
[1]School of Computing and Electrical Engineering, Indian Institute of Technology Mandi, Mandi, Himachal pradesh-175005, India
[2]Department of Electrical Engineering, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand-247667, India

MO Posters-60 DEVELOPING PROCESS OF SURFACE FLASHOVER ALONG SOLID INSULATING MATERIALS UNDER REPETITIVE NANOSECOND PULSES IN NITROGEN

J. Li, Z. Zhao, M. Zheng, H. Cao
School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China

Session MO Posters: MO P4
Poster Session

Monday, May 22 14:30-16:00, Poster Room
Session Chair: Dong Dai, South China University of technology

MO Posters-61 A NOVEL ARBITRARY BI-POLAR CURRENT SOURCE FOR HIGH DYNAMIC LOADS IN PLASMA, FUSION AND ACCELERATOR APPLICATIONS

M. Frei, R. Schneider, G. Blokesch
Ampegon, Turgi, AG, Switzerland

MO Posters-62 LOW-VOLTAGE DC INPUT, HIGH-VOLTAGE PULSE GENERATOR USING NANO-CRYSTALLINE TRANSFORMER AND SEQUENTIALLY CHARGED MMC SUB-MODULES, FOR WATER TREATMENT APPLICATIONS

M. A. Elgenedy[1], D. Holiday[1], S. Ahmed[2], B. Williams[1]
[1]Electtronic and elecr, Strathclyde University, Glasgow, United Kingdom
[2]ECEN, Texas A and M University at Qatar, Doha, Qatar

MO Posters-63 INFLUENCE OF DUTY CYCLE ON PULSE MODULATED RF CAPACITIVELY-COUPLED ARGON DISCHARGE

L. Chang[1], X. Lu[1], S. Yang[2], X. Liu[3], W. Jiang[2]
[1]State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science and Technology, Wuhan, China
[2]School of Physics, Huazhong University of Science and Technology, Wuhan, China
[3]School of Science, Qiqihar University, Qiqihar, China

MO Posters-64 CURRENT HANDLING CAPABILITY AND BOND DEGRADATION OF BOND WIRES UNDER PULSED CONDITIONS

R. I. Rodriguez-Molina
Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, United States

MO Posters-65 HIGH FREQUENCY 30 KV PULSED-DC GENERATOR WITH USER ADJUSTABLE PULSE WIDTH

T. Ziemba, K. E. Miller, J. Prager
Eagle Harbor Technologies, Inc., Seattle, WA, United States

MO Posters-66 CONTINUOUS TRIBOLUMINESCENCE X-RAY SOURCE BY CONTACTING AND ROTATING TWO CIRCULAR DISCS

S. Furuya
Saitama Institute of Technology, Fukaya, Japan

Session MO Posters: MO P7
Poster Session

Monday, May 22 14:30-16:00, Poster Room
Session Chairs:

MO Posters-67 EXPERIMENTAL INVESTIGATION ON PLASMA PROPERTIES OF DISCHARGE CHANNEL FOR PULSED PLASMA THRUSTER BASED ON SPECTROSCOPIC EMISSION MEASUREMENT

X. Liu, G. Zuo, Y. Zhou, Z. Wu, K. Xie, N. Wang
School of Aerospace Engineering, Beijing Institute of Technology, Beijing, China

MO Posters-68 MEASUREMENTS OF GAS TEMPERATURE IN MICROWAVE PLASMA AT ATMOSPHERIC PRESSURE BY MOLECULAR EMISSION SPECTROMETRY

L. Deng, G. Zhang, C. Liu, H. Xie
Department of Electrical Engineering, Tsinghua University, Beijing, China

MO Posters-69 ELECTRON DENSITY MEASUREMENT IN A LASER INDUCED PLASMA FILAMENT BY RAYLEIGH MICROWAVE SCATTERING

A. Sharma[1], A. Shashurin[1], M. Slipchenko[2], K. A. Rahman[2], M. N. Schneider[3]
[1]School of Aeronautics and Astronautics, Purdue University, West Lafayette, IN, USA
[2]School of Mechanical Engineering, Purdue University, West Lafayette, IN, USA
[3]Princeton Plasma Physics Laboratory, Princeton University, Princeton, NJ, USA

MO Posters-70 CHARACTERIZATION OF SPARK DISCHARGES AT HIGH PRESSURE CONDITIONS BY SPECTRAL LINE BROADENING

S. Groeger, M. Hamme, E. Iglesias, P. Awakowicz
Institute of Electrical Engineering and Plasma Technology, Ruhr University Bochum, Bochum, NRW, Germany

MO Posters-71 OPERATION AND MEASUREMENT OF PENNING DISCHARGES FOR BEAM PLASMA EXPERIMENTS

K. Ronald[1], M. King[1], T. Heelis[1], D. C. Speirs[1], S. L. McConville[1], A. D. Phelps[1], C. W. Robertson[1], A. W. Cross[1], M. E. Koepke[2,1]
[1]SUPA and Department of Physics, University of Strathclyde, Glasgow, United Kingdom
[2]Department of Physics, West Virginia University, Morgantown, United States

MO Posters-72 STREAKED THOMSON SCATTERING TO MEASURE HEATING OF LABORATORY PLASMA JETS BY THE PROBE LASER

J. T. Banasek, T. Byvank, B. R. Kusse, D. A. Hammer
Cornell University, Ithaca, NY, United States

MO Posters-73 MEASUREMENT OF RESONANT AND METASTABLE DENSITIES IN A LOW PRESSURE, MICROWAVE DRIVEN, MICRO ARGON PLASMA BY OPTICAL EMISSION SPECTROSCOPY

P. Hermanns, B. Hillebrand, M. Fiebrandt, P. Awakowicz
Institute of Electrical Engineering and Plasma Technology, Ruhr University Bochum, Bochum, Germany

MO Posters-74 ELECTRON NEUTRAL ELASTIC COLLISION FREQUENCY MEASUREMENT WITH THE HAIRPIN RESONATOR PROBE

D. J. Peterson[1], P. Kraus[2], T. C. Chua[2], S. C. Shannon[1]
[1]Nuclear Engineering, North Carolina State University, Raleigh, NC, United States
[2]Applied Materials Inc., Santa Clara, CA, United States

MO Posters-75 WHAT IS EFFECTIVE AREA OF THE FLAT PROBE DURING MEASUREMENTS?

A. Mustafaev[1], O. Murillio[1], V. Soukhomlinov[2], I. Kaganovich[3]
[1]St.Petersburg Mining University, St. Petersburg, Russian Federation
[2]St. Petersburg State University, St. Petersburg, Russian Federation
[3]Princeton Plasma Physics Laboratory, Princeton, USA

MO Posters-76 PLASMA PARTICLE INTERACTION IN RADIO FREQUENCY THERMAL PLASMA DEVICES

G. D. Dhamale[1], N. Tiwari[2], V. L. Mathe[1], S. V. Bhoraskar[1], S. Ghorui[2]
[1]Department of Physics, Savitribai Phule Pune University, Pune, Maharashtra, India
[2]Laser and Plasma Technology Division, Bhabha Atomic Research Center, Mumbai, Maharashtra, India

Session MO Posters: MO P8
Poster Session

Monday, May 22 14:30-16:00, Poster Room
Session Chairs:

MO Posters-77 ACCURACY ENHANCEMENT IN PROBE REGISTRATION OF ANISOTROPIC CHARGED PARTICLES DISTRIBUTION FUNCTIONS IN PLASMA: ANALYSIS OF SYSTEMATIC ERRORS

V. Soukhomlinov[1], A. Mustafaev[2], A. Strahova[2], Y. Filiasova[2], A. Grabovskiy[2]
[1]St. Petersburg State University, St.Petersburg, Russian Federation
[2]St.Petersburg Mining University, St.Petersburg, Russian Federation

MO Posters-78 DESIGN OF AN ELECTRON ENERGY ANALYZER FOR DC AND LASER ACTIVATED EMISSION FROM A CARBON FIBER CATHODE USING ELECTRON OPTICS

R. L. Miner[1], S. D. Kovaleski[1], J. A. Elle[2]
[1]EECS, University of Missouri, Columbia, MO, United States
[2]RDHP, Air Force Research Labs, Albuquerque, NM, United States

MO Posters-79 MICRO ION GAUGE FOR NSTX-U

R. Raman
Aeronautics and Astronautics, University of Washington, Seattle, WA, United States

MO Posters-80 IMPROVEMENT IN THE FLAT PROBE DIAGNOSTICS FOR ARBITRARY DEGREE OF ANISOTROPY

V. Soukhomlinov[1], A. Mustafaev[2], A. Strahova[2], I. D. Kaganovich[3]
[1]St. Petersburg State University, St. Petersburg, Russia
[2]St.Petersburg Mining University, St. Petersburg, Russia
[3]Princeton Plasma Physics Lab, Princeton, NJ, USA

MO Posters-81 IMPROVEMENT IN THE FLAT PROBE DIAGNOSTICS FOR ARBITRARY DEGREE OF ANISOTROPY

V. Soukhomlinov[1], A. Mustafaev[2], A. Strahova[2], I. Kaganovich[3]
[1]St. Petersburg State University, St. Petersburg, Russian Federation
[2]St.Petersburg Mining University, St. Petersburg, Russian Federation
[3]Princeton Plasma Physics Laboratory, Princeton, USA

MO Posters-82 EVALUATION OF ION FLUX IN AR AND SF6 ASYMMETRIC CAPACITIVE COUPLED PLASMAS THROUGH INVASIVE AND NON-INVASIVE METHODS

J. S. B. Lima[1], A. C. O. C. Doria[1], R. S. Pessoa[1], H. S. Maciel[2], G. Petraconi[2]
[1]Laboratory of Biotechnology and Electric Plasmas, University of Vale do Paraiba, Sao Jose dos Campos, Sao Paulo
[2]Plasmas and Processes Laboratory, Instituto Tecnologico de Aeronautica, Sao Jose dos Campos, Sao Paulo

MO Posters-83 PULSE ANALYSIS OF THE MERCURY INDUCTIVE VOLTAGE ADDER CELLS

E. G. Nachtigall, C. W. Peters
Electrical and Computer Engineering, Drexel University, Philadelphia, PA, United States

MO Posters-84 TIME-RESOLVED ELECTRON DENSITY MEASUREMENTS OF THE RISE CYCLE IN A PULSED INDUCTIVELY COUPLED PLASMA

K. Ford[1], J. Brandon[1], D. Peterson[1], S. Shannon[1], S. K. Nam[2], S. Lee[2]
[1]Nuclear Engineering, North Carolina State University, Raleigh, NC, United States
[2]Research, Samsung Electronics Co., Gyeonggi-do, Republic of Korea

MO Posters-85 ANALYSIS OF STRAY CAPACITANCE ON OUTPUT VOLTAGE OF MARX GENERATOR

M. Mishra[1], K. Kanakgiri[1], S. Mitra[2], V. Sharma[2], A. Roy[2], A. Sharma[2]
[1]Electrical Department, Veermata Jijabai Technological Institute, Mumbai, Maharashtra, India
[2]Accelerator and Pulse Power Division, Bhabha Atomic Research Center, Mumbai, Maharashtra, India

Session MO 2.1: Computational Physics and Techniques I

Monday, May 22 16:00-18:00, Wildwood 9
Session Chair: matthew t bettencourt, Sandia National Labs

16:00 MO 2.1-1 PARAMETRIC STUDY OF THE CHARACTERISTICS OF TRICHEL PULSES FROM NEGATIVE NEEDLE TO PLANE CORONAS
Y. Zheng, L. Wang, D. Wang, S. Jia
Xi'an Jiaotong University, Xi'an, China

16:15 MO 2.1-2 INFLUENCE OF EXTERNAL ELECTRIC FIELD BOUNDARY CONDITIONS ON ELECTROSPRAY EMISSIONS
N. A. Mehta, D. A. Levin
Aerospace Engineering, The University of Illinois at Urbana - Champaign, Urbana, Illinois, United States

16:30 MO 2.1-3 (invited) PARTICLE-IN-CELL ALGORITHM ON UNSTRUCTURED TETRAHEDRAL MESHES
S. N. Averkin, N. A. Gatsonis
Worcester Polytechnic Institute, Worcester, MA, United States

17:00 MO 2.1-4 TWO-DIMENSIONAL ELECTROMAGNETIC PLASMA SIMULATIONS WITH DIFFERENT COLLISION MODELS USING IPIC
W. S. Koh[1], S. -H. Chen[2]
[1]A*STAR Institute of High Performance Computing, Singapore, Singapore, Singapore
[2]Department of Physics, National Central University, Jung-Li, Taiwan

17:15 MO 2.1-5 NUMERICAL MODELING OF HIGH SPEED TIME VARYING PLASMA ANTENNA USING ELECTROMAGNETIC 2D PARTICLE-IN-CELL SIMULATION
H. Y. Kim[1], R. Kingsley-Shadi[1], M. Golkowski[1], M. B. Cohen[2], M. L. R. Walker[3]
[1]Department of Electrical Engineering, University of Colorado Denver, DENVER, CO, USA
[2]School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA
[3]School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, GA, USA

17:30 MO 2.1-6 3-D PARTICLE IN CELL NUMERICAL SIMULATION OF UNDER-VOLTAGED PRESSURIZED SPARK GAP
A. Elshafiey, S. Portillo
UNM, Albuquerque, NM, United States

17:45 MO 2.1-7 ADVANCED PIC-MCC SIMULATION FOR AN INTERMEDIATE-PRESSURE CAPACITIVELY COUPLED PLASMA FOR DEPOSITION PROCESS

J. S. Kim[1], H. J. Kim[2], H. J. Lee[1]
[1]Electric computer engineering, Pusan National University, Busan, South Korea
[2]Memory Thin Film Technology Team, Samsung electronics, Suwon, South Korea

Session MO 2.2: Z Pinches, Foils, Liners, and Plasma Foci

Monday, May 22 16:00-18:00, Wildwood 10
Session Chair: Nicholas Ouart, NRL

16:00 MO 2.2-1 MATERIAL EFFECTS ON LABORATORY PLASMA JETS WITH APPLIED MAGNETIC FIELDS

T. Byvank, N. Hamlin, L. Atoyan, C. E. Seyler, B. R. Kusse
Cornell University, Ithaca, NY, United States

16:15 MO 2.2-2 EXPERIMENTAL INVESTIGATION OF THE EFFECTS OF DIELECTRIC COATINGS ON CYLINDRICAL METAL LINERS DRIVEN BY A 1 MA PULSED POWER GENERATOR

L. Atoyan, D. A. Hammer, J. T. Banasek, T. Byvank, J. B. Greenly, B. R. Kusse, S. V. Rocco
Cornell University, Ithaca, NY, United States

16:30 MO 2.2-3 PREIONIZATION STUDIES OF A LINER-ON-TARGET CONFIGURATION FOR STAGED Z-PINCHES

F. Conti[1], J. C. Valenzuela[1], M. P. Ross[1], J. Narkis[1], N. Aybar[1], I. Krasheninnikov[1], F. N. Beg[1], F. J. Wessel[2], E. Ruskov[2], H. U. Rahman[2], P. Ney[2], T. Darling[3]
[1]Center for Energy Research, University of California, San Diego, La Jolla, CA, United States
[2]Magneto-Inertial Fusion Technologies, Inc., Tustin, CA, United States
[3]Nevada Terawatt Facility, University of Nevada, Reno, Reno, NV, United States

16:45 MO 2.2-4 DEVELOPMENT OF DENSE PLASMA FOCI AS ADVANCED NEUTRON SOURCES AT LLNL

A. P. Povilus, Y. Podpaly, C. Cooper, B. Shaw, S. Chapman, E. Koh, S. Falabella, A. Schmidt
Lawrence Livermore National Lab, Livermore, CA, United States

17:00 MO 2.2-5 SIMULATIONS OF A DENSE PLASMA FOCUS ON A HIGH IMPEDANCE GENERATOR

A. Beresnyak, J. Giuliani, S. Richardson, S. Jackson, S. Swanekamp, J. Schumer, R. Commisso, D. Mosher, B. Weber
Naval Research Laboratory, Washington, DC, United States

17:15 MO 2.2-6 TUNGSTEN PLANAR WIRE ARRAYS ON MICHIGAN LTD GENERATOR

A. S. Safronova[1], V. L. Kantsyrev[1], V. V. Shlyaptseva[1], I. K. Shrestha[1], M. T. Schmidt-Petersen[1], C. J. Butcher[1], A. Stafford[1], K. A. Schultz[1], M. C. Cooper[1], P. C. Campbell[2], A. M. Steiner[2], D. A. Yager-Elorriaga[2], N. M. Jordan[2], R. McBride[2], R. M. Gilgenbach[2], J. L. Giuliani[3], A. L. Velikovich[3], A. S. Chuvatin[4]
[1]University of Nevada, Reno, Reno, NV, United States
[2]University of Michigan, Ann Arbor, MI, United States
[3]Naval Research Laboratory, Wasgington, DC, United States
[4]Ecole Polytechnique, Palaiseau, France

17:30 MO 2.2-7 (invited) PRECONDITIONED WIRE ARRAY Z-PINCH ON A DOUBLE-PULSE CURRENT GENERATOR

J. Wu, Y. Lu, D. Zhang, X. Li, S. Jia, A. Qiu
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi, China

Session MO 2.3: Codes and Modeling I

Monday, May 22 16:00-17:45, Wildwood 12
Session Chair: Peter Mardahl, Air Force Research Laboratory

16:00 MO 2.3-1 EFFICIENT ABSORBING BOUNDARY CONDITIONS FOR ELECTROMAGNETIC PIC SIMULATION

S. J. Cooke
Electronics Science And Technology Division, Naval Research Laboratory, Washington, DC, United States

16:15 MO 2.3-2 (invited) A HIGH-PERFORMANCE PARALLEL COMPUTING FRAMEWORK FOR UNCERTAINTY QUANTIFICATION ANALYSIS OF RF DEVICES

G. M. Stantchev[1], S. J. Cooke[1], K. W. Elliott[2], J. J. Petillo[2]
[1]Naval Research Laboratory, Washington, DC, United States
[2]Leidos, Inc, Billerica, MA, United States

16:45 MO 2.3-3 LARGE SCALE OPTIMIZATION OF RF DEVICES

A. Jensen[1], J. Petillo[1], S. Ovtchinnikov[1], A. Burke[1], D. Panagos[1], C. Kostas[1], G. Statchev[2], S. Cooke[2]

[1]Leidos, Billerica, MA, United States

[2]US Naval Research Laboratory, Washington, DC, United States

17:00 MO 2.3-4 ADVANCES IN BEAM OPTICS ANALYZER

T. Bui, R. L. Ives, M. Read

Calabazas Creek Research, Inc., Mountain View, CA, USA

17:15 MO 2.3-5 DEVELOPMENTS OF THE MICHELLE CODE FOR HIGH PERFORMANCE COMPUTING

J. J. Petillo[1], S. Ovtchinnnikov[1], C. Kostas[1], D. N. Panagos[1], A. Jensen[1], A. Burke[1], E. Nelson[1], G. Stantchev[2], S. Cooke[2], B. Held[3], A. Nichols[3], S. Ayala[3]

[1]Center for Electromagnetics, Leidos Corp, Billerica, MA, United States

[2]Vacuum Electronics, US Naval Research Laboratory, Washington, DC, United States

[3]AWR - National Instruments, Mequon, WI, United States

17:30 MO 2.3-6 A MODEL OF PHOTOEMISSION DELAY MECHANISMS AND ITS APPLICATION TO BEAM OPTICS CODES

K. L. Jensen[1], J. J. Petillo[2], D. N. Panagos[3], S. Ovtchinnikov[2], N. A. Moody[4], A. J. Jensen[2]

[1]Code 6362, MSTD, Naval Research Laboratory, Washington, DC, United States

[2]Directed Energy, Optics, and Space Technology, Leidos Corp, Billerica, MA, United States

[3]Gnosys Inc., Providence, RI, United States

[4]MS H851, Los Alamos National Laboratory, Los Alamos, NM, United States

Session MO 2.4: Insulation and Dielectric Breakdown

Monday, May 22 16:00-17:30, Wildwood 13

Session Chair: Ruixue Wang, Institute of Electrical Engineering, Chinese Academy of Sciences

16:00 MO 2.4-1 (invited) PROPAGATION OF SURFACE IONIZATION WAVE IN NS-PULSE DIELECTRIC BARRIER DISCHARGE IN ATMOSPHERIC PRESSURE AIR

C. Zhang[1,2], J. Qiu[1,2], S. Zhang[1], R. Wang[1], P. Yan[1,2], T. Shao[1,2]

[1]Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China

[2]University of Chinese Academy of Sciences, Beijing, China

16:30 **MO 2.4-2 TEA CO2 LASER PULSE CLIPPER USING A HV PULSE-BASED PRE-IONIZING GAS BREAKDOWN TECHNIQUE NEEDED FOR HIGH RESOLUTION ATMOSPHERIC MONITORING**

T. Gasmi Cherifi
Division of Sciences & Engineering, Saint Louis University-Madrid Campus, Madrid, Spain

16:45 **MO 2.4-3 (invited) PASCHEN CURVE FOR HELIUM IN 100-1000 KV RANGE**

A. V. Khrabrov[1], L. Xu[2], I. D. Kaganovich[1], T. J. Sommerer[3]
[1]PPPL, Princeton, NJ, United States
[2]CAS Key Laboratory of Geospace Environment, USTC, Hefei, China
[3]General Electric Global Research, Niskayuna, NY, United States

17:00 **MO 2.4-4 ELECTRIC FIELD BREAKDOWN VERSUS FREQUENCY SIMULATED UNDER ATMOSPHERIC CONDITIONS FOR LARGE GAPS**

H. Nguyen, A. Chowdhury, J. C. Dickens, R. P. Joshi, A. A. Neuber
Electrical and Computer Engineering, Texas Tech University, Lubbock, TX, United States

17:15 **MO 2.4-5 SURFACE DISCHARGE PHENOMENA ON SYNTHETIC ESTER-PRESSBOARD INTERFACE: EFFECT OF MOISTURE**

C. Thirumurugan
School of Computing and Electrical Engineering, Indian Institute of Technology Mandi, Mandi, Himachal Pradesh, India

Session MO 2.5: Plasma Diagnostic I

Monday, May 22 16:00-17:30, Wildwood 14
Session Chair: Holger Kersten, University Kiel, Germany

16:00 **MO 2.5-1 DEVELOPMENT OF LASER-COLLISION INDUCED FLUORESCENCE FOR ATMOSPHERIC PRESSURE PLASMA GENERATED IN HELIUM ATMOSPHERES**

E. Barnat, A. Fierro
Sandia National Laboratories, Albuquerque, NM, United States

16:15 **MO 2.5-2 EVOLUTION PROCESSES OF NANOSECOND PULSED DIELECTRIC BARRIER DISCHARGE BY SPATIOTEMPORAL RESOLVED SPECTRA IN NEEDLE-PLATE ELECTRODE CONFIGURATION**

D. Yang[1,2], L. Zhang[1,2], S. Tao[3], S. Zhang[3], F. Jing[1,2]
[1]Key Lab of Materials Modification,Ministry of Education, Dalian University of Technology, Dalian, China
[2]School of Phyiscs, Dalian University of Technology, Dalian, China
[3]Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China

16:30 MO 2.5-3 CHARACTERISTICS OF DC MICRODISCHARGE UNDER LOW PRESSURE

Q. Xiong, S. Ji, L. Zhu, W. Lu, S. Chen
State Key Laboratory of Electrical Insulation and Power Equipment, Xiï¿½an Jiaotong University, Xi'an, China

16:45 MO 2.5-4 A HIGH TEMPORAL AND SPATIAL RESOLUTION ELECTRON DENSITY DIAGNOSTIC BASED ON STARK BROADENING

A. Zafar[1], E. Martin[2], S. Shannon[1]
[1]Nuclear Engineering, North Carolina State University, Raleigh, 27695, United States
[2]Fusion Energy, Oak Ridge National Laboratory, Oak Ridge, 37830, United States

17:00 MO 2.5-5 STUDY ON DISCHARGE CHARACTERISTICS OF ONE-DIMENSION ATMOSPHERIC PLASMA JET ARRAY

B. Zhang, M. Wang, F. Liu, Z. Fang
College of Electrical Engineering and Control Science, Nanjing Tech University, Nanjing, Jiangsu, China

17:15 MO 2.5-6 RAYLEIGH MICROWAVE SCATTERING FOR DIAGNOSTICS OF ATMOSPHERIC-PRESSURE MICROPLASMAS

A. Shashurin
Purdue University, West Lafayette, IN, United States

Session MO 2.6: Plasma, Ion, and Electron Sources

Monday, May 22 16:00-18:00, Wildwood 15
Session Chair: Scott Kovaleski, U Missouri

16:00 MO 2.6-1 MODELING ION BEAM NEUTRALIZATION WITH 3D PARTICLE-IN-CELL SIMULATIONS

D. Han, N. A. Gatsonis
Worcester Polytechnic Institute, Worcester, MA, United States

16:15 MO 2.6-2 HIGH POWER OPERATION OF CONTROLLED POROSITY RESERVOIR CATHODES

L. Ives, L. Falce, D. Marsden, G. Collins, M. Read
Calabazas Creek Research, Inc., San Mateo, CA, United States

16:30 MO 2.6-3 THE TWO-STREAM INSTABILITY IN A FINITE LENGTH PLASMA

D. Sydorenko[1], I. D. Kaganovich[2]
[1]1University of Alberta, Edmonton, Edmonton, Alberta, Canada
[2]Princeton Plasma Physics Lab, Princeton, NJ, United States

16:45 MO 2.6-4 (invited) DYNAMICS OF ION BEAM CHARGE NEUTRALIZATION BY FERROELECTRIC PLASMA SOURCES

A. D. Stepanov[1], E. P. Gilson[1], L. R. Grisham[1], I. D. Kaganovich[1], Q. Ji[2], A. Persaud[2], P. A. Seidl[2], T. Schenkel[2]

[1]Princeton Plasma Physics Laboratory, Princeton, NJ, United States

[2]Lawrence Berkeley National Laboratory, Berkeley, CA, United States

17:15 MO 2.6-5 INVESTIGATION OF PLASMA ELECTRON SOURCES USING OPTICAL EMISSION SPECTROSCOPY AND CORRELATION WITH EXTRACTED ELECTRON CURRENT

S. del Pozo[1], C. N. Ribton[1], D. R. Smith[2]

[1]Electron Beam Section, TWI Ltd., Cambridge, United Kingdom

[2]College of Engineering, Design and Physical Sciences, Brunel University London, London, United Kingdom

17:30 MO 2.6-6 ELECTRON ACCELERATION DUE TO THE INTERACTION BETWEEN A NEUTRALIZED ION BEAM AND BACKGROUND PLASMA

K. Hara[1], I. D. Kaganovich[2]

[1]Department of Aerospace Engineering, Texas A&M University, College Station, TX, USA

[2]Princeton Plasma Physics Laboratory, Princeton, NJ, USA

17:45 MO 2.6-7 ION FILTERING OF VACUUM ARC ION SOURCE THROUGH EXTRACTION GRIDS

C. Lan

Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, China

Session PL3: Plenary 3

Tuesday, May 23 08:30-09:30, Wildwood 3

Session Chair: Sarita Prasad, Raytheon and Univ. of New Mexico

8:30 PL3-1 (invited) SIMULATON OF NANOSECOND SPARK DISCHARGES FOR PLASMA ASSISTED COMBUSTION APPLICATIONS

A. Bourdon

LPP, Ecole Polytechnique, France, Palaiseau, France

Session TU 1.1: Basic Plasma Phenomena II

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

Session Chair: Ricky Tang, Sandia National Laboratories

10:00 TU 1.1-1 SPONTANEOUS SELF-ORGANIZATION IN A HELICON PLASMA DEVICE: INSTABILITIES, BIFURCATION, HYSTERESIS AND PLASMA DETACHMENT

S. Chakraborty Thakur, R. Hong, K. Adriany, G. R. Tynan

University of California San Diego, La Jolla, United States

10:30 TU 1.1-2 STUDIES OF PLASMA DENSITY GRADIENT EFFECT ON DIRECT CONVERSION OF UPPER-HYBRID WAVES IN ELECTROMAGNETIC EMISSION FOR BEAM-PLASMA SYSTEM

A. V. Arzhannikov[1,2], V. V. Annenkov[1,2], A. V. Burdakov[1,3], V. S. Burmasov[1,2], I. A. Ivanov[1,2], A. A. Kasatov[1,2], S. A. Kuznetsov[2], M. A. Makarov[1], K. I. Mekler[1], S. V. Polosatkin[1,2,3], V. V. Postupaev[1,2], A. F. Rovenskikh[1], S. L. Sinitsky[1,2], V. F. Sklyarov[1,2], V. D. Stepanov[1,2], I. V. Timofeev[1,2]

[1]Budker Institute of Nuclear Physics, Novosibirsk, Russian Federation

[2]Novosibirsk State University, Novosibirsk, Russian Federation

[3]Novosibirsk State Technical University, Novosibirsk, Russian Federation

10:45 TU 1.1-3 EFFECT OF PARALLEL CONNECTION LENGTH ON FLOWS, FLUCTUATIONS AND QUASI-STATIONARY EQUILIBRIUM IN SIMPLE TOROIDAL DEVICE

U. Kumar[1], R. Ganesh[1], S. G. Thatipamula[2], Y. C. Saxena[1], D. Raju[1]

[1]BETA, Institute for Plasma Research, Gandhinagar, Gujarat, India

[2]Pohang University of Science and Technology, Pohang, South Korea

11:00 TU 1.1-4 MODELING OF CAPACITIVELY COUPLED RF DISCHARGE WITH NON-SINUSOIDAL CURRENT WAVEFORM

G. Shivkumar[1], S. S. Tholeti[1], S. O. Macheret[1], M. A. Alrefae[2], T. S. Fisher[2], A. A. Alexeenko[1]

[1]School of Aeronautics and Astronautics, Purdue University, West Lafayette, IN, United States

[2]School of Mechanical Engineering, Purdue University, West Lafayette, IN, United States

11:15 TU 1.1-5 EFFECT OF RADIATIVE HEAT TRANSFER ON INDUCTIVELY COUPLED PLASMA SIMULATION

M. Yu

Faculty of Mechanical and Precision Instrument Engineering, Xi'an University of Technology, Xi'an, China

11:30 TU 1.1-6 A LONG HELIUM PLASMA COLUMN GENERATED AT 13.56 MHZ UP TO ATMOSPHERIC PRESSURE

J. -S. Boisvert[1], J. Margot[2]
[1]Institut National de la Recherche Scientifique (INRS), 1602 blvd. Lionel Boulet, Quebec, J3X 1S2, Canada, Varenne, Canada
[2]Departement de physique, Universite de Montreal, Montreal, H3T 1J4, Canada, Montreal, Canada

11:45 TU 1.1-7 MODULATION INSTABILITY AND ENVELOPE EXCITATION IN PARTIALLY STRIPPED MAGNETIZED QUANTUM PLASMA

P. Kumar, N. S. Rathore
Department of Physics, University of Lucknow, LUCKNOW, India

Session TU 1.2: Computational Physics and Techniques II

Tuesday, May 23 10:00-12:00, Wildwood 10
Session Chairs: Nikolaos A. Gatsonis, WPI
Juan Trelles, U Mass Lowell

10:00 TU 1.2-1 3D SIMULATION ON VACUUM ARC CONTROLLED BY THREE KINDS OF AMF CONTACTS

J. Deng, L. Wang, X. Zhang, S. Jia
Xi'an Jiaotong University, Xi'an,Shaanxi, China

10:15 TU 1.2-2 VARIATIONAL MULTISCALE FINITE ELEMENT SIMULATION OF A NONEQUILIBRIUM ATMOSPHERIC-PRESSURE ARC IN CROSSFLOW

V. G. Bhigamudre, J. P. Trelles
Mechanical Engineering, University of Massachusetts Lowell, Lowell, MA, United States

10:30 TU 1.2-3 MODELING OF ION THRUSTER PLUME AND BACKFLOW USING PIC-DSMC APPROACH WITH MULTIPLE GPUS.

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

10:45 TU 1.2-4 (invited) PERFORMANCE PORTABILE MULTI-SPECIES PLASMA CODE

M. T. Bettencourt, J. C. Bennett, R. M. Kramer, A. H. Markosyan, C. H. Moore, R. P. Pawlowski, E. G. Phillips, A. Robinson, J. Shadid
1352, Sandia National Labs, Albuquerque, United States

11:15 TU 1.2-5 VALIDATION AND VERIFICATION OF A KINETIC HEAVY PARTICLE TRANSPORT MODEL

J. Trieschmann[1], F. Schmidt[1], D. Krueger[1], R. P. Brinkmann[1], T. Mussenbrock[2]
[1]Ruhr University Bochum, Bochum, Germany
[2]Brandenburg University of Technology, Cottbus, Germany

11:30 TU 1.2-6 MULTIPHYSICS MODELING AND SIMULATION OF ELECTRICAL BREAKDOWN IN LIQUID MEDIUM

A. Charchi Aghdam, T. Farouk
Department of Mechanical Engineering, University of South Carolina, Columbia, SC, United States

11:45 TU 1.2-7 ADVANCED MAGNETO-GAS-KINETIC SCHEME FOR MHD: ANALYSIS AND COMPARISON TO EXISTING MODELS

S. Anderson, K. Hara, S. Girimaji
Aerospace Engineering, Texas A&M University, College Station, TX, United States

Session TU 1.3: Fast- and slow-wave devices

Tuesday, May 23 10:00-11:45, Wildwood 12
Session Chair: Adrian Cross, Strathclyde University

10:00 TU 1.3-1 (invited) TESTING OF A DUAL-FREQUENCY 104/140 GHZ MEGAWATT-CLASS GYROTRON FOR FUSION PLASMA HEATING

S. Cauffman, M. Blank, P. Borchard, K. Felch
CPI, Palo Alto, CA, United States

10:30 TU 1.3-2 HEADING FROM W7-X GYROTRONS TOWARDS GYROTRONS FOR DEMO: RESEARCH STRATEGY AND RECENT DEVELOPMENTS AT KIT

J. Jelonnek[1], G. Aiello[2], K. Avramidis[1], J. Franck[1], G. Gantenbein[1], S. Illy[1], Z. C. Ioannidis[1], J. Jin[1], P. Kalaria[1], I. G. Pagonakis[1], T. Rzesnicki[1], S. Ruess[1], T. Scherer[2], D. Strauss[2], M. Thumm[1], C. Wu[1]
[1]IHM, Karlsruhe Institute of Technology (KIT), Germany, Karlsruhe, Germany
[2]IAM-AWP, Karlsruhe Institute of Technology (KIT), Germany, Karlsruhe, Germany

10:45 TU 1.3-3 PROGRESS OF THE EXPERIMENTS WITH THE EUROPEAN 1MW, 170GHZ INDUSTRIAL CW PROTOTYPE GYROTRON FOR ITER

Z. C. Ioannidis[1], T. Rzesnicki[1], K. Avramidis[1], G. Gantenbein[1], S. Illy[1], J. Jin[1], T. Kobarg[1], I. Pagonakis[1], M. Schmid[1], M. Thumm[1], A. Zein[1], J. Jelonnek[1], S. Alberti[2], F. Braunmueller[2], J. -P. Hogge[2], C. Schlatter[2], J. Genoud[2], M. Q. Tran[2], W. Kasparek[3], C. Lechte[3], J. Chelis[4], G. Latsas[4], A. Zisis[4], I. Tigelis[4], A. Bruschi[5], W. Bin[5], M. Lontano[5], V. Hermann[6], Y. Rozier[6], F. Legrand[6], F. Albajar[7], T. Bonicelli[7], P. -E. Frigot[7]

[1]Institute for Pulsed Power and Microwave Technology (IHM), Karlsruhe Institute of Technology, Karlsruhe, Germany

[2]Swiss Plasma Center, Ecole polytechnique federale de Lausanne, Lausanne, Switzerland

[3]IGVP, University of Stuttgart, Stuttgart, Germany

[4]Faculty of Physics, National and Kapodistrian University of Athens, Athens, Greece

[5]IFP, CNR, Milano, Italy

[6]Thales Electron Devices, Velizy-Villacoublay, France

[7]Fusion for Energy, Barcelona, Spain

11:00 TU 1.3-4 AMPLITUDE AND PHASE CONTROLLED MAGNETRON-BASED, RF SOURCE

L. Ives[1], M. Read[1], B. Chase[2], C. Walker[3], G. Collins[1], D. Marsden[1], R. Pasquinelli[2], T. Bui[1], J. Conant[3]

[1]Calabazas Creek Research, Inc., San Mateo, CA, United States

[2]Fermi National Laboratory, Batavia, IL, United States

[3]Communications & Power Industries, LLC, Beverley, MA, United States

11:15 TU 1.3-5 MULTI-BEAM MTM HIGH POWER MICROWAVE SOURCE

A. Elfrgani, H. Seidfaraji, E. Schamiloglu

Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

11:30 TU 1.3-6 W-BAND GYROTRON TRAVELLING WAVE AMPLIFIER EXPERIMENT BASED ON A HELICALLY CORRUGATED WAVEGUIDE

W. He, C. R. Donaldson, L. Zhang, P. McElhinney, K. Ronald, A. W. Cross, A. D. R. Phelps

Department of Physics, SUPA, Strathclyde University, Glasgow G40NG, United Kingdom

Session TU 1.4: Plasma Medicine and Biological Effects I

Tuesday, May 23 10:00-12:00, Wildwood 13
Session Chairs:

10:00 TU 1.4-1 (invited) APPLICATION OF A MICRO-COLD ATMOSPHERIC PLASMA DEVICE (CAP) IN VITRO AND VIVO FOR BRAIN CANCER THERAPY
Z. Chen[1], E. Gjika[1], L. Lin[1], X. Cheng[1], H. Simonyan[2], C. Young[2], M. Keidar[1]
[1]Mechanical and Aerospace Engineering, The George Washington University, DC, United States
[2]Pharmacology and Physiology, The George Washington University, DC, United States

10:30 TU 1.4-2 CANCER INHIBITING PROPERTIES FROM SELF-ORGANIZED PLASMA-LIQUID INTERFACE: IN VITRO DEMONSTRATION
Z. Chen[1], S. Shiqiang Zhang[1], I. Levchenko[2], I. Beilis[3], M. Keidar[1]
[1]The George Washington University, Washington, DC, United States
[2]Queensland University of Technology, Brisbane QLD, Australia
[3]Tel Aviv University, Ramat Aviv, Israel

10:45 TU 1.4-3 AN INVESTIGATION OF THE IMMEDIATE EFFECT OF COLD ATMOSPHERIC PLASMA ON CANCER CELLS
E. Gjika, M. Kirschner, X. Cheng, Z. Chen, M. Keidar
Mechanical and Aerospace Engineering, George Washington University, Washington, DC, United States

11:00 TU 1.4-4 OPTIMIZATION OF COLD ATMOSPHERIC PLASMA AND ELECTROPORATION FOR CANCER CELLS
P. K. Diwakar[1], A. M. Avellan[2], L. A. Krause[3], R. Jain[4], C. A. Savran[4], T. Sizyuk[1], A. Hassanein[1]
[1]Center for Materials Under Extreme Environment (CMUXE), School of Nuclear Engineering, Purdue University, West Lafayette, United States
[2]Department of Materials Science and Engineering, University of Maryland, College Park, College Park, United States
[3]Weldon School of Biomedical Engineering, Purdue University, West Lafayette, United States
[4]Department of Mechanical Engineering, Purdue University, West Lafayette, United States

11:15 TU 1.4-5 NSPEFS PROMOTING THE PROLIFERATION OF PIEC CELLS: AN IN VITRO STUDY

F. Dong[1], Z. Liu[1], J. Zhang[1,2], J. Fang[1,2], J. Guo[2], Y. Zhang[3]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China
[2]College of Engineering, Peking University, Beijing, China
[3]Department of Cardiology, Beijing Anzhen Hospital, Capital Medical University, Beijing, China

11:30 TU 1.4-6 STRONG H2O2 GENERATION BY CANCER CELLS DURING THE COLD PLASMA TREATMENT

D. Yan[1], J. H. Sherman[2], M. Keidar[1]
[1]Department of Mechanical and Aerospace Engineering, The George Washington University, Washington, DC, United States
[2]Neurological Surgery,, The George Washington University, Washington, DC, United States

11:45 TU 1.4-7 NUTRITIONAL ELEMENT DETECTION IN HUMAN NAILS USING MICROPLASMA INDUCED BREAKDOWN SPECTROSCOPY

M. Burnette[1], X. Tang[1], D. Staack[1], C. Frederickson[2]
[1]Texas A&M University, College Station, TX, United States
[2]NeuroBioTex, Inc., Galveston, TX, United States

Session TU 1.5: Plasma Diagnostics II

Tuesday, May 23 10:00-11:45, Wildwood 14
Session Chair: Vladislav Vekselman, Princeton Plasma Physics Laboratory

10:00 TU 1.5-1 TIME EVOLUTION OF REACTIVE OXYGEN NITROGEN SPECIES IN PLASMA-ACTIVATED ESSENTIAL MEDIA AND WATER

T. R. Brubaker, K. Ishikawa, K. Takeda, H. Hashizume, H. Tanaka, H. Kondo, M. Sekine, M. Hori
Graduate School of Engineering, Nagoya University, Nagoya-shi, Aichi-ken, Japan

10:15 TU 1.5-2 Chromium Vapor Density Measurement by Optical Absorption Spectroscopy at Current-zero of Vacuum Arcs in Vacuum Interrupters

H. Wang, Z. Wang, J. Liu, Z. Liu, Y. Geng, J. Wang
Electrical Engineering, Xi'an Jiaotong University, Xi'an, China

10:30 TU 1.5-3 HIGH RESOLUTION FLUORESCENCE SPECTROSCOPY OF LASER-INDUCED PLASMAS

S. S. Harilal[1], K. Hartig[1], I. Jovanovic[2], M. C. Phillips[1]
[1]Pacific Northwest National Laboratory, Richland, United States
[2]University of Michigan, Ann Arbor, United States

10:45 TU 1.5-4 LASER-COLLISIONAL INDUCED FLUORESCENCE MEASUREMENTS IN A MULTIPOLE CONFINED ARGON DC GLOW DISCHARGE

N. A. Arthur[1], J. E. Foster[1], E. V. Barnat[2]
[1]Nuclear Engineering, University of Michigan, Ann Arbor, MI, United States
[2]Physical, Chemical, and Nano Sciences, Sanda National Laboratory, Albuquerque, NM, United States

11:00 TU 1.5-5 DEVELOPMENT OF A TWO-COLOR THOMSON AND RAYLEIGH SCATTERING DIAGNOSTIC FOR ELECTRON DENSITY MEASUREMENTS

C. M. Limbach[1], A. P. Yalin[2]
[1]Texas A&M University, College Station, TX, United States
[2]Colorado State University, Fort Collins, CO, United States

11:15 TU 1.5-6 X-RAY LASER PLASMA INVESTIGATIONS

G. A. Pavlov, V. M. Treushnikov, V. V. Treushnikov
Institute of problems of chemical physics RAS, Chernogolovka, Moscow region, Russian Federation

11:30 TU 1.5-7 VISIBLE SPECTROSCOPY AND MAGNETIC FIELD PROFILE MEASURMENTS OF PULSED POWER DIODES

S. G. Patel[1], M. D. Johnston[1], T. J. Webb[1], R. E. Falcon[1], D. E. Bliss[1], G. R. Laity[1], M. R. Gomez[1], N. L. Bennett[1], D. R. Welch[1], M. L. Kiefer[1], M. E. Cuneo[1], Y. Maron[2], R. M. Gilgenbach[3]
[1]Sandia National Labs, Albuquerque, NM, USA
[2]Weizmann Institute of Science, Rehovot, Isreal
[3]University of Michigan, Ann Arbor, MI, USA

Session TU 1.6: Nonequilibrium Plasma Applications II

Tuesday, May 23 10:00-11:30, Wildwood 15
Session Chairs:

10:00 TU 1.6-1 EFFECT OF CHEMICAL AND PLASMA FUNCTIONALIZATION ON THE PERFORMANCE OF MICROWAVE RESONATORS

E. H. Lock[1], P. Xu[2], T. Kohler[2], Y. Rosen[2], A. Ramanayaka[2], K. D. Osborn[2]
[1]Materials Science and Technology Division, Naval Research Laboratory, Washington, DC, United States
[2]Laboratory of Physical Sciences, College Park, MD, United States

10:15 TU 1.6-2 EXPLORING THE KINETIC CONTRIBUTION OF CATALYST-PLASMA INTERACTIONS TO ACTIVATE C-H BONDS

J. Kim[1], M. S. Abbott[1], D. B. Go[2], J. C. Hicks[1]
[1]Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, IN, United States
[2]Department of Aerospace and Mechanical Engineering, University of Notre Dame, Notre Dame, IN, United States

10:30 TU 1.6-3 SELF-INITIATED MICROWAVE PLASMA FORMATION AND INTERACTION WITHIN A 2D PHOTONIC CRYSTAL

S. Parsons, J. Gregorio, J. Hopwood
ECE, Tufts University, Medford, MA, United States

10:45 TU 1.6-4 SURFACE MODIFICATION OF PET, PS, PE POLYMERS BY SINGLE RF PLASMA DISCHARGE

D. Mansuroglu[1,2], I. U. Uzun-Kaymak[1]
[1]Physics Department, Middle East Technical University, Ankara, Turkey
[2]Physics Department, Canakkale Onsekiz Mart University, Canakkale, Turkey

11:00 TU 1.6-5 ULTRAFAST SPRAY OF TIO2 SELF-CLEANING FILMS IN TUBULAR SUBSTRATES

L. Zhang[1], S. Yu[1], K. 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

11:15 TU 1.6-6 PLASMA SURFACE MODIFICATION OF ELECTROSPUN POLYMERIC SCAFFOLDS INTENDED FOR TISSUE ENGINEERING

R. Ghobeira[1], P. Wieringa[2], N. De Geyter[1], L. Moroni[2], R. Morent[1]
[1]Research Unit Plasma Technology (RUPT), Ghent University, Ghent, Belgium
[2]Department of Complex Tissue Regeneration, MERLN institute, Maastricht University, Maastricht, The Netherlands

Session PL4: Plenary 4

Tuesday, May 23 13:30-14:30, Wildwood 3
Session Chairs:

13:30 PL4-1 (invited) EFFICIENT GENERATION OF HIGH POWER MICROWAVES USING THE DEGENERATE BAND EDGE OSCILLATORS
M. A. K. Othman[1], A. Figotin[2], F. Capolino[1]
[1]Department of Electrical Engineering and Computer Science, University of California, Irvine, Irvine, CA, United States
[2]Department of Mathematics, University of California, Irvine, Irvine, CA, United States

Session TU Posters: TU P4
Poster Session

Tuesday, May 23 14:30-16:00, Poster Room
Session Chairs:

TU Posters-1 EXPERIMENTAL STUDY OF A HIGH POWER NLTL-MODULATED ELECTRON BEAM DRIVER
B. W. Hoff[1], P. D. Lepell[2], T. B. Montoya[3], D. H. Simon[1]
[1]Air Force Research Laboratory, Kirtland AFB, NM, United States
[2]Leidos, Albuquerque, NM, United States
[3]Voss Scientific, Albuquerque, NM, United States

TU Posters-2 CHANGE IN GUIDING CENTER POSITION AS A FUNCTION OF INCIDENT AND SCATTERING ANGLE IN CROSS-FIELD DIODE
B. S. Stutzman[1], J. P. Verboncoeur[2]
[1]US Coast Guard Academy, New London, CT, United States
[2]Michigan State University, East Lansing, MI, United States

Session TU Posters: TU P2
Poster Session

Tuesday, May 23 14:30-16:00, Poster Room
Session Chairs:

TU Posters-3 EXPERIMENTAL STUDIES ON TWO TYPES OF MAGNETIC POTENTIAL WELLS
I. G. Pagonakis, H. Buchelet, G. Gantenbein, S. Illy, Z. Ioannidis, T. Rzesnicki, M. Thumm, A. Zein, J. Jelonnek
Karlsruhe Institute of Technology (KIT), Institute for Pulsed Power and Microwave Technology (IHM), Karlsruhe, Germany

Session TU Posters: TU P10
Poster Session

Tuesday, May 23 14:30-16:00, Poster Room
Session Chairs:

TU Posters-4 RECENT RESEARCH ON THE MULTI-FREQUENCY RECIRCULATING PLANAR MAGNETRON
G. B. Greening, N. M. Jordan, D. A. Packard, S. C. Exelby, K. A. Schneider, P. Y. Wong, Y. Y. Lau, R. M. Gilgenbach
NERS, University of Michigan, Ann Arbor, United States

TU Posters-5 BACKWARD WAVE OSCILLATION THRESHOLDS IN A TRAVELING-WAVE TUBE
A. Jassem, P. Y. Wong, F. Antoulinakis, Y. Y. Lau
University of Michigan, Ann Arbor, MI, United States

TU Posters-6 ABSOLUTE INSTABILITY AT THE LOWER BAND EDGE IN A TRAVELING WAVE TUBE
F. Antoulinakis, Y. Y. Lau, P. Y. Wong, A. Jassem
University of Michigan, Ann Arbor, MI, United States

TU Posters-7 INVESTIGATING A LOWER LIMIT FOR THE MAGNETIC FIELD IN A TWT
N. Haytural[1], L. Oksuz[1,2], A. Gulec[3], F. Bozduman[1], H. Yesiltepe[1]
[1]Plasma Research Laboratory, Suleyman Demirel University, Isparta, Turkey
[2]Plazmatek, Suleyman Demirel University, Isparta, Turkey
[3]Biomedical Engineering, Suleyman Demirel University, Isparta, Turkey

TU Posters-8 ABOUT THE INVESTIGATION OF ELECTRON-WAVE MICROWAVE AMPLIFIERS AT HIGH VALUES OF INHOMOGENEITY PARAMETER
Y. A. Kalinin, A. V. Starodubov
Department of Physics of nonlinear systems, Saratov State University, Saratov, Russian Federation

TU Posters-9 SIMULATION RESULTS OF A LINEAR FORMAT CFA USING A MODULATED CATHODE
M. Pearlman, J. Browning
Electrical Engineering, Boise State University, Boise, ID, United States

TU Posters-10 BEAM PROFILE AND POSITION INSTABILITY OF A POST-ACCELERATED PSEUDOSPARK-SOURCED ELECTRON BEAM FOR AN EXTENDED INTERACTION OSCILLATOR

A. W. Cross[1], H. Yin[1], L. Zhang[1], W. He[1], G. Shu[1], J. Zhao[2], Y. Yin[3]

[1]Department of Physics, SUPA, Strathclyde University, Glasgow G40NG, United Kingdom

[2]High Voltage Division, School of Electrical Engineering, Xi'an Jiaotong University, Xi'an 710049, China

[3]School of Phyisical Electronics, University of Electronic Science & Technology of China, Chengdu 610054, China

Session TU Posters: TU P1
Poster Session

Tuesday, May 23 14:30-16:00, Poster Room

Session Chair: Peter Mardahl, Air Force Research Laboratory

TU Posters-11 TEMPORAL AND SPATIAL ANALYSIS OF INDUCTIVELY COUPLED ATMOSPHERIC PRESSURE PLASMA

A. Gulec[1], F. Bozduman[2], L. Oksuz[2], A. M. Hala[3]

[1]Technology Faculty/Biomedical Engineering, Suleyman Demirel University, Isparta, Turkey

[2]Science and Literature Faculty/Physics, Suleyman Demirel University, Isparta, Turkey

[3]The National Center for Applied Physics, Material Science Research Institute, King Abdul Aziz City for Science and Technology, Riyadh, Saudi Arabia

TU Posters-12 MODELING PLASMA EXPANSION INTO VACUUM WITH SPEED-LIMITED PARTICLE-IN-CELL (SLPIC) SIMULATION

T. G. Jenkins[1], P. H. Stoltz[1], J. R. Cary[1], G. R. Werner[2]

[1]Tech-X Corporation, Boulder, CO, United States

[2]University of Colorado, Boulder, CO, United States

TU Posters-13 OPERATION OF A W-BAND MILLIMETER-WAVE SOURCE MANUFACTURED BY 3D PRINTING

A. R. Phipps, A. J. MacLachlan, C. W. Robertson, K. Ronald,

A. W. Cross, A. D. R. Phelps

Dept of Physics, University of Strathclyde, Glasgow, United Kingdom

TU Posters-14 TIME EVOLUTION OF DISTRIBUTION FUNCTION OF PLASMA ELECTRON UNDER THE ACTION OF PULSED ELECTRON BEAM

N. E. Aktaev, G. E. Remnev
National Research Tomsk Polytechnic University, Tomsk, Russian Federation

TU Posters-15 TIME DOMAIN ANALYSIS OF HIGHER ORDER MODE PROPERTIES IN AN OPEN CAVITY RETAINING AXIAL SYMMETRY

S. Y. Lin[1], M. C. Lin[2]
[1]STEM, Fairview High School, Boulder, CO, USA
[2]Department of Electrical and Biomedical Engineering, Hanyang University, Seoul, South Korea

TU Posters-16 EFFICIENT SIMULATIONS OF BEAM LOADING IN RF CAVITIES WITH MULTIPLE HIGH-ORDER MODES

S. D. Webb, N. M. Cook, D. T. Abell
RadiaSoft, LLC, Boulder, CO, United States

Session TU Posters: TU P5
Poster Session

Tuesday, May 23 14:30-16:00, Poster Room
Session Chairs:

TU Posters-17 REDUCTION OF NOX EMISSIONS BY MICROWAVE PLASMA IGNITION IN INTERNAL COMBUSTION ENGINE

C. Liu, G. Zhang, H. Xie, L. Deng
Department of Electrical Engineering, Tsinghua University, Beijing, Beijing

TU Posters-18 MEASUREMENTS OF MULTIPACTOR AND DARK CURRENT IN A 17 GHZ STANDING WAVE ACCELERATOR STRUCTURE

H. Xu, M. A. Shapiro, R. J. Temkin
Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA, United States

TU Posters-19 RESONANT CHARACTERISTICS IN 7X7 MICROWAVE DISCHARGE ARRAY BASED ON MICROSTRIP SPLIT RING RESONATOR

H. Kim, S. G. Parsons, J. A. Hopwood
Electrical and Computer Engineering, Tufts University, medford, United States

TU Posters-20 STATIONARY STATISTICAL THEORY FOR COAXIAL MULTIPACTOR

S. Lin, Y. Li, H. Wang, C. Liu
Xi'an Jiaotong University, Xi'an, China

TU Posters-21 TWT SUPPORT ROAD COATING BY MPCVD

F. Bozduman[1], N. Haytural[2], A. Gulec[3], O. N. Asan[4], L. Oksuz[5]

[1]Physics, Ferhat Bozduman, Isparta, Turkey

[2]Physics, Necati Haytural, Isparta, Turkey

[3]Biomedical, Ali Gulec, Isparta, Turkey

[4]Physics, Orkun Nuri Asan, Isparta, Turkey

[5]Physics, Lutfi Oksuz, Isparta, Turkey

TU Posters-22 DIAGNOSTICS OF CAPACITIVE COUPLED PLASMA BY SPECTROSCOPY AND MICROWAVE

X. He[1], C. Liu[1], Y. Zhang[2], J. Chen[3], Y. Chen[3], X. Zeng[3], B. Chen[1]

[1]College of science, Hohai university, Nanjing, China

[2]College of science, Nanjing University of Science & Technology, Nanjing, China

[3]Beijing Aeronautical Technology Research Center, Beijing, China

TU Posters-23 INTERACTION MECHANISM OF MICRO-PLASMA AND TERAHERTZ WAVES

L. Hou[1], W. Shi[1], M. Xu[1], C. Ma[1], H. Liu[1], X. Sun[2]

[1]Applied Physics Department, Xi'an University of Technology, Xi'an, China

[2]Northwest Engineering Corporation Limited, Xi'an, China

TU Posters-24 ELECTRIC FIELD DISTRIBUTION OF A WEDGE SHAPE PLASMA PHOTONIC CRYSTAL

S. S. M. Chung

Institute of Biophotonics Engineering, National Yang Ming University, Taipei, Taiwan

Session TU Posters: TU P3

Poster Session

Tuesday, May 23 14:30-16:00, Poster Room

Session Chairs:

TU Posters-25 A STUDY ON FLEXİBLE SOLİD STATE ELECTROCHROMİC DEVİCES CONSISTING OF RF PLASMA MODIFIED WO3 HYBRID

E. Eren[1], C. Alver[1], G. Yurdabak Karaca[1], E. Uygun[2],

L. Oksuz[2], A. Uygun Oksuz[1]

[1]Chemistry, Suleyman Demirel University, Isparta, Turkey

[2]Physics, Suleyman Demirel University, Isparta, Turkey

TU Posters-26 DESIGN OF ELECTROCHROMIC HYBRID POLY(3-METHYLTHIOPHENE)/WO3 MATERIALS VIA ELECTROCHEMICAL ROUTE

C. Dulgerbaki, A. Uygun

Chemistry, Suleyman Demirel University, Isparta, Turkey

TU Posters-27 EXPERIMENTAL STUDY OF TIME DEPENDENCE ABLATION RATE IN ATMOSPHERIC PRESSURE DC CARBON ARC DISCHARGES

T. Huang, V. Vekselman, Y. Raitse
Princeton Plasma Physics Laboratory, Princeton, NJ, United States

TU Posters-28 UNIFIED ANALYTICAL TREATMENT OF NEAR-CATHODE LAYERS OF ARC DISCHARGES WITH APPLICATION TO SPOTLESS CATHODIC ATTACHMENT OF VACUUM ARCS

L. G. Benilova[1], M. S. Benilov[1,2]
[1]Departamento de Fï¿½sica, FCEE, Universidade da Madeira, Funchal, Portugal
[2]IST, Instituto de Plasmas e Fusï¿½o Nuclear, Universidade de Lisboa, Lisboa, Portugal

TU Posters-29 ELECTROMAGNETIC THERMAL FLUID SIMULATION OF VACUUM ARC CATHODE SPOT WITH VAPOR FROM OXIDE LAYER

S. Yamamoto, T. Iwao, Y. Ehara
Electrical and electronic engineering, Tokyo City University, Tokyo, Japan

TU Posters-30 EVAPORATION QUANTITY OF TROLLEY WIRE AFFECTED BY ARC CURRENT USING ELECTROMAGNETIC THERMAL FLUID SIMULATION

Y. Maeda[1], S. Iwata[1], S. Yamamoto[1], T. Iwao[1], T. Hayasaka[2]
[1]Tokyo City University, Tokyo, Japan
[2]Railway Technical Research Institute, Tokyo, Japan

TU Posters-31 CONTRIBUTION OF ARC COLUMN FOR MOVING SPEED AFFECTED BY EXTERNAL MAGNETIC FIELD IN MAGNETIC DRIVEN ARC

T. Yamato, Y. Inuzuka, S. Yamamoto, T. Iwao
Electrical & Electronic Engineering, Tokyo City University, Setagaya-ku, Japan

TU Posters-32 DISTRIBUTION OF VAPOR DENSITY AFFECTED BY CATHODE SPOT AREA OF VACUUM ARC

S. Iwata, S. Yamamoto, T. Iwao
Electrical & Electronic Engineering, Tokyo City University, Setagaya-ku, Japan

TU Posters-33 LAMP EFFICIENCY OF WALL-STABILIZED ARGON PULSED ARC AFFECTED BY TRANSIENT CURRENT

Y. Asano, S. Yamamoto, T. Iwao
Electrical & Electronic Engineering, Tokyo City University, Setagaya-ku, Japan

TU Posters-34 CONDUCTANCE IN POST ARC DISCHARGE AFFECTED BY THE GAS BLUSTER ANGLE

Y. Ishikawa, K. Sato, S. Ono, S. Yamamoto, T. Iwao
Electrical & Electronic Engineering, Tokyo City University, Setagaya-ku, Japan

TU Posters-35 PROCESS OF ARC MOVING AFFECTED BY EXTERNAL MAGNETIC FIELD IN MAGNETIC DRIVEN ARC

Y. Inuzuka, T. Yamato, S. Yamamoto, T. Iwao
Tokyo City University, Tokyo, Japan

Session TU Posters: TU P8
Poster Session

Tuesday, May 23 14:30-16:00, Poster Room
Session Chairs:

TU Posters-36 HIGH-THRUST ELECTRO-JET ENGINE USING HELICALLY CORRUGATED MAGNETIC FIELD

A. V. Arzhannikov[1,2], A. D. Beklemishev[1,2]
[1]Plasma physics department, Novosibirsk State University, Novosibirsk, Russian Federation
[2]Plasma Physics Department, Budker Institute of Nuclear Physics, Novosibirsk, Russian Federation

TU Posters-37 MICROPLASMA JET DEVICE FOR PLASMA THRUSTER

H. Seo[1], D. H. Kim[1], G. T. Bae[1], H. -S. Tae[1], C. -S. Park[1], W. H. Kim[2], B. J. Shin[3], S. -O. Kim[4]
[1]School of Electronics Engineering, Kyungpook National University, Daegu, South Korea
[2]School of Mechanical Engineering, Kyungpook National University, Daegu, South Korea
[3]Department of Electronics Engineering, Sejong University, Seoul, South Korea
[4]Department of Electrical and Computer Engineering, New York Institute of Technology, Old Westbury, USA

TU Posters-38 TRANSITION OF THERMODYNAMIC PROPERTY OF ELECTRON IN A MAGNETICALLY EXPANDING PLASMA

K. S. Chung, J. Y. Kim, K. -J. Chung, Y. S. Hwang
Nuclear Engineearing, Seoul National University, Seoul, South Korea

TU Posters-39 AN APPROACH TO IMPROVE OVERALL EFFICIENCY OF PULSED PLASMA THRUSTER UTILIZING CAPILLARY STRUCTURE AND COAXIAL ACCELERATING RAIL

Y. Wang, L. Cheng, J. Yan, K. Qian, Z. Li, W. Ding
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, China

TU Posters-40 ANALYSIS OF PROCESSES IN INDUCTOR LOADED BY A PLASMA OF RF THRUSTER DISCHARGE

G. G. Shishkin[1], A. G. Shishkin[2], A. P. Plokhikh[3]
[1]Moscow Aviation Institute, Moscow, Russian Federation
[2]Moscow State University, Dept. of Computational Mathematics& Cybernetics, Moscow, Russian Federation
[3]RIAME of Moscow Aviation Institute, Moscow, Russian Federation

TU Posters-41 PRELIMINARY STUDY ON PLUME CHARACTERISTICS OF A NOVEL PULSED PLASMA THRUSTER

Y. Wang, L. Cheng, J. Yan, K. Qian, Z. Li, W. Ding
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, China

TU Posters-42 STUDY ON THE CHARACTERISTIC OF DEPOSITED ENERGY IN A CAPILLARY DISCHARGE BASED PULSED PLASMA THRUSTER

L. Cheng, Y. Wang, J. Yan, Z. Li, K. Qian, W. Ding
Xi'an Jiaotong University, Xi'an, China

TU Posters-43 EXPERIMENTAL RESEARCH ON ABLATION CHARACTERISTICS IN A LOW ENERGY CAPILLARY DISCHARGE BASED PULSED PLASMA THRUSTER

L. Cheng, Y. Wang, J. Yan, Z. Li, K. Qian, W. Ding
Xi'an Jiaotong University, Xi'an, China

Session TU Posters: TU P7
Poster Session

Tuesday, May 23 14:30-16:00, Poster Room
Session Chairs:

TU Posters-44 OXIDATIVE STRESS OF MELANOMA CANER CELLS INDUCED BY ATMOSPHERIC PRESSURE COLD PLASMA

G. -M. Xu[1], J. -R. Liu[2], S. -L. Chen[1], X. -M. Shi[2], G. -J. Zhang[1]
[1]State Key Lab of Electrical Insulation & Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi, China
[2]Environment and Genes Related to Diseases Key Laboratory of Education Ministry, Xi'an, Shaanxi, China

TU Posters-45 THE SELECTIVE EFFECT OF PLASMA ACTIVATED MEDIA ON CELLS

S. Mohades[1], N. Barekzi[1,2], V. Maruthamuthu[3], H. Razavi[1], M. Laroussi[1]
[1]Plasma Engineering & Medicine Institute, Old Dominion University, Norfolk, VA, United States
[2]Department of Biological Sciences, Old Dominion University, Norfolk, VA, United States
[3]Mechanical & Aerospace Engineering Dept, Old Dominion University, Norfolk, VA, United States

TU Posters-46 SYNERGISTIC EFFECTS OF COLD ATMOSPHERIC PLASMA AND ELECTRIC PULSES ON JURKAT CELLS

M. V. Lauria, P. Dieffenbach, A. Vadlamani, J. Firehammer, A. Shashurin, A. L. Garner
Nuclear Engineering, Purdue University, West Lafayette, IN, USA

TU Posters-47 MODELLING SYNERGISTIC EFFECTS OF COLD ATMOSPHERIC PLASMA AND PULSED ELECTRIC FIELD TREATMENTS IN PORE CREATION

C. Meert, N. Allen, A. L. Garner, J. N. Brooks
Nuclear Engineering, Purdue University, West Lafayette, IN, United States

TU Posters-48 CHARACTERIZATION OF A COLD ATMOSPHERIC PRESSURE HELIUM PLASMA JET FOR BIOMEDICAL EXPERIMENTS

P. C. Dieffenbach, M. V. Lauria, A. Shashurin, A. L. Garner
Nuclear Engineering, Purdue University, West Lafayette, United States

TU Posters-49 THE EFFECT OF THE TYPE OF GAS ON UNDERWATER DISCHARGE

K. Kim, J. Y. Huh, S. H. Ma, Y. C. Hong
Plasma Technology Research Center, National Fusion Research Institute, Gunsan, South Korea

TU Posters-50 3D PRINTED MINI PLASMA JET: APPLICATION TO HEMOSTATIC TREATMENT FOR ENDOSCOPE

Y. Hayashi[1], H. Kawano[1], Y. Nomura[2], T. Takamatsu[2], H. Miyahara[1], S. Ota[3], T. Azuma[2], A. Okino[1]
[1]Tokyo Institute of Technology, Yokohama, Japan
[2]Kobe University, Kobe, Japan
[3]Kobe Design University, Kobe, Japan

TU Posters-51 CHARATERIZATION OF A PLASMA SOURCE USED TO ACCELERATE WOUND HEALING OF THE TADPOLE XENOPUS LAEVIS

K. Martus, J. Menon
William Paterson University, Wayne, NJ, United States

TU Posters-52 TREATMENT ON NEUROBLASTOMA CANCER CELLS USING ATMOSPHERIC COLD PLASMA

M. T. Rajan, K. Patel, S. Vemulapalli, N. Pokala
Plasma Engineering Research Lab (PERL), Texas A&M University - Corpus Christi, Corpus Christi, TX, United States

TU Posters-53 ATMOSPHERIC PRESSURE COLD PLASMA APPLICATION FOR HOSPITAL STERILIZATION

M. T. Rajan, A. Wilkins, B. Phung
Plasma Engineering Research Lab (PERL), Texas A&M University - Corpus Christi, Corpus Christi, TX, United States

TU Posters-54 DISINFECTION OF REVERSE OSMOSIS WATER BY ATMOSPHERIC PLASMA RICH IN OH RADICAL

A. C. O. C. Doria, G. S. Liberato, F. R. Figueira, C. A. Carvalho, J. B. S. Lima, R. S. Pessoa, S. Khouri
Laboratory of Biotechnology and Electric Plasma, University of Vale do Paraiba, Sao Jose dos Campos, Sao Paulo, Brazil

TU Posters-55 ARGON/AIR AND HELIUM/AIR ATMOSPHERIC PLASMA JET INACTIVATION OF CANDIDA ALBICANS BIOFILM FORMED FROM CLINICAL STRAINS

F. R. Figueira, A. C. O. C. Doria, J. S. B. Lima, S. Khouri, R. S. Pessoa
Laboratory of Biotechnology and Electric Plasma, University of Vale do Paraiba, Sao Jose dos Campos, Sao Paulo, Brazil

TU Posters-56 REACTIVE MOLECULAR DYNAMICS SIMULATION ON PLASMA-INDUCED DESTRUCTION OF FUNGAL CELL WALL COMPONENTS

L. Shi, T. Zhao, Y. T. Zhang, L. Zou, L. Zhang
School of Electrical Engineering, Shandong University, Ji'nan, Shandong Province, China

Session TU Posters: TU P6
Poster Session

Tuesday, May 23 14:30-16:00, Poster Room
Session Chairs:

TU Posters-57 NUMERICAL INVESTIGATION OF A HELIUM ATMOSPHERIC PRESSURE JET WITH VARIOUS AMOUNTS OF N2 ADMIXTURE

Y. Zheng, L. Wang, D. Wang, S. Jia
Xi'an Jiaotong University, Xi'an, China

TU Posters-58 NUMERICAL MODELLING OF IONIC WIND GENERATION BY NEGATIVE CORONA DISCHARGE IN AMBIENT AIR WITH EXPERIMENTAL VALIDATION

S. Chen[1,2], S. Nijdam[1]

[1]Department of Applied Physics, Eindhoven University of Technology, 5600 MB Eindhoven, Netherlands

[2]Department of Electrical and Information Engineering, Hunan University, 410082 Changsha, China

TU Posters-59 NUMERICAL SIMULATION OF MULTI-PEAK DISCHARGE AND ITS RADIAL STRUCTURES IN ATMOSPHERIC PRESSURE HELIUM DIELECTRIC BARRIER DISCHARGES

D. Dai, Y. Zhang, W. Ning, Q. Zhang

school of electric power, South China University of technology, Guangzhou, Guangdong, China

TU Posters-60 SIMULATION OF CH4 DRY REFORMING BY NANOSECOND PULSE PLASMA-CATALYSIS

H. Cheng[1,2], X. Lu[1,2], D. Liu[1,2,3]

[1]State Key Lab of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science and Technology, Wuhan,Hubei, China

[2]IFSA Collaborative Innovation Center, Shanghai Jiao Tong University, Shanghai, China

[3]State Key Laboratory of Electrical Insulation and Power Equipment, Xiï¿½an Jiaotong University, Xiï¿½an,Shanxi, China

TU Posters-61 MICROWAVE PLASMA-ASSISTED IGNITION AND FLAMEHOLDING IN PREMIXED ETHYLENE/AIR MIXTURES

C. A. Fuh, W. Wu, C. Wang

Department of Physics and Astronomy,, Mississippi State University, Starkville, Ms, United States

TU Posters-62 FLASHOVER CHARACTERISTICS OF EPOXY RESIN WITH HE_CF4 ATMOSPHERIC PRESSURE PLASMA JET TREATMENT

S. -L. Chen, G. -M. Xu, C. -W. Yao, Z. -S. Chang, G. -J. Zhang

State Key Lab of Electrical Insulation & Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China

TU Posters-63 A MODEL CONSIDERING VOLTAGE BREAKDOWN PROCESS TO SIMULATE CURRENT PAUSE PHENOMENA IN ELECTRICAL WIRE EXPLOSION

G. Yin, X. Li, J. Wu, S. Jia, A. Qiu

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

TU Posters-64 STRUCTURAL CHARACTERISTICS OF ALUMINUM NANOPARTICLES PRODUCED BY ELECTRICAL EXPLOSION IN ARGON

X. Li, Y. Wang, J. Wu, X. Li, A. Qiu
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi, China

TU Posters-65 RF MAGNETRON SPUTTERED MAGNETIC NANOWIRE

G. Yurdabak Karaca[1], E. Uygun[2], A. Uygun Oksuz[1], L. Oksuz[2,3]
[1]Chemistry, Suleyman Demirel University, Isparta, Turkey
[2]Technopark, Plazmatek, Isparta, Turkey
[3]Physics, Suleyman Demirel University, Isparta, Turkey

TU Posters-66 ELECTROCHROMIC CHARACTERISTICS AS A FUNCTION OF ELECTROLYTE ON PERFORMANCE OF ELECTROCHROMIC FILMS INCLUDING PLASMA MODIFIED V2O5 HYBRIDS

E. Eren[1], G. Cogal[2], A. Yildiz[3]
[1]Chemistry, Suleyman Demirel University, Isparta, Turkey
[2]Metarial Technology Engineering, Mehmet Akif Ersoy University, Burdur, Turkey
[3]Chemistry, Mehmet Akif Ersoy University, Burdur, Turkey

TU Posters-67 EFFECT OF NANOPOROUS DIELECTRIC ON DISCHARGE MODE TRANSITION IN A RF DIELECTRIC BARRIER DISCHARGE AND ITS APPLICATION IN METHANE REFORMING

H. Mu[1], A. Rousso[2], C. Yu[1], P. Li[1], G. Zhang[1], Y. Ju[2]
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[2]Department of Mechanical and Aerospace Engineering, Princeton University, Princeton,NJ, USA

TU Posters-68 MODELING OF AN ELECTRON-BEAM PUMPED ARF EXCIMER LASER

T. B. Petrova, G. M. Petrov, M. F. Wolford, A. J. Schmitt, J. L. Giuliani, S. P. Obenschain
Plasma Physics Division, NRL, Washington, DC, United States

TU Posters-69 ATMOSPHERIC PRESSURE COLD PLASMA APPLICATION FOR FOOD SAFETY

M. T. Rajan, J. Turner, L. Pinnell, J. Tallman, E. Moreno
Plasma Engineering Research Lab (PERL), Texas A&M University - Corpus Christi, Corpus Christi, TX, United States

TU Posters-70 OVERVIEW OF EXPERIMENTAL STUDIES OF PLASMA IN LIQUID WATER AT THE UNIVERSITY OF MICHIGAN AND PROGRESS TOWARDS A PRACTICAL PLASMA WATER REACTOR

J. E. Foster[1], J. Lai[1], S. Mujovic[1], J. Groele[1], Y. Kovach[1], M. C. Garcia[2]
[1]University of Michigan, Ann Arbor, MI, United States
[2]Grupo De Espectroscopia de Plasmasas, Universidad de Cordoba, Cordoba, Spain

TU Posters-71 THE EFFECT OF SEED ELECTRONS ON THE REPEATABILITY OF APPJ PROPAGATION

X. Lu, L. Nie, J. Chang`, Y. Xian
Huazhong University of Science and Technology, China, Wuhan, China

TU Posters-72 CONTROLLABLE VOLTAGE STABILIZATION BY MEANS OF LIGHT INERT GASES

E. Lomakina, A. Egorova, A. Mustafaev
St.Petersburg Mining University, St. Petersburg, Russian Federation

TU Posters-73 ATMOSPHERIC PRESSURE PLASMA SOURCES FOR PLASMA POLYMERIZATION AND LARGE AREA TREATMENT

D. H. Kim[1], C. -S. Park[1], D. Kim[1], H. -S. Tae[1], B. J. Shin[2], J. H. Seo[3]
[1]School of Electrical Engineering, College of IT Engineering, Kyungpook National University, Daegu, South Korea
[2]Department of Electronics Engineering, Sejong University, Seoul, South Korea
[3]Department of Electronics Engineering, Incheon National University, Incheon, South Korea

TU Posters-74 PLASMA-ENHANCED ATOMIC LAYER DEPOSITION OF AL2O3 THIN FILM ON TIO2 NANOTUBES

R. C. Goncalves, A. C. O. C. Doria, J. S. B. Lima, R. S. Pessoa, H. S. Maciel
Laboratory of Biotechnology and Electric Plasma, University of Vale do Paraiba, Sao Jose dos Campos, Sao Paulo, Brazil

TU Posters-75 CHARACTERIZATION OF THE OPERATIONAL MODES OF A NON-THERMAL ATMOSPHERIC PRESSURE PLASMA JET

M. A. Demetillo, J. L. Lopez
Department of Physics, Seeton Hall University, South Orange, NJ, United States

TU Posters-76 THE STANDARDIZATION AND REPRODUCIBILITY OF DIELECTRIC BARRIER DISCHARGE REACTORS

I. Lowenthal[1], M. Feurer[2], J. Lopez[2]
[1]Columbia High School, New Jersey, United States
[2]Seton Hall University, New Jersey, United States

TU Posters-77 NUMERICAL STUDIES ON THE NONLINEAR COUPLING IN ATMOSPHERIC DUAL RADIO-FREQUENCY DIELECTRIC BARRIER DISCHARGE

Z. Zhang, Q. Nie, Z. Wang, B. Jiang
Harbin Institute of Technology, Harbin, China

TU Posters-78 NEGATIVE DC CORONA DISCHARGE FOR NITRIC OXIDE REMOVAL IN PIN-TO-WATER ELECTRODE CONFIGURATION

L. Zhou, T. Wang, S. Macgregor, M. Wilson, I. Timoshkin, M. Given
Electronic & Electrical Engineering, University of Strathclyde, Glasgow, United Kingdom

Session TU Posters: TU P9
Poster Session

Tuesday, May 23 14:30-16:00, Poster Room
Session Chair: Scott Kovaleski, U Missouri

TU Posters-79 Laser effects on the stopping power for ion traveling through plasmas

G. Wang, H. Yi, Y. Wang, D. Liu
Dalian Maritime University, Dalian, Liaoning, China

TU Posters-80 EXPERIMENTAL MEASUREMENTS OF POWER EXTRACTION CIRCUITS FOR MOBILE IONOSPHERIC HEATING

B. L. Beaudoin, A. Ting, S. Gold, J. A. Karakkad, A. H. Narayan,
G. S. Nusinovich, C. Turner, T. M. Antonsen Jr.
IREAP, University of Maryland, College Park, MD, USA

TU Posters-81 SIMULATIONS OF POWER EXTRACTION CIRCUITS FOR MOBILE IONOSPHERIC HEATING

A. H. Narayan, B. L. Beaudoin, A. Ting, S. Gold, J. A. Karakkad,
G. S. Nusinovich, C. Turner, T. M. Antonsen Jr.
IREAP, University of Maryland, College Park, United States

TU Posters-82 DC AND PULSED BORON PLASMA AND ION BEAM GENERATION BY PLANAR MAGNETRON DISCHARGE

A. V. Vizir[1], M. V. Shandrikov[1], G. Y. Yushkov[1], E. M. Oks[1,2]
[1]Plasma Sources Laboratory, High Current Electronics Institute, Tomsk, Russian Federation
[2]Physics Department, Tomsk State University of Control System and Radioelectronics, Tomsk, Russian Federation

TU Posters-83 POTENTIAL DISTRIBUTION OVER A DIELECTRIC SURFACE IRRADIATED BY AN ELECTRON BEAM AT FOREVACUUM PRESSURES

Y. G. Yushkov[1], D. B. Zolotukhin[1], A. V. Tyunkov[1], E. M. Oks[1,2]

[1]Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russian Federation

[2]Institute of High Current Electronics, SB RAS, Tomsk, Russian Federation

TU Posters-84 DISCHARGE CHARACTERISTICS OF THREE BRUSH-SHAPED PLASMA PLUME OPERATED IN ATMOSPHERIC PRESSURE ARGON

X. Li, P. Jia, J. Chu, L. Dong

College of Physics Science and Technology, Hebei University, Baoding, Hebei province, China

TU Posters-85 VACUUM ARC PLASMA PRODUCED WITH COPPER-CHROMIUM CATHODES IN A MAGNETIC FIELD

E. M. Oks[1,2], A. G. Nikolaev[1], V. P. Frolova[1], G. Y. Yushkov[1], I. N. Poluyanova[3]

[1]High Current Electronics Institute, SB RAS, Tomsk, Russian Federation

[2]Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russian Federation

[3]Tavrida Electric, Moscow, Russian Federation

TU Posters-86 GENERATION OF DEUTERIUM ION BEAMS BY VACUUM ARC ION SOURCE WITH DEUTERIUM-SATURATED ZIRCONIUM CATHODE

E. M. Oks[1,2], A. G. Nikolaev[1], V. P. Frolova[1], G. Y. Yushkov[1]

[1]High Current Electronics Institute, SB RAS, Tomsk, Russian Federation

[2]Tomsk State University of Control System and Radioelectronics, Tomsk, Russian Federation

TU Posters-87 EXPERIMENTAL INVESTIGATION OF HIGH EFFICIENT INDUCTIVELY COUPLED PLASMA BY SPLITTING EXTERNAL ANTENNA COIL

H. S. Rhee, D. H. Kim, S. Nawaz, S. J. Yoon

R&D Center, PSK Inc., Hwaseong-si, South Korea

TU Posters-88 INVESTIGATION OF VARYING END-CAPACITANCE IN EXTERNAL ANTENNA FOR INDUCTIVELY COUPLED PLASMA

D. H. Kim, H. S. Rhee, S. Nawaz, S. J. Yoon

R&D Center, PSK inc., Hwaseong, South Korea

TU Posters-89 EXPERIMENTAL MEASUREMENT OF E TO H MODE TRANSITION IN O2, N2 AND O2-N2 GASES IN CYLINDRICAL ICP SOURCE FOR PHOTORESIST DRY-STRIP APPLICATIONS

S. Nawaz, H. S. Rhee, D. H. Kim, S. J. Yoon

R&D Center, PSK-Inc, hwaseong, South Korea

TU Posters-90 SPECIFIC FEATURES OF A PULSED VACUUM ARC WITH A BORON CATHODE

E. M. Oks[1], A. S. Bugaev[2], V. I. Gushenets[2]
[1]Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russian Federation
[2]Institute of High Current Electronics SB RAS, Tomsk, Russian Federation

TU Posters-91 EXTENDING THE VOLUME AND PROCESSING AREA OF ATMOSPHERIC PRESSURE PLASMA JETS

S. G. Walton, E. D. Gillman, D. R. Boris, M. H. Helle, S. C. Hernandez, T. B. Petrova, G. M. Petrov
Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States

TU Posters-92 MOLECULAR DYNAMICS BASED INVESTIGATION OF CONTRIBUTION OF DISCRETE PARTICLE EFFECTS NEAR CATHODE TO BEAM EMITTANCE.

A. Valfells[1], K. Torfason[1], A. Manolescu[1], A. Jassem[2]
[1]School of Science and Engineering, Reykjavik University, Reykjavik, Iceland
[2]Department of Nuclear Engineering and Radiological Sciences, University of Michigan, Ann, MI, USA

TU Posters-93 PLASMA INDUCED BY A CARBON NANOTUBE (CNT) GENERATED ELECTRON BEAM

N. Masoud[1], K. Martus[2], D. Murnick[3]
[1]Milwaukee School of Engineering, Milwaukee, WI, United States
[2]William Paterson University, Wayne, NJ, United States
[3]Rutgers University - Newark, Newark, NJ, United States

TU Posters-94 ARC SUPPRESSION IN ELECTRON GUNS

L. Ives[1], L. Falce[2], M. Read[1], G. Collins[1]
[1]Calabazas Creek Research, Inc., San Mateo, CA, United States
[2]Consultant, Surprise, AZ, United States

TU Posters-95 SPECTROSCOPIC MEASUREMENT OF A PIEZOELECTRIC TRANSFORMER DRIVEN ATMOSPHERIC PRESSURE PLASMA

S. D. Kovaleski, P. Norgard
Electrical Engineering and Computer Science, University of Missouri-Columbia, Columbia, MO, United States

Session TU 2.1: Plasma Chemistry

Tuesday, May 23 16:00-18:00, Wildwood 9

Session Chair: Xin Tu, University Liverpool

16:00 TU 2.1-1 (invited) GLIDING ARC PLASMA-BASED CO2 CONVERSION: INSIGHTS FROM NUMERICAL MODELLING

W. Wang[1], A. Bogaerts[1], D. Mei[2], X. Tu[2]

[1]Department of Chemistry, research group PLASMANT, University of Antwerp, Antwerp, Belgium

[2]Department of Electrical Engineering and Electronics, The University of Liverpool, Liverpool, United Kingdom

16:30 TU 2.1-2 MECHANISM OF PLASMA-ASSISTED IGNITION FOR H2 AND C1-C5 HYDROCARBONS

A. Starikovskiy[1], N. Aleksandrov[2]

[1]Princeton University, Princeton, United States

[2]Moscow Institute of Physics and Technology, Dolgoprudny, Russia

16:45 TU 2.1-3 COMPARSION OF PULSED DBD AND SPARK DISCHARGE FOR DIRECT METHANE CONVERSION

H. Sun, Y. Gao, R. Wang, S. Zhang, T. Shao

Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China

17:00 TU 2.1-4 PLASMA-CATALYTIC CONVERSION OF BIOGAS INTO HYDROGEN OVER NI-BASED BIMETALLIC CATALYSTS

D. Mei, X. Tu

Electrical Engineering and Electronics, University Liverpool, Liverpool, United Kingdom

17:15 TU 2.1-5 A PRELIMINARY STUDY FOR METHANE CONVERSION TO ACETYLENCE ASSISTED BY AC ROTATING-GLIDING ARC PLASMA DISCHARGED IN MERELY HYDROGEN

D. K. Dinh[1,2], D. H. Lee[1,2], Y. H. Song[1,2]

[1]University of Science and Technology (UST), Daejeon, South Korea

[2]Korea Institute of Machinery and Materials (KIMM), Daejeon, South Korea

17:30 TU 2.1-6 ELECTRON ENERGY DISTRIBUTION FUNCTION AND RATE COEFFICIENTS IN FIELD EMISSION-DRIVEN TOWNSEND DISCHARGE REGIME

X. Tan, D. B. Go

University of Notre Dame, Notre Dame,IN, US

17:45 TU 2.1-7 PLASMA PHYSICS FOR HIGH THROUGHPUT WATER REUSE

S. Mujovic, J. E. Foster
Nuclear Engineering & Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

Session TU 2.2: Dusty and strongly coupled plasmas

Tuesday, May 23 15:00-16:45, Wildwood 10
Session Chairs:

15:00 TU 2.2-1 (invited) EXTREME STATE OF MATTER: SHOCK EXPERIMENTS AND SIMULATIONS

V. E. Fortov
Joint Institute for High Temperature of RAS, Moscow, Russian Federation

15:30 TU 2.2-2 NON-LINEAR PROPERTIES OF DENSE PLASMA

G. A. Pavlov
Institute of problems of chemical physics RAS, Chernogolovka, Moscow region, Russian Federation

15:45 TU 2.2-3 COLLISIONAL PLASMA WAKES OF SMALL PARTICLES

S. Sundar, H. Kaehlert, I. Schnell, J. -P. Joost, P. Ludwig, M. Bonitz
ITAP, Christian-Albrechts-Universitaet zu Kiel, Kiel, Germany

16:00 TU 2.2-4 EFFECT ON COLLISIONAL PHASE SHIFT OF TWO DUST ACOUSTIC SOLITARY WAVES IN A DUSTY PLASMA

N. S. Saini, K. Singh
Department of Physics, Guru Nanak Dev University, Amirtsar,Punjab, India

16:15 TU 2.2-5 FOUNDATIONS OF QUANTUM HYDRODYNAMICS FOR DENSE PLASMAS

Z. Moldabekov[1,2], M. Bonitz[1], T. Ramazanov[2]
[1]Institut fuer Theoretische Physik und Astrophysik, Christian-Albrechts-Universitaet zu Kiel, Kiel, Germany
[2]Institute for Experimental and Theoretical Physics, Al-Farabi Kazakh National University, Almaty, Kazakhstan

16:30 TU 2.2-6 PLASMA OSCILLATIONS AND EXPANSION OF ULTRA-COLD PLASMA IN MAGNETIC FIELD

Y. Choi[1], A. Christlieb[2], J. P. Verboncoeur[2]
[1]Institute for Cyber-Enabled Research, Michigan State University, East Lansing, MI, United States
[2]Computational Mathematics, Science and Engineering Department, Michigan State University, East Lansing, MI, United States

Session TU 2.3: High Pressure and Thermal Plasma Processing

Tuesday, May 23 16:00-18:00, Wildwood 12
Session Chair: Michaek Keidar, GWU

16:00 TU 2.3-1 (invited) COMPLEX STRUCTURE OF THE CARBON ARC DISCHARGE FOR NANOMATERIAL SYNTHESIS
V. Vekselman, B. Stratton, Y. Raitses
Princeton Plasma Physics Laboratory, Princeton, NJ, United States

16:30 TU 2.3-2 THERMO- AND PHOTO-OXIDATION IN A LIQUID TREATMENT SYSTEM USING SUBMERGED PLASMA
D. Milelli, F. Lemont, M. Marchand
DEN/DTCD/SCDV/LPIC, CEA Marcoule, Bagnols sur Ceze, France

16:45 TU 2.3-3 NUMERICAL SIMULATION OF RF RESONANT ANTENNA-PLASMA INDUCTIVE COUPLING IN PLANAR GEOMETRY
A. D'Angola[1,2], I. Furno[3], A. A. Howling[3], R. Jacquier[3], G. Plyushchev[3], P. Guittienne[4], N. Panarese[5], R. Zaffina[1]
[1]Scuola di Ingegneria, Universita della Basilicata, Potenza, Italy
[2]PLASMI Lab at NANOTEC, Consiglio Nazionale delle Ricerche (CNR), Bari, Italy
[3]SPC, Ecole Polytechnique Federale de Lausanne (EPFL), Lausanne, Switzerland
[4]Helyssen, Belmont-sur-Lausanne, Switzerland
[5]Politecnico di Torino, Torino, Italy

17:00 TU 2.3-4 SIMULATING IGNITION AND DEVELOPMENT OF CATHODE SPOTS IN VACUUM ARCS
H. T. C. Kaufmann[1,2], M. D. Cunha[1,2], M. S. Benilov[1,2], W. Hartmann[3], N. Wenzel[3]
[1]Departamento de Fï¿½sica, FCEE, Universidade da Madeira, Funchal, Portugal
[2]IST, Instituto de Plasmas e Fusï¿½o Nuclear, Universidade de Lisboa, Lisboa, Portugal
[3]Corporate Technology, Siemens AG, Erlangen, Germany

17:15 TU 2.3-5 MODELING OF METAL POWER SYNTHESIS USING A PARTICLE TRAJECTORY METHOD IN AN INDUCTIVELY COUPLED PLASMA TORCH

M. Y. Hur[1], D. G. Lee[2], S. Yang[3], H. J. Lee[1]
[1]Department of Electric Engineering, Pusan National University, Busan, South Korea
[2]Department of Mechanical Engineering, Pusan National University, Busan, South Korea
[3]Powder Techonology Department, Korea Institute of Materials Science, Changwon, South Korea

17:30 TU 2.3-6 PLASMA GASIFICATION OF BIOMEDICAL WASTE

A. B. Ustimenko[1], V. E. Messerle[1], A. L. Mosse[2], G. Paskalov[3]
[1]Research Institute of Experimental and Theoretical Physics of Kazakhstan National University, Almaty, Kazakstan
[2]A.V. Luikov Heat and Mass Transfer Institute, Minsk, Belarus
[3]Three Hats LLC, Nevada, USA

Session TU 2.4: Opening and Closing Switches

Tuesday, May 23 16:00-18:00, Wildwood 13
Session Chair: Kefu Liu, Fudan University, China

16:00 TU 2.4-1 (invited) QUENCHED HIGH GAIN OPERATION OF GAAS PHOTOCONDUCTIVE SEMICONDUCTOR SWITCH AT NANO-JOULES EXCITATION

M. Xu, H. Liu, C. Ma, L. Hou, W. Shi
Applied Physics, Xi'an University of Technology, Xi'an, China

16:30 TU 2.4-2 MECHANISM OF THE POST-ARC DYNAMIC VOLTAGE DISTRIBUTION FOR SERIES-CONNECTED VACUUM GAPS IN MULTI-BREAK VACUUM CIRCUIT BREAKERS

M. Liao, G. Ge, X. Duan, G. Lu, J. Zou
School of Electrical Engineering, Dalian University of Technology, Dalian, China

16:45 TU 2.4-3 MODELING AND SIMULATION OF THE INTERACTION BETWEEN HIGH-CURRENT VACUUM ARC AND ANODE VAPOR

L. Wang, X. Zhang, Z. Yang, R. Lin, S. Jia
Xi'an Jiaotong University, Xi'an,Shaanxi, China

17:00 TU 2.4-4 STUDY OF THE INITIAL TRANSITION PROCESS OF HIGH CURRENT VACUUM ARC IN TRANSVERSE MAGNETIC FIELD (TMF)

S. Xiu, D. Feng, T. Wang, Z. Liu, J. Yang
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, China

17:15 TU 2.4-5 SECOND GENERATION HIGH-VOLTAGE, ULTRA-FAST, HIGH RELIABILITY SOLID STATE THYRATRON REPLACEMENTS

J. Waldron
Silicon Power Corporation, Malvern, PA, United States

17:30 TU 2.4-6 MICROWAVE PULSE COMPRESSION EXPERIMENTS USING RF BREAKDOWN TRIGGERED SWITCH UNDER REPETIVE OPERATIONAL CONDITIONS

S. P. Savaidis, N. A. Stathopoulos, S. A. Mitilineos, Z. C. Ioannidis
Electronics Engineering, Piraeus University of Applied Sciences, Athens, Greece

17:45 TU 2.4-7 RESEARCH ON A NOVEL HIGH-POWER SEMI-INSULATING GAAS PHOTOCONDUCTIVE SEMICONDUCTOR SWITCH

J. Xiao, C. Luan, X. Ma, H. Li
China Academy of Engineering Physics, Mianyang, Sichuan, China

Session TU 2.5: Industrial, Lighting, and Biological Applications

Tuesday, May 23 15:00-17:00, Wildwood 14
Session Chair: Danil Dobrynin, Drexel University

15:00 TU 2.5-1 CONTACT EDGE ROUGHNESS IN THE ETCHING OF HIGH ASPECT RATIO CONTACTS IN SiO_2

S. Huang[1], C. Huard[1], M. J. Kushner[1], S. Shim[2], S. Lee[2], I. -C. Song[2], S. Lu[2]
[1]University of Michigan, Ann Arbor, MI, United States
[2]Samsung Electronics Co, Hwaseong-si, Republic of Korea

15:15 TU 2.5-2 PLASMA SPECIES VARIATION AS A FUNCTION OF VOLTAGE FOR HIGH VOLTAGE COLD ATMOSPHERIC PRESSURE PLASMAS IN SEALED BAGS

R. S. Brayfield II, A. J. Fairbanks, A. L. Garner
Nuclear Engineering, Purdue University, West Lafayette, United States

15:30 TU 2.5-3 PROGRESS OF PLASMA OXIDATION OF PM FROM A DIESEL ENGINE

S. Yao
School of Environmental Science and Engineering, Zhejiang Gongshang University, Hangzhou, China

15:45 TU 2.5-4 EFFECT OF COLD PLASMA PROCESSING ON SWEET BASIL AND THE BIOCHEMISTRY OF ITS ESSENTIAL OILS

G. J. Buonopane[1], C. Antonacci[1], J. L. Lopez[2]
[1]Department of Chemistry and Biochemistry, Seton Hall University, South Orange, New Jersey
[2]Department of Physics, Seton Hall University, South Orange, New Jersey

16:00 TU 2.5-5 SYNERGISTIC EFFECTS OF PLANT HORMONES AND NON-THERMAL PLASMA ON EARLY GERMINATION OF ARABIDOPSIS THALIANA SEEDS

D. Cui, R. Ma, Z. Jiao
Henan Key Laboratory of Ion-beam Bioengineering, Zhengzhou University, Zhengzhou, China

16:15 TU 2.5-6 ULTRA-COMPACT PHOTOIONIZATION ANALYZER. SMART APPROACH FOR ECOLOGICAL MONITORING AT HAZARDOUS PRODUCTION FACILITIES

A. Mustafaev[1], I. Rastvorova[1], S. Podenko[1], E. Maksimova[2]
[1]Department of General and Applied Physics, Saint-Petersburg Mining University, Saint Petersburg, Russian Federation
[2]Petroleum Learning Centre Heriot-Watt Approved Learning Partner at TPU, National Research Tomsk Polytechnic University, Tomsk, Russian Federation

16:30 TU 2.5-7 DYNAMIC 3D MICROPLASMA PHOTONIC CRYSTAL BY 3D PRINTING

P. P. Sun[1,2], R. Zhang[3], S. Zhong[2], W. Chen[4], P. V. Braun[3], J. G. Eden[2]
[1]Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
[2]Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
[3]Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
[4]Department of Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

16:45 TU 2.5-8 AN EXPERIMENTAL APPROACH TO PERIOD DOUBLING BIFURCATION IN PLASMAS

I. U. Uzun-Kaymak[1], D. Mansuroglu[1,2]
[1]Physics, Middle East Technical University, Ankara, Turkey
[2]Physics, Canakkale Onsekiz Mart University, Canakkale, Turkey

Session TU 2.6: Microwave Plasma Interaction

Tuesday, May 23 16:00-18:00, Wildwood 15
Session Chair: Peter Duselis, Raytheon

16:00 TU 2.6-1 IONOSPHERIC MODIFICATION TESTS OF ARTIFICAL IONIZATION AND WAVE GENERATION

P. A. Bernhardt, B. Y. Rock, N. Pereira
Plasma Physics Division, Naval Research Laboratory, Washingon, DC, United States

16:15 TU 2.6-2 (invited) MICROWAVE INTERACTIONS WITH INTENSE LASER PRODUCED AIR-PLASMAS

B. Y. Rock[1], M. Helle[1], J. Palastro[1], J. Penano[1], R. Fischer[1], S. Melis[2]
[1]Plasma Physics Division, The U.S. Naval Research Laboratory, Washington, DC, United States
[2]Physics Department, Georgetown University, Washington, DC, United States

16:45 TU 2.6-3 STUDIES ON THE PLASMA-ADDED INTENSIFICATION OF GIGAHERTZ RADIO FREQUENCY SIGNALS

F. Kong[1], Q. Nie[1], Y. Sun[1], Z. Zhang[1], X. Wang[2], B. Jiang[1]
[1]School of Electrical Engineering and Automation, Harbin Insititute of Technology, Harbin, China
[2]Physics Department, Harbin Insititute of Technology, Harbin, China

17:00 TU 2.6-4 SYNTHETIZATION OF SIGNALS BY THE TRANSMISSION AND SUPERPOSITION OF BIPOLAR IMPULSES IN FREE SPACE

Z. Shaw, W. Feilner, J. C. Dickens, A. A. Neuber
Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, United States

17:15 TU 2.6-5 MICROWAVE ABSORPTION IN WARM STEALTH PLASMA

M. S. Bawaaneh[1], Y. -C. Ghim[2], A. Al-Khateeb[1]
[1]Dept. of Physics, Yarmouk University, Irbid, Jordan
[2]Dept. of Nuclear Engineering, KAIST, Daejeon, Korea

17:30 TU 2.6-6 HIGH-POWER MICROWAVE SWITCHING UTILIZING LOW-TEMPERATURE GAS DISCHARGE TUBE

A. Semnani[1], S. O. Macheret[2], D. Peroulis[1]
[1]School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN, United States
[2]School of Aeronautics and Astronautics, Purdue University, West Lafayette, IN, United States

17:45 TU 2.6-7 A REVIEW OF TURBULENCE PHENOMENA IN MICROWAVE ELECTRONICS (THEORETICAL APPROACHES AND RESULTS OF EXPERIMENTS)

D. I. Trubetskov, Y. A. Kalinin, A. V. Starodubov
Department of Physics of nonlinear systems, Saratov State University, Saratov, Russian Federation

Session PL5: Plenary 5

Wednesday, May 24 08:30-09:30, Wildwood 3
Session Chair: Juergen Kolb, INP Greifswald

8:30 PL5-1 (invited) NON-CONVENTIONAL DIAGNOSTICS FOR PLASMA PROCESSING

H. Kersten, T. Trottenberg, A. Spethmann, S. Gauter, F. Haase, R. Wiese
IEAP, University Kiel, Germany, Kiel, Germany

Session WE 1.1: Fusion

Wednesday, May 24 10:00-12:00, Wildwood 9
Session Chair: Justin R Angus, Lawrence Livermore National Laboratory

10:00 WE 1.1-1 (invited) FORMATION AND CHARACTERIZATION OF A CONICAL SECTION OF A SPHERICALLY IMPLODING PLASMA LINER

S. C. Hsu[1], S. J. Langendorf[1], J. P. Dunn[1], K. C. Yates[2], M. A. Gilmore[2], F. D. Witherspoon[3], S. Brockington[3], A. Case[3], E. Cruz[3], J. Cassibry[4], K. Schillo[4], R. Samulyak[5], W. Shih[5], P. Stoltz[6], K. Beckwith[6]
[1]Los Alamos National Laboratory, Los Alamos, NM, United States
[2]University of New Mexico, Albuquerque, NM, United States
[3]HyperV Technologies Corp., Chantilly, VA, United States
[4]University of Alabama in Huntsville, Huntsville, AL, United States
[5]Brookhaven National Laboratory, Upton, NY, United States
[6]Tech-X Corporation, Boulder, CO, United States

10:30 WE 1.1-2 SIMULATION OF SPHERICALLY IMPLODING PLASMA LINERS FOR THE PLX-ALPHA PROJECT

R. Samulyak[1], W. Shih[1], J. Cassibry[2], S. Hsu[3], S. Langendorf[3]
[1]Stony Brook University & Brookhaven National Laboratory, Stony Brook, United States
[2]University of Alabama in Huntsville, Huntsville, United States
[3]Los Alamos National Laboratory, Los Alamos, United States

10:45 WE 1.1-3 APPLICATION OF A KDVB EQUATION TO SHOCK FORMATION IN THE STAGED Z-PINCH

J. Narkis[1], J. C. Valezuela[1], F. Conti[1], M. P. Ross[1], H. U. Rahman[2], E. Ruskov[2], F. J. Wessel[2], F. N. Beg[1]

[1]Center for Energy Research, University of California, San Diego, San Diego, CA, United States

[2]Magneto-Inertial Fusion Technologies, Inc., Tustin, CA, United States

11:00 WE 1.1-4 THE NEW SCHEME TO PROMOTE IGNITION BY COMPRESSING COLLISION-MERGING TARGET OF FIELD REVERSED CONFIGURATION

X. -J. Yang

First Dept., Institute of Applied Physics & Computational Physics, Beijing, China

11:15 WE 1.1-5 INCREASING LOAD CURRENT IN MAGNETIZED LINER INERTIAL FUSION EXPERIMENTS

M. R. Gomez, B. T. Hutsel, C. A. Jennings, M. R. Martin, M. E. Cuneo, M. H. Hess, G. R. Laity, D. C. Lamppa, K. J. Peterson, G. A. Rochau, D. C. Rovang, D. B. Sinars, S. A. Slutz, W. A. Stygar

Sandia National Laboratories, Albuquerque, NM, United States

11:30 WE 1.1-6 MODIFYING MAGLIF STAGNATION CONDITIONS AND MORPHOLOGY BY CHANGING LINER INITIAL CONDITIONS

D. J. Ampleford, C. A. Jennings, M. R. Gomez, P. F. Knapp, E. C. Harding, K. Hahn, P. F. Schmitt, M. Weis, S. B. Hansen, D. C. Lamppa, T. J. Awe, K. J. Peterson, G. A. Rochau

Sandia National Lab, Albuquerque, NM, United States

11:45 WE 1.1-7 STABILIZED LINER COMPRESSOR FOR LOW-COST CONTROLLED FUSION: PROGRESS AND ISSUES

P. J. Turchi[1], S. D. Frese[2], M. H. Frese[3]

[1]NumerEx, Santa Fe, NM, United States

[2]NumerEx, Corrales,NM, United States

[3]NumerEx, Corrales,NM, United States

Session WE 1.2: Generator and Networks & Compact and Rep-rated Pulsed Power

Wednesday, May 24 10:00-12:00, Wildwood 10

Session Chair: Praveen Desireddy,

10:00 WE 1.2-1 (invited) COAXIAL-CONICAL TRANSITION IN MAGNETICALLY INSULATED TRANSMISSION LINES

W. Zou[1], B. Wei[1], F. Guo[1], B. Gong[1], L. Chen[1], M. Wang[1], L. Liu[2], D. Liu[2]
[1]Key Laboratory of Pulsed Power, Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang,Sichuan, China
[2]School of Physical Electronics, University of Electronic Science and Technology of China, Chengdu,Sichuan, China

10:30 WE 1.2-2 (invited) THEORETICAL INVESTIGATION OF A NOVEL HIGH CURRENT DIODE WITH MULTIPACTING CATHODE

Y. Dong
Institute of Applied Physics and Computational Mathematics, Beijing, China

11:00 WE 1.2-3 A REPETITIVE NANOSECOND PULSES GENERATOR BASED ON AVALANCHE TRANSISTOR MARX CIRCUITS AND TRANSMISSION LINE TRANSFORMER

J. Li, Z. Zhao, Y. Sun, Y. Liu, Z. Ren, J. He
School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China

11:15 WE 1.2-4 DEVELOPING A HIGH POWER, PULSED UV LED SYSTEM FOR PHOTOCONDUCTIVE SWITCHING APPLICATIONS

N. A. Wilson, D. L. Mauch, V. E. Meyers, J. C. Dickens, A. A. Neuber
Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, United States

11:30 WE 1.2-5 NS DIELECTRIC BARRIER DISCHARGE DEVELOPMENT AND THRUST GENERATION IN 4-ELECTRODE GEOMETRY

A. Starikovskiy, K. Meehan, R. Miles
Princeton University, Princeton, United States

11:45 WE 1.2-6 NOVEL DESIGN OF HIGH VOLTAGE PULSE SOURCE FOR EFFICIENT DBD PLASMA GENERATION BY USING SIDAC

H. T. Truong[1], M. Hayashi[1], Y. Uesugi[1], Y. Tanaka[1], T. Ishijima[2]
[1]Electrical Engineering and Computer Science, kanazawa university, Kanazawa,Ishikawa, Japan
[2]Research Center for Sustainable Energy and Technology, kanazawa university, Kanazawa,Ishikawa, Japan

Session WE 1.3: Nonequilibrium Plasma Applications III

Wednesday, May 24 10:00-12:00, Wildwood 12
Session Chair: Sungo Kim, NYIT

10:00 WE 1.3-1 MICROWAVE PLASMA MULTI-POINT IGNITION PROCESS IN METHANE-AIR MIXTURES

C. Liu, G. Zhang, H. Xie, L. Deng
Department of Electrical Engineering, Tsinghua University, Beijing, Beijing

10:15 WE 1.3-2 ELECTRON BEAM TREATMENT OF DIELECTRICS BY FOREVACUUM PLASMA ELECTRON SOURCES

E. Oks[1,2]

[1]Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russian Federation

[2]High Current Electronics Institute, Tomsk, Russian Federation

10:30 WE 1.3-3 EXPERIMENTAL STUDY ON CHARACTERISTICS OF NANOSECOND SLIDING DISCHARGE

H. Lin[1,2], C. Zhang[2,3], Y. Wang[1,2], Q. Xie[1], P. Yan[2,3], T. Shao[2,3]

[1]North China Electric Power University, Baoding, China

[2]Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China

[3]University of Chinese Academy of Sciences, Beijing, China

10:45 WE 1.3-4 FORMATION OF HYDROGEN PEROXIDE IN DBD NON-THERMAL REACTOR WITH WATER MIST

D. Xu

Department of Physical Electronics, Institute of Light Sources & Illuminating Engineering, Fudan University, Shanghai, China

11:00 WE 1.3-5 CHARACTERIZATION OF A PULSE DRIVEN ARGON PLASMA JET ARRAY

R. Wang[1], S. Hao[1], S. Tian[1], P. Yan[1], W. Zhu[2], T. Shao[1]

[1]Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China

[2]Department of Applied Science and Technology, Saint Peterï¿½s University, Jersey City, New Jersey, USA

11:15 WE 1.3-6 (invited) EXPERIMENTAL STUDY OF AN ULTRA-FAST ATMOSPHERIC PRESSURE AIR DISCHARGE IN A PIN-TO-PLATE GEOMETRY

J. -M. Pouvesle, S. Iseni, S. Dozias, E. Robert

CNRS/Universite d'Orleans, GREMI, Orleans, France

11:45 WE 1.3-7 COLD PLASMA PROVIDES IMMUNE STIMULUS TO BATTLE CANCER

S. Bekeschus, T. von Woedtke, K. -D. Weltmann

ZIK plasmatis, Leibniz-Institute for Plasma Science and Technology (INP Greifswald), Greifswald, Germany

Session WE 1.4: Partially Ionized Plasmas

Wednesday, May 24 10:00-12:00, Wildwood 13
Session Chair: Vladislav Vekselman, PPPL

10:00 WE 1.4-1 (invited) ON ELECTRON HEATING IN MAGNETRON SPUTTERING DISCHARGES

J. T. Gudmundsson[1,2], D. Lundin[3], M. A. Raadu[1], C. Huo[1], T. M. Minea[3], N. Brenning[1,4]
[1]Department of Space and Plasma Physics, KTH-Royal Institute of Technology, Stockholm, Sweden
[2]Science Institute, University of Iceland, Reykjavik, Iceland
[3]Laboratoire de Physique des Gaz et Plasmas - LPGP, Universite Paris-Sud, Orsay, France
[4]Plasma and Coatings Physics Division, Linkoping University, Linkoping, Sweden

10:30 WE 1.4-2 MATCHING PLASMAS AND ELECTRODES IN NUMERICAL SIMULATION OF HIGH-PRESSURE ARC DISCHARGES: A SUMMARY

M. S. Benilov
FCEE, Departamento de Fisica, Universidade da Madeira, Funchal, Portugal

10:45 WE 1.4-3 SELF-CONSISTENT NUMERICAL SIMULATION OF CARBON ARC FOR NANOPARTICLE SYNTHESIS

A. Khrabry[1], A. Khodak[1], I. Kaganovich[1], V. Vekselman[1], V. Nemchinsky[2]
[1]Princeton Plasma Physics Laboratory, Princeton, NJ, United States
[2]Keiser University, Fort Lauderdale, United States

11:00 WE 1.4-4 INTERACTION OF ATMOSPHERIC PRESSURE PLASMA JET WITH HELIUM FLOW

V. Samara, S. Ptasinska
Radiation Laboratory, University of Notre Dame, Notre Dame, IN, US

11:15 WE 1.4-5 REMOTE GENERATION OF LARGE-VOLUME ELECTROPOSITIVE PLASMA AT REDUCED PRESSURE BY MEANS OF GUIDED FAST IONIZATION WAVES FROM A PLASMA JET AS A POWER SOURCE

H. Razavi, S. Mohades, M. Laroussi
Electrical and Computer Engineering, Old Dominon University, Norfolk, VA, United States

11:30 WE 1.4-6 ON PEAK CURRENT DENSITY IN ATMOSPHERIC PULSE-MODULATED RF DISCHARGES WITH VERY HIGH FREQUENCY

Y. Zhang[1], Y. Wang[2]
[1]School of Electrical Eng., Shandong University, Jinan, China
[2]School of Physics and Optoelectronic Engineering, Dalian University of Tech., Dalian, China

11:45 WE 1.4-7 METHODS FOR DIRECT SOLUTION OF THE BOLTZMANN EQUATION FOR GAS DISCHARGES

S. B. Swanekamp, A. S. Richardson, B. Srinivasan
Plasma Physics Division, Naval Research Laboratory, Washington, DC

Session WE 1.5: Plasma Diagnostics III

Wednesday, May 24 10:00-11:00, Wildwood 14
Session Chair: Juergen Kolb, INP Greifswald

10:00 WE 1.5-1 WHAT IS EFFECTIVE AREA OF THE FLAT PROBE DURING MEASUREMENTS?

A. Mustafaev[1], O. Murillio[1], V. Soukhomlinov[2], I. D. Kaganovich[3]
[1]St.Petersburg Mining University, St. Petersburg, Russia
[2]St. Petersburg State University, St. Petersburg, Russia
[3]Princeton Plasma Physics Lab, Princeton, NJ, USA

10:15 WE 1.5-2 RETARDING FIELD ENERGY ANALYZER OPTIMIZATION AND SPACE CHARGE EFFECTS

M. L. Talley[1], S. Shannon[1], L. Chen[2], J. P. Verboncoeur[3]
[1]Nuclear Engineering, North Carolina State University, Raleigh, NC, United States
[2]System Etch, Tokyo Electron Limited, Inc, Austin, TX, United States
[3]Electrical and Computer Engineering, Michigan State University, East Lansing, MI, United States

10:30 WE 1.5-3 THE INTERACTION OF COLD ATMOSPHERIC PLASMA JET AND A CAPACITIVE TARGET WITH DC FIELD: THE REFLECTION AND ABSORPTION OF GUIDED IONIZATION WAVE

L. Lin, M. Keidar
Mechanical and Aerospace Engineering, The George Washington University, Washington,DC, United States

10:45 WE 1.5-4 DESIGN AND PERFORMANCE OF B-DOT MONITORS FOR DIAGNOSING CATHODE CURRENT IN THE MAGNETICALLY INSULATED TRANSMISSION LINE

F. Guo, B. Gong, B. Wei, W. Zou, L. Chen, M. Wang, W. Xie
Institute of Fluid Physics, China Academy of Engineerging Physics, Mianyang, Sichuan Provience, China

Session WE 1.6: Microwave and Plasma Interactions, Vacuum Microelectronics and THz Devices and Slow Wave Devices

Wednesday, May 24 10:00-11:30, Wildwood 15
Session Chair: Rebecca Seviour, Huddersfield University

10:00 WE 1.6-1 RESEARCH PROGRESS ON LINEAR AVALANCHE MULTIPLICATION GAAS TERAHERTZ EMITTER

S. Wei, L. Hong, W. Ling
Applied Physics Department, Xi'an Uniecersity of Technology, Xi'an Shaanxi, China

10:15 WE 1.6-2 EFFECTS OF THZ TRANSMISSION ON THE NARROW GAP DC GLOW DISCHARGE PLASMAS

N. Alasgarzade[1], H. Altan[1], D. Mansuroglu[1,2], A. B. Sahin[3], I. U. Uzun-Kaymak[1]
[1]Physics Department, Middle East Technical University, Ankara, Turkey
[2]Canakkale Onsekiz Mart University, Canakkale, Turkey
[3]Ankara Yildirim Beyazit University, Ankara, Turkey

10:30 WE 1.6-3 NEXT GENERATION IONOSPHERIC HEATER ARRAY

B. Esser, J. C. Dickens, J. J. Mankowski, A. A. Neuber
Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, United States

10:45 WE 1.6-4 STUDYING PERMITTIVITY AND ELECTRIC FIELD FOR PLASMA GENERATION BY DIELECTRIC RESONATOR ARRAYS

S. Dennison, J. Hopwood, A. Chapman
Electrical and Computer Engineering, Tufts University, Medford, MA, United States

11:00 WE 1.6-5 DESIGN OF OVERSIZED TWTS WITH PHOTONIC BAND-GAP STRUCTURES

G. Rosenzweig, J. C. Stephens, M. A. Shapiro, R. J. Temkin
Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA, United States

11:15 WE 1.6-6 A 140 GHZ GYRO-AMPLIFIER USING A DIELECTRIC-LOADED, SEVER-LESS CONFOCAL WAVEGUIDE

A. Soane, M. A. Shapiro, R. J. Temkin
MIT, Cambridge, MA, United States

Session PL6: Plenary 6

Wednesday, May 24 13:30-14:30, Wildwood 3
Session Chairs:

13:30 PL6-1 (invited) LOW TEMPERATURE PLASMAS AND THEIR APPLICATIONS IN NANOTECHNOLOGY

M. Meyyappan
NASA Ames Research Center, Moffett Field, CA, United States

Session WE Posters: WE P1
Poster Session

Wednesday, May 24 15:00-15:45, Poster Room
Session Chair: Yevgeny Raitses, PPPL

WE Posters-1 REVISITING THE PROPAGATION AND FOCUSSING OF A HIGH INTENSITY ELECTRON BEAM IN A LOW-PRESSURE GAS CELL

J. Gardelle, B. Bicrel, B. Cadilhon, C. Fourment, A. Galtiï¿½, D. Hï¿½bert, F. Lavaud-Davi, F. Malaise, P. Maury, E. Pasini
CEA/CESTA, Le Barp, France

WE Posters-2 INTENSE RELATIVISTIC ELECTRON BEAM INTERACTION WITH A TWO-PULSE RADIOGRAPHY CONVERTER

C. Fourment, D. Hebert
CEA CESTA, Le Barp, France

WE Posters-3 ION B-DOT AND FARADAY CUP RESULTS LOCATED INSIDE THE CATHODE KNOB OF THE SELF MAGNETIC PINCH (SMP) DIODE

M. G. Mazarakis, M. L. Kiefer, J. J. Leckbee, D. S. Nielsen, D. Ziska
1656, Sandia National Laboratories, Albuquerque,NM, United States

Session WE Posters: WE P2
Poster Session

Wednesday, May 24 15:00-15:45, Poster Room
Session Chairs:

WE Posters-4 BROMATE FREE DISINFECTION OF DRINKING WATER USING A HIGH VOLTAGE IMPULSE (HVI) TECHNIQUE

I. -S. Chang[1], J. -H. Lee[2], H. -R. Kim[1], C. H. Cho[1]
[1]Environnmental Engineering, Hoseo University, Asan, South Korea
[2]Electrical Engineering, Hoseo University, Asan, south Korea

WE Posters-5 OUTER CIRCULAR RING-SHAPED RF MAGNETIZED PLASMA FOR SPECIFIC AREA TARGET UTILIZATION BY MAGNETIC MONOPOLE ARRANGEMENT

M. A. Hossain, Y. Ohtsu
Graduate School of Science and Engineering, Saga University, 1 Honjo-machi, Saga, 840-8502, Japan

WE Posters-6 ORGANIC WASTE PROCESSING IN PLASMA REACTOR

V. Sauchyn, I. Khvedchyn
Arc Plasma Department, A.Luikov Heat and Mass Transfer Institute, Minsk, Belarus

WE Posters-7 NEXT GENERATION HIGH-CURRENT SWITCHING DEVICES FOR COSMIC CURRENT SOURCE CONVERTER

A. Mustafaev[1], A. Grabovskiy[1], V. Soukhomlinov[2], V. Kuznetsov[3], V. Babanin[3], A. Pashchina[4]
[1]St.Petersburg Mining University, St. Petersburg, Russian Federation
[2]St. Petersburg State University, St. Petersburg, Russian Federation
[3]Ioffe Institute RAS, St. Petersburg, Russian Federation
[4]JIHT RAS, Moscow, Russian Federation

WE Posters-8 PRELIMINARY STUDY ON PLASMA-CATALYST COMBINATION FOR CF4 REMOVAL

K. -T. Kim, S. Jo, D. Lee, Y. -H. Song
Department of Plasma Engineering, Korea Institute of Machinery & Materials, Daejeon, South Korea

WE Posters-9 ABATEMENT CHARACTERISTICS OF TiCl4 IN A LOW-PRESSURE PLASMA REACTOR

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

WE Posters-10 TECHNOLOGIES FOR CLEANING WATER MEDIUMS WITH STRONG ELECTROPULSE FIELDS

E. J. Gurbanov, F. F. Yusifov
Scientific research and international relations, "Azersu" OJSC, Baku, Azerbaijan

WE Posters-11 YIELD CHARACTERISTIC AND ENERGY CONSTRAINT OF ACTIVE SPECIES WITH DISCHARGE IN WATER-GAS MIXTURE

B. Chen[1], Y. Gan[1], P. Fang[1], C. Zhu[1], J. Fei[1], Y. Jiang[1], L. Wan[2], J. Bian[2], J. Wan[2]
[1]Department of Mathematics and Physics, Hohai University, Changzhou, Jiangsu, China
[2]Nanjing Suman Plasma Techology Co., Ltd, Nanjing, Jiangsu, China

WE Posters-12 DENIM BLEACHING BY CNC CONTROLLED PLASMA JET METHOD

E. Uygun[1], F. Bozduman[2], G. Karaca[3], A. Uygun Oksuz[3], L. Oksuz[1,2]
[1]Plazmatek, Technopark, Suleyman Demirel University, Isparta, Turkey
[2]Physics, Suleyman Demirel University, Isparta, Turkey
[3]Chemistry, Suleyman Demirel University, Isparta, Turkey

WE Posters-13 RECTANGLE PULSED ATMOSPHERIC DBD PLASMA FOR SURFACE MODIFICATION

K. Zerbe, M. Iberler, J. Jacoby, C. Wagner
Institut for Applied Science, Goethe-University Frankfurt, Frankfurt, Germany

WE Posters-14 SELF-OSCILLATORY OPERATION MODE OF ATMOSPHERIC-PRESSURE PLASMA JET

X. Wang, A. Shashurin
School of Aeronautics and Astronautics, Purdue University, West Lafayette, IN, United States

WE Posters-15 REMOVAL OF MICROCYSTIN-LR VIA ADVANCED OXIDATION PROCESSES USING A BUBBLING PLASMA JET

J. C. Lai, J. E. Foster
Department of Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

WE Posters-16 HYDROPHOBIC COATING OF GLASS SURFACE USING ATMOSPHERIC PRESSURE DIELECTRIC BARRIER DISCHARGE PLASMA

Q. H. Trinh, M. M. Hossain, Y. S. Mok
Jeju National University, Jeju, South Korea

WE Posters-17 ATMOSPHERIC PLASMA JET FOR SPACECRAFT SURFACE STERILIZATION FOR PLANETARY PROTECTION

J. Prager[1], T. Ziemba[1], J. Miller[2]
[1]Eagle Harbor Technologies, Inc., Seattle, WA, United States
[2]Edmonds Community College, Lynnwood, WA, United States

WE Posters-18 PLASMA-LIQUID INTERACTION FOR TREATMENT OF HYDRAULIC FRACTURING WASTEWATER

J. R. Groele[1], J. E. Foster[2]
[1]Mechanical Engineering, University of Michigan, Ann Arbor, MI, United States
[2]Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

WE Posters-19 EFFECTS OF PLASMA TREATMENT ON THE GERMINATION AND DEVELOPMENT OF SOYBEANS

K. W. Engeling, V. C. Fritz, J. E. Foster, C. MacAlister
University of Michigan, Ann Arbor, Michigan, United States

WE Posters-20 PREPARATION OF GRAPHENE OXIDE/CONDUCTING POLYMER NANOCOMPOSITES BY RF-PLASMA POLYMERIZATION

S. Cogal[1], G. Celik Cogal[2], A. Oksuz[2]
[1]Polymer Engineering, Mehmet Akif Ersoy University, Burdur, Turkey
[2]Chemistry, Suleyman Demirel University, Isparta, Turkey

WE Posters-21 DESIGN AND CONTROL OF PLASMA ACTUATED UNMANNED AERIAL VEHICLES (UAV)

M. T. Rajan, H. Xu, C. Avalos, A. Matheson, E. Swinny
Plasma Engineering Research Lab (PERL), Texas A&M University - Corpus Christi, Corpus Christi, TX, United States

WE Posters-22 THE EFFECT OF VOLTAGE ON FILM PROPERTIES DLC:CAMPHOR FILMS DEPOSITED ON POLYURETHANE SUBSTRATES BY PECVD

T. B. Santos[1], P. A. Radi[1,2], R. S. Pessoa[1,2], L. Vieira[1,2]
[1]Grupo Nanotecplasma, Universidade do Vale do Paraï¿½ba, Sï¿½o Josï¿½ dos Campos/SP, Brasil
[2]Laboratï¿½rio de Processamento a Plasma, Instituto Tecnolï¿½gico de Aeronï¿½utica, Sï¿½o Josï¿½ dos Campos/SP Sï¿½o Josï¿½ dos Campos/SP Sï¿½o Josï¿½ dos Campos/SP, Brasil

WE Posters-23 DOUBLE-COOLED ELECTRODE TEMPERATURE EFFECTS IN OZONE GENERATORS

M. Feurer, J. Lopez, D. Guerrero
Seton Hall University, New Jersey, United States

WE Posters-24 INVESTIGATING THE GROWTH MODIFICATION OF VARIOUS PLANT SPECIES VIA ATMOSPHERIC PRESSURE PLASMA JETS

A. N. McFarlane[1], D. Piatek[1], I. C. Guevara[1], D. Guerrero[1], J. L. Lopez[1], C. Antonacci[2], G. J. Buonopane[2]

[1]Physics, Seton Hall University, South Orange, NJ, United States

[2]Chemistry and Biochemistry, Seton Hall University, South Orange, NJ, United States

WE Posters-25 GENERATION OF MICROPLASMA IN A REVERSE-BIASED SILICON CARBIDE SCHOTTKY DIODE

O. A. Sonoiki, J. G. Eden

Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

WE Posters-26 MICROPLASMA SOURCE OF HIGH ENERGY ELECTRONS

S. Gershman, Y. Raitses

Princeton Plasma Physics Laboratory, Princeton, NJ, USA

WE Posters-27 CHARACTERISTICS OF POROUS CERAMICS DIELECTRIC BARRIER DISCHARGE IN AR/CH4 METHANE MIXTURE AT ATMOSPHERIC PRESSURE

C. Y. Yu, H. B. Mu, P. Li, C. W. Yao, S. L. Chen, G. M. Xu, G. J. Zhang

State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, No.28, Xianning West Road, Xi'an, Shaanxi, 710049, P.R. China

WE Posters-28 LIGHT SOURCES FOR WATER STERILISATION

M. Hamady

Physics Department, Faculty of sciences, Beirut Arab University, Debbieh, Lebanon

WE Posters-29 SURFACE MODIFICATION OF CEMENT FIBER ADDITIVES USING ATMOSPHERIC PRESSURE PLASMA JETS

T. J. McVeigh, W. P. Davis, D. Guerrero, J. L. Lopez

Physics Dept., Seton Hall University, South Orange, New Jersey, United States

Session WE Posters: WE P3
Poster Session

Wednesday, May 24 15:00-15:45, Poster Room
Session Chair: Peter Stoltz, Tech-X Corp.

WE Posters-30 GAIN ESTIMATIONS FOR A FUSION TARGET COMPRESSED BY A SPHERICALLY IMPLODING PLASMA LINER

P. Stoltz[1], K. Beckwith[1], S. Langendorf[2], S. Hsu[2]
[1]Tech-X Corp., Boulder, CO, United States
[2]LANL, Los Alamos, NM, United States

WE Posters-31 ENHANCING UNDERSTANDING OF HIGH ENERGY DENSITY PLASMAS USING FLUID MODELING WITH KINETIC CLOSURES

R. Masti[1], B. Srinivasan[1], J. King[2], P. Stoltz[2], D. Hansen[3], E. Held[3]
[1]Aerospace & Ocean Engineering, Virginia Tech, Blacksburg, VA, United States
[2]Tech-X Corporation, Boulder, CO, United States
[3]Utah State University, Logan, UT, United States

WE Posters-32 DENSITY AND TEMPERATURE UNIFORMITY OF A CONICAL SECTION OF A SPHERICALLY IMPLODING PLASMA LINER

K. C. Yates[1], M. A. Gilmore[1], S. C. Hsu[2], S. J. Langendorf[2], J. P. Dunn[2], J. Cassibry[3], K. Schillo[3], R. Samulyak[4], W. Shih[5]
[1]University of New Mexico, Albuquerque, New Mexico, United States
[2]Los Alamos National Laboratory, Los Alamos, New Mexico, United States
[3]University of Alabama in Huntsville, Huntsville, Alabama, United States
[4]Brookhaven National Laboratory, Upton, New York, United States
[5]Stony Brook University, Stondy Brook, New York, United States

WE Posters-33 SPECTROSCOPIC MEASUREMENTS OF THE FORMATION OF A CONICAL SECTION OF SPHERICALLY IMPLODING PLASMA LINERS

S. J. Langendorf[1], S. C. Hsu[1], J. P. Dunn[1], J. Cassibry[2], K. Schillo[2], R. Samulyak[3], W. Shih[4], K. C. Yates[5], M. A. Gilmore[5]
[1]P-24, Los Alamos National Laboratory, Los Alamos, NM, United States
[2]Mechanical & Aerospace Engineering, University of Alabama in Huntsville, Huntsville, AL, United States
[3]Computational Science Center, Brookhaven National Laboratory, Upton, NY, United States
[4]Stony Brook University, Stony Brook, NY, United States
[5]Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

WE Posters-34 DT NEUTRON YIELD MODELING FOR STAGED Z-PINCH EXPERIMENTS ON THE 1MA ZEBRA MACHINE

E. Ruskov[1], H. U. Rahman[1], F. J. Wessel[1], P. Ney[1], A. Qerushi[2]

[1]Experimental Physics, Magneto-Inertial Fusion Technologies, Inc., Tustin, CA, United States

[2]Lockheed Martin, Palmdale, CA, United States

WE Posters-35 STAGED Z-PINCH EXPERIMENTS ON THE MEGA-AMPERE CURRENT DRIVER ZEBRA

F. J. Wessel[1], E. Ruskov[1], T. W. Darling[2], F. Conti[3], M. P. Ross[3], J. C. Valenzuela[3], N. Aybar[3], F. N. Beg[3], J. Narkis[3], H. U. Rahman[1], P. Ney[1]

[1]Experimental Physics, Magneto-Inertial Fusion Technologies, Inc., Irvine, CA, United States

[2]Nevada Terawatt Facility, University of Nevada, Reno, NV, United States

[3]Center for Energy Research, University of California, San Diego, CA, United States

WE Posters-36 EXPERIMENTAL INVESTIGATION OF MAGNETIZED LINER IMPLOSIONS ON A 1-MA LINEAR TRANSFORMER DRIVER

P. C. Campbell, D. A. Yager-Elorriaga, N. M. Jordan, R. D. McBride, Y. Y. Lau, R. M. Gilgenbach

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

WE Posters-37 DESIGN OF A PULSED POWER DRIVER FOR STUDY OF PLANAR PLASMA SHOCKS

M. P. Ross[1], F. J. Wessel[2], J. C. Valenzuela[1], F. Conti[1], N. Aybar[1], F. N. Beg[1]

[1]Center for Energy Research, University of California, San Diego, CA, United States

[2]Experimental Physics, Magneto-Inertial Fusion Technologies, Inc., Tustin, CA, United States

WE Posters-38 SIMULATION FOR THE MAGNETIZED PLASMA COMPRESSION STUDY

S. V. Ryzhkov[1], V. V. Kuzenov[2]

[1]Bauman Moscow State Technical University (BMSTU), Thermal Physics Department (E6), Moscow, Russian Federation

[2]VNIAA of SC "ROSATOM", Moscow, Russian Federation

WE Posters-39 EXCITATIONS OF HALF INTEGER UP SHIFTED DECAY CHANNEL AND TURBULENT VIRTUAL MODES IN PLASMA EDGE FOR HIGH POWER EBW HEATING SCENARIO

M. Abbasi, M. Ali Asgarian
Department of Advanced Sciences and Technologies, University of Isfahan, Isfahan, Iran, Islamic Republic Of

WE Posters-40 MITIGATION OF THE MAGNETO-RAYLEIGH-TAYLOR INSTABILITY IN THE STAGED Z-PINCH WITH AN AXIAL MAGNETIC FIELD

H. U. Rahman[1], E. Ruskov[1], F. J. Wessel[1], P. Ney[1], J. Narkis[2], F. Conti[2], J. C. Valenzuela[2], M. P. Ross[2], F. N. Beg[2]
[1]Magneto-Inertial Fusion Technologies, Inc., Tustin, CA, United States
[2]Center for Energy Research, University of California, San Diego, San Diego, CA, United States

WE Posters-41 VERIFICATION OF RUNAWAY RATE SCALING FOR RELATIVISTIC ELECTRONS

A. V. Khrabrov, E. A. Startsev, I. D. Kaganovich
PPPL, Princeton, NJ, United States

WE Posters-42 ELECTROTHERMAL INSTABILITY STUDIES ON A SMALL PULSED POWER DEVICE

S. M. Miller, A. M. Steiner, R. D. McBride, D. A. Yager-Elorriaga, N. M. Jordan, Y. Y. Lau, R. M. Gilgenbach
Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, United States

WE Posters-43 COMPUTER SIMULATION OF DENSE PLASMA PROPERTIES FOR INERTIAL CONFINEMENT FUSION

M. K. Issanova, S. K. Kodanova, T. S. Ramazanov, Z. A. Moldabekov
Institute of Experimental and Theoretical Physics, Al-Farabi Kazakh National University, Almaty, Kazakstan

WE Posters-44 VARIABLE DENSITY, UNIFORM HYDROGEN PLASMA SOURCE FOR PLASMA-BASED ACCELERATORS

J. Williams, M. Gundersen
Electrical Engineering-Electrophysics, University of Southern California, Los Angeles, United States

Session WE Posters: WE P4
Poster Session

Wednesday, May 24 15:00-15:45, Poster Room
Session Chair: Mingsheng Wei, General Atomics

WE Posters-45 SHOCK FRONT FIELD STRUCTURE IN LOW-DENSITY SYSTEMS

R. Hua[1], H. Sio[2], S. Wilks[3], C. McGuffey[1], F. Beg[1], B. Heeter[3], R. Collins[3], Y. Ping[3]
[1]MAE, UCSD, San Diego, United States
[2]Physics, MIT, Massachusetts, United States
[3]LLNL, Livermore, United States

WE Posters-46 PARTICLE-IN-CELL SIMULATIONS OF ION ACCELERATION IN HIGH CONTRAST, HIGH INTENSITY LASER-SOLID TARGET INTERACTIONS AT INTENSITIES > 10^20 W/CM^2

J. Li[1], P. F. Colleoni[1], C. McGuffey[1], F. Beg[1], A. Arefiev[2], S. Bulanov[3]
[1]Center for Energy Research, University of California, San Diego, San Diego, CA, United States
[2]Center for High Energy Density Science, University of Texas, Austin, United States
[3]Lawrence Berkeley National Laboratory, Berkeley, United States

WE Posters-47 BREMSSTRAHLUNG RADIATION FROM THE INTERACTION OF SHORT LASER PULSES WITH DIELECTRICS

G. M. Petrov, J. P. Palastro, J. Penano
Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States

WE Posters-48 DIAGNOSTICS OF LASER INDUCED PLASMA DYNAMICS IN GASES AND LIQUIDS

M. T. Rajan, A. Rhoden
Plasma Engineering Research Lab (PERL), Texas A&M University - Corpus Christi, Corpus Christi, Texas

WE Posters-49 REACTIVATION OF LASER-INDUCED PLASMAS USING TIME-DELAYED HIGH-VOLTAGE PULSES

A. Robledo-Martinez[1], A. Garcia-Villarreal[1], H. Sobral[2]
[1]Ciencias Bï¿½sicas, Universidad Autï¿½noma Metropolitana, Mexico City, Mexico
[2]CCADET, Universidad Nacional Autï¿½noma de Mï¿½xico, Mexico City, Mexico

WE Posters-50 BEAM EVOLUTION PROPAGATED THROUGH THE RELATIVISTIC WARM MAGNETO PLASMA

M. R. Jafari Milani[1], S. Rezaei[2], M. J. Jafari[3]
[1]Plasma Physics Research School,NSTRI, Tehran, Iran
[2]Plasma Physics Research School,NSTRI, Tehran, Iran
[3]Plasma Physics Research School,NSTRI, Tehran, Iran

WE Posters-51 STUDY OF THERMAL EFFECT ON THE SELF-FOCUSING MECHANISM IN THE COLLISIONAL MAGNETIZED PLASMA

M. J. Jafari[1], M. R. Jafari Milani[2], S. Rezaei[3]
[1]Plasma Physics Research School,NSTRI, Tehran, Iran
[2]Plasma Physics Research School,NSTRI, Tehran, Iran
[3]Plasma Physics Research School,NSTRI, Tehran, Iran

Session WE Posters: WE P5
Poster Session

Wednesday, May 24 15:00-15:45, Poster Room
Session Chairs:

WE Posters-52 EFFECT OF THE ION BACKGROUND ON THE CHARACTERISTICS OF THE OUTPUT SIGNAL FROM THE OSCILLATOR WITH THE TURBULENT ELECTRON BEAM

Y. A. Kalinin, A. V. Starodubov
Department of Physics of nonlinear systems, Saratov State University, Saratov, Russian Federation

WE Posters-53 EXPERIMENTAL COMPARISON OF ELECTRONIC CYLOTRONIC RESONANCE AND COLLISIONAL TYPE COAXIAL PLASMAS SOURCES

J. Lo[1], A. Kaiz[1], L. Therese[1], B. Caillier[1], P. Guillot[1], L. Latrasse[2]
[1]Laboratoire Diagnostics des Plasmas Hors Equilibre (DPHE), Universite de Toulouse, INU Champollion, Albi, France
[2]Sairem S.A., Neyron, France

Session WE Posters: We P6
Poster Session

Wednesday, May 24 15:00-15:45, Poster Room
Session Chair: Hyyong Suk, Gwangju Institute of Science and Technology, Korea

WE Posters-54 HEAVY IONS ACCELERATED BY A HIGH INTENSITY, HIGH CONTRAST LASER PULSE FROM SUB-MICROMETER METAL TARGETS

P. Forestier-Colleoni[1], J. Li[1], C. McGuffey[1], J. Peebles[1], C. Krauland[1], F. N. Beg[1], D. C. Gautier[2], J. C. Fernandez[2], S. Palaniyappan[2], R. P. Johnson[2], E. D'Humieres[3], A. Hussein[4], T. Batson[4]
[1]CER, University of California San Diego, La Jolla, CA, United States
[2]Los Alamos National Laboratory, MN, United States
[3]CELIA, Talence, France
[4]University of Michigan, Ann Arbor, MI, United States

Session WE Posters: WE P7
Poster Session

Wednesday, May 24 15:00-15:45, Poster Room
Session Chair: Tatyana Sizyuk, Purdue University

WE Posters-55 STUDY ON SOLID BY-PRODUCTS OF METAL-ELECTRODES\SF6 REACTIONS UNDER POWER ARC

K. Qian, J. Yan, L. Cheng, Y. Wang, Y. Wang
State Key Laboratory of Electrical Insulation and Power Equipment, Xi an Jiaotong University, Xi an, China

WE Posters-56 Observation of inorganic layer contamination by impurities originated from organic layers during multi-layer PEALD process for flexible electronics encapsulation

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

WE Posters-57 INVESTGATION OF DECOMPOSITION CHARACTERISTICS OF SF6 UNDER ARC DISCHARGE

Z. Li, Y. Wang, K. Qian, J. Yan, L. Cheng, W. Ding
State Key Laboratory of Electrical Insulation and Power Equipment, xi'an, China

WE Posters-58 SECONDARY ELECTRON EMISSION FROM CARBON VELVET

C. Jin, Y. Raitses
Princeton Plasma Physics Laboratory, Princeton, New Jersey, USA

WE Posters-59 IS THE SHEATH POTENTIAL POSITIVE OR NEGATIVE AT STRONGLY EMITTING SURFACES?

M. D. Campanell, M. V. Umansky
Fusion Energy Sciences Program, Lawrence Livermore National Laboratory, Livermore, CA, United States

WE Posters-60 SURFACE CHARACTERIZATION OF THE PLASMA-IONIC LIQUID INTERFACE USING X-RAY PHOTOELECTRON SPECTROSCOPY

A. M. Capece, K. Miner
Physics, The College of New Jersey, Ewing, NJ, United States

WE Posters-61 MODELING OF REDUCED EFFECTIVE SECONDARY ELECTRON EMISSION YIELD FROM VELVET AND FOAM SURFACES

C. Swanson, I. D. Kaganovich
Princeton Plasma Physics Laboratory, Princeton, NJ, United States

WE Posters-62 NON-THERMAL PLASMA-INDUCED WETTABILITY CHANGES ON MARINA WOOL VIA ATMOSPHERIC DIELECTRIC BARRIER DISCHARGES

A. Diaz, D. Staack
Mechanical Engineering, Texas A&M University, College Station, Texas, United States

WE Posters-63 INTEGRATION OF MICROPLASMA WITH SEMICONDUCTOR: PLASMA BIPOLAR JUNCTION TRANSISTOR

J. Ni, Y. Huang, S. Zhong, S. -J. Park, J. Eden
University of Illinois, Urbana, IL, United States

WE Posters-64 STUDY OF PLASMA-POLYMERIZED SiOXNY THIN FILMS STRUCTURAL PROPERTIES USING TEOS/O2/N2 MIXTURE

M. Shahpanah, M. Abbasi-Firouzjah, B. Shokri
Laser & plasma research institue, Shahid Beheshti university, Tehran, Iran, Tehran, Iran

WE Posters-65 SYNTHESISING NANOFLUIDS USING LASER INDUCED PLASMA

M. T. Rajan
Plasma Engineering Research Lab (PERL), Texas A&M University - Corpus Christi, Corpus Christi, Texas, United States

WE Posters-66 EXPERIMENTAL STUDY OF THE INTERACTION OF AN HELIUM PLASMA JET AND A CONDUCTIVE TARGET

A. Kone, B. Caillier, C. Muja, F. Sainct, P. Guillot
Diagnostics des Plasmas Hors Equilibre, Universite de Toulouse, INU Champollion, Albi, France

WE Posters-67 COMPARATIVE STUDY OF THE INTERACTIONS OF AN HELIUM AND NEON PLASMA JET WITH A CONDUCTIVE TARGET

A. Kone, B. Caillier, C. Muja, F. P. Sainct, P. Guillot
Laboratoire Diagnostics des Plasmas Hors Equilibre, Universite de Toulouse, INU Champollion,, Albi, France

WE Posters-68 SURFACE MODIFICATION OF CORN STARCH AND TIO2 WITH A COAXIAL DBD REACTOR AND WITH THE AID OF A FLUIDIZED-BED.

E. A. Garcia-Guerrero[1], M. Tirado-Guerrero[1], G. Lopez-Echevarria[2], M. J. Nieto-Perez[1], J. A. Huerta-Ruelas[1], G. Mendez-Montealvo[2], G. Velazquez-delaCruz[2]
[1]Alternative Energies, CICATA-IPN Queretaro, Queretaro, Mexico
[2]Biotechnology, CICATA-IPN Queretaro, Queretaro, Mexico

WE Posters-69 PLATFORMS FOR GHZ MICROPLASMA-MATERIAL STUDIES

Z. Cohick[1], S. Antonsson[1], S. Perini[2], D. Wolfe[1,3], M. Lanagan[1,2]
[1]Department of Engineering Science and Mechanics, The Pennsylvania State University, University Park, PA, United States
[2]Materials Research Institute, The Pennsylvania State University, University Park, Pa, United States
[3]Applied Research Laboratory, The Pennsylvania State University, University Park, PA, United States

Session WE Posters: WE P8

Poster Session

Wednesday, May 24 15:00-15:45, Poster Room
Session Chair: Nicholas Ouart, NRL

WE Posters-70 CREATING AND DIAGNOSING A UNIFORM HOT, DENSE PLASMA WITH THE PLASMA-FILLED ROD PINCH

N. R. Pereira
Ecopulse, Inc., Springfield, Va, United States

WE Posters-71 X-RAY SPECTROSCOPIC DIAGNOSTICS OF ICF IMPLOSIONS ON NIF USING KR DOPANT

A. Dasgupta[1], N. D. Ouart[1], J. L. Giuliani[1], R. W. Clark[1], M. B. Schneider[2], H. A. Scott[2]
[1]Plasma Physics, Naval Research Laboratory, Washington, DC, United States
[2]Lawrence Livermore National Laboratory, Livermore, CA, Unites States

WE Posters-72 NON-LTE MODELING OF MOLYBDENUM L-SHELL RADIATION PRODUCED USING THE NIKE LASER

N. Ouart[1], Y. Aglitskiy[1], J. Weaver[1], A. Dasgupta[1], Y. Ralchenko[2]
[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[2]National Institute of Standards and Technology, Gaithersburg, MD, United States

WE Posters-73 SIMULATIONS OF GAS PUFF Z-PINCH IMPLOSIONS WITH A XE DOPANT

V. Tangri[1], J. L. Giuliani[2], A. L. Velikovich[2], N. D. Ouart[2], A. Dasgupta[2], J. P. Apruzese[3], A. J. Harvey-Thompson[4], C. A. Jennings[4], B. Jones[4]
[1]Berkeley Research Associates, Beltsville, MD, United States
[2]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
[3]Syntek Technologies, Arlington VA, United States
[4]Sandia National Laboratories, Albuquerque, NM, United States

Session WE Posters: WE P9

Poster Session

Wednesday, May 24 15:00-15:45, Poster Room
Session Chairs:

WE Posters-74 DESIGN OF A 250 GHZ PHOTONIC BANDGAP EXTENDED INTERACTION KLYSTRON

J. C. Stephens, M. A. Shapiro, R. J. Temkin
Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, Massachusetts

WE Posters-75 MODELING AND STUDY OF THE ELECTRON OPTICAL SYSTEM WITH COMPRESSION OF AN ELECTRON SHEET BEAM

A. A. Burtsev[1], A. V. Danilushkin[1], K. V. Shumikhin[1], Y. G. Gamayunov[2], Y. A. Grigoriev[3]
[1]Saratov State Technical University, Saratov, Russian Federation
[2]Saratov State University, Saratov, Russian Federation
[3]The Kotelnikov Institute of Radio-engineering and Electronics of RAS, Saratov, Russian Federation

WE Posters-76 STUDY OF PARTICAL-IN-CELL SIMULATION FOR THE GRAPHENE SURFACE PLASMON POLARITONS EXCITATION

L. Liu
School of Physical Electronics, University of Electronic Science and Technology of China, Chengdu, China

Session WE Posters: WE P10
Poster Session

Wednesday, May 24 15:00-15:45, Poster Room
Session Chair: John Giuliani, Naval Research Laboratory

WE Posters-77 THE MULTI-PHASE EQUATION OF STATE FOR COMPUTATIONAL INVESTIGATION ON EXPLODING ALUMINUM WIRE

K. Wang[1], D. Zhang[1], Z. Shi[2], Y. Shi[2]
[1]Hebei University of Technology, Tianjin, China
[2]Xian Jiaotong University, Xian, China

WE Posters-78 ON THE STABILITY OF THE MAGNETIZED NOH Z-PINCH PROBLEM

S. Zalesak[1], J. Giuliani[2], A. Velikovich[2], A. Beresnyak[2]
[1]Berkeley Research Associates, Beltsville, MD, United States
[2]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States

WE Posters-79 INFLUENC OF DIELECTRIC COATING AND SOLDERING ON ELECTRICAL EXPLOSION OF TUNGSTEN WIRES

Y. Shi[1], Z. Shi[1], K. Wang[2], Z. Wu[1], S. Jia[1]
[1]Dept. of Electrical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China
[2]Dept. of Electrical Engineering, Hebei University of Technology, Tianjin, China

WE Posters-80 COMPARATIVE STUDIES OF MAGNETIC FIELD EVOLUTION AND Z-PINCH DYNAMIC PROCESS OF CURRENT-CARRYING RAREFIED DEUTERIUM PLASMA SHELL

C. Ning, Z. Feng, S. Sun, C. Xue, B. Li
Institute of Applied Physics and Computational Mathematics, Beijing, China

WE Posters-81 RESEARCH ON TWO-DIMENSIONAL MHD SIMULATIONS OF X-PINCH IMPLOSION DYNAMICS

J. Cui, T. Zhao, L. Shi, Y. Zhang, L. Zou
School of Electrical Engineering, Shandong University, Ji'nan, Shandong Province, China

WE Posters-82 THE ELECTROTHERMAL INSTABILITY ON PULSED POWER ABLATIONS OF THIN FOILS

A. M. Steiner, P. C. Campbell, D. A. Yager-Elorriaga, N. M. Jordan, Y. Y. Lau, R. M. Gilgenbach
Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

WE Posters-83 DEVELOPMENT OF PULSED PINCH PLASMAS FOR THE APPLICATION AS FAIR PLASMA STRIPPER

M. Iberler, T. Ackermann, B. Bohlender, K. Cistakov, C. Hock, D. Mann, G. Xu, J. Wiechula, J. Jacoby
Institute for Applied Physics, Goethe University Frankfurt, Frankfurt am Main, Germany

WE Posters-84 PLASMA SPECTRAL CHARACTERISTICS OF SINGLE ALUMINUM WIRE ELECTRICALLY EXPLODED IN HIGH VACUUM

Z. Wu, Z. Shi, Y. Shi, J. Bai, S. Jia
Xi'an Jiaotong University, Xi'an,Shaanxi, China

WE Posters-85 FULLY KINETIC MODELING OF DENSE PLASMA FOCI FROM KILO- TO MEGA-AMP DEVICES

D. P. Higginson, J. Angus, I. Holod, S. Jiang, C. Kueny, J. Liu, M. McMahon, A. Pankin, J. Sears, K. Tummel, A. Voronin, A. Link, A. Schmidt
Lawrence Livermore National Lab, Livermore, CA, United States

WE Posters-86 Investigation of 1-MA, 200-ns Ar Gas Puff Z-Pinches on COBRA

N. Qi, S. V. Rocco, J. T. Banasek, L. Atoyan, T. Byvank, W. M. Potter, J. B. Greenly, D. A. Hammer, B. R. Kusse
Lab. of Plasma Studies, Cornell University, Ithaca, NY, United States

WE Posters-87 INSTABILITIES AND THE IMPLOSION DYNAMICS OF GAS-PUFF Z-PINCH EXPERIMENTS

S. V. Rocco[1], J. Banasek[1], D. Hammer[1], B. Kusse[1], N. Qi[2], W. Potter[1]
[1]Lab of Plasma Studies, Cornell University, Ithaca, NY, United States
[2]L3 Communications, San Leandro, CA, United States

WE Posters-88 STAGED Z-PINCH EXPERIMENTS ON THE MEGA-AMPERE CURRENT DRIVER COBRA

J. C. Valenzuela[1], F. Conti[1], M. P. Ross[1], N. Aybar[1], J. Narkis[1], F. N. Beg[1], F. J. Wessel[2], E. Ruskov[2], H. U. Rahman[2], P. Ney[2], T. W. Darling[3], A. Covington[3], D. A. Hammer[4], T. Byvank[4], J. T. Banasek[4], J. B. Greenly[4], W. M. Potter[4], S. V. Rocco[4]

[1]University of California, San Diego, San Diego, CA, United States

[2]Magneto-Inertial Fusion Technologies, Inc, Tustin, CA, United States

[3]Iniversity of Nevada, Reno, Nevada, Reno, United States

[4]Cornell University, Ithaca, NY, United States

WE Posters-89 FORCE-FREE CURRENT FLOW IN Z PINCHES IMPLODED IN AN AXIAL MAGNETIC FIELD

A. L. Velikovich[1], N. D. Ouart[1], J. L. Giuliani[1], R. B. Baksht[2], A. G. Rousskikh[2], V. I. Oreshkin[2], D. Mikitchuk[3], M. Cvejic[3], R. Doron[3], E. Kroupp[3], Y. Maron[3]

[1]Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States

[2]Institute of High Current Electronics of the Siberian Branch of the Russian Academy of Sciences, Tomsk, Russia

[3]Weizmann Institute of Science, Rehovot, Israel

WE Posters-90 THE EFFECTS OF CENTRAL JET ON THE AR-ON-D DOUBLE-SHELL GAS PUFF Z-PINCH LOADS ON SANDIA ZR FOR PULSED NEUTRON SOURCE

Y. Chong[1], A. L. Velikovich[1], J. Giuliani[1], P. Knapp[2], C. Jennings[2]

[1]Naval Research Laboratory, WASHINGTON, DC

[2]Sandia National Laboratories, Albuquerque, NM

Session WE 2.1: Computational Physics and Techniques III

Wednesday, May 24 16:00-18:00, Wildwood 9

Session Chairs: Tanvir Farouk, University of South Carolina

Juan Trelles, U Mass Lowell

16:00 WE 2.1-1 COMPUTATION OF CATHODE LAYER THICKNESS FOR NORMAL GLOW DISCHARGE

X. Wang[1], X. Hou[1], Y. Fu[2], X. Zou[1]

[1]Tsinghua University, Beijing, China

[2]Michigan State University, East Lansing, USA

16:15 WE 2.1-2 (invited) STRUCTURE-PRESERVING SECOND-ORDER INTEGRATION OF RELATIVISTIC PARTICLE TRAJECTORIES IN ELECTROMAGNETIC FIELDS

A. V. Higuera[1,2], J. R. Cary[1,2]
[1]University of Colorado, Boulder, Boulder, CO, United States
[2]Tech-X Corporation, Boulder, CO, United States

16:45 WE 2.1-3 THE DYNAMICS OF COLLISIONAL BUNEMAN INSTABILITY DEVELOPMENT

E. V. Rostomyan
Theoretical, Institute of Radiophysics & Electronics National Ac Sci of Armenia, Ashtarack, Armenia

17:00 WE 2.1-4 NEW MULTI-WEIGHT COLLISION ALGORITHM FOR DSMC/PIC SIMULATIONS OF GASES AND PLASMA FLOWS

S. N. Averkin, D. Han, N. A. Gatsonis
Worcester Polytechnic Institute, Worcester, MA, United States

17:15 WE 2.1-5 STUDY ON THE ANALYTICAL SOLUTION OF ELECTRON NUMBER DENSITY AND IMPEDANCE OF α MODE HELIUM RADIO-FREQUENCY ATMOSPHERIC PRESSURE GLOW DISCHARGES

H. Wang, J. Jiao, H. Luo, X. Wang
Department of electric engineering, Tsinghua university, Beijing, China

17:30 WE 2.1-6 COMPUTER SIMULATIONS FOR MODELLING EXPLOSIVE PROPERTIES OF BALL LIGHTNING

M. O. McDougall, S. Kelty, J. Lopez
Physics, Seton Hall University, South Orange, NJ, United States

17:45 WE 2.1-7 ELECTRON INTERACTIONS WITH PLASMA FEED GASES

C. G. Limbachiya[1], R. Bhavsar[2], M. Swadia[3], M. Vinodkumar[4]
[1]Applied Physics, Department of Applied Physics, The M.S. University of Baroda, Vadodara (India) - 390001, Vadodara, India
[2]Physics, M.N. Science College, Visnagar, india
[3]Physics, HVHP Institute of PG Studies and Research, Kadi, India
[4]Electronics, V.P. Science College, Vallabh Vidyanagar, India

Session WE 2.2: Joint Fusion HEDP

Wednesday, May 24 16:00-18:00, Wildwood 10
Session Chair: David Ampleford, Sandia National Lab

16:00 WE 2.2-1 (invited) INVESTIGATION OF CORE TRANSPORT DURING THE FIRST W7-X EXPERIMENTAL CAMPAIGN

N. A. Pablant[1], S. Bozhenkov[2], A. Dinklage[2], G. Fuchert[2], M. Landreman[3], A. Langenberg[2], A. Alonso[4], C. D. Beidler[2], M. Beurskens[2], M. Bitter[1], R. Burhenn[2], L. F. Delgado-Aparicio[1], D. A. Gates[1], J. Geiger[2], K. W. Hill[1], M. Hirsch[2], U. Hofel[2], J. Knauer[2], A. Kramer-Flecken[5], S. Lazerson[1], H. Maassberg[2], O. Marchuk[5], N. B. Marushchenko[2], D. R. Mikkelsen[1], E. Pasch[2], T. S. Pedersen[2], S. Satake[6], H. Smith[2], J. Svensson[2], P. Traverso[7], Y. Turkin[2], P. Valson[2], J. L. Velasco[4], G. Weir[2], T. Windisch[2], R. C. Wolf[2], M. Yokoyama[6], D. Zhang[2]
[1]Princeton Plasma Physics Laboratory, Princeton, NJ, United States
[2]Max-Planck-Institut fur Plasmaphysik, Greifswald, Germany
[3]University of Maryland, College Park, MD, United States
[4]Laboratorio Nacional de Fusion, CIEMAT, Madrid, Spain
[5]Forschungszentrum Julich, Julich, Germany
[6]National Institute for Fusion Science, Toki, Japan
[7]Auburn University, Auburn, AL, United States

16:30 WE 2.2-2 UNDERSTANDING AND PREDICTION OF INTERNAL TRANSPORT BARRIERS IN TOKAMAKS USING INTEGRATED MODELING

A. Y. Pankin[1], I. Holod[1], A. Garofalo[2], J. Weiland[3]
[1]Lawrence Livermore National Laboratory, Livermore, CA, United States
[2]General Atomics, San Diego, CA, United States
[3]Chalmers University of Technology, Chalmers, Sweden

16:45 WE 2.2-3 A HYBRID TRANSPORT-DIFFUSION SIMULATION IN LASER FUSION

J. Li
Institute of Applied Physics and Computational Mathematics, Beijing, China

17:00 WE 2.2-4 THE SIMULATION OF FORMING PROCESS OF Z-PINCH DRIVEN DYNAMIC HOHLRAUM BASED ON THE PROGRAM MULTI2D-Z

C. Ning, Z. Chen
Institute of Applied Physics and Computational Mathematics, Beijing, China

17:15 WE 2.2-5 (invited) AZIMUTHAL CURRENT DENSITY DISTRIBUTION RESULTING FROM A POWER FEED VACUUM GAP IN METALLIC LINER EXPERIMENTS AT 1 MA

S. Bott-Suzuki[1], S. W. Cordaro[1], L. S. Caballero Bendixsen[1], L. Atoyan[2], T. Byvank[2], W. Potter[2], B. R. Kusse[2], J. B. Greenly[2], D. A. Hammer[2], C. A. Jennings[3]

[1]U. C. San Diego, La Jolla, CA, United States

[2]Cornell University, Ithaca, NY, United States

[3]Sandia National Laboratories, Albuquerque, NM, United States

17:45 WE 2.2-6 MEASURING PRESSURE IN WARM DENSE TUNGSTEN PLASMA CREATED IN PLASMA-FILLED ROD-PINCH DIODES

B. V. Weber[1], C. N. Boyer[2], D. Mosher[3], N. R. Pereira[4], A. S. Richardson[1], J. W. Schumer[1]

[1]Naval Research Laboratory, Washington, DC, United States

[2]Sotera Defense Solutions, Herndon, VA, United States

[3]Syntek Technologies Inc, Arlington, VA, United States

[4]Ecopulse Inc, Springfield, VA, United States

Session WE 2.3: Plasma Medicine and Biological Effects II

Wednesday, May 24 16:00-17:45, Wildwood 12

Session Chairs:

16:00 WE 2.3-1 (invited) NON-THERMAL ATMOSPHERIC PRESSURE PLASMA EFFECTS ON LUNG CANCER CELLS WITHININ 3D COLLAGEN MATRIX

S. B. Karki, H. Ayan

University of Toledo, Toledo,OH, United States

16:30 WE 2.3-2 EFFECT OF ELECTRIC FIELDS ON BIOFILM FORMATION

H. Panesar[1], J. L. Lopez[2]

[1]Department of Biology, Seton Hall University, South Orange, NJ, United States

[2]Department of Physics, Seton Hal University, South Orange, NJ, United States

16:45 WE 2.3-3 COLD AIR ATMOSPHERIC PRESSURE PLASMA FOR DECONTAMINATION OF ESCHERICHIA COLI CONTAMINATED FRUITS, MOHAMED ICOPS-BEAMS 2017

A. -A. H. Mohamed[1], A. H. Basher[1], A. A. Alhazime[1], J. Q. M. Almarashi[1], M. A. Ellabban[1], A. Al-Mashraqi[1], S. A. Ouf[2]

[1]Physics Department/Faculty of Science, Taibah University, Medina, Saudi Arabia

[2]Botany Department/ Faculty of Science,, Cairo University, Giza, Egypt

17:00 WE 2.3-4 THE EFFECT OF NONTHERMAL PLASMA ON INTRACELLULAR REDOX AND PH HOMEOSTASIS IN SACCHAROMYCES CEREVISIAE

R. Ma, D. Cui, H. Xu, Y. Zhu, Z. Jiao
Henan Key Laboratory of Ion-beam Bioengineering, Zhengzhou University, Zhengzhou, China

17:15 WE 2.3-5 ANALYSIS OF LOW-TEMPERATURE PLASMA JET AND TREATMENT EFFECTS ON STAPHYLOCOCCUS AUREUS WITH AND WITHOUT BIOFILM FORMATION

S. D. Knecht, G. Kirmanjeswara, S. G. Bilen, A. Sosa, G. Ryan, C. Whalen
Penn State University, University Park, PA, United States

Session WE 2.4: Intense Beam Microwave Generation II

Wednesday, May 24 16:00-18:00, Wildwood 13
Session Chair: John Jelonnek, Karlsruhe Institute of Technology, Germany

16:00 WE 2.4-1 RESEARCH AND DEVELOPMENT OF THE RECIRCULATING PLANAR CROSSED-FIELD AMPLIFIER

S. C. Exelby[1], G. B. Greening[1], N. M. Jordan[1], D. Simon[1], Y. Y. Lau[1], R. M. Gilgenbach[1], B. W. Hoff[2]
[1]Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States
[2]Directed Energy Directorate, Air Force Research Laboratory, Albuquerque, NM, United States

16:15 WE 2.4-2 PLASMA-BASED PULSE SHORTENING IN THE RECIRCULATING PLANAR MAGNETRON

N. M. Jordan, G. B. Greening, S. C. Exelby, D. A. Packard, K. A. Schneider, Y. Y. Lau, R. M. Gilgenbach
Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

16:30 WE 2.4-3 NOVEL RELATIVISTIC MAGNETRON WITH LENGTHY VIRTUAL CATHODE AND MAGNETIC MIRROR

E. Schamiloglu[1], M. Fuks[1], A. A. Koronovskii[2], S. A. Kurkin[2]
[1]Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States
[2]Faculty of Nonlinear Processes, Saratov State University, Saratov, Russian Federation

16:45 WE 2.4-4 DEVELOPMENT OF A PHASE-CONTROLLED MAGNETRON EXPERIMENT USING A MODULATED ELECTRON SOURCE

J. Browning[1], M. Pearlman[1], D. Plumlee[1], T. Akinwande[2], M. Worthington[3], J. Cipolla[3]

[1]Electrical Engineering, Boise State University, BOISE,ID, USA

[2]Electrical Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA

[3]L-3 EDD Communications, Williamsport, PA, USA

17:00 WE 2.4-5 (invited) PROGRESS OF HIGH POWER MICROWAVE RESEARCHES AT THE NATIONAL UNIVERSITY OF DEFENSE TECHNOLOGY

J. Zhang, J. Ju, W. Zhang, X. Zhang, F. Dang, W. Li, D. Shi, H. Zhong

College of Optoelectronic Science and Engineering, National University of Defense Technology, Changsha, China

17:30 WE 2.4-6 (invited) MATERIAL SELECTION FOR THE PERIODIC ELEMENTS OF A METAMATERIAL-ENHANCED RESISTIVE WALL AMPLIFIER

T. Rowe, P. Forbes, J. H. Booske, N. Behdad

Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, WI, United States

Session WE 2.5: Source technologies and material interfaces

Wednesday, May 24 15:00-17:00, Wildwood 14

Session Chair: Steven Shannon, NC State

15:00 WE 2.5-1 THE ELECTROSTATIC DEBYE LAYER OF THE PLASMA-LIQUID INTERFACE

P. Rumbach, J. P. Clarke, D. B. Go

University of Notre Dame, Notre Dame, IN, United States

15:15 WE 2.5-2 NANOMOLAR TO MICROMOLAR OH AND 1O2 DELIVERY WITH 3D PRINTED MICROPLASMA JETS ARRAY

P. P. Sun[1,2], E. Araud[1], S. Zhong[2], Z. Tong[2], J. G. Eden[2], T. H. Nguyen[1]

[1]Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

[2]Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

15:30 WE 2.5-3 INVESTIGATION OF SCALING EFFECTS DUE TO VARYING DIELECTRIC MATERIAL IN ASYMMETRIC DIELECTRIC BARRIER DISCHARGE ACTUATORS

A. D. Ngo[1], K. K. Pai[2], J. D. Jacob[1]

[1]MAE, Oklahoma State University, Stillwater, United States

[2]Plasma Bionics LLC, Stillwater, United States

15:45 WE 2.5-4 A STUDY OF PULSE OPTIMIZATION FOR THE TREATMENT OF DIESEL EMISSIONS USING TRANSIENT PLASMA

S. Kerketta, S. Subranmanian, W. P. Schroeder, M. Gundersen
Electrical Engineering, University of Southern California, Los Angeles, California, United States

16:00 WE 2.5-5 INVESTIGATION OF CHARACTERISTICS OF A COAXIAL DIELECTRIC BARRIER DISCHARGE REACTOR WITH DIFFERENT POWER SOURCES

F. Liu, C. Miao, Q. Wang, B. Zhang, Z. Fang
College of Electrical Engineering and Control Science, Nanjing Tech University, Nanjing, China

16:15 WE 2.5-6 TIME-RESOLVED IMAGING OF ELECTRICAL DISCHARGE DEVELOPMENT IN BUBBLES IMMERSED IN WATER

Y. Yang
Electrical and Electronics Engineering, Huazhong University of Science and Technology, Wuhan, China

16:30 WE 2.5-7 A COMPARISON OF OZONE GENERATION USING MESHED AND PLANAR ELECTRODES IN DIELECTRIC BARRIER DISCHARGES

Y. Zhou, T. Wang, S. MacGregor, M. Wilson, I. Timoshkin, M. Given
Electronic And Electrical Engineering, University of Strathclyde, GLASGOW, United Kingdom

16:45 WE 2.5-8 Characteristics of Homogeneous MDBD Excited by Unipolar Sub-microsecond pulse Power at Atmospheric Pressure

J. Li, X. Li, P. Dong, C. Lan, J. Long, L. Zhang
Accelerator physics and applications, Institute of fluid phycis, CAEP, Mianyang, Sichuan, China

Session PL7: Plenary 7

Thursday, May 25 08:30-09:30, Wildwood 3
Session Chair: WeiDong Zhu, St. Peter's University

8:30 PL7-1 (invited) PROGRESS AND PROSPECTS OF PLASMA-BASED ACCELERATORS AND THEIR APPLICATIONS

C. Joshi
Electrical Engineering, UCLA, Los Angeles, CA, United States

Session TH 1.1: Codes and Modeling II

Thursday, May 25 10:00-12:00, Wildwood 9
Session Chair: Andrey D Andreev, Booz Allen Hamilton Inc.

10:00 TH 1.1-1 STUDY ON THE BEFORE CAVITY INTERACTION IN A SECOND HARMONIC GYROTRON USING 3D CFDTD PIC SIMULATIONS

M. C. Lin[1], A. Malygin[2], S. Illy[2], M. Thumm[2], J. Jelonnek[2]
[1]Department of Electrical and Biomedical Engineering, Hanyang University, Seoul, South Korea
[2]Institute for Pulsed Power and Microwave Technologies, Karlsruhe Institute of Technology, Karlsruhe, Germany

10:15 TH 1.1-2 (invited) STUDY ON THE AFTER CAVITY INTERACTION IN A 140 GHZ GYROTRON USING 3D CFDTD PIC SIMULATIONS

M. C. Lin[1], S. Illy[2], K. Avramidis[2], M. Thumm[2], J. Jelonnek[2]
[1]Department of Electrical and Biomedical Engineering, Hanyang University, Seoul, South Korea
[2]Institute for Pulsed Power and Microwave Technologies, Karlsruhe Institute of Technology, Karlsruhe, Germany

10:45 TH 1.1-3 VALIDATION AND BENCHMARKING OF TWO PARTICLE-IN-CELL CODES FOR A GLOW DISCHARGE

J. Carlsson[1], A. Khrabrov[1], I. Kaganovich[1], T. Sommerer[2], D. Keating[3]
[1]Princeton Plasma Physics Laboratory, Princeton, NJ, United States
[2]General Electric Global Research, Niskayuna, NY, United States
[3]Department of Physics, University of California at Berkeley, Berkeley, CA, United States

11:00 TH 1.1-4 COUPLING MD SIMULATIONS OF LASER ABLATION WITH PIC-DSMC SIMULATIONS OF PLASMA PLUME EXPANSIONS AND SUBSEQUENT LASER-PLASMA INTERACTIONS

S. M. Copplestone[1], P. Ortwein[1], C. -D. Munz[1], M. Pfeiffer[2], S. Fasoulas[2]
[1]Institute of Aerodynamics and Gas Dynamics, Stuttgart, Germany
[2]Institute of Space Systems, Stuttgart, Germany

11:15 TH 1.1-5 COMPUTER SIMULATION OF ACETYLENE PLASMA POLYMERIZATION: EFFECT OF SUBSTRATE TEMPERATURE

M. Zarshenas[1], A. Delcorte[1], T. Leyssens[2]
[1]Bio & Soft Matter, Institute of Condensed Matter and Nanoscience-Bio & Soft Matter, UniversitÃ© catholique de Louvain, louvain la neuve, Belgium
[2]Molecules, Solids and Reactivity, Institute of Condensed Matter and Nanoscience, Universite catholique de Louvain, louvain la neuve, Belgium

11:30 TH 1.1-6 VALIDATION AND VERICATION OF A PIC/MCC CODE FOR LOW TEMPERATURE PLASMAS

A. Sun

Xi'an Jiaotong University, Xi'an, Shannxi, China

11:45 TH 1.1-7 PICLAS: A HIGHLY FLEXIBLE PARTICLE CODE FOR THE SIMULATION OF REACTIVE PLASMA FLOWS

P. Ortwein[1], S. Copplestone[1], C. -D. Munz[1], M. Pfeiffer[2], T. Binder[2], A. Mirza[2], P. Nizenkov[2], S. Fasoulas[2]

[1]Institute of Aerodynamics and Gas Dynamics, Stuttgart, Germany

[2]Institute of Space Systems, Stuttgart, Germany

Session TH 1.2: Partially Ionized Plasmas/Space Plasmas

Thursday, May 25 10:00-11:15, Wildwood 10

Session Chairs:

10:00 TH 1.2-1 THE EFFECT OF NEUTRALS DEPLETION ON PLASMA DIAMAGNETISM

A. Fruchtman[1], S. Shinohara[2], D. Kuwahara[2]

[1]Physics department, Holon Institute of Technology, Holon, Israel

[2]Division of Advanced Mechanical Systems Engineering, Tokyo University of Agriculture and Technology, Tokyo, Japan

10:15 TH 1.2-2 INVESTIGATION OF THE SIMILARITY LAW IN DISCHARGES AT HIGH PRESSURE USING A KINETIC GLOBAL MODEL

Y. Fu[1], G. Parsey[1], J. Kerk[1], J. Verboncoeur[1], A. Chiristlieb[1], X. Wang[2]

[1]Department of Computational Mathematics, Science and Engineering, Michigan State University, East Lansing, United States

[2]Department of Electrical Engineering, Tsinghua University, Beijing, China

10:30 TH 1.2-3 ION ACOUSTIC GARDNER SOLITONS IN SUPERTHERMAL PLASMA WITH ELECTRON BEAM

N. S. Saini, N. Kaur

Physics, Guru Nanak Dev University, Amritsar, Punjab, India

10:45 TH 1.2-4 KINETIC MODEL TO INTERPRET WHISTLER WAVES IN MULTICOMPONENT NON-MAXWELLIAN SPACE PLASMAS

W. Nasir[1], M. N. Sarwar[2]

[1]PHYSICS, Forman Christian College (A Chartered University), Lahore, PAKISTAN

[2]PHYSICS, Government College University, lahore, PAKISTAN

11:00 TH 1.2-5 ION EMISSION ENERGETICS FROM A POSITIVELY BIASED HOLLOW CATHODE CONTACTOR

G. Miars[1], O. Leon[1], B. Gilchrist[1], G. L. Delzanno[2], F. L. Castello[2], J. E. Borovsky[3]

[1]The University of Michigan, Ann Arbor, MI, United States

[2]Los Alamos National Laboratory, Los Alamos, NM, United States

[3]Space Science Institute, Boulder, CO, United States

Session TH 1.3: Plasma Material Interactions

Thursday, May 25 10:00-12:00, Wildwood 12

Session Chair: Tatyana Sizyuk, Purdue University

10:00 TH 1.3-1 (invited) ENERGY DEPENDENT PULSED ELECTRON DEPOSITION OF AMORPHOUS TITANIUM DIOXIDE FILMS

D. Das[1], A. Barman[1], D. Banerjee[1], A. Kanjilal[1], M. Gupta[2], D. Phase[2], A. Ponomaryov[3], S. Zvyagin[3], R. Singhal[4]

[1]Physics Department, School of Natural Sciences, Shiv Nadar University, Dadri, Gautam Buddha Nadar, Uttar Pradesh, PIN 201314, India

[2]UGC-DAE Consortium for Scientific Research, Khandwa Road, Indore, Madhya Pradesh, PIN 452001, India

[3]Dresden High Magnetic Field Laboratory (Hld), Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Po Box 510119, 01314 Dresden, Germany

[4]Department of Physics, Malaviya National Institute of Technology, Jaipur, PIN 302017, India

10:30 TH 1.3-2 OUTGASSING AND SECONDARY ELECTRON REDUCTION FROM LASER-PROCESSED ANODES

S. B. Fairchild[1], D. Gortat[2], P. T. Murray[3], T. C. Back[4], N. Lockwood[5], D. C. Ingram[6]

[1]Materials Directorate, Air Force Research Laboratory, WPAFB,OH, United States

[2]Institute for Manufacturing, University of Cambridge, Cambridge, UK

[3]MurHop Technical Consulting, LLC, Dayton, OH, United States

[4]Research Institute, University of Dayton, Dayton,OH, United States

[5]Directed Energy Directorate, Air Force Research Laboratory, Albuquerque,NM, United States

[6]Dept of Physics and Astronomy, Ohio University, Athens, OH, United States

10:45 TH 1.3-3 IONIZATION COMPRESSION OF HIGH POWER PICOSECOND CO2 LASER

L. A. Johnson[1], D. F. Gordon[1], J. P. Palastro[1], V. Hasson[2]
[1]Division of Plasma Physics, U.S. Naval Research Laboratory, Washington, DC, United States
[2]PaR System, Shoreview, MI, Unites States

11:00 TH 1.3-4 NEON PLASMA JET INTERACTIONS WITH CONDUCTIVE AND NON-CONDUCTIVE TARGETS

A. Kone, B. Caillier, C. Muja, F. P. Sainct, P. Guillot
Laboratoire Diagnostics des Plasmas Hors Equilibre, Universite de Toulouse, INU Champollion,, Albi, France

11:15 TH 1.3-5 ION DYNAMICS AND ABLATION MECHANISMS OF FEMTOSECOND AND NANOSECOND LASER PRODUCED PLASMAS

A. Aelseid, P. K. Diwakar, A. Hassanein
Center for Materials Under Extreme Environment (CMUXE), School of Nuclear Engineering, Purdue University, West Lafayette, United States

11:30 TH 1.3-6 INVESTIGATION OF ENHANCED LASER-INDUCED BREAKDOWN (LIB) FOR APPLICATION IN HIGH-ENERGY LASER (HEL) DAMAGE MITIGATION

C. Campbell, D. Staack
Department of Mechanical Engineering, Texas A&M University, College Station, Texas, United States

11:45 TH 1.3-7 PLASMA ELECTROLYTIC BORIDING

Y. Jiang, Y. Bao, M. Wang
Hohai Univerisy, Changzhou, Jiangsu, China

Session TH 1.4: Plasma Thrusters

Thursday, May 25 10:00-11:30, Wildwood 13
Session Chairs:

10:00 TH 1.4-1 THREE-DIMENSIONAL AND SHEATH BOUNDARY EFFECTS ON THE INSTABILTIES IN EXB PLASMA DISCHARGES

V. Morin[1], O. Koshkarov[1], A. Smolyakov[1], Y. Raitses[2], I. Kaganovich[2]
[1]Physics and Engineering Physics, University of Saskatchewan, Saskatoon, Saskatoon,SK, Canada
[2]Princeton Plasma Physics Laboratory, Princeton,NY, USA

10:15 TH 1.4-2 PARTICLE-IN-CELL SIMULATION OF ANOMALOUS TRANSPORT IN A PENNING DISCHARGE

J. Carlsson[1], I. Kaganovich[1], Y. Raitses[1], A. Smolyakov[2], I. Romadanov[2]
[1]Princeton Plasma Physics Laboratory, Princeton, NJ, United States
[2]Department of Physics and Engineering Physics, University of Saskatchewan, Saskatoon, SK, Canada

10:30 TH 1.4-3 NUMERICAL MODELING OF ROTATING SPOKES IN HALL THRUSTER DISCHARGE PLASMA

R. Kawashima[1], K. Hara[2]
[1]Department of Aeronautics and Astronautics, The University of Tokyo, Tokyo, Japan
[2]Department of Aerospace Engineering, Texas A&M University, TX, USA

10:45 TH 1.4-4 MICRO-PROPULSION ACTIVITIES AT GEORGE WASHINGTON UNIVERSITY

J. Kolbeck, M. Keidar
The George Washington University, Washington, DC, United States

11:00 TH 1.4-5 LINEAR ACTUATED MICRO-CATHODE ARC THRUSTER ANALYSIS

S. Hurley, M. Keidar
Mechanical & Aerospace Engineering, The George Washington University, Washington, DC, United States

11:15 TH 1.4-6 NUMERICAL STUDY ON DYNAMIC BEHAVIOR OF INDUCTIVE PULSED PLASMA THRUSTER

G. Xia
School of Aeronautics and Astronautics, Dalian University of Technology, Dalian, Liaoning, China

Session TH 1.5: Plasma Medicine and Biological Effects III

Thursday, May 25 10:00-12:00, Wildwood 14
Session Chairs:

10:00 TH 1.5-1 (invited) INHIBITION OF STAPHYLOXANTHIN BIOSYNTHESIS IN STAPHYLOCOCCUS AUREUS BY NON-THERMAL PLASMA

Y. Zhu, D. Cui, H. Xu, R. Ma, Z. Jiao
Henan Key Laboratory of Ion-beam Bioengineering, Zhengzhou University, Zhengzhou, China

10:30 TH 1.5-2 BIOACTIVE AND ANTIBACTERIAL PLASMA SPRAYED COATINGS ON POLYMER SUBSTRATES SUITABLE FOR ORTHOPEDIC AND TISSUE ENGINEERING APPLICATIONS

L. Barillas[1], H. Testrich[2], J. M. Cubero-Sesin[1], I. Vargas[1], M. Froehlich[2], K. -D. Weltmann[2], M. Polak[2]

[1]Plasma Laboratory for Fusion Energy and Applications, Instituto Tecnologico de Costa Rica, Cartago, Costa Rica

[2]Plasma Surface Technology Deparment, Leibniz Institute for Plasma Science and Technology, Greifswald, Germany

10:45 TH 1.5-3 PLASMA-BASED SURFACE MODIFICATION OF POLYSTYRENE FOR SERUM-FREE CELL CULTURE

E. C. Stancu, A. Quade, K. -D. Weltmann, M. Polak

Leibniz Institute for Plasma Science and Technology (INP Greifswald e.V.), Greifswald, Germany

11:00 TH 1.5-4 MEASUREMENT OF ELECTRIC PULSE MODIFICATION OF CELL SUSPENSION CONDUCTIVITY DURING TREATMENT

A. J. Fairbanks, A. M. Darr, A. Vadlamani, A. L. Garner

Nuclear Engineering, Purdue University, West Lafayette, IN, United States

11:15 TH 1.5-5 EFFECT OF NANOSECOND PULSED ATMOSPHERIC PRESSURE DIELECTRIC BARRIER DISCHARGES ON IMMUNE CELL MEDIATED WOUND HEALING

Y. Malkova

C&J Nyheim Plasma Institute, Drexel University, Philadelphia, PA, United States

11:30 TH 1.5-6 NON-THERMAL PLASMA IN CONJUNCTION WITH CHLORHEXIDINE (CHX) DIGLUCONATE STERILIZE THE BIOFILM CONTAMINATED TITANIUM SURFACE

T. T. Gupta[1], H. Ayan[1,2]

[1]Bioengineering, University of Toledo, Toledo, OH, USA

[2]Mechanical, Industrial and Manufacturing Engineering, University of Toledo, Toledo, OH, USA

11:45 TH 1.5-7 INTRALUMINAL DISINFECTION OF CATHETER CONTAMINATED WITH STAPHYLOCOCCUS AUREUS BIOFILM USING ATMOSPHERIC PLASMA

A. C. O. C. Doria, R. R. N. R. Cruz, F. R. Figueira, A. C. Oliveira, J. B. S. Lima, R. S. Pessoa, S. Khouri

Laboratory of Biotechnology and Electric Plasma, University of Vale do Paraiba, Sao Jose dos Campos, Sao Paulo, Brazil

Session TH 1.6: Slow-Wave Devices

Thursday, May 25 10:00-12:00, Wildwood 15
Session Chair: Jane Lehr, University of New Mexico

10:00 TH 1.6-1 HIGH POWER LONG PULSE MICROWAVE GENERATION FROM A METAMATERIAL BASED BACKWARD WAVE OSCILLATOR
X. Lu, J. S. Hummelt, M. A. Shapiro, R. J. Temkin
Massachusetts Institute of Technology, Cambridge, MA, United States

10:15 TH 1.6-2 RECENT ADVANCES IN MAGNETICALLY INSULATED TRANSMISSION LINE OSCILLATOR RESEARCH
Y. -W. Fan, X. -Y. Wang, A. -K. Li, J. -C. Ju, Z. -Q. Li, X. -P. Zhang, T. Jiang
College of Optoelectric Science and Engineering, National University of Defense Technology, Changsha, Hunan, China

10:30 TH 1.6-3 (invited) DESIGN AND SIMULATION OF A RELATIVISTIC INVERTED MAGNETRON
T. P. Fleming[1], M. R. Lambrecht[1], P. J. Mardahl[1], J. D. Keisling[2]
[1]RDHE, Air Force Research Laboratory, Kirtland AFB, NM, United States
[2]Leidos Inc., Albuquerque NM, United States

11:00 TH 1.6-4 MODELING OSCILLATIONS IN TWTS BY USING THE TESLA-FAMILY OF 2D LARGE-SIGNAL CODES
I. A. Chernyavskiy[1], A. N. Vlasov[1], B. Levush[1], T. M. Antonsen, Jr.[2]
[1]U.S. Naval Research Laboratory, Washington, DC, United States
[2]Leidos, Inc., Reston, VA, United States

11:15 TH 1.6-5 LOW VOLTAGE FOLDED WAVEGUIDE MULTIPLE BEAM MINI-TWTS: DESIGN AND MODELING
A. N. Vlasov[1], J. C. Rodgers[1], J. A. Pasour[1], I. A. Chernyavskiy[1], S. J. Cooke[1], B. Levush[1], T. M. Antonsen Jr.[2], D. Chernin[2], K. T. Nguyen[3]
[1]Naval Research Laboratory, Washington, DC, United States
[2]Leidos Inc., Billerica, MA, Unirted States
[3]Beam-Wave Reasearch Inc., Bethesda, MD, United States

11:30 TH 1.6-6 HARMONIC GENERATION IN AN OCTAVE BANDWIDTH TRAVELING-WAVE TUBE
P. Y. Wong[1], D. Chernin[2], Y. Y. Lau[1], P. Zhang[3], D. H. Simon[4], B. W. Hoff[4], G. B. Greening[1], R. M. Gilgenbach[1]
[1]University of Michigan, Ann Arbor, MI, United States
[2]Leidos Inc., Reston, VA, United States
[3]Michigan State University, East Lansing, MI, United States
[4]Air Force Research Laboratory, Albuquerque, NM, United States

11:45 TH 1.6-7 EVALUATION OF THE PIERCE PARAMETERS C AND Q IN A TRAVELING WAVE TUBE

D. H. Simon[1,2], P. Wong[1], D. Chernin[3], Y. Y. Lau[1], B. W. Hoff[2], P. Zhang[1,4], C. Dong[1,5], R. M. Gilgenbach[1]

[1]University of Michigan, Ann Arbor, MI, United States

[2]Air Force Research Laboratory, Albuquerque, NM, United States

[3]Leidos, Reston, VA, United States

[4]Michigan State University, East Lansing, MI, United States

[5]Princeton Plasma Physics Laboratory, Princeton, NJ, United States

ICOPS 2017 AUTHOR INDEX

A

B

C

D

E

F

G

H

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z