Session PL0: Welcome Session

Monday, May 25 09:00-09:30, Citrine II-III

Session Chair: Lutfi Oksuz, Suleyman Demirel Universitesi

Session PL1: Plenary PL1

Monday, May 25 09:30-10:30, Citrine II-III

Session Chair: David A. Hammer, Cornell University

9:30 PL1-1 MAGNETO-INERTIAL FUSION RESEARCH IN THE UNITED STATES: A PROMISING PROSPECT
D. B. Sinars
Sandia National Laboratories, Albuquerque, NM, USA

Session 1A: Space Plasmas

Monday, May 25 11:00-13:00, Opal I

Session Chair: Peter H Yoon, University of Maryland, College Park

11:00 1A-1 (invited) WEAK TURBULENCE IN RADIATION BELTS
G. Ganguli¹, C. Crabtree¹, M. Mithaiwala¹, L. Rudakov²
¹Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States
²Icarus Inc., Bethesda, MD, US

11:30 1A-2 (invited) ABSORPTION AND EMISSION SPECTROSCOPY REVEALING ASTROPHYSICAL PLASMA PROPERTIES IN AT-PARAMETER LABORATORY EXPERIMENTAL SIMULATIONS
M. E. Koepke¹, G. A. Rochau², G. P. Loisel², J. E. Bailey², D. Liedahl³, T. Nagayama³, R. Mancini⁴, T. S. Lane¹, M. K. Flaugh¹
¹West Virginia University, Morgantown, WV, USA
²Sandia National Laboratories, Albuquerque, NM, USA
³Lawrence Livermore National Laboratory, Livermore, CA, USA
⁴University of Nevada, Reno, NV, USA

12:00 1A-3 WHISTLER WAVES IN MAGNETOSHEATH WITH OBSERVED FLAT TOP DISTRIBUTIONS
M. N. S. Qureshi
Physics, GC University, Lahore, Pakistan

12:15 1A-4 (invited) IONOSPHERIC MODIFICATIONS USING MOBILE, HIGH POWER HF TRANSMITTERS BASED ON HPM TECHNOLOGY
K. Papadopoulos
Physics, University of Maryland, College Park, MD, United States

12:45 1A-5 ASYMPTOTIC THEORY OF SOLAR WIND ELECTRONS
P. H. Yoon
IPST, University of Maryland, College Park, MD, United States

Session 1B: Inertial and Magneto-Inertial Fusion

Monday, May 25 11:00-13:00, Opal II

Session Chair: Daniel B Sinars, Sandia National Laboratories
11:00 1B-1 DRAMATIC REDUCTION OF MAGNETO-RAYLEIGH TAYLOR INSTABILITY GROWTH IN MAGNETICALLY DRIVEN Z-PINCH LINERS
K. J. Peterson¹, T. J. Awe¹, S. E. Rosenthal¹, R. D. McBride¹, D. B. Sinars¹, E. P. Yu¹, G. K. Robertson¹, M. E. Cuneo¹,
M. E. Savage¹, P. F. Knapp¹, P. F. Schmit¹, S. A. Slutz¹, B. E. Blue², D. Schroen², K. Tomlinson³
¹Sandia National Labs, Albuquerque, NM, United States
²General Atomics, San Diego, CO, USA

11:15 1B-2 (invited) EXPERIMENTAL PROGRESS IN MAGNETIZED LINER INERTIAL FUSION (MAGLIF)
M. R. Gomez, S. A. Slutz, A. B. Sefkow, M. Geissel, A. J. Harvey-Thompson, K. J. Peterson, S. B. Hansen, K. D.
Sandia National Laboratories, Albuquerque, NM, United States

11:45 1B-3 TARGET GAIN DEPENDENCE ON IGNITOR PULSE CHARACTERISTICS IN SHOCK
IGNITION APPROACH
M. J. Jafari, A. H. Farahbod, S. Rezaei
Plasma Physics Research School, Tehran, Iran

12:00 1B-4 STOPPING POWER AND TRANSPORT OF MULTI-KEV ELECTRONS INTO PRE-
COMPRESSED TARGET
S. Rezaei, A. H. Farahbod, M. J. Jafari
Plasma Physics Research School, Tehran, Iran

12:15 1B-5 REDUCTION OF THE GROWTH RATE OF RAYLEIGH TAYLOR INSTABILITIY IN LASER
ABLATION EXPERIMENTS
E. Aliyari, S. Sabhanian
Department of Physics, Islamic Azad University, Tabriz, Iran

12:30 1B-6 ON THE COMBINING SCHEMES FOR MAGNETO-INERTIAL FUSION SYSTEMS WITH
HYBRID DRIVERS
S. V. Ryzhkov, V. V. Kuzenov, P. A. Frolko
Bauman Moscow State Technical University (BMSTU), Thermal Physics Department (E6), Moscow, Russian
Federation

12:45 1B-7 DETERMINATION OF THE ELECTRIC FIELD IN A TWO-DIMENSIONAL MODEL OF AN
ELECTROTHERMAL PLASMA SOURCE
M. J. Esmond¹, A. L. Winfrey²
¹Mechanical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States
²Cockcroft Institute, Warrington, United Kingdom

Session 1C: THz Sources, Radiation & Applications and Non-Fusion Microwave Systems

Monday, May 25 11:00-13:05, Onyx

Session Chair: Stephen N Spark, E2V Technologies

11:00 1C-1 THZ BWO BASED ON PHOTONIC CRYSTAL CORRUGATED WAVEGUIDE
R. Letizia¹,², M. Mineo¹, C. Paoloni¹
¹Engineering, Lancaster University, Lancaster, United Kingdom
²Cockcroft Institute, Warrington, United Kingdom

11:15 1C-2 GOL-PET EXPERIMENTS ON THZ-EMISSION FROM DENSE PLASMA AT RELATIVISTIC
ELECTRON BEAM RELAXATION
A. V. Arzhannikov¹, A. V. Burdakov², V. S. Burmasov², D. E. Gavrilenko³, I. A. Ivanov², A. A. Kasatov², S. A.
Kuznetsov¹, M. A. Makarov², K. I. Mekler², S. V. Polosatkin², V. V. Postupav², A. F. Rovenskikh², S. L. Sinitsky², V.
F. Sklyarow², V. D. Stepanov², I. V. Timofeev², L. N. Vyacheslavov²
¹Physics Department, Novosibirsk State University, Novosibirsk, Russian Federation
²Plasma Physics Department, Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russian Federation

11:30 1C-3 EXPERIMENTAL INVESTIGATIONS OF 263 GHZ/1 KW GYROTRON BASED SYSTEM FOR
DIAGNOSTIC OF VARIOUS MEDIA
M. Y. Gilyavin¹,², M. V. Morozkin¹, A. I. Tsvetkov¹, L. V. Lubyako¹
¹¹²
Session 1A: Polarimetric Emission and Detection

11:45 1A-4 TERAHERTZ POLARIMETRIC EMISSION AND DETECTION USING A CUBIC CRYSTAL
G. Gaborit1, M. Bernier1, A. Biciunas2, J. -L. Coutaz1
1Photo, IMEP-LAHC, UMR 5130, Le Bourget-du-Lac, France
2Center for Physical Sciences and Technology, Vilnius, Lithuania

Session 1B: Backward-Wave Oscillators

12:00 1B-5 (invited) THZ BACKWARD-WAVE OSCILLATORS FOR PLASMA DIAGNOSTIC IN NUCLEAR FUSION
C. Paoloni1, L. Yue2, X. Tang3, F. Zhang3, B. Popovic4, L. Himes4, R. Barchfelds4, D. Gamzina4, R. Letizia1, M. Mineo1
1Lancaster University, Lancaster, United Kingdom
2University of Electronic Science and Technology of China, Chengdu, China
3Beijing Vacuum Electronics Research Institute, Beijing, China
4University of California Davis, Davis, Ca, USA

Session 1C: Pulse Compression

12:30 1C-6 MODELING OF A WAVEGUIDE MICROWAVE PULSE COMPRESSION SYSTEM USING TRANSMISSION LINE THEORY AND EQUIVALENT CIRCUITS
S. P. Savaidis1, S. A. Mitilineos1, N. A. Stathopoulos1, Z. C. Ioannidis1,2
1Department of Electronics Engineering, Technological Education Institute of Piraeus, Athens, Greece
2Faculty of Physics, National and Kapodistrian University of Athens, Athens, Greece

Session 1D: Generators & Networks and Switching

Monday, May 25 11:00-12:45, Quartz

Session Chair: Victor L Kantsyrev, University of Nevada, Reno

11:00 1D-1 REFURBISHMENT AND ENHANCEMENT OF THE SATURN ACCELERATOR
Dept. 5443, Sandia National Laboratories, Albuquerque, NM, United States

11:15 1D-2 LOAD CURRENT PULSE SHAPING ON A NANOSECOND PFL-BASED ACCELERATOR USING DYNAMIC LCM TECHNIQUE
1Laboratoire de Physique des Plasmas, Ecole Polytechnique, Palaiseau, France
2CEA, DAM, GRAMAT, Gramat, France
3University of Nevada, Reno, Reno, NV, United States

11:30 1D-3 A MULTI-STAGE GAS SWITCH FOR LTD
P. T. Cong, T. P. Sun, W. X. Luo, A. C. Qiu
Northwest Institute of Nuclear Technology, Xi’an, China

11:45 1D-4 ACCELERATOR URT-1M-300 FOR MOBIL INSTALLATION
S. Y. Sokovnin1, S. V. Scherbinin1, M. E. Balezin2
1Experimental Physics Department, Ural Federal University, Yekaterinburg, Russian Federation
2ElectroPhysics Technology Group, IEP UB RAS, Yekaterinburg, Russian Federation

12:00 1D-5 STUDY OF HIGH-CURRENT ARCS AND ITS INTERACTION WITH SIDE WALLS AND LAYERS
S. Frank, R. Methling, A. Khakpour, S. Gorchakov, V. Brueser, D. Uhrlandt
INP Greifswald, Greifswald, Germany

12:15 1D-6 X-RAY AND ENERGETIC ION GENERATIONS IN THE DIVERGENT GAS-PUFF Z PINCH
K. Takasugi1, M. Nishio2
1Institute of Quantum Science, Nihon University, Tokyo, Japan
2Anan National College of Technology, Tokushima, Japan
12:30 1D-7 A TRIGGERED VACUUM SWITCH USED IN HIGH CURRENT AND HIGH COULOMB CROWBAR CIRCUIT  
W. Lei, X. Yao, W. Xu, J. Chen  
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China

Session 1E: Thermal plasma processing and Non-equilibrium plasma applications

Monday, May 25 11:00-13:15, Topaz

Session Chair: Tamer Akan, Univ. of Osmangazi

11:00 1E-1 SYNTHESIS AND CHARACTERIZATION OF THERMAL BARRIER YTTRIA-STABILIZED ZIRCONIA COATING BY PLASMA SPRAY - PHYSICAL VAPOR DEPOSITION  
N. Sehab, Y. Mebdoua  
Center of Advanced Technologies Development, Baba Hasen, Alger, Algeria

11:15 1E-2 EXPERIMENTAL STUDY ON THE EFFECT OF PERCENTAGES OF NITROGEN TO ARGON GAS ON ARC PROPERTIES IN THERMAL DC PLASMA TORCHES  
S. Mohsenian, H. Mehdikia, J. Fathi, B. Shokri  
Laser and Plasma Institute, Shahid Beheshti University, Tehran, Iran

11:30 1E-3 SIMULATION OF SPOTS ON CU-CR CATHODES OF VACUUM ARCS AND OF THEIR STABILITY  
M. S. Benilov1, M. D. Cunha1, W. Hartmann2, S. Kosse2, N. Wenzel2, A. Lawall3  
1Universidade da Madeira, Funchal, Portugal  
2Siemens AG, Corporate Technology, Erlangen, Germany  
3Siemens AG, Energy Management Division, Medium Voltage & Systems, Berlin, Germany

11:45 1E-4 DEVELOPMENT OF LOW GRADE COAL GASIFICATION TECHNOLOGY BY MEANS OF A HIGH POWER MICROWAVE STEAM PLASMA TORCH  
Plasma Technology Research Center, National Fusion Research Institutes, Gunsan, South Korea

12:00 1E-5 (invited) THE ROLE OF PHOTO-IONIZATION AND RESIDUAL ELECTRONS IN ATMOSPHERIC PRESSURE NON-EQUILIBRIUM PLASMA JETS  
S. Q. Wu, X. P. Lu  
HuaZhong University of Sci. & Tech, Wuhan, China

12:30 1E-6 PLASMA PROPERTIES OF THE CYBELE NEGATIVE ION SOURCE FOR FUSION APPLICATIONS: PIC SIMULATIONS AND EXPERIMENTS  
J. -P. Boeuf1, G. Fubiani1, S. Bechu2, P. Garibaldi3, C. Grand3, A. Simonin3  
1LAPLACE, Universite de Toulouse, Toulouse, France  
2LPSC, Universite Joseph Fourier, Grenoble, France  
3IRFM, CEA, Cadarache, France

12:45 1E-7 EXOTIC PLASMA BULLETS INDUCED BY RESIDUAL ELECTRON CONTROL  
Y. Xian, X. Lu  
State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science and Technology, Wuhan, Hubei, China

13:00 1E-8 DENSE MEDIUM PLASMA TECHNOLOGY FOR SYNTHESIS CARBON NANOMATERIALS  
D. Cokeliler1, S. Manolache2, F. S. Denes2, S. Gunasekaran2  
1Biomedical Engineering, Baskent University, Ankara, Turkey  
2College of Engineering, University of Wisconsin Madison, Madison, Wisconsin, USA

Session PL2: Plenary PL2

Monday, May 25 14:00-15:00, Citrine II-III

Session Chair: Simon Bland, Imperial College London

14:00 PL2-1 UNDERWATER ELECTRICAL EXPLOSION OF WIRES: PHYSICS AND APPLICATIONS  
Y. Krasik
Session 1P: Basic Phenomena (poster)

Poster Session

Monday, May 25 15:00-16:30, Citrine I

Session Chair: Amnon Fruchtman, Holon Institute of Technology

1P-1 CAN THE NEGATIVE GLOW PLASMA HAVE A NEGATIVE CHARGE?
A. A. Kudryavtsev, E. A. A. Bogdanov
Physics, St.Petersburg State University, St. Petersburg, Russian Federation

1P-2 GROWTH RATE OF SECOND HARMONIC BACKSCATTERING IN NON-MAXWELLIAN HIGH DENSITY PLASMA
N. S. Rathore, P. Kumar
Department of Physics, University of Lucknow, Lucknow, India

1P-3 HARMONIC GENERATION IN MAGNETIZED QUANTUM PLASMA
A. K. Singh, P. Kumar
Department of Physics, University of Lucknow, Lucknow, India

1P-4 THE INFLUENCE OF ANNEALING ON FLUORENE-TYPE THIN FILM PRODUCED BY BIPHENYL AND METHANE RF PLASMA SYSTEM
D. Mansuroglu, S. Bilikmen
Physics Department, Middle East Technical University, Ankara, Turkey

1P-5 CAIRNS-GUREVICH EQUATION FOR SOLITON IN PLASMA EXPANSION INTO VACUUM
K. Annou, D. Bara, D. Bennaceur-Doumaz
MIL, USTHB, Baba Hassen, Algeria

1P-6 CHARACTERISTICS OF AN ARGON DC GLOW DISCHARGE AND EFFECT OF CATHODE MATERIAL ON PASCHEN CURVE AND CATHODE TEMPERATURE
M. Satir, M. Celik
Department of Mechanical Engineering, Bogazici University, Istanbul, Turkey

1P-7 CROSS SECTIONS FOR ELECTRON COLLISIONS WITH TETRAFLUOROETHANE (C2H2F4)
O. M. Sasic1, S. Dupljanin2, M. Radjenovic-Radmilovic1, S. Dujko1, Z. L. Petrovic1, J. De Urquijo2
1University of Belgrade, Institute of Physics, Belgrade, Serbia
2Instituto de Ciencias Fisicas, Universidad Nacional Autonoma de Mexico, Cuernavaca, Mexico

1P-8 PROPAGATION OF SOLITON AND ITS RADIATION IN INHOMOGENEOUS DISCHARGE PLASMA WITH NON EXTENSIVE ELECTRONS
D. Lyes, M. Yamina
Center De Developpement Des Technologies Avancee, Baba Hassen, Algeria

1P-9 STUDY ON THE MEMRISTIVE NATURE OF DIELECTRIC BARRIER DISCHARGE
L. Lu1, D. Dai1, Y. X. Han1, L. C. Li1, T. Shao2
1School of Electric Power, South China University of Technology, Guangzhou, China
2Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China

1P-10 EFFECT OF PONDEROMOTIVE AND RELATIVISTIC FILAMENTATION ON COEXISTING STIMULATED RAMAN AND BRILLOUIN SCATTERING
A. Vyas, R. P. Sharma
Center for Energy Studies (CES), Indian Institute of Technology, Delhi (IIT Delhi), New Delhi, Delhi, India

1P-11 NONLINEAR ABSORPTION OF SUPERINTENSE LINEARLY POLARIZED LASER RADIATION IN RELATIVISTIC PLASMA VIA BREMSSTRAHLUNG
A. Ghazaryan, A. Avetissian, S. Isaelyan, K. Sedrakian
Centre of Strong Fields Physics, Yerevan State University, Yerevan, Armenia

1P-12 CURRENT FILAMENTS IN A LONG SPARK IN AIR
A. V. Agafonov, A. V. Oginov, A. A. Rodionov, K. V. Shpakov
P.N. Lebedev Physical Institute of RAS, Moscow, Russian Federation
1P-13 MULTIPACTOR BREAKDOWN MODELLING USING AN AVERAGED VERSION OF FURMAN'S SEY MODEL
S. Rice, J. Verboncoeur
ECE, Michigan State University, East Lansing, United States

Session 1P: Computational Plasma Physics (poster)
Poster Session
Monday, May 25 15:00-16:30, Citrine I

Session Chair: Anatoly A Kudryavtsev, St. Petersburg State University

1P-14 GLOBAL MODEL CAPABILITY STUDY OF EEDF MODIFICATION OF RARE GAS METASTABLE LASER REACTION KINETICS
G. Parsey¹, J. Verboncoeur¹, A. Christlieb¹, Y. Güçlü²
¹Michigan State University, East Lansing, MI, United States
²Max Planck Institute of Plasma Physics, Griefswald, Germany

1P-15 ONE DIMENSIONAL MODELING OF DBD XENON EXCIMER LAMP FOR VUV EMISSION
H. Loukil, S. Saidi, K. Khodja, B. Larouci, A. Belasri
Département de Physique Énergetique, Laboratoire de Physique des Plasmas, Oran, Algeria

1P-16 A NUMERICAL METHOD FOR THE CALCULATION OF THE MAGNETIC DIFFUSION EQUATION IN WIRE ARRAY Z-PINCH
Dept. of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China

1P-17 CONFINEMENT OF HIGHLY ENERGETIC ELECTRON BEAMS IN LOW PRESSURE CAPACITIVE DISCHARGES
S. Wilezek¹, J. Trieschmann¹, J. Schulze², E. Schuengel², R. P. Brinkmann¹, A. Derzsi¹, I. Korolov³, Z. Donko³, T. Mussenbrock¹
¹Institute for Theoretical Electrical Engineering, Ruhr-University Bochum, Bochum, Germany
²West Virginia University, Department of Physics, Morgantown, USA
³Institute for Solid State Physics and Optics, Wigner Research Centre for Physics, Budapest, Hungary

1P-18 NUMERICAL STUDY ON HEATING GAS IN ATMOSPHERIC PRESSURE HELIUM DISCHARGE
S. I. Eliseev, A. A. Kudryavtsev, O. M. Stepanova
St.Petersburg State University, St. Petersburg, Russian Federation

1P-19 2D NUMERICAL RESEARCH ON NEEDLE-TO-PLATE DISCHARGE IN ATMOSPHERIC PRESSURE HELIUM AND AIR MIXTURE
C. Yao, Z. Chang, P. Li, G. Xu, H. Mu, G. J. Zhang
State Key Laboratory of Electrical Insulation & Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi Province, China

1P-20 A NEW FULLY IMPLICIT FINITE-DIFFERENCE ALGORITHM FOR SIMULATION OF NONLINEAR ELECTRON HEAT CONDUCTION IN HIGH-TEMPERATURE PLASMAS INCLUDING BREMSTRAHLUNG EMISSION
M. Oroum, M. Habibi, H. Hossein Khani, S. Magidi, F. Pouraram
Nuclear Science and Technology Research Institute, AEOI, Plasma and Nuclear Fusion Research School, Tehran, Iran

1P-21 SEMI-CLASSICAL PARTICLE-IN-CELL SIMULATIONS OF QUANTUM SYSTEMS
S. Dirkmann, T. Mussenbrock
Ruhr University Bochum, Bochum, Germany

1P-22

1P-23 DIFFUSE AND SPOT MODE OF CATHODIC ARC ATTACHMENTS IN MAGNETICALLY ROTATING ARGON ARC AT ATMOSPHERIC PRESSURE
T. Chen¹, X. -N. Zhang¹, C. Wang¹, M. -R. Liao¹, C. -A. Zhu¹, L. Ding², W. -D. Xia¹
¹Institute of Engineering Science, University of Science and Technology of China, Hefei, Anhui, China
²School of Life Science, University of Science and Technology of China, Hefei, Anhui, China
1P-24 PARTICLE-IN-CELL SIMULATION OF HIGH VOLTAGE BREAKDOWN OF LARGE GAP IN VACUUM
Y. Li¹, M. Jiang¹, C. Liu¹, J. Cheng², L. Zhao², H. Shao², J. Su²
¹Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, Xi'an, Shaanxi, China
²Science and Technology on High Power Microwave Laboratory, Northwest Institute of Nuclear Technology, Xi'an, Shaanxi, China

1P-25 SIMULATION OF ION REDISTRIBUTION IN A VACUUM CHAMBER DURING MAGNETRON SPUTTERING OF COATINGS
E. R. Saifullin
Physics and Engineering, National Research Tomsk State University, Tomsk, Russian Federation

1P-26 MULTI-DIMENSIONAL KINETIC SIMULATIONS OF INSTABILITIES AND TRANSPORT IN EXB DEVICES
J. A. Carlsson¹, I. D. Kaganovich¹, A. V. Khрабров¹, A. Smolyakov³, D. Sydorenko³, Y. Raitses³
¹Princeton Plasma Physics Laboratory, Princeton, New Jersey, United States
²University of Saskatchewan, Saskatoon, Saskatchewan, Canada
³University of Alberta, Edmonton, Alberta, Canada

1P-27 ELECTRO-DYNAMIC SPRAYING OF PLASMA BODIES ON PROTECTED SURFACES
O. Chizhko
DECHEMA Foreign Department, Association of German Engineers, Cherkessk, Russian Federation

1P-28 VALIDATION AND PARALLELIZATION OF THE PARTICLE IN CELL/MONTE CARLO COLLISION NUMERICAL CODE FOR THE RF DISCHARGE SIMULATIONS
C. Kusoglu Sarikaya, I. Rafatov, S. Cakir
Department of Physics, Middle East Technical University, Ankara, Turkey

1P-29 MODELING ELECTROMAGNETIC EFFECTS IN LARGE-AREA CAPACITIVELY COUPLED DISCHARGES
H. Bae¹, M. -C. Lin², J. W. Hong¹, H. J. Lee¹
¹Pusan National University, Busan, South Korea
²Hanyang University, Seoul, South Korea

1P-30 NUMERICAL SIMULATION OF SPHERICAL PLASMA FOCUS DEVICE USING LEE MODEL
F. D. Ismail, J. Ali, T. Saktioto
Advanced Photonics Science Institute, University Teknologi Malaysia, UTM Johor Bahru, Johor, Malaysia

Session 1P: Dusty & Strongly Coupled Plasmas (poster)

Poster Session

Monday, May 25 15:00-16:30, Citrine I

Session Chair: Holger Kersten, University Kiel, Germany

1P-31 RECENT DEVELOPMENT FOR A PLASMA DIAGNOSTIC WITH OPTICALLY TRAPPED MICROPARTICLES
V. Schneider, H. Kersten
Institute of Experimental and Applied Physics, Christian-Albrechts-University Kiel, Kiel, Germany

1P-32 ELECTRICAL MEASUREMENTS FOR THE CONTROL OF NANOPARTICLE GROWTH IN AN ACETYLENE PLASMA
E. V. Wahl¹, A. Hinz², T. Strunskus², H. Kersten¹
¹Plasma Technology, Institute of Experimental and Applied Physics, Kiel, Schleswig-Holstein, Germany
²Multicomponent Materials, Technical Faculty, Kiel, Schleswig-Holstein, Germany

1P-33 INFLUENCE OF INTERPARTICLE INTERACTION ANISOTROPY ON STRUCTURAL AND KINETIC PROPERTIES OF THE DUST SYSTEM IN PLASMA
I. I. Lisina, O. S. Vaulina
Joint Institute for High Temperatures of the Russian Academy of Sciences (JIHT RAS), Moscow, Russian Federation
1P-34 ON THE POSSIBILITY OF MEASURING THE FORCES OF ANISOTROPIC INTERACTION BETWEEN MACROPARTICLES IN A PLASMA WITH ION FLOW
E. A. Lisin, O. S. Vaulina
Joint Institute for High Temperatures, Russian Academy of Sciences, Moscow, Russian Federation

1P-35 COEXISTENCE OF DA SHOCK AND SOLITARY WAVES IN DUSTY PLASMAS WITH TWO-TEMPERATURE IONS
K. -E. Hasin1, M. M. Masud1, A. H. Bhuiyan1, A. A. Mamun2
1Department of Physics, Bangladesh University of Engineering and Technology (BUET), Dhaka-1000, Dhaka, Bangladesh
2Department of Physics, Jahangirnagar University, Dhaka, Bangladesh

1P-36 TIME DEPENDENT NONPLANAR DIA SHOCK WAVES IN MULTI-COMPONENT DUSTY PLASMAS WITH DISTINCT TEMPERATURE SUPERThermal ELECTRONS
M. M. Masud
Department of Physics, Bangladesh University of Engineering & Technology (BUET), Dhaka, Bangladesh

1P-37 MEASURING THE CHARGE OF MICROPARTICLES IN THE RADIOFREQUENCY PLASMA SHEATH BY COULOMB INTERACTION
D. Trienekens, J. Beckers, G. Kroesen
Applied Physics, Eindhoven University of Technology, 5600 MB, Eindhoven, the Netherlands, Eindhoven, Netherlands

1P-38 DIELECTRIC FUNCTION OF DENSE PLASMAS AND SUM RULES
Y. V. Arkhipov1, A. B. Ashikbayeva1, A. Askaruly1, I. M. Tkachenko2
1Department of Physics and Technology, IETP, Al-Farabi Kazakh National University, Almaty, Kazakhstan
2Instituto de Matematica Pura y Aplicada, Universidad Politecnica de Valencia, Valencia, Spain

1P-39 INFLUENCE OF POLARIZATION EFFECTS ON CHARGING OF DUST PARTICLES IN A PLASMA
A. E. Davletov, L. T. Erimbetova, A. Kissan
Department of Physics and Technology, Al-Farabi Kazakh National University, Almaty, Kazakhstan

Session 1P: Intense Beam Microwave Generation (poster)

Poster Session

Monday, May 25 15:00-16:30, Citrine I

Session Chair: Theodore C Grabowski, Air Force Research Laboratory

1P-40 AMPLIFICATION OF OUTPUT MICROWAVE POWER IN LOW-VOLTAGE VIRTUAL CATHODE OSCILLATOR UNDER EXTERNAL FORCE
N. S. Frolov1,2
1Saratov State University, Saratov, Russian Federation
2Saratov State Technical University, Saratov, Russian Federation

1P-41 VOLUME FREE ELECTRON LASERS AND MASERS
V. G. Baryshevsky
Research Institute for Nuclear Problems, Minsk, Belarus

1P-42 A TUNABLE MAGNETICALLY INSULATED TRANSMISSION LINE OSCILLATOR
College of Optoelectric Science and Engineering, National University of Defense Technology, CHANGSHA, China
1P-43 SIMULATION INVESTIGATION OF A HIGH-EFFICIENCY X-BAND MAGNETICALLY INSULATED LINE OSCILLATOR
X. -Y. Wang, Y. -W. Fan
College of Optoelectric Science and Engineering, National University of Defense Technology, CHANGSHA, China

1P-44 STABILIZED OPERATION OF A MICROWAVE COMPRESSOR DRIVEN BY RELATIVISTIC S-BAND MAGNETRON
A. Sayapin, A. Levin, Y. Krasik
Dep. Physics, Technion, Haifa, Israel

1P-45 RELATIVISTIC VIRCATOR WITH AN ELECTROMAGNETIC BANDGAP MEDIUM
A. Elfrgani, G. Atmatzakis, S. C. Yurt, C. G. Christodoulou, E. Schamiloglu
Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

1P-46 MEASUREMENTS OF AN ELECTRON BEAM DRIVEN BY A NONLINEAR TRANSMISSION LINE
D. French, B. Hoff
Air Force Research Laboratory, Albuquerque, NM, United States

1P-47

1P-48 COMPACT A6 MAGNETRON WITH A NEODYMIUM
J. W. McConaha
Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, United States

Session 1P: High Energy Density Matter (poster)

Poster Session

Monday, May 25 15:00-16:30, Citrine I

Session Chair: Guy Rosenzweig, Weizmann Institute of Science

1P-49 SPECTROSCOPY OF THE PLASMA FORMED IN THE VICINITY OF THE STRONG SHOCK WAVE IMPLOSION
O. Antonov, S. Efimov, V. T. Gurovich, Y. E. Krasik
Physics, Technion- Israel Institute of Technology, Haifa, Israel

1P-50 SHOCK WAVE IMPLOSION IN WATER WITH DIFFERENT BOUNDARY CONDITIONS
D. Yanuka, D. Shafer, Y. Krasik
Technion, Haifa, Israel

1P-51 DIAGNOSTICS OF PLASMA GENERATED BY UNDERWATER SPHERICAL SHOCK WAVE IMPLOSION
S. Efimov, O. Antonov, V. T. Gurovich, Y. E. Krasik
Department of Physics, Technion, Haifa, Israel

1P-52 ANALYSIS OF WIRE EXPLOSION SYSTEM FOR GENERATING STRONG SHOCK WAVES IN WATER
K. -J. Chung1, K. Lee1, Y. S. Hwang1, D. -K. Kim2
1Department of Nuclear Engineering, Seoul National University, Seoul, South Korea
2Agency for Defense Development, Daejeon, South Korea

1P-53 SIMPLE MIXED EQUATION-OF-STATE MODEL OF NONIDEAL PLASMA FOR SIMULATION OF UNDERWATER WIRE EXPLOSION
D. -K. Kim, S. Baek, J. Jung
R&D Institute - Division 4, Agency for Defense Development, Daejeon, South Korea

1P-54 DIFFERENT BREAKDOWN MODES OF ELECTRICAL EXPLODING ALUMINUM WIRES IN AIR
J. Wu, X. Li, Z. Yang
College of Electrical Engineering, Xi’an Jiaotong University, Xi’an, Shaanxi, China

1P-55 RESULT OF CURRENT FLOW WITH A LINEAR DENSITY OF 1-3 MA/CM AND DURATION OF 100 NS ACROSS STAINLESS STEEL ELECTRODES
G. M. Oleynik1, A. V. Branitskii1, E. V. Grabovskii1, J. N. Laukhin1, P. V. Sasorov1, I. N. Frolov1, S. I. Tkachenko2, A. I. Khiryanova1
1P-56 DIFFUSION OF THE STRONG MAGNETIC FIELDS INTO THE CONDUCTOR
V. I. Oreshkin, S. Chaikovsky, N. Labetskaya, I. Datsko
Institute of High Current Electronics SB RAS, Tomsk, Russian Federation

1P-57 THE SURFACE TEMPERATURE MODEL FOR MAGNETICALLY INSULATED TRANSMISSION LINE
H. Wang, Y. Li, W. Luo, C. Liu
Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, Xi'an, Shaanxi, China

1P-58 MODELING OF PLASMA CONDITIONS AND SPECTRAL PROPERTIES OF RADIATION-HEATED MATTER
I. Golovkin1, J. MacFarlane1, V. Golovkina1, T. Nagayama2, J. Bailey2, G. Rochau3
1Prism Computational Sciences, Inc., Madison, WI, United States
2Sandia National Laboratories, Albuquerque, NM, United States

1P-59 VISRAD, 3-D TARGET DESIGN AND RADIATION SIMULATION CODE
V. Golovkina, J. MacFarlane, I. Golovkin
Prism Computational Sciences, Inc., Madison, WI, United States

1P-60 CIRCUIT SIMULATION OF MAGNETICALLY DRIVEN HYPER-VELOCITY FLYER PLATE LAUNCHING EXPERIMENT ON PTS FACILITY
F. Guo, G. Wang, W. Zou
Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, Sichuan, China

Session 1P: Fast Z pinches (poster)

Poster Session

Monday, May 25 15:00-16:30, Citrine I

Session Chair: Stanislav Chaikovsky, Institute of High Current Electronics SB RAS

1P-61

1P-62 EFFECT OF THE AXIAL MAGNETIC FIELD ON A RADIATING Z-PINCH PLASMA
R. Baksht, A. Rousskikh, A. Zhigalin, N. Labetskaya, S. Chaikovaskii, V. Oreshkin
Institute of High Current Electronics SB RAN, Tomsk, Russia

1P-63 EXPERIMENTAL AND NUMERICAL INVESTIGATIONS ON THE FAST ELECTRICAL EXPLOSION OF SINGLE ALUMINUM WIRE IN VACUUM
Dept. of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China

1P-64 STUDY ON ELECTRICAL EXPLOSION OF BARE AND INSULATION COATED TUNGSTEN WIRES
H. Shi, X. Zou, X. Wang
Department of Electrical Engineering, Tsinghua University, Beijing, China

1P-65 STUDIES OF THE X-RAY RADIATION FROM GAS-PUFF Z-PINCHES ON COBRA.
Lab. of Plasma Studies, Cornell University, Ithaca, N-Y, United States

1P-66 NEON AND ARGON MULTI-NOZZLE GAS PUFF Z-PINCH STUDIES ON COBRA
Greenly1, C. L. Hoyt1, S. A. Pikuz1, T. A. Shelkovenko1, D. A. Hammer1, B. R. Kusse1, Y. K. Chong2, J. Giuliani2, N. Ouattar2, W. Thornhill2, E. Kroup3, A. Fisher3, Y. Maron3
1Lab. of Plasma Studies, Cornell University, Ithaca, NY, United States
2Naval Research Laboratory, Washington, DC, United States
3Weizmann Institute of Science, Rehovot, Israel

1P-67 RADIATIONS DURING OF INITIAL PHASE OF HIGH-VOLTAGE ATMOSPHERIC DISCHARGE
1P-68 STUDY OF Z-PINCH X-RAY EMISSION IN THE IMPLOSION OF FIBER ARRAYS AT THE ANGARA-5-1 FACILITY
A. N. Gritsuk, V. V. Aleksandrov, E. V. Grabovskiy, I. G. Maksimov, K. N. Mitrofanov, G. M. Oleinik, G. S. Volkov, A. P. Shevelko
1Troitsk Institute for Innovation and Fusion Research, Moscow, Troitsk, Russian Federation
2P.N. Lebedev Physical Institute of the RAS, Moscow, Russian Federation

1P-69 EXPERIMENTAL INVESTIGATION OF THE EFFECTS OF AN AXIAL MAGNETIC FIELD ON THE MAGNETO RAYLEIGH-TAYLOR INSTABILITY IN ABLATING PLANAR FOIL PLASMAS
Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, Michigan, United States

1P-70 STUDY OF THE HYBRID X-PINCH WITH AN EXTERNAL AXIAL MAGNETIC FIELD
1LPS, Cornell University, Ithaca, NY, United States
2RAS, P.N. Lebedev Institute, Moscow, Russia

1P-71 STUDIES OF CYLINDRICAL LINER Z-PINCHES AT 1 MA ON COBRA
Laboratory of Plasma Studies, Cornell University, Ithaca, NY, United States

1P-72 MEASUREMENT OF THE CURRENT OF THE ELECTRON BEAM IN A PLASMA FOCUS DEVICE USING X-RAY SPECTRUM
N. Shamsian, B. Shirani, H. Pirjamadi, A. Kanani
Nuclear Engineering Department, University of Isfahan, Isfahan, Iran

1P-73 CALCULATION OF ELECTRON AVALANCHE FORMATION TIME AND BREAKDOWN TIME LAG OF UIPF1
H. Pirjamadi, B. Shirani, N. Shamsian
Nuclear Engineering Department, University of Isfahan, Isfahan, Iran

1P-74 CALCULATION OF WAVE PROPAGATION DELAY IN A PLASMA FOCUS DEVICE AND ITS EFFECT ON BREAKDOWN TIME LAG
H. Pirjamadi, B. Shirani, N. Shamsian
Nuclear Engineering Department, University of Isfahan, Isfahan, Iran

1P-75 CALCULATION OF MINIMUM BREAKDOWN VOLTAGE IN A MATHER TYPE PLASMA FOCUS DEVICE (UIPF1)
H. Pirjamadi, B. Shirani, N. Shamsian
Nuclear Engineering Department, University of Isfahan, Isfahan, Iran

1P-76 MEASUREMENT OF THE ENERGY SPECTRUM OF THE ELECTRON BEAM IN A SMALL PLASMA FOCUS DEVICE USING X-RAY SPECTRUM
N. Shamsian, B. Shirani, H. Pirjamadi, A. Kanani
Nuclear Engineering Department, University of Isfahan, Isfahan, Iran

1P-77 PLASMA DYNAMICS IN GAS EMBEDDED CONICAL WIRE ARRAY Z-PINCH PLASMAS
G. Munoz, F. Veloso, V. Valenzuela, M. Favre, E. Wyndham
Instituto de Fisica, Pontificia Universidad Catolica de Chile, Santiago, Chile

1P-78

1P-79 NUMERICAL INVESTIGATION ON THE EFFECT OFABLATOR PRESSURE TO ISOLATE SPHERICAL FUEL COMPRESSION FROM CYLINDRICAL Z-PINCH IMPLOSION
D. Xiao, N. Ding, S. Sun, Z. Dai
Institute of Applied Physics and Computational Mathematics, Beijing, China

Session 1P: Insulation and Dielectric Breakdown (poster)

Poster Session

Monday, May 25 15:00-16:30, Citrine I
1P-80 EFFECT OF PLASMA CHANNEL PARAMETERS ON THE SHOCK-WAVE DYNAMICS AT BLAST- HOLE ELECTRO-FRACTURE OF CONCRETE LUMPS
N. S. Kuznetsova, A. S. Yudin
Institute of High Technology Physics, National Research Tomsk Polytechnic University, Tomsk, Russian Federation

1P-81 SIMULATION OF LEADER INCEPTION FROM OVERHEAD TRANSMISSION LINES UNDER LIGHTNING BACKGROUND
B. Wei1, Z. Fu2
1Equipment Condition Evaluation Center, Electric Power Technical Research Institute, SMEPC, Shanghai, China
2Department of Electrical Engineering, Shanghai Jiaotong University, Shanghai, China

1P-82 CIRCUIT MODELS FOR BAND PASS FILTER OF RF FRONT-END SYSTEM DAMAGED BY HIGH POWER ELECTROMAGNETIC PULSE
K.-A. Lee, Y.-M. Cho, K.-C. Ko
Electrical Engineering, Hanyang University, Seoul, South Korea

1P-83 ELEMENTAL COMPOSITION AND ELECTRIC PROPERTIES OF POLYCRYSTALLINE ALUMINA CERAMIC AFTER METAL ION BEAM TREATMENT
E. M. Oks1, A. S. Bugaev1, A. G. Nikolaev1, K. P. Savkin1, G. Y. Yushkov1, M. V. Shandrikov1, A. V. Tyunkov2
1Institute of High Current Electronics, Tomsk, Russian Federation
2Tomsk State University of Automated Control Systems and Radioelectronics, Tomsk, Russian Federation

1P-84 SCATTERING CROSS SECTIONS AND ELECTRON TRANSPORT COEFFICIENTS FOR ELECTRONS IN CF3I
J. Miric1, D. Bosnjakovic1, S. Dujko1, Z. Petrovic1, O. Sasic1, J. de Urquijo3
1Institute of Physics, University of Belgrade, Belgrade, Yugoslavia
2Faculty of Transport and Traffic Engineering, University of Belgrade, Belgrade, Yugoslavia
3Instituto de Ciencias Físicas, Universidad Nacional Autónoma de México, Mexico City, Mexico

1P-85 NONSTATIONARY FLUID DYNAMICS IN INHOMOGENEOUS ELECTRIC FIELD
V. A. Vdovin1, V. N. Kornienko1, V. G. Andreev2
1Russian Academy of Science, Kotelnikov Institute of Radioengineering and Electronics, Moscow, Russian Federation
2Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow, Russian Federation

1P-86 INITIATION OF BREAKDOWN IN STRINGS OF BUBBLES IMMERSED IN TRANSFORMER OIL: PASCHEN CURVES AND PROXIMITY OF BUBBLES
N. Y. Babaeva, D. V. Tereshonok, G. V. Naidis
Joint Institute for High Temperatures Russian Academy of Sciences, Moscow, Russian Federation

1P-87 SURFACE MORPHOLOGY AND CHEMICAL CHARACTERISTICS OF GIS EPOXY INSULATORS UNDER MICROSECOND-PULSE EXCITATION
X. Liu1,2, T. Shao1,2, C. Zhang2,3, R. Wang2,3
1Department of Electrical Engineering, North China Electric Power University, Baoding, China
2Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
3Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China

Session 1P: Nonequilibrium Plasma Applications (poster)

Poster Session

Monday, May 25 15:00-16:30, Citrine I

Session Chair: Nader Sadeghi, Univ. Grenoble & CNRS, Grenoble France

1P-88 STUDY ON ATMOSPHERIC-PRESSURE DIFFUSE DISCHARGE WITH A DOUBLE-PINS-TO-PLANE GAP IN REPETITIVE MODES
J. Gu1, C. Zhang1,2, R. Wang1,2, T. Shao1,2
1Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
2Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China
1P-89 STRONG DISCHARGE PROCESSES BY ATMOSPHERIC PLASMA JET ARRAY WITHOUT EXTERNAL GROUND ELECTRODE
J. Y. Kim¹, S. Y. Lee¹, M. Shin¹, D. W. Moon¹, H. -S. Tae²
¹Department of New Biology, Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, South Korea
²School of Electronics Engineering, College of IT Engineering, Kyungpook National University, Daegu, South Korea

1P-90 LARGE VOLUME AIR PLASMA FOR FRUIT STERILIZATION
A. -A. H. Mohamed¹, S. M. Shariff², M. Benghanem¹, A. A. Almashraqi¹, A. H. Bashir¹, S. A. Ouf³
¹Physics Department/Faculty of Science, Taibah University, Madinah, Saudi Arabia
²Electrical Engineering Department/Faculty of Engineering, Taibah University, Madinah, Saudi Arabia
³Biology Department/Faculty of Science, Taibah University, Madinah, Saudi Arabia

1P-91 DEVELOPMENT OF A HYBRID MPI/OPENMP MASSIVELY PARALLEL 3D PARTICLE-IN-CELL MODEL OF A MAGNETIZED PLASMA SOURCE
G. Fubiani¹, J. -P. Boeuf², J. Qiang³
¹Grephe, CNRS/LAPLACE University of Toulouse 3, Toulouse, France
²CBB, Lawrence Berkeley National Laboratory, Berkeley, CA, USA
³Biology Department/Faculty of Science, Taibah University, Madinah, Turkey

1P-92 GRAPHENE SYNTHESIS BY ATMOSPHERIC PRESSURE MICROWAVE PLASMA
F. Bozduman¹, A. Gulec¹, S. Noree³, Y. Durmaz², M. Ismael¹, A. Uygun Oksuz³
¹Physics, Suleyman Demirel University, Isparta, Turkey
²Chemistry, Suleyman Demirel University, Isparta, Turkey
³Department of Chemical and Biological Engineering, Zhejiang University, Hangzhou, China

1P-93 EXPERIMENTAL STUDIES ON ELECTRO-OPTICAL CHARACTERISTICS OF PULSED STREAMER DISCHARGE ON WATER SURFACE
L. Zhang, Y. Huang, Z. Liu, K. Yan
Department of Chemical and Biological Engineering, Zhejiang University, Hangzhou, China

1P-94 MASS SPECTROSCOPY AND ICCD ANALYSIS OF COUPLED AND UNCOUPLED MODE IN A GATLING-GUN LIKE PLASMA SOURCE
A. Stancampiano¹, N. Gherardi¹, V. Colombo¹, N. Selakovic², N. Pua³, Z. L. Petrovic²
¹Department of Industrial Engineering, Alma Mater Studiorum - University of Bologna, Bologna, Italy
²Institute of Physics Belgrade, University of Belgrade, Belgrade, Serbia
³State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiao Tong University, Xi'an, China

1P-95 MASS SPECTROSCOPY AND ICCD ANALYSIS OF COUPLED AND UNCOUPLED MODE IN A GATLING-GUN LIKE PLASMA SOURCE
A. Stancampiano¹, N. Gherardi¹, V. Colombo¹, N. Selakovic², N. Pua³, Z. L. Petrovic²
¹Department of Industrial Engineering, Alma Mater Studiorum - University of Bologna, Bologna, Italy
²Institute of Physics Belgrade, University of Belgrade, Belgrade, Serbia
³State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiao Tong University, Xi'an, China

1P-96 INFLUENCE OF GAS FLOW ON DISCHARGE MODE IN COAXIAL ARGON DBD UNDER ATMOSPHERIC PRESSURE
G. M. Xu, Z. -S. Chang, C. -W. Yao, P. Li, S. -L. Chen, G. -J. Zhang
State Key Lab of Electrical Insulation & Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi, China

1P-97 A LOW-POWER MAGNETIC-FIELD-ASSISTED PLASMA JET GENERATED BY DIRECT-CURRENT GLOW DISCHARGE AT ATMOSPHERIC PRESSURE
J. Tang¹, W. Jiang¹, J. Li¹, Y. Wang¹, W. Zhao¹, Y. Duan¹
¹State Key Laboratory of Transient Optics and Photonics, Xi'an Institute of Optics and Precision Mechanics of CAS, Xi'an, Shaanxi, China

1P-98 RESEARCH STATUS OF ELECTRON BEAM PLASMA FOR AERODYNAMIC APPLICATIONS IN CHINA
Y. Deng, Y. H. Tan, X. W. Han
Shaanxi Power Machine Design and Research Institute, Xi'an, China

1P-99 OPTICAL EMISSION OF HE LiTH CRYOPLASMA
N. Bonifaci¹, J. Ghannay¹, R. Boltnev³, V. Atrazhev³, V. Shakatov³, J. Eloranta⁵, K. van Haeften⁶
¹G2Elab, GRENoble, France
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³Joint Institute for High Temperatures, Moscow, Russia
⁵Topchiev of Petrochemical Synthesis Institute, Moscow, Russia
²Department of Chemistry and Biochemistry, California State University, Northridge, USA
⁶Department of Physics and Astronomy, University of Leicester, Leiscester, United Kingdom
1P-100 THE EFFECT OF LOW-TEMPERATURE PLASMA TREATMENT ON THE PLANT SEEDS
A. Zahoranova¹, D. Kovacik¹, M. Cernak¹, M. Hensełova², D. Hudcova¹, B. Kalinakova¹
¹Department of Experimental Physics, Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava, Slovakia
²Department of Plant Physiology, Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia
³Faculty of Chemical and Food Technology, Slovak University of Technology, Bratislava, Slovakia

1P-101 INVESTIGATION OF BINDING PROPERTIES OF MICROCAPSULES ON LOW PRESSURE PLASMA TREATED TEXTILES
B. Kutlu, G. C. Turkoglu, A. Aksit, A. M. Sariisik
Textile Engineering Department, Dokuz Eylul University, Izmir, Turkey

1P-102 EFFECTS OF PLASMA TREATMENTS ON THE ADHESION BETWEEN POLYESTER FABRICS AND SILICONE RUBBER COATING
Y. B. Sari¹, B. Kutlu¹, B. Mizrak²
¹Textile Engineering Department, Dokuz Eylul University, Izmir, Turkey
²Rultrans Transmisyon A.Ş., Izmir, Turkey

1P-103 NEW PLASMA PATTERNING OF AG NANOWIRE USING HIGH PRESSURE MICRO-DISCHARGE
H. -J. Kim¹, H. -S. Ta¹, S. -H. Lee², B. J. Shin³, J. H. Seo⁴, J. H. Pyo⁵
¹80 Daehak-ro, Buk-gu, School of Electrical Engineering, College of IT Engineering, Kyungpook National University, Daegu, South Korea
²100 Inha-ro, Nam-gu, School of Electrical Engineering, College of Information Technology and Engineering, Inha University, Incheon, South Korea
³209 Neungdong-ro, Gwangjin-gu, Department of Electronics Engineering, Sejong University, Seoul, South Korea
⁴119 Academy-ro, Yeonsu-gu, Department of Electronics Engineering, Incheon National University, Incheon, South Korea
⁵89 Seoho-ro, Gwoneon-gu, Sawon-si, Applied Plasma Devices, Inc., Gyeonggi-do, South Korea

Session 1P: Environmental and Industrial Applications (poster I)

Poster Session

Monday, May 25 15:00-16:30, Citrine I

Session Chair: Xinpei Lu, Huazhong University of Science and Technology, China

1P-105 PREPARATION AND SURFACE MODIFICATION OF CHITOSAN COATED MODAL FABRIC BY NON-THERMAL OXYGEN PLASMA TREATMENT
K. A. Vijayalakshmi, N. Karthikeyan, K. Vignesh
Department of Physics, Sri Vasavi College, Erode-16, Tamilnadu, India

1P-106 INTERACTION BETWEEN PT CATALYST AND OZONE FOR CATALYTIC CARBON MONOXIDE OXIDATION
Department of Plasma Engineering, Korea Institute of Machinery & Materials, Daejeon, South Korea

1P-107 CHARACTERISTICS OF HELIUM PLASMA JET DRIVEN BY MICROSECOND PULSES WITH DIFFERENT CONFIGURATIONS
Y. Shen¹,², R. Wang²,³, C. Zhang²,³, T. Shao²,³
¹School of Automation and Electrical Engineering, Nanjing University of Technology, Nanjing, China
²Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
³Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China

1P-108 OPTIMIZATION OF LOW-PRESSURE PLASMA REACTOR FOR HIGH-SPEED SURFACE TREATMENT OF POLYIMIDE SUBSTRATE
Korea Institute of Machinery and Materials, Daejeon, South Korea

1P-109 MEASUREMENT OF THE CHARGE ON DIELECTRIC SURFACE OF A DBD PLASMA ACTUATOR
E. Paniel, H. Rabat, D. Hong
1P-110 MODIFICATION OF THE SURFACE LAYER OF METAL MATERIALS UNDER THE COMBINED INFLUENCE OF HIGH INTENSITY PULSED ION BEAM AND MAGNETRON SPUTTERING
National Research Tomsk Polytechnic University, Tomsk, Russian Federation

1P-111 DEPOSITION OF FUNCTIONAL COATINGS BASED ON INTERMETALLIC SYSTEMS TiAl ON THE SURFACE OF PUNCHING TOOLS FOR COLD HEADING MACHINES BY VACUUM ARC PLASMA
E. L. Vardanyan, V. V. Budilov, I. I. Yagafarov, K. N. Ramazanov
Ufa State Aviation Technical University, Ufa, Russian Federation

1P-112 APPLICATION OF THE HOLLOW CATHODE EFFECT FOR LOCAL ION NITRIDING OF THE MACHINE PARTS
V. V. Budilov1, K. N. Ramazanov1, Y. G. Khusainov1, I. V. Zolotov1, N. S. Babenko2
1Ufa State Aviation Technical University, Ufa, Russian Federation
2Ufa Engineering Industrial Association, Ufa, Russian Federation

1P-113 OBTAINING USEFUL PROPERTIES OF DIFFERENT MATERIALS BY USING MAGNETRON SPUTTERING
K. Senturk1, T. Sen2, T. Coruhlu3, I. Varturk3, M. Korachi4, N. Aslan2
1Energy Systems Engineering Department, Beykent University, Istanbul, Turkey
2Department of Physics, Yeditepe University, Istanbul, Turkey
3Genetics and Bioengineering Department, Yeditepe University, Istanbul, Turkey

1P-114 COMPUTER MODELING OF LOCAL ION NITRIDING PROCESS WITH HOLLOW CATHODE EFFECT
K. N. Ramazanov, Y. G. Khusainov, I. V. Zolotov
Ufa State Aviation Technical University, Ufa, Russian Federation

1P-115 THE PREPARATION OF MICROPOROUS PVDF MEMBRANES WITH DITHIOPHOSPHATES AND MODIFICATION OF SURFACE PROPERTIES BY HELICON PLASMA
T. Sardohan Koseoglu1, F. Ilgaz1, O. Calis1, E. Kir1, A. Aydin1, A. Gulec2
1Chemistry, Suleyman Demiel University, Isparta, Turkey
2Physics, Suleyman Demiel University, Isparta, Turkey

1P-116 AN NOVEL DISINFECTION METHOD FOR DRINKING WATER TREATMENT BASED ON STRONG ELECTRIC FIELD DISCHARGE AND HYDRODYNAMIC CAVITATION
Y. Tian, X. Yuan, S. Xu, X. Zhou, Z. Zhang
Dalian Maritime University, Dalian, Liaoning, China

1P-117 SOLID STATE BATTERY MANUFACTURING WITH THERMIonic VACUum ARC AND RF SPUTTERING
S. Pat1, S. Ozen2, V. Senay2, S. Korkmaz2, Z. Pat1
1Eskişehir Osmangazi University, Eskişehir, Turkey
2Bayburt University, Bayburt, Turkey

1P-118 CALCULATIONS OF ELECTRIC AND MAGNETIC FIELDS AND OHMIC HEATING IN THE VACUUM INTERRUPTER
S. D. Kuznetsov1, S. F. Garanin2, V. A. Glazunov1, V. B. Yakubov1, V. N. Borisenkova2, P. P. Misyura3
1Russian Federal Nuclear Center - All Russian Scientific Research Institute of Experimental Physics, Sarov, Russia
2Eurocontract - High Voltage Equipment Ltd., Balashiha, Russia
3HC Open Joint-Stock Company NEVZ-Soyuz, Novosibirsk, Russia

1P-119 AN ATMOSPHERIC-PRESSURE, ROOM-TEMPERATURE, COLD MICRO PLASMA
X. Lu, J. Gou
Huazhong University of Science and Technology, WuHan, China

1P-120 YIELD OF HYDROGEN PEROXIDE, OZONE AND NITRITE NITROGEN WITH DBD ARRAYS IN WATER MIST SPRAY
B. Chen1,2,3,4, Y. Gan1,3, Y. Wu1,3, C. Zhu1,2,5, J. Fei4,5, F. Zhou1,3, J. Wang1,3, J. Wang1,3
1Hohai University Nantong Institute of Marine and Offshore Engineering, Nantong, China
2Jiangsu Province Key Laboratory of Environmental Engineering, Nanjing, China
3Department of Mathematics and Physics, Hohai University, Changzhou, China
4College of Energy and Electrical Engineering, Hohai University, Nanjing, China
5Jiangsu Key Laboratory of Power Transmission and Distribution Equipment Technology, Changzhou, China
1P-121 TREATMENT OF POLYTETRAFLUOROETHYLENE FILMS BY ATMOSPHERIC AR THREE-DIELECTRIC LAYERS BARRIER DISCHARGE PLASMA
X. Li1,2, J. Li1,2, P. Dong1,2, L. W. Zhang1,2, J. D. Long1,2, Y. T. Xie1,2
1Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, China
2Key Laboratory of Pulsed Power, China Academy of Engineering Physics, Mianyang, China

1P-122 CHARACTERISTICS OF DISCHARGE CHANNEL AND ITS EFFECT ON CONCRETE MONOLITH SPLITTING OFF BY BOREHOLE ELECTRICAL DISCHARGE BLASTING
A. S. Yudin
High Voltage and Electrophysics, National Research Tomsk Polytechnic University, Tomsk, Russian Federation

Session 2A: Partially Ionized Plasmas

Monday, May 25 16:30-18:45, Opal I
Session Chair: Mikhail S Benilov, Universidade da Madeira

16:30 2A-1 HYBRID MODEL OF RUNAWAY ELECTRONS GENERATION PROCESS IN NANOSECOND HIGH PRESSURE GAS DISCHARGE
V. Y. Kozhevnikov1, A. V. Kozyrev1, N. S. Semeniuk2
1Faculty of Physics, Tomsk State University, Tomsk, Russian Federation
2Institute of High Current Electronics, Tomsk, Russian Federation

16:45 2A-2 EMISSION AND LEVEL POPULATION IN THE NUCLEAR-INDUCED PLASMAS OF GAS MIXTURES
M. Khasenov
Nazarbaev University Research and Innovation System PI, Astana, Kazakhstan

17:00 2A-3 EXCITATION OF ION ACCOUSTIC WAVES IN PLASMAS WITH ELECTRON EMISSION FROM WALLS
I. D. Kaganovich1, A. V. Khrabrov1, D. Sydorenko2, A. Smolyakov3, Y. Raitses1
1PPPL, Princeton, United States
2University of Alberta, Alberta, Canada
3University of Saskatchewan, Saskatoon, Canada

17:15 2A-4 FIELD EMISSION CURRENT GENERATION IN A HIGH PRESSURE NOBLE GAS
N. P. Lockwood1, G. A. Pitz1, S. B. Fairchild2, M. A. Lange3
1Directed Energy Directorate, Air Force Research Laboratory, Kirtland AFB, NM, United States
2Materials Directorate, Air Force Research Laboratory, Wright-Patterson AFB, NM, United States
3TechFlow Scientific, Albuquerque, NM, United States

17:30 2A-5 STUDY ON THE PARAMETERS OF SPARK DISCHARGE PLASMA IN A GAS MIXTURE OF ATMOSPHERIC PRESSURE UNDER METAL TREATMENT
M. V. Zhuravlev, G. E. Remnev, B. G. Shubin
Tomsk Polytechnic University, Tomsk, Russian Federation

17:45 2A-6 NUMERICAL STUDY OF ACTIVE SPECIES GENERATION AND DELIVERY TO A DIELECTRIC SURFACE FROM A HELIUM ATMOSPHERIC-PRESSURE PLASMA JET
M. I. Hasan, J. W. Bradley
Electrical Engineering and Electronics, University of Liverpool, Liverpool, United Kingdom

18:00 2A-7 ASSESSMENT OF PHYSICAL CORRELATIONS IN A LARGE DC DISCHARGE TUBE FOR MULTIPLE GASES AND ELECTRODE MATERIALS
T. E. Gebhart1, D. C. Lam2, I. A. Bean2, A. L. Winfrey1, M. A. Bourham3
1Nuclear Engineering, University of Florida, Gainesville, FL, United States
2Department of Mechanical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States
3Nuclear Engineering, North Carolina State University, Raleigh, NC, United States

18:15 2A-8 EXPERIMENTAL VALIDATION OF SIMILARITY LAW FOR GLOW DISCHARGES IN ARGON AT LOW PRESSURE
Y. Fu, X. Yang, H. Luo, X. Zou, X. Wang
Department of Electrical Engineering, Tsinghua University, Beijing, China
18:30 2A-9 NUMERICAL STUDY OF MICROWAVE DIELECTRIC SURFACE BREAKDOWN AT ATMOSPHERIC CONDITION
Q. Zhou, Y. Dong, Z. Dong
Institute of Applied Physics and Computational Mathematics, Beijing, China

Session 2B: Plasma Chemistry I

Monday, May 25 16:30-18:30, Opal II

Session Chair: Tao Shao, Institute of Electrical Engineering, Chinese Academy of Sciences

16:30 2B-1 ERRORS AND UNCERTAINTY IN COMPLEX PLASMA CHEMISTRY MODELS
M. Turner
School of Physical Sciences and National Centre for Plasma Science and Technology, Dublin City University, Dublin 9, Ireland

16:45 2B-2 INFLUENCE OF OXYGEN ADDITION ON DISCHARGE CHARACTERISTICS OF DIELECTRIC BARRIER DISCHARGE IN AR
Z. Fang, J. Tan, W. J. Wu
School of Automation and Electrical Engineering, Nanjing Technology University, Nanjing, Jiangsu Province, China

17:00 2B-3 (invited) PLASMA-CATALYTIC CONVERSION OF CO2 INTO VALUE-ADDED CHEMICALS: UNDERSTANDING THE SYNERGISTIC EFFECT AT LOW TEMPERATURES
D. Mei, J. Yan, X. Tu
Electrical Engineering and Electronics, University of Liverpool, Liverpool, United Kingdom

17:30 2B-4 PRODUCTION OF ACTIVE OXYGEN SPECIES IN LOW PRESSURE CCP USED FOR STERILIZATION OF COMMERCIAL SEEDS
K. Spasić, N. Skoro, N. Pucać, G. Malović, Z. L. Petrović
Institute Of Physics, Belgrade, Serbia

17:45 2B-5 AN EXPERIMENTAL INVESTIGATION ON THE RADIATION CHARACTERISTICS OF PLASMA JET IN THE PLASMA-PROPELLANT INTERACTION
Y. Hang, X. Li, S. Jia
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, Shaanxi, China

18:00 2B-6 PLASMA-INDUCED POLYMERIZATION OF SULFOBETAINE ACRYLATE ON BIOMER FILM
A. Mazzah1, C. Rolando1, A. Haoudi2
1Chemistry, Lille University, Villeneuve d'Ascq, France
2Chemistry, Faculty des Sciences et Techniques de Fes, Fes, Morocco

18:15 2B-7 REMOVAL OF ORGANIC POLLUTANTS AND SIMULTANEOUS REGENERATION OF GRANULAR ACTIVATED CARBON BY DIELECTRIC BARRIER DISCHARGE PLASMA
J. Li, S. Tang, N. Jiang, N. Lu, K. Shang, Y. Wu
School of Electrical Engineering, Dalian University of Technology, China, Dalian, China

Session 2C: Plasma, Ion and Electron Sources and Intense Electron and Ion Beams

Monday, May 25 16:30-18:30, Onyx

Session Chair: Leigh Winfrey, University of Florida

16:30 2C-1 (invited) BACK-STREAMING ION BEAM MEASUREMENTS IN A SELF MAGNETIC PINCH (SMP) ELECTRON DIODE
M. G. Mazarakis1, M. L. Kiefer1, M. D. Johnston1, J. Leckbee1, T. J. Webb1, T. J. Renk1, S. C. Simpson1, D. S. Nielsen2, D. Ziska1, N. L. Bennett3, D. R. Welch5, T. M. Romero4
1Sandia National Laboratories, Albuquerque, NM, United States
2National Security Technologies, LLC, Las Vegas, NV, United States
3Voss Scientific, LLC, Albuquerque, NM, United States
4Leidos, Inc., Albuquerque, NM, United States
17:00 2C-2 THE NEAREST NEIGHBOURS APPROXIMATION AND THE ANALYSIS OF THE MELTING POINT OF 2D- AND 3D-YUKAWA SYSTEMS
X. G. Koss1,2, O. S. Vaulina1,2
1JIHT RAS, Moscow, Russian Federation
2MIPT, Dolgoprudny, Russian Federation

17:15 2C-3 A NOVEL COLD CATHODE SHEET-BEAM PLASMA CATHODE ELECTRON GUN AND ITS BEAM DIAGNOSTICS
N. Kumar1,2, U. N. Pat1,2, R. Prakash1,2
1CSIR-CEERI, Pilani, Rajasthan, India
2AcSIR, New Delhi, Delhi, India

17:30 2C-4 ELECTRON SOURCE BASED ON THE LTD AND PLASMA-FILLED DIODE
A. Zherlitcyn, B. Kovalchuk
Institute of High Current Electronics, Tomsk, Russian Federation

17:45 2C-5 CURRENT DENSITIES EFFECTS IN THE FOCUSING PHASE OF A PLASMA FOCUS DEVICE
N. D. Nawi, J. Ali, K. Tufail, S. Toto
Physic, Universiti Teknologi Malaysia, Johor, Malaysia

18:00 2C-6 SPECTROSCOPIC STUDY OF THE ANODE FLARE FORMATION DURING THE INITIAL STAGE OF VACCUM ARC DISCHARGE.
S. A. Popov1,2, R. Methling3, A. V. Batrakov1,2, D. Uhrlandt1, K. -D. Weltmann3
1Institute of High Current Electronics, Siberian Branch, Russian Academy of Sciences (IHCE SB RAS), Tomsk, Russian Federation
2Tomsk Polytechnic University, Tomsk, Russian Federation
3Leibniz-Institute for Plasma Science and Technology e.V. (INP Greifswald), Greifswald, Germany

Session 2D: Laser Produced Plasmas
Monday, May 25 16:30-18:15, Quartz

16:30 2D-1 HIGH DYNAMIC RANGE LASER PULSE CONTRAST MEASUREMENT WITH A OPTICAL CLIPPING OF PLASMA
Z. Sun, Y. Xia, Z. Peng, J. Dong
Research Center of Laser Fusion, CAEP, Mianyang, China

16:45 2D-2 EFFECTS OF NONTHERMAL ELECTRONS ON PLASMA EXPANSION INTO VACUUM
D. Bennyacour-Doumaz, D. Bara
Milieux Ionises et Lasers, Centre de Developpement des Technologies Avancees (CDTA), Algiers, Algeria

17:00 2D-3 OSCILLATIONS AND ELECTRON EMISSION FROM LASER PRODUCED CLUSTER NANOPLASMA
R. Bystryi1,2, I. Morozov1,2
1Joint Institute for High Temperatures of Russian Academy of Sciences (JIHT RAS), Moscow, Russian Federation
2National Research University Higher School of Economics, Moscow, Russian Federation

17:15 2D-4 STUDY OF X-RAY GENERATION FROM NOBLE GASES MIXTURE JETS IRRADIATED BY UNR FS- LEOPARD LASER WITH DIFFERENT PULSE CONTRAST
University of Nevada, Reno, Reno, NV, United States

17:30 2D-5 STUDIES OF PLASMA DYNAMICS IN COLLIDING LASER PLASMA PLUMES
M. Favre1, F. Merello1, H. Bhuyan1, F. Veloso1, E. Wyndham1, H. M. Ruiz2
17:45 2D-6 THE ROLE OF CORONA AND SPACE CHARGES DURING FEMTOSECOND LASER PULSE FILAMENT GUIDED HIGH VOLTAGE DISCHARGES IN AIR
A. Schmitt-Sody1, W. White1, A. Lucero2, V. Hasson3
1AFRL, Albuquerque, NM, United States
2Boeing DES, Albuquerque, NM, United States
3University of Arizona, Tucson, AZ, United States

18:00 2D-7 A PROPOSED 100KHZ REPETITION RATE FEMTOSECOND LASER PLASMA HARD X-RAY SOURCE AT THE ELI-ALPS FACILITY
D. Papp1, A. A. Andreev1,2
1ELI-ALPS, ELI-HU Nkft, Szeged, Hungary
2Max-Born-Institut, Berlin, Germany

Session 2E: Plasma Medicine I

Monday, May 25 16:30-18:30, Topaz
Session Chair: Prof. Vittorio Colombo, University of Bologna, Italy

16:30 2E-1 (invited) COMBINATION OF TUMOR THERAPEUTICS AND COLD PLASMA TO FIGHT CANCER
K. Masur1, M. von Behr2, K. -D. Weltmann1, L. I. Partecke2, T. von Woedtke3
1ZIK Plasmatis, INP Greifswald, Greifswald, Germany
2Department of Surgery, Ernšt-Moritz-Arndt-University Greifswald, Greifswald, Germany

17:00 2E-2 EFFECT OF NONTHERMAL ATMOSPHERIC PRESSURE PLASMA ON BREAST CANCER CELLS
S. Mirpour1, N. Jalali Farahani2, M. Nikkhah3, N. Soleimani3, S. Piroozmand3, H. R. Ghomi1
1Laser and Plasma Institute, Shahid Beheshti University, Tehran, Iran
2Plasma Research Center, Science and Research Branch, Azad University, Tehran, Iran
3Nanobiotechnology Group, Tarbiat Modares University, Tehran, Iran

17:15 2E-3 CHARACTERIZATION AND EVALUATION OF BACTERICIDAL EFFECT AND CYTOCOMPATIBILITY OF A LOW POWER ICP SOURCE FOR BIOMEDICAL APPLICATIONS
V. Colombo, D. Barbieri, M. Boselli, F. Cavrini, M. Gherardi, M. P. Landini, R. Laurita, A. Liguori, A. Stancampiano
Alma Mater Studiorum - University of Bologna, Bologna, Italy

17:30 2E-4 ELECTRIC FIELD MEASUREMENTS DURING PLASMA JET OPERATION ON/IN BIOLOGICAL SAMPLES AND TISSUES
T. Darny, E. Robert, S. Dozias, J. -M. Pouveles
Orleans University/CNRS, GREMI, Orleans, France

17:45 2E-5 INVESTIGATION OF BACTERIAL INACTIVATION BY VARIOUS GAS PLASMAS AND ELECTRON MICROSCOPIC OBSERVATION OF TREATED BACTERIA
T. Takamatsu1, T. Kobayashi2, H. Kawano2, Y. Sasaki2, Y. Watanabe2, Y. Matsumura3, H. Miyahara2, A. Iwasawa3, A. Okino2, T. Azuma1
1Department of Gastroenterology, Kobe University, Kobe, Japan
2Energy Sciences, Tokyo Institute of Technology, Yokohama, Japan
3Bioengineering, Tokyo Institute of Technology, Yokohama, Japan

18:00 2E-6 STERILIZATION OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS WITH DIELECTRIC BARRIER DISCHARGE
H. Ayan, N. Sanaei
Bioengineering, The University of Toledo, Toledo, OH, United States

18:15 2E-7 SENSOR PROPERTIES OF RF-TITANIUM DIOXIDE PLAZMA MODIFIED GRAPHENE
F. Kuralay1, S. Tunc1, F. Bozduman2, A. Uygun Oksuz2, L. Oksuz2
1Department of Chemistry, Ordu University, Ordu, Turkey
2Department of Physics, Suleyman Demirel University, Isparta, Turkey

18:45 2E-8 MEDICAL APPLICATIONS OF PLASMA-ASSISTED THERAPY
T. Takamatsu1, T. Kobayashi2, H. Kawano2, Y. Sasaki2, Y. Watanabe2, Y. Matsumura3, H. Miyahara2, A. Iwasawa3, A. Okino2, T. Azuma1
1Department of Gastroenterology, Kobe University, Kobe, Japan
2Energy Sciences, Tokyo Institute of Technology, Yokohama, Japan
3Bioengineering, Tokyo Institute of Technology, Yokohama, Japan
Session PL3: Plenary PL3

Tuesday, May 26 09:00-10:00, Citrine II-III

Session Chair: Gurudas Ganguli, Naval Research Laboratory

9:00 PL3-1 ON EXCITATION OF ALFVEN WAVES BY ENERGETIC PARTICLES IN FUSION AND SPACE PLASMAS
L. Chen
ZheJiang University, Hangzhou, China

Session 3A: Basic Phenomena - I

Tuesday, May 26 10:30-13:00, Opal I

Session Chair: Amnon Fruchtman, Holon Institute of Technology

10:30 3A-1 (invited) COLLISIONLESS ELECTRON HEATING IN A SURFACE-WAVE DISCHARGE
J.-P. Boeuf
LAPLACE, Universite de Toulouse, Toulouse, France

11:00 3A-2 INFLUENCE OF ELECTRON-ION COLLISIONS ON STABILITY OF CURRENT CARRYING PLASMA
E. V. Rostomyan
Theoretical Dept, Institute of Radiophysics & Electronics National Ac Sci of Armenia, Ashtarack, Armenia

11:15 3A-3 FLOATING POTENTIAL FLUCTUATION USING LASER HEATED EMISSIVE PROBE (LHEP) AND ITS NONLINEAR ANALYSIS
A. K. Sarma1, P. Mehta2, V. Mitra3, J. Ghosh3, B. Sarma1
1School of Advanced Sciences (SAS), VIT University Chennai, Chennai, Tamil Nadu, India
2Venus International College of Technology, Gandhinagar, Gujarat, India
3Institute for Plasma Research, Gandhinagar, Gujarat, India

3A-4

11:30 3A-5 PAST SUCCESSES AND FUTURE PROSPECTS FOR EXPERIMENTAL ELECTRON SCATTERING FROM FLUOROCARBON RADICALS
S. J. Buckman1, D. B. Jones2, G. B. da Silva2,3, M. J. Brunger2,4
1Research School of Physics and Engineering, Australian National University, Canberra, ACT, Australia
2School of Chemical and Physical Sciences, Flinders University, Adelaide, SA, Australia
3Universidade Federal de Mato Grosso, Barra do Garcas, Mato Grosso, Brazil
4Institute of Mathematical Sciences, University of Malaya, Kuala Lumpur, Malaysia

11:45 3A-6 THE LXCAT PROJET: AN OVERVIEW AND A BRIEF PROGRESS REPORT
L. C. Pitchford
LAPLACE, Universite de Toulouse and CNRS, Toulouse, France

12:00 3A-7 LOW FREQUENCY GLOBAL MODES IN INHOMOGENEOUS NON-MAXWELLIAN PLASMAS
Q. U. Haque1, A. Ahmad2
1Theoretical Physics Division, PINSTECH, Islamabad, Pakistan
2TPD, National Center for Physics, Islamabad, Pakistan

12:15 3A-8 INFLUENCE OF FINITE LARMOR RADIUS CORRECTION ON MAGNETO GRAVITATIONAL INSTABILITY OF ANISOTROPIC QUANTUM PLASMA
P. Sharma
Physics Department, Ujjain Engineering College, Ujjain, India

12:30 3A-9 ANALYSIS OF THE STOCHASTIC PROCESS IN WIRE-PLATE NEGATIVE CORONA DISCHARGE USING STATISTICAL METHODS
K. Zhang1, L. Wei2, J. Tang3, D. Yu3, C. Zhang1
Session 3B: Intense Beam Microwave Generation

Tuesday, May 26 10:30-13:00, Opal II

Session Chair: Theodore C Grabowski, Air Force Research Laboratory

10:30 3B-1 VORTEX STRUCTURES FORMATION IN ULTRARELATIVISTIC ELECTRON BEAM WITH VIRTUAL CATHODE
A. E. Hramov1,2, S. A. Kurkin2,1, A. A. Badarin1,2, A. A. Koronovskiy2,1
1REC "Nonlinear Dynamics of Complex Systems", Saratov State Technical University, Saratov, Russian Federation
2Faculty of Nonlinear Processes, Saratov State University, Saratov, Russian Federation

10:45 3B-2 GENERATION OF HIGHER HARMONICS IN RELATIVISTIC ELECTRON BEAM WITH VIRTUAL CATHODE
S. A. Kurkin1,2, A. A. Badarin1, A. A. Koronovskii1,2, A. E. Hramov2,1
1Saratov State University, Saratov, Russian Federation
2Saratov State Technical University, Saratov, Russian Federation

11:00 3B-3 (invited) HIGH EFFICIENCY RELATIVISTIC MAGNETRON WITH DIFFRACTION OUTPUT OPERATING WITH A VIRTUAL CATHODE
M. I. Fuks, E. Schamiloglu
Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

11:30 3B-5 4 MM WAVE GENERATION IN TWO-CHANNEL PLANAR FEM AT STRONG ELECTRODYNAMIC COUPLING OF CHANNELS
S. L. Sinitsky1,2, A. V. Arzhannikov1,2, N. S. Ginzburg1,2, P. V. Kalinin1,2, N. Y. Peskov3, A. S. Sergeev3, V. D. Stepanov1,2, V. Y. Zaslavsky1
1Plasma Department, Budker Institute of Nuclear Physics Novosibirsk, Novosibirsk, Russian Federation
2Physics Department, Novosibirsk State University, Novosibirsk, Russian Federation
3Plasma Physics and High Power Electronics Division, Plasma Physics and High Power Electronics Division, Institute of Applied Physics, Nizhnii Novgorod, Russian Federation

11:45 3B-6 A SERIES OF TUFTED CARBON FIBER CATHODE DESIGNED FOR DIFFERENT HIGH POWER MICROWAVE SOURCES
L. Liu, Z. -Q. Li, Y. -W. Fan
College of Optoelectric Science and Engineering, National University of Defense Technology, Changsha, China

12:00 3B-7 EXPERIMENTAL PROGRESS ON A PROTOTYPE MULTIFREQUENCY REcirculating PLANAR MAGNETRON
Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

12:15 3B-8 COMPACT REFLEX TRIODE OPERATION AT 10 HZ REpETITION RATE AND LONG PULSeWIDTHS
E. Rocha1, J. M. Parson1, C. F. Lynn1, J. C. Dickens1, A. A. Neuber1, J. J. Mankowski1, T. Queller2, J. Z. Gleizer2, Y. E. Krasik2
1Pulsed Power and Power Electronics, Texas Tech University, Lubbock, Texas, United States
2Physics Department, Technion-Israel Institute of Technology, Haifa, Israel

12:30 3B-9 INVESTIGATION OF A DISTRIBUTED FEEDBACK RESONANT TRAVELING WAVE TUBE
W. Song, Y. Shi, Y. Deng, L. Zhang, X. Li
Science and Technology on High Power Microwave Laboratory, Northwest Institute of Nuclear Technology, Xian, China

Session 3C: Fast Z pinches I

Tuesday, May 26 10:30-13:00, Onyx

Session Chair: Kenneth W. Struve, Sandia National Laboratories
10:30 3C-1 (invited) RAYLEIGH-TAYLOR INSTABILITY AMPLIFICATION DUE TO RADIATIVE LOSSES
P. W. L. de Grouchy1, N. Qi1, B. R. Kusse1, L. Atoyan1, J. Banasek1, T. Byvank1, A. Cahill1, J. Engelbrecht1, H. Moore1, L. Ramsholt2, S. Tian1, D. Hammer1, S. Pikuz2, T. Shilkovenko3
1Laboratory of Plasma Studies, Cornell University, Ithaca, NY, United States
2Lebedev Institute, Moscow, Russia

11:00 3C-2 CYLINDRICAL AND QUASI-SPHERICAL WIRE ARRAYS INVESTIGATION ON ANGARA-5-1 AND BAikal PROJECT
E. V. Grabovski1, V. V. Smirnov1, V. V. Aleksandrov1, A. N. Gritsuk1, K. N. Mitrofanov1, G. M. Oleinik1, V. I. Zaitsev1, G. S. Volkov1, A. P. Lototsky1, A. N. Gribov1, V. V. Djanganbegov1, A. O. Schishlov1, S. F. Medovschikov1, A. V. Branitski1, V. A. Gasilov2, O. G. Olkhovska2, P. V. Sasorov2, A. P. Shevelko2, S. I. Tkachenko2
1CDPD, SRC RF TRINITI, Moscow, Troitsk, Russian Federation
2KeldyiSh Institute of Applied Mathematics, RAS, Moscow, Russia, Moscow, Russian Federation
3Lebedev Physical Institute, RAS, Moscow, Russia, Moscow, Russian Federation
4Moscow Institute of Physics and Technology, Dolgoprudy, Moscow Region, Russian Federation

11:15 3C-3 HIGH ENERGY DENSITY PHYSICS RESEARCHES ON THE JULONG-I(PTS)
J. Deng, W. Xie, X. Huang
Institute of Fluid Physics, CAEP, Mianyang, Sichuan, 621900, China

11:30 3C-4 Z-PINCH EXPERIMENTS ON THE UM LINEAR TRANSFORMER DRIVER
Nuclear Engineering & Radiological Sciences, University of Michigan, Ann Arbor, MI, United States

11:45 3C-5 PLANAR WIRE ARRAY Z-PINCHES ON QIANGGUANG-I FACILITY
M. Li, L. Sheng, L. P. Wang, Y. Li, Y. Yuan, X. J. Zhang, M. Zhang, C. Zhao, B. D. Peng, J. H. Zhang
Northwest Institute of Nuclear Technology, Xi'an, China

12:00 3C-6 (invited) DOUBLE AND SINGLE PLANAR WIRE ARRAYS AT HIGH AND LOW IMPEDANCE UNIVERSITY-SCALE GENERATORS
A. S. Safronova1, V. L. Kantsyrev1, M. E. Weller1, V. V. Shlyaptseva1, I. K. Shrestha1, A. Stafford1, M. Y. Lorance1, M. C. Cooper1, S. G. Patel2, A. M. Steiner2, D. A. Yager-Elorriaga2, N. M. Jordan2, R. M. Gilgenbach2, C. A. Coverdale1, B. Jones2, K. M. Williamson2, A. S. Chuvatin4
1University of Nevada, Reno, Reno, NV, United States
2University of Michigan, Ann Arbor, MI, United States
3Sandia National Laboratories, Albuquerque, NM, United States
4Ecole Polytechnique, Palaiseau, France

12:30 3C-7 METAL-PUFF Z-PINCH IMPLOSIONS ON GENERATOR MIG WITH CURRENT LEVEL UP TO 2.3 MA
SB RAS, Institute of High Current Electronics, Tomsk, Russian Federation

12:45 3C-8 STRUCTURAL TRANSFORMATIONS OF PINCHED COLUMN IN PLASMA FOCUS DEVICE
P. Kubes1, M. Paduch2, J. Cikhardt1, J. Kortanek1, B. Cikhardtova1, K. Rezac1, D. Kliir1, J. Kravarik1, E. Zielinska2
1Czech Technical University in Prague, FEE, Department of Physics, Prague, Czech Republic
2IPPLM, Warsaw, Poland

Session 3D: Diagnostics: Optical and X-ray, Microwave and FIR, and Particle

Tuesday, May 26 10:30-13:00, Quartz

Session Chairs: Simon Bland, Imperial College London
Stuart V Springham, NIE

10:30 3D-1 ANALYTIC DESCRIPTION OF THE RESONANCE FREQUENCIES OF CURLING PROBE
A. Arshadi, R. P. Brinkmann
Ruhr University Bochum, Institute for Theoretical Electrical Engineering, Bochum, Germany

10:45 3D-2 INVESTIGATION ON THE SPATIAL DISTRIBUTION OF ACTIVE SPECIES IN ATMOSPHERIC-PRESSURE PLASMA JET USING OPTICAL EMISSION SPECTROSCOPY AND FLUID SIMULATION
11:00 3D-3 DIAGNOSTICS OF BENT X-RAY DIAGNOSTIC CRYSTALS
N. R. Pereira1, A. T. Macrander2, S. Stoupin2, E. O. Baronova2
1Ecopulse, Inc., Springfield VA, United States
2XSD, Advanced Photon Source, Argonne IL, United States

11:15 3D-4 TWO-COLOR INTERFEROMETRY FOR THE STUDY OF LASER FILAMENTATION TRIGGERED DISCHARGES IN AIR
G. Point, Y. Brelet, L. Arantchouk, J. Carbonnel, B. Prade, A. Mysyrowicz, A. Houard
Laboratoire d'Optique Appliquee - Ecole Polytechnique, ENSTA ParisTech, CNRS - France, Palaiseau, France

11:30 3D-5 FAST-FRAME OPTICAL IMAGING AND TIME-RESOLVED SPECTROSCOPY OF PLASMA IN A GAS DISCHARGE-BASED SWITCH OF A MICROWAVE PULSE COMPRESSOR
A. S. Shlapakovski, L. Beilin, Y. E. Krasik
Physics Department, Technion, Haifa, Israel

11:45 3D-6 (invited) MICROWAVE DIAGNOSTICS OF PLASMA FILAMENTS LEFT IN THE WAKE OF HIGH POWER FEMTOSECOND LASER PULSE.
J. Papeer1, Z. Henis1, M. Botton1, A. Zigler1, D. Gordon2
1Racah Institute of Physics, The Hebrew University, Jerusalem, Israel
2Plasma Division, Naval Research Lab, Washington, DC, USA

12:15 3D-7 MODE TRANSITIONS IN LOW-PRESSURE NITROGEN RF-CCP AT DIFFERENT FREQUENCIES
U. Erozbek Gungor, S. K. Bilikmen
Physics, Middle East Technical University, Ankara, Turkey

12:30 3D-8 STUDIES OF PLASMA FOCUS FUSION ZONE GEOMETRY USING PROTON CODED APERTURE IMAGING
S. V. Springham1, A. Talebitaheh2, P. M. E. Shultier3, R. S. Rawat1, P. Lee1
1Natural Sciences and Science Education, National Institute of Education, NTU, Singapore, Singapore
2Energy Research Institute, Nanyang Technological University, Singapore, Singapore
3Mathematics and Mathematical Education, National Institute of Education, NTU, Singapore, Singapore

12:45 3D-9 IMPORTANT ISSUES FROM X-RAY STUDIES OF HIGH-CURRENT PULSE DISCHARGES OF THE PLASMA-FOCUS TYPE
M. J. Sadowski1, M. Paduch1, E. Skladnik-Sadowska1, W. Surala2, D. Zalog12, R. Miklaszewski1, E. Zielinska1, K. Tomaszewski1
1Division of Magnetised Plasma, Institute of Plasma Physics and Laser Microfusion (IFPiLM), Warsaw, Poland
2Plasma Studies Division, National Centre for Nuclear Research (NCBJ), Otwock, Poland
3ACS Sp. z o.o., Warsaw, Poland

Session 3E: Environmental and Industrial Applications I

Tuesday, May 26 10:30-13:00, Topaz

Session Chair: Xinpei Lu, Huazhong University of Science and Technology, China

10:30 3E-1 (invited) SPATIAL DIAGNOSIS OF ATMOSPHERIC PRESSURE HELIUM PLASMA JET
R. Wang1,2, Y. Shen1,3, C. Zhang1,2, T. Shao1,2
1Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
2Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China
3School of Automation and Electrical Engineering, Nanjing University of Technology, Nanjing, China

3E-2 (withdrawn)

11:00 3E-3 A STUDY ON THE MECHANISM OF RING-SHAPE STRUCTURE IN THE ATMOSPHERIC PRESSURE PLASMA JETS
Y.-F. Yue, Y. Xian, X. Lu
School of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan, China

11:15 3E-4 REACTION OF CCl3F (CFC-11) WITH CH4 IN A DIELECTRIC BARRIER DISCHARGE REACTOR
Session 4A: Dusty & Strongly Coupled Plasmas

Tuesday, May 26 14:00-15:45, Opal I

Session Chair: Holger Kersten, University of Kiel, Germany

14:00 4A-1 (invited) ISSUE OF PARTICLE FORMATION IN THE HIGH-RATE FILM DEPOSITION BY PLASMA ASSISTED DEPOSITION PROCESSES
J. G. Han, B. B. Sahu, R. S. Shin, J. S. Lee, S. B. Jin
Department of Advanced Materials Science and Engineering, Sungkyunkwan University, NU-SKKU Joint Institute for Plasma Nano Materials (IPNM), Center for Advanced Plasma Surface Technology (CAPST), Suwon, South Korea 440-746

14:30 4A-2 DUST CHARGING UNDER SURFACE ELECTRON EMISSION
F. Taccogna, G. Mizzi
CNR-IMIP, Bari, Italy

14:45 4A-3 (invited) STRONGLY COUPLED PLASMA, GENERATED BY THE INTENSIVE SHOCK WAVES AND RAREFACTION
V. E. Fortov
Joint Institute for High Temperature of RAS, Moscow, Russian Federation

15:15 4A-4 DYNAMICAL SCREENING AND WAKE EFFECTS IN CLASSICAL, QUANTUM, AND ULTRARELATIVISTIC PLASMAS
P. Ludwig1, Z. Moldabekov2, H. Kaehlert1, J.-P. Joost1, M. Bonitz1
1Theoretische Physik und Astrophysik, University of Kiel, Kiel, Germany
2Institute for Experimental and Theoretical Physics, Al-Farabi Kazakh National University, Almaty, Kazakhstan

15:30 4A-5 LIGHT SCATTERING ON DUSTY PLASMAS: HOW TO IMPROVE THE QUALITY OF WHITE LEDS?
Session 4B: Codes and Modeling

Tuesday, May 26 14:00-16:00, Opal II

Session Chair: Thuc Bui, Calabazas Creek Research, Inc.

14:00 4B-1 APPLICATION OF A PSEUDOSPARK-GENERATED ELECTRON BEAM TO A 200GHZ BACKWARD WAVE OSCILLATOR
Department of Physics, Strathclyde University, Glasgow, United Kingdom

14:15 4B-2 ADVANCES IN BEAM OPTICS ANALYZER
T. Bu1, M. Read1, M. C. Lin1, B. Tallis2, H. Tran2
1Calabazas Creek Research, Inc., Mountain View, CA, United States
2North Carolina State University, Raleigh, NC, USA

14:30 4B-3 (invited) VERIFICATION OF PARTICLE-IN-CELL SIMULATIONS AGAINST EXACT SOLUTIONS OF THE BOLTZMANN-POISSON SYSTEM
M. Turner
School of Physical Sciences and National Centre for Plasma Science and Technology, Dublin City University, Dublin 9, Ireland

15:00 4B-4 MODELLING OF TRIDIMENSIONAL PLASMA ENHANCED CHEMICAL VAPOR DEOSITION REACTOR AT 2.45 GHZ
K. Bouherine1, A. Tibouche1, M. Labiode1, N. Ikhlef1, O. Leroy2
1Laboratoire d'Etudes et Modelisation en Electrotechnique, Universite de Jijel, Jijel, Algeria
2Laboratoire de Physique des Gaz et des Plasmas (LPGP), CNRS, Universite Paris-Sud (UPS), 91405 Orsay, Paris, France

15:15 4B-5 Analytic model of the energy distribution for energetic electrons in HiPIMS
S. Gallian1, J. Trieschmann1, T. Mussenbrock1, W. N. G. Hitchon2, R. P. Brinkmann1
1Theoretical Electrical Engineering, Ruhr University Bochum, Bochum, Germany
2Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, WI, USA

15:30 4B-6 SIMULATION OF NANOCOLUMN FORMATION IN A PLASMA ENVIRONMENT
J. W. Abraham1, T. Strunskus2, F. Faupel2, M. Bonitz1
1Institut fuer Theoretische Physik und Astrophysik, University of Kiel, Kiel, Germany
2Institut fuer Materialwissenschaft, University of Kiel, Kiel, Germany

15:45 4B-7 CHERENKOV RADIATION IN DIELECTRIC-LOADED WAVEGUIDES AND CAVITIES
A. F. Abdel-Rahman, T. M. Abuelfadl
Electronics and Electrical Communications Department, Faculty of Engineering, Cairo University, Giza, Egypt

Session 4C: Magnetic Fusion

Tuesday, May 26 14:00-16:00, Onyx

Session Chair: Mark Gilmore, University of New Mexico

14:00 4C-1 PLASMA CONTROL FOR ITER AND FUTURE FUSION REACTORS
E. Kolemen1, D. A. Gates2, D. A. Humphreys2, M. L. Walker2
1Princeton University, Princeton, NJ, United States
2Princeton Plasma Physics Laboratory, Princeton, NJ, United States

14:15 4C-2 ORIGIN AND DYNAMICS OF PLASMA BLOB

1Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands
2Philips Research, Eindhoven, Netherlands
3Philips Lighting, Eindhoven, Netherlands
Session 4C: Tokamak Physics

14:30 4C-3 EFFECTIVE PARAMETERS OF RADIAL ELECTRIC FIELD IN IR-T1 TOKAMAK
K. Noori¹, P. Khorshid²
¹Dept. of Physics, Azarbaijan University of Shahid Madani, Tabriz, Iran
²Dept. of Physics, Islamic Azad University, Mashhad Branch, Mashhad, Iran

14:45 4C-4 EFFECT OF LIMITER BIASING ON ELECTRON TEMPERATURE IN IR-T1 TOKAMAK
S. Meshkani, M. Ghoranneviss
Plasma Physics Research Centre, Science and Research Branch, Islamic Azad University, Tehran, Iran, Tehran, Iran

15:00 4C-5 (invited) ORIGIN AND EVOLUTION OF SPONTANEOUS ROTATION IN PLASMA UNDER DIFFERENT MAGNETIC FIELD GEOMETRY IN TOKAMAK QUEST
K. Mishra¹, H. Zushi², H. Idei², T. Onchi², M. Hasegawa², K. Hanada²
¹AEES, IGSES, Kyushu University, Kasuga, Fukuoka, Japan
²AFRC, RIAM, Kyushu University, Kasuga, Fukuoka, Japan

Session 4D: Plasma Medicine II

Tuesday, May 26 14:00-15:45, Quartz

Session Chair: Kai Masur, INP Greifswald - ZIK Plasmatis

14:00 4D-1 ABOUT INTERNATIONALS STANDARDS IN PLASMA MEDICINE
M. S. Mann¹, R. Tiede², A. Raees³, S. Wurster³, K.-D. Weltmann⁴, G. Daeschlein⁵, S. Emmert⁵, T. von Woedtke¹
¹Plasma Bioengineering, Leibniz-Institute for Plasma Science and Technology (INP Greifswald), Greifswald, Germany
²Department of Dermatology, Venereology and Allergology of the Goettingen University Medical Center, Goettingen, Germany
³Institut fuer anwendungsorientierte Forschung und klinische Studien GmbH (IFS), Goettingen, Germany
⁴Chair of Innovation Economics, Technical University of Berlin, Berlin, Germany
⁵Department of Dermatology of the Ernst Moritz Arndt University Greifswald, Greifswald, Germany

14:15 4D-2 COMBINATION OF PULSED ELECTRIC FIELDS AND NON-THERMAL PLASMA JET FOR MORE EFFECTIVE BACTERIAL DECONTAMINATION
Q. Zhang¹,², J. Zhuang¹, T. von Woedtke¹, J. F. Kolb¹, K.-D. Weltmann¹, J. Zhang², J. Fang²
¹Bioelectrics, Leibniz Institute for Plasma Science and Technology, Greifswald, Germany
²Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China

14:30 4D-3 (invited) INVESTIGATION OF ANTIBACTERIAL EFFICACY OF A PLASMA GUN SOURCE FOR ENDODONTIC APPLICATIONS
M. Boselli, F. Cavrini, V. Colombo, M. Gherardi, R. Laurita, A. Liguori, E. Simoncelli, A. Stancampiano
Department of Industrial Engineering, Alma Mater Studiorum - University of Bologna, Bologna, Italy

15:00 4D-4 A BATTERY-OPERATED ATMOSPHERIC-PRESSURE PLASMA WAND FOR BIOMEDICAL APPLICATIONS
X. Pei, X. Lu
School of Electrical and Electronic Engineering, Huazhong University of Science & Technology, Wuhan, China

15:15 4D-5 CHARACTERISTICS OF COLD ATMOSPHERIC PRESSURE PLASMA JET AND ITS ANTIMICROBIAL ACTIVITY
A. H. Bashir¹, S. A. Ouf¹, S. M. Shariff², M. Benghanem¹, A. A. Almashraqi¹, A. -A. H. Mohamed¹
¹Physics Department/Faculty of Science, Taibah University, Madinah, Saudi Arabia
²Biotechnology Department/Faculty of Science, Taibah University, Madinah, Saudi Arabia
³Electrical Engineering Department/Faculty of Engineering, Taibah University, Madinah, Saudi Arabia
15:30 4D-6 CHARACTERISTICS OF A SURFATRON-PRODUCED ATMOSPHERIC-PRESSURE PLASMA JET AT LOW PLASMA TEMPERATURES
T. Doll, C. M. Oeguen, R. Kling
Light Technology Institute, Karlsruhe Institute of Technology, Karlsruhe, Germany

Session 4E: Insulation and Dielectric Breakdown

Tuesday, May 26 14:00-16:00, Topaz

Session Chair: Zoran Petrovic, Univ. of Belgrade

14:00 4E-1 DC BREAKDOWN IN VAPOURS OF LIQUIDS
J. Sivos, D. Marić, N. Skoro, G. Malović, Z. L. Petrović
Institute of Physics Belgrade, Belgrade, Serbia

14:15 4E-2 PREBREAKDOWN PROCESSES IN WATER WITH SCREENED ELECTRODES AND POSSIBILITY OF PULSE ELECTRICAL STRENGTH INCREASE
S. M. Korobeynikov, A. V. Melekhov
1Power Engineering, Novosibirsk State Technical University, Novosibirsk, Russian Federation
2Institute of Laser Physics, Novosibirsk, Russian Federation

14:30 4E-3 TWO-DIMENSIONAL SIMULATIONS OF GAS DISCHARGE IGNITION IN SHORT GAPS AT VOLTAGE VALUES BELOW PASCHEN MINIMUM
V. Y. Kozhevnikov, A. V. Kozyrev, L. A. Zjulkova, N. S. Semeniuk
1Faculty of Physics, Tomsk State University, Tomsk, Russian Federation
2Institute of High Current Electronics, Tomsk, Russian Federation

14:45 4E-4 DIELECTRIC WITHSTAND OF MULTI BARRIER ARRANGEMENTS IN AIR SUBJECT TO A LIGHTNING IMPULSE VOLTAGE PULSE
J. Ekeberg
Corporate Research, ABB Schweiz AG, Baden-Daettwil, Switzerland

15:00 4E-5 STUDY ON SPOTS ON ELECTRODES AND POLARITY EFFECT INVERSION IN A NANOSECOND-PULSE GAS BREAKDOWN
C. Zhang, V. F. Tarasenko, R. Wang, T. Shao
1Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
2Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China
3Institute of High Current Electronics, Russian Academy of Sciences, Tomsk, Russia

15:15 4E-6 NANONSECOND HIGH POWER MICROWAVE WINDOW BREAKDOWN DIANOSTIC AND ITS MECHANISM
C. Chang, Y. D. Li, J. Verboncoeur, C. Chen
1Laboratory on Science and Technology of High Power Microwave, Xi'an, Shaanxi, China
2Key Laboratory of Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, Xi'an, Shaanxi, China
3Department of Electrical and Computer Engineering, Michigan State University, East Lansing, Michigan, United States

15:30 4E-7 STREAMER DISCHARGES ALONG DIELECTRIC SURFACES - EXPERIMENTAL INVESTIGATIONS
A. Chvreyev, A. J. M. Pemen, T. Christen
1Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands
2Corporate Research, ABB Switzerland Ltd., Baden, Switzerland

15:45 4E-8 POLARITY EFFECTS ON BREAKDOWN STRENGTH FOR HIGH ENERGY STORAGE LIQUID DIELECTRICS IN MICROWAVE REGIME
W. Zhen, Z. Zicheng, Z. Jiande, S. Zuyin
1College of Optoelectronic Science and Engineering, National University of Defense Technology, Changsha, China
2Military Delegate of Air Force Resident Office in Hunan Province, Changsha, China

Session PL4: Plenary PL4

Tuesday, May 26 17:30-18:30, Citrine II-III
17:30 PL4-1 43 YEARS OF FUN BASIC PLASMA EXPERIMENTS
N. Hershkowitz
University of Wisconsin, Madison, Madison, WI, USA

Session 2P: Vacuum Microelectronics (poster)

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Yasir Alfadhil, QMUL

2P-1 ON THE ROLE OF THE QUANTUM IMAGE FORCES ON THE INITIAL STAGE OF A PICOSECOND GAS DISCHARGE
Y. A. Barengolts1, S. I. Beril1, S. A. Barengolts2
1Shevchenko Dniester State University, Tiraspol, Moldova
2Prohorov General Physics Institute RAS, Moscow, Russian Federation

2P-2 EFFECTS OF CATHODE TEMPERATURE AND GAP SPACING ON DEGRADATION OF THz BUNCHING IN A VACUUM MICRODIODE
A. Valfells, M. Ilkov, K. Torfason, A. Manolescu
School of Science and Engineering, Reykjavik University, Reykjavik, Iceland

2P-3 NUMERICAL STUDY OF A 170-GHz, GRADIENT-CAVITY GYROTRON
Y.-H. Liu1, X. Niu1, H. -F. Li
University of Electronic Science and Technology of China, Chengdu, Sichuan, China

2P-4 IONIC CONDUCTIVITY OF Li0.5-XLa0.5Ti1-XO3 ELECTROLYTE
S. Gulen1, G. Aygun1, M. Ozyuzer1, M. Ozdemir2
1Physics Department, Izmir Institute of Technology, Izmir-Urla, Turkey
2Department of Electrical and Electronics Engineering, Gediz University, Izmir-Seyrek, Turkey

2P-5 CHARACTERIZATION OF VO2 FILMS GROWN BY MAGNETRON SPUTTERING
H. Yuce1, M. Koklu2, G. Aygun1, L. Ozyuzer1
1Department of Physics, Izmir Institute of Technology, Izmir, Turkey
2Department of Electrical-Electronics Engineering, Gediz University, Izmir, Turkey

Session 2P: Non-Fusion Microwave Systems (poster)

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Rosa Letizia, Lancaster University

2P-6 FOUR-CHANNEL SOURCE OF SYNCHRONOUSLY MODULATED SUBGIGAWATT VOLTAGE PULSES
V. V. Rostov1, S. N. Rukin2, K. A. Sharypov2, V. G. Shpak2, S. A. Shunailov2, M. R. Ul'masculov2, M. I. Yalandin2
1High Current Electronics Institute, Tomsk, Russian Federation
2Institute of Electrophysics, Ekaterinburg, Russian Federation

2P-7 LABORATORY STUDY OF AURORAL CYCLOTRON EMISSION MECHANISMS
A. W. Cross1, D. C. Speirs1, K. M. Gillespie1, K. Matheson1, M. King1, S. L. McConville1, A. D. R. Phelps1, C. G. Whyte1, C. W. Robertson1, R. Bingham2, M. E. Koepke3, R. A. Cairns4, I. Vorgul4, B. Kellet4, K. Ronald1
1Department of Physics, Strathclyde University, Glasgow, United Kingdom
2Rutherford Appleton Laboratory, STFC, Oxford, United Kingdom
3Department of Physics, West Virginia University, Morgantown, United States of America
4School of Mathematics and Statistics, St. Andrews University, St. Andrews, United Kingdom
Session 2P: THz Sources, Radiation & Applications (poster)

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Claudio Paoloni, University of Lancaster

2P-8 CHERENKOV MASER EXPERIMENTS BASED ON A TWO DIMENSIONAL (2D) PERIODIC SURFACE LATTICE
A. R. Phipps¹, A. J. MacLachlan¹, C. W. Robertson¹, I. V. Konoplev², K. Ronald¹, A. W. Cross¹, C. G. Whyte¹, A. D. R. Phelps¹
¹Department of Physics, Strathclyde University, Glasgow, United Kingdom
²John Adams Institute, Department of Physics, Oxford University, Oxford, United Kingdom

2P-9 SUB-THZ TRAVELING WAVE AMPLIFIERS BASED ON THE DOUBLE CORRUGATED WAVEGUIDE
C. Paoloni, M. Mineo
Lancaster University, Lancaster, United Kingdom

2P-10 FABRICATION OF HIGH TEMPERATURE SUPERCONDUCTING BI2212 BOLOMETERS FOR TERAHertz SENSING
Y. Demirhan¹, T. Semerci¹, H. Alaboz¹, M. Kurt¹, N. Miyakawa², K. Kadowaki³, L. Ozyuzer³
¹Department of Physics, Izmir Institute of Technology, Urla, 35430, Izmir, TURKEY
²Department of Applied Physics, Tokyo University of Science, Tokyo, JAPAN
³Department of Physics, University of Tsukuba, Tsukuba, JAPAN

Session 2P: Microwave Plasma Interaction (poster)

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Ram Prakash, CSIR-Central Electronics Engineering Research Institute (CSIR-CEERI)

2P-11 PIC-FDTD CODE FOR BEAM-WAVE INTERACTION ANALYSIS IN RIPPLED WALL SLOW WAVE STRUCTURE
N. Pareek¹, R. Prakash¹, U. N. Pal¹, N. Kumar¹, N. Sarkar²
¹Microwave Tubes Division, CSIR-CEERI Pilani, Pilani, Rajasthan, India
²Physics Group, BITS, Pilani, Rajasthan, India

2P-12 PARTICLE BEAM DYNAMICS IN A MAGNETICALLY INSULATED COAXIAL DIODE
V. G. Korenev, I. I. Magda, V. Sinitsin
Div. of Plasma Electronics, Nat'l Sci Center 'Kharkov Inst of Phys and Technology', Nat'l Academy of Sciences, Kharkov, Ukraine

2P-13 A SIMPLIFIED GEOMETRIC APPROACH FOR SPACE CHARGE LIMITING CURRENT ANALYSIS IN INTERACTION REGION
P. Shukla¹,², U. N. Pal¹, R. Prakash¹,²
¹Microwave Tubes Division, CSIR-Central Electronics Engineering Research Institute, Pilani, Rajasthan, India
²Academy of Scientific and Innovative Research, New Delhi, India

2P-14 COMPARISON OF A NUMERICAL AND ANALYTICAL MODEL FOR THE SIMULATION OF THE MODE PROPAGATION IN A MICROWAVE DRIVEN PLASMA DISCHARGE
D. Szeremley¹, T. Mussenbrock¹, R. P. Brinkmann¹, M. Zimmermann², I. Rolles², D. Eremin¹
¹Theoretical Electrical Engineering, Ruhr University Bochum, Bochum, Germany
²Institute of Microwave Systems, Ruhr University Bochum, Bochum, Germany

2P-15 NUMERICAL SOLUTION OF EXACT AXIAL MAGNETIC FIELD FOR PLANAR AND CYLINDRICAL BEAM DRIVEN BACKWARD WAVE OSCILLATOR
T. S. Banerjee¹, A. Hadap², K. T. V Reddy³
2P-16 A SIMPLIFIED 2-D FLUID MODEL OF PLASMA FORMATION UNDER PULSED HIGH POWER MICROWAVES IN ATMOSPHERIC GASES
S. Lin1,2, S. Beeson3, Y. Li1, C. Liu1, A. Neuber2
1Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, Xi'an, China
2Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, Texas, USA

2P-17 ENHANCED MICROWAVE ABSORPTION RATES IN STEALTH PLASMA
M. S. Bawaaneh1, A. M. Al-Khatteeb2
1Dept. of Applied Math, Khalifa University of Science, Technology and Research, Sharjah, United Arab Emirates
2Dept. of Physics, Yarmouk University, Irbid, Jordan

Session 2P: Laser Produced Plasmas (poster)

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Paul Cummings, AFRL

2P-19

2P-20 SELF-FOCUSING OF GAUSSIAN LASER BEAM IN WARM COLLISIONAL PLASMA WITH RAMP-UP DENSITY
M. R. Jafari Milani1, A. R. Nicknam2
1Plasma Physics Research School, Amirkabir University of Technology, Tehran, Iran
2Laser and Plasma Research Institute, Shahid Beheshti University, Tehran, Iran

2P-21 HIGH-SPEED SPECTRALLY-RESOLVED IMAGING OF THE LASER ABLATION PLASMA
S. A. Popov1,2, A. V. Batrakov1,2, V. V. Mataibaev3
1Institute of High Current Electronics, Siberian Branch, Russian Academy of Sciences (IHCE SB RAS), Tomsk, Russian Federation
2National Research Tomsk Polytechnic University, Tomsk, Russian Federation
3Central Research Institute of Engineering of Russian Federation, Moscow Region, Russian Federation

Session 2P: Plasma Material Interaction (poster)

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Rajdeep Singh Rawat, National Institute of Education, Nanyang Technological University

2P-22 SURFACE MODIFICATION OF LDPE FILM BY NANOSECOND-PULSE DIELECTRIC BARRIER DISCHARGE AT ATMOSPHERIC PRESSURE
Y. Ma1,2, C. Zhang1,2, R. Wang1,3, T. Shao2,3
1School of Electrical Engineering, Zhengzhou University, Zhengzhou, China
2Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
3Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China

2P-23 MODIFICATION OF DIFFERENT AREAS OF COPPER SURFACE BY DIFFUSE DISCHARGES AT ATMOSPHERIC PRESSURE
Z. Zhou1,2, C. Cheng1,3, R. Wang1,3, Z. Zhi1,2, T. Shao1,3
1Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
2School of Automation and Electrical Engineering, Nanjing University of Technology, Nanjing, China
3Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China

2P-24 CORROSION RESISTANCE OF SIO2 THIN FILM COATED BIOMEDICAL TI-13NB-13ZR TITANIUM ALLOY BY E-BEAM
K. Ozaltin1, F. Bozduman2, M. Zwołinska1, M. Kulecyk1, A. Oksuz4, L. Oksuz2, M. Lewandowska1
1Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland
2Physics Department, Suleyman Demirel University, Isparta, Turkey
3Institute of High Pressure Physics, Polish Academy of Sciences, Warsaw, Poland
4Chemistry Department, Suleyman Demirel University, Isparta, Turkey

2P-25 A STUDY ON CHARACTERIZATION OF POLYMER-COATED WOOL FABRICS USING PLASMA POLYMERIZATION
E. Eren1, L. Oksuz2, A. I. Komur2, F. Bozduman2, N. Maslakci3, A. Oksuz3
1Hydrogen Technologies Research and Application Center, Suleyman Demirel University, Isparta, Turkey
2Department of Physics, Suleyman Demirel University, Isparta, Turkey
3Department of Chemistry, Suleyman Demirel University, Isparta, Turkey

2P-26 DEPOSITION OF TRANSPARENT SIOXNY THIN FILM ON PET BY PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION
M. Shahpanah, M. Abbasi, H. Mehdikia, B. Shokri
Laser & Plasma Research Institute, Shahid Beheshti University, Tehran, Iran

2P-27 EFFECTS OF HYDROGEN FLUX AND PRESSURE ON THE STRUCTURAL PROPERTIES OF PECVD-SYNTHESIZED CARBON THIN FILMS
F. Rezaei1, M. Abbasi-Firouzjah1, B. Shokri1,2
1Laser & Plasma Research institute, Shahid Beheshti University, Tehran, Iran
2Physics Department, Shahid Beheshti University, Tehran, Iran

2P-28 SYNTHESIS OF FEW-LAYER GRAPHENE FILMS BY CONTROLLABLE C4F8 PLASMA ETCHING SIC
C. Jin1,2, T. Huang1,2, L. Zhuge2,3, X. Wu1,2
1College of Physics, Optoelectronics and Energy & Collaborative Innovation Center of Suzhou Nano Scie, Jiangsu, China
2Key Lab of Advanced Optical Manufacturing Technologies of Jiangsu Province & Key Lab of Modern Optical Technologies of Education Ministry of China, Jiangsu, China
3Analysis and Testing Center, Soochow University, Jiangsu, China

2P-29 6C-8 GRAPHENE SYNTHESIS BY PECVD
Physics Department, Suleyman Demirel University, Isparta, Turkey

2P-30 VACUUM ARC EXPLOSIVE CELLS
M. M. Tsventoukh
Lebedev Physical Institute RAS, Moscow, Russian Federation

2P-31 IMPROVING PHOTOVOLTAIC EFFICIENCY BY RF ROTATING PLASMA MODIFIED NANOTUBES
S. E. Ela1, A. Verlek2, F. Bozduman3, M. Kiristi4, M. Remskar2, L. Oksuz2, A. Uygun Oksuz4
1Solar Energy Institute, Ege University, İzmir, Turkey
2Solid State Department, Jozef Stefan Institute, Ljubljana, Slovenia
3Department of Physics, Suleyman Demirel University, Isparta, Turkey
4Department of Chemistry, Suleyman Demirel University, Isparta, Turkey

2P-32 SYNTHESIS AND ANALYSIS OF TITANIUM NITRIDE THIN FILM IN ATMOSPHERIC THERMAL PLASMA TORCH
J. Fathi, S. Mohsenian, M. Shafie, H. Mehdikia, B. Shokri
Plasma Engineering, Plasma Engineering, Laser and Plasma Institution, Tehran, Iran

2P-33 NITRIDING OF SUPER-FERRITIC STAINLESS STEEL BY PLASMA IMMERSION ION IMPLANTATION IN RADIO FREQUENCY AND ECR-MICROWAVE PLASMA SYSTEM
H. Bhuyan1, S. Mandi2, M. Favrè3, M. Cisternas1, A. Henriquez2, E. Wyndham1, D. Manova3, M. Walczak2
1Institute of Physics, Pontificia Universidad Catolica de Chile, Santiago, Chile
2Leibniz-Institut für Oberflächenmodifizierung, Leipzig, Germany
3Department of Mechanical and Metallurgical Engineering, Pontificia Universidad Catolica de Chile, Santiago, Chile
2P-35 STUDIES OF PULSED PLASMA-ION STREAMS DURING THEIR FREE PROPAGATION AND INTERACTION WITH SIC-TARGETS
Plasma Research Division TJ5, National Centre for Nuclear Research (NCBJ), 05-400 Otwock, Poland

2P-36 PARALLEL AND SEQUENTIAL TESTS OF RADIATION RESISTANCE OF DOUBLE FORGED TUNGSTEN IN VARIOUS PLASMA DEVICES
E. V. Demina, V. A. Gribkov, M. D. Prusakova, S. A. Maslyaev, V. N. Pimenov, A. V. Voronin, I. E. Garkusha
A.A.Baikov Institute of Metallurgy and Material Sciences RAS, Moscow, Russian Federation
Institute of Plasma Physics and Laser Microfusion, Warsaw, Poland
A.F.Ioffe Physical-Technical Institute, St. Petersburg, Russian Federation
Institute of Plasma Physics, Kharkov, Ukraine
Tallinn University, Tallinn, Estonia

2P-37 IMPURITY ISSUES IN MATERIAL IRRADIATION STUDIES IN PLASMA FOCUS DEVICE
K. S. Tan, P. Lee, S. V. Springham, T. L. Tan, R. S. Rawat
Natural Sciences and Science Education, National Institute of Education, Nanyang Technological University, Singapore, Singapore

2P-38 DYE-SENSITIZED SOLAR CELL PRODUCED WITH PLASMA COATING METHOD
Faculty of Arts and Science, Department of Physics, Suleyman Demirel University, Isparta, Turkey
Faculty of Arts and Science, Department of Chemistry, Suleyman Demirel University, Isparta, Turkey

Session 2P: Plasmas for Lighting, Displays, and Microdischarges (poster)

Poster Session
Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Juergen Kolb, INP Greifswald

2P-39 PLASMA TREATMENT ON INDIUM-TIN-OXIDE ANODE SURFACE FOR ORGANIC LIGHT EMITTING DIODES
Department of Physics, Suleyman Demirel University, Isparta, Turkey
Department of Chemistry, Suleyman Demirel University, Isparta, Turkey

2P-40 STUDIES ON BIOCIDAL ACTIVITY OF AN UV-C DBD LAMP
DPHE, Universite de Toulouse, Centre Universitaire - J. F. Champollion, Albi, France
CEMES, Universite de Toulouse, Toulouse, France
Department of Chemistry, University of Sao Paulo, FFCLRP, Ribeirao Preto-SP, Brazil

2P-41 RADIATION CALCULATION IN ELECTRODED AND MICROWAVE HID LAMPS
M. Hamady, G. Zissis
Faculty of Sciences (I), Department of Physics, Lebanese University, EL-Hadath, Beirut, Lebanon
Universite de Toulouse, UPS, INPT, LAPLACE (Laboratoire Plasma et Conversion d’Energie), 118 route de Narbonne, F-31062 Toulouse Cedex9, France

2P-42 THREE-DIMENSIONAL MODELLING OF SELF-ORGANIZATION PHENOMENA IN CATHODE BOUNDARY LAYER DISCHARGES USING COMSOL MULTIPHYSICS
M. S. Bieniek, P. G. C. Almeida, M. S. Benilov
Fisica, University of Madeira, Funchal, Portugal

Session 2P: Plasma Thrusters (poster)

Poster Session
Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Laifa Boufendi, GREMI, Orleans University

**2P-43 EXPERIMENTAL STUDY ON LOW-FREQUENCY OSCILLATION OF THE PLUME DIVERGENCE ANGLE OF HALL THRUSTERS**
J. Li, L. Wei, L. Han, D. Yu  
*Laboratory of Plasma Propulsion, Harbin Institute of Technology, Harbin, China*

**2P-44 FORMATION OF MULTIPLE AXIAL POTENTIAL STRUCTURES IN EXPANDING RF PLASMAS**
S. Ghosh, P. K. Chattopadhyay, J. Ghosh, D. Bora  
*Institute for Plasma Research, Bhat, Gandhinagar-382428, India, Gujarat, India*

**2P-45 HOLLOW CATHODES FOR HALL THRUSTERS: MODELLING AND SCALING TRENDS**
G. Sary, L. Garrigues, J. P. Boeuf  
*CNRS/Laplace, Toulouse, France*

**2P-46**

Session **2P: Plasma Medicine (poster)**

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Xinpei Lu, Huazhong University of Science and Technology, China

**2P-47 EFFECTS OF AGED PAM ON CANCER CELLS**
M. Laroussi, S. Mohades, N. Barekzi, H. Razavi  
*Old Dominion University, Norfolk, VA, United States*

**2P-48 USING FLUORESCENCE TO MEASURE HYDROGEN PEROXIDE CONCENTRATIONS IN PLASMA ACTIVATED MEDIA**
J. Sears, S. Mohades, H. Razavi, M. Laroussi  
*Old Dominion University, Norfolk, VA, United States*

**2P-49 APPLICATION OF UNDERWATER ELECTRIC BARRIER DISCHARGE AS A WASHING SYSTEM TO INACTIVATE SALMONELLA TYPHIMURIUM ON PERILLAR LEAVES**
Y. J. Kim, J. S. Kim, E. J. Lee  
*Research Group of Food Safety, Korea Food Research Institute, Seongnam, South Korea*

**2P-50 ATMOSPHERIC PEN PLASMA STERILIZING HELP PAPER SURFACE**
F. Bozduman, A. I. Komur  
*Science, Isparta, Turkey*

**2P-51 INHIBITION BY LOW-TEMPERATURE PLASMA JET ON THE VIABILITY OF HEPATOMA CELLS AND ITS MECHANISM**
X. -M. Shi1, G. -M. Xu2, S. -L. Chen3, C. -W. Yao2, W. -L. Liao2, J. -F. Cai1, G. -J. Zhang2  
1School of Public Health, Xi'an Jiaotong University, Xi'an, Shaanxi, China  
2State Key Lab of Electrical Insulation & Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China

**2P-52 A BATTERY-OPERATED ATMOSPHERIC-PRESSURE PLASMA ROD FOR BIOMEDICAL APPLICATIONS**
X. Lu, X. Pei  
*Huazhong University of Science and Technology, China, WuHan, China*

**2P-53 COLD ATMOSPHERIC PRESSURE PLASMA JET FOR TOOTH ROOT CANAL DISINFECTION**
P. Shali1, P. Asadi1, M. Asna Ashari2, B. Shokri1,3  
1Laser & Plasma Research Institute, Shahid Beheshti University, Tehran, Iran  
2Department of Endodontics, Shahid Beheshti University of Medical Sciences, Tehran, Iran  
3Physics Department, Shahid Beheshti University G.C., Evin, Tehran, Iran
2P-54 CHARACTERISTICS OF DIABETIC WOUND HEALING RATE AND ENZYMES ACTIVITY AFTER ATMOSPHERIC PRESSURE PLASMA TREATMENT
P. Asadi1, P. Shali1, M. Bigdeli2, B. Shokri1
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2Zoodynamics Department, Shahid Beheshti University, Tehran, Iran
3Physics Department, Shahid Beheshti University, Tehran, Iran

2P-55 THE EFFECT OF ATMOSPHERIC PRESSURE PLASMA JET ON MACROPHAGE ACTIVATION
E. -J. Lee1, J. -S. Kwon1, J. -Y. Om1, J. -W. Yu1, E. H. Choi1, K. -N. Kim1, K. -M. Kim1
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2BK21 PLUS Project, Yonsei University College of Dentistry, Seoul, South Korea
3Microbiology, Yonsei University College of Medicine, Seoul, South Korea
4Plasma Bioscience Research Center, Kwangwoon University, Seoul, South Korea

2P-56 THE EFFECT OF NON-THERMAL ATMOSPHERIC PRESSURE MICROWAVE-PULSED PLASMA ON STAPHYLOCOCCUS AUREUS AND FIBROBLAST L929 CELLS
S. -H. Seo1, S. -H. Uhm1, J. -S. Kwon1, K. -N. Kim1, J. J. Choi1, E. H. Choi3, G. Park3, K. -M. Kim1
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2P-57 APPLICATIONS OF NON-THERMAL ATMOSPHERIC PRESSURE PLASMA IN PREVENTION AND REGENERATION OF ORAL DISEASES
S. -H. Uhm1, J. -S. Kwon1, E. -J. Lee1, J. -H. Lee1, E. H. Choi1, K. -M. Kim1, K. -N. Kim2
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2P-58 RF-TITANIUM DIOXIDE PLASMA MODIFIED GRAPHENE COATED ELECTRODES FOR PROTEIN SENSING
F. Kuralay1, S. Tunc1, F. Bozduman2, A. Uygun Oksuz2, L. Oksuz2
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2Department of Physics, Suleyman Demirel University, Isparta, Turkey

2P-59 MEASUREMENT OF STERILIZATION ABILITY AND REACTIVE SPECIES OF VARIOUS PLASMA BUBBLED-UP WATER
T. Kobayashi1, Y. Watanabe1, T. Oshita1, T. Takamatsu1, H. Matsubara1, S. Oshima1, T. Kamiya1, Y. Matsumura1, H. Miyahara1, A. Iwasawa1, T. Azuma1, A. Okino1
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2Department of Internal Medicine, Kobe University, Kobe, Japan
3Meiji Co. Ltd., Odawara, Japan
4Department of Bioengineering, Tokyo Institute of Technology, Yokohama, Japan

2P-60 THE TREATMENT WITH NON-THERMAL PLASMA ON HACAT HUMAN KERATINOCYTES CAN BLOCK TNF-α AND IFN-γ MEDIATED PRO-INFLAMMATORY GENE EXPRESSIONS
J. -H. Choi1, J. -W. Hong2, H. -J. Lee3, G. -C. Kim1
1Department of Oral Anatomy and Cell Biology, School of Dentistry, Pusan National University, Yang-san, South Korea
2Department of Internal Medicine, School of Korean Medicine, Pusan National University, Yang-san, South Korea
3Department of Electrical Engineering, Pusan National University, Busan, South Korea

Session 2P: High Pressure and Thermal Plasma Processing (poster)

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Tamer Akan, Univ. of Osmangazi

2P-61 EFFECTS OF GEOMETRY OF AUTO-EXPANSION VOLUME ON SF6 ARC BEHAVIOUR
2P-62 PULSED PLASMA PROCESSING OF INSTRUMENTAL STEELS
A. Zhukeshov, A. Amrenova, A. Gabdullina, Z. Moldabekov, S. Beysenbaev, K. Serik
Plasma physics, Science Research Institute of Experimental and Theoretical Physics, Almaty, Kazakhstan

2P-63 A METHOD TO REALIZE MULTIPOINT IGNITION WITH MICROWAVE PLASMA
L. Hou, G. Zhang
Department of Electrical, Tsinghua University, Beijing, China

2P-64 AN EXPERIMENTAL AND COMPUTATIONAL STUDY OF THE INTERACTION BETWEEN THE JET OF AN ICP TORCH AND A CYLINDRICAL SUBSTRATE
M. Boselli, V. Colombo, M. Fiorini, E. Ghedini, M. Gherardi, P. Sanibondi, A. Stancampiano, E. Traldi
Department of Industrial Engineering, Alma Mater Studiorum - University of Bologna, Bologna, Italy

2P-65 A NOVEL STRAIN GAUGE APPLIED TO STRONG ELECTROMAGNETIC FIELD
Q. Liu, W. Ding, J. Wu, R. Han, H. Zhou
Xi'an Jiaotong University, Xi'an, China

2P-66 STUDY OF ARC PLASMA JET EFFECTIVE PARAMETERS (POWER AND FLOW RATE)
H. Mehdi kia, M. Shafiae, M. Shahpanah, M. R. Khani, B. Shokri
Laser & Plasma Research Institute, Shahid Beheshti University, Tehran, Iran

2P-67 THERMAL INSTABILITY IN NON-UNIFORMITIES ON THE SURFACE OF CATHODES OF VACUUM ARCS
M. S. Benilov¹, M. D. Cunha¹, W. Hartmann², N. Wenzel²
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²Siemens AG, Corporate Technology, Erlangen, Germany

2P-68 FABRICATION AND CHARACTERIZATION OF INDIUM TIN OXIDE AND BILAYER MOLYBDENUM THIN FILMS ON GLASS AND POLYIMIDE
M. Kurt¹, F. G. Akca¹, M. D. Yaman¹,², L. Ozyuzer¹,²
¹Department of Physics, Izmir Institute of Technology, Izmir, Turkey
²Teknoma Technological Materials Ltd., Izmir, Turkey

2P-69 CLEANING AND MODIFICATION OF THE NEAR-SURFACE LAYERS OF METALS UNDER THE ACTION OF RUNAWAY ELECTRON PREIONIZED DIFFUSE DISCHARGE
V. F. Tarasenko, M. V. Erofeev, M. A. Shulepov
Dep. Optical Radiation Laboratory, High Current Electronics Institute, Tomsk, Russian Federation

2P-70 PHYSICS OF SPOTLESS MODE ON CATHODES OF METAL VAPOR ARCS
M. S. Benilov, L. G. Benilova
Departamento de Fisica, Universidade da Madeira, Funchal, Portugal

Session 2P: Partially ionized Plasmas (poster)

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Vasily Y Kozhevnikov, Tomsk State University, Tomsk, Russian Federation

2P-71 RUNAWAY ELECTRONS PREIONIZED DIFFUSE DISCHARGES IN SF6, ARGON, AIR AND NITROGEN
V. F. Tarasenko, D. V. Beloplotov, M. I. Lomaev, D. A. Sorokin
Dep. Optical Radiation Laboratory, High Current Electronics Institute, Tomsk, Russian Federation

2P-72 2P-73 BOUNDARY CONDITIONS AT THE PLASMA-CATHODE INTERFACE IN HIGH-PRESSURE ARCS
N. A. Almeida¹, M. S. Benilov¹, L. G. Benilova¹, M. Baeva²
¹Departamento de Fisica, CCEEE, Universidade da Madeira, Funchal, Portugal
²Leibniz Institute for Plasma Sci. Technol, Greifswald, Germany
2P-74 GASEOUS BREAKDOWN IN THE TOWNSEND DISCHARGE  
F. Ghaleb, D. A. Aid, S. Saidi, H. Loukil, A. Belasri  
Laboratory of Plasma Physics, Conducting Materials and their Applications Faculty of Physics, Department of Physics  
Energy, El M'Naour B.P. 1505 USTMB, Oran, Algeria

2P-75 MODIFICATION OF PASCHEN’S LAW FOR THE NONUNIFORM ELECTRIC FIELD BETWEEN TWO PLANE-PARALLEL ELECTRODES  
X. Wang, Y. Fu, H. Luo, X. Zou  
Department of Electrical Engineering, Tsinghua University, Beijing, China

2P-76 THE INFLUENCE OF AMBIPOLAR ELECTRIC FIELD ON THE EDF FORMATION AND THE ELECTRON PROCESSES IN PARTIALLY IONIZED PLASMAS  
A. A. Kudryavtsev1, M. V. Krasilnikov1, K. D. Kapustin2  
1Physics, St. Petersburg State University, St. Petersburg, Russian Federation  
2Physics, St. Petersburg ITMO University, St. Petersburg, Russian Federation

2P-77 CONTROL OF PARTICLES DISTRIBUTION FUNCTIONS BY MAGNETIC FIELD IN HELICON PLASMA DISCHARGE  
T. Huang1,2, C. Jin1,2, J. Yu1,2, L. Zhuge2,1, X. Wu1,2  
1Soochow University, College of Physics, Optoelectronics and Energy & Collaborative Innovation Center of Suzhou Nano Science and Technology, Suzhou, China  
2Soochow University, Key Lab of Advanced Optical Manufacturing Technologies of Jiangsu Province & Key Lab of Modern Optical Technologies of Education Ministry of China, Suzhou, China

2P-78 STUDY ON THE PARAMETERS OF BARRIER DISCHARGE PLASMA IN A GAS PHASE HYDROCARBON MIXTURE OF ATMOSPHERIC PRESSURE UNDER EXTERNAL HEATING OF DISCHARGE AREA  
M. V. Zhuravlev, A. S. Kovantsev, G. E. Remnev, B. G. Shubin  
Tomsk Polytechnic University, Tomsk, Russian Federation

2P-79 DYNAMIC BEHAVIORS OF HELIUM ATMOSPHERIC PRESSURE PLASMA JET INVESTIGATED BY STEAK IMAGES  
W. Ning, L. Wang, S. Jia, C. Wu  
State Key Laboratory of Electrical Insulation and Power Equipment, Xi’an Jiaotong University, Xi’an, China

2P-80  

2P-81 EQUATION OF STATE OF DENSE KRYPTON PLASMA IN THE PARTIAL IONIZATION REGIME  
Q. F. Chen, J. Zheng, Y. J. Gu, L. C. Cai  
Institute of Fluid Physics, CAEP, Mianyang, China

2P-82 THE SAG OF THE POTENTIAL IN LOW PRESSURE REFLEX DISCHARGE  
G. Liziakin1, A. Gavrikov1, V. Smirnov1, R. Usmanov2, A. Samokhin1  
1JIHT RAS, Moscow, Russian Federation  
2Moscow Institute of Physics and Technology (State University), Dolgoprudny, Moscow Region, Russian Federation

2P-83

Session 2P: Space Plasmas (poster)

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Peter H Yoon, University of Maryland, College Park

2P-84 ELECTROSTATIC EXCITATIONS IN NON-MAXWELLIAN SPACE PLASMAS  
S. Ali  
Theoretical Physics Department, National Centre for Physics, Quaid-e-Azam University, Islamabad, Pakistan

2P-85 ROLE OF CIRCULARLY POLARIZED DISPERSIVE ALFVEN WAVE IN SOLAR WIND TURBULENCE
2P-86 EFFECTS OF ELECTRON SUPRATHERMALITY AND POSITRON DENSITY ON ION ACOUSTIC DRESSED SOLITONS IN AN ELECTRON-POSITRON-ION PLASMA
R. Amour, M. Tribeche
Theoretical Physics Laboratory, Plasma Physics Group, Faculty of Sciences-Physics, University of Bab-ezzouar, USTHB, Algiers, Algeria

2P-87 PROPAGATION OF DUST ACOUSTIC WAVES IN A DUSTY PLASMA IN THE PRESENCE OF ION NONTHERMALITY AND BACKGROUND NONEXTENSIVITY
M. Benzekka1,2, M. Tribeche
1Theoretical Physics Laboratory, Plasma Physics Group, USTHB, Algiers, Algeria
2Department of Physics, ENS-Vieux Koub, Algiers, Algeria

2P-88 DUST-ION-ACOUSTIC SOLITARY WAVES IN A DEGENERATE PAIR PLASMA
M. Alimohamadi
Department of Physics, Shahid Rajaee Teacher Training University, Tehran, Iran

2P-89 MODIFIED JEANS INSTABILITY OF MAGNETIZED QUANTUM VISCOUS PLASMA WITH ROTATION
S. Jain1, P. Sharma2, R. K. Chhajlani3
1Physics Department, Ujjain Engineering College, M.P., India
2Physics Department, Ujjain Engineering College, Ujjain, M.P., India
3School of Studies in Physics, Vikram University, M.P., India

2P-90 MAXIMUM MAGNETIC FIELD IN COSMIC OUTFLOWS SYSTEMS
K. Hajisharifi, H. Mehdian, A. Hasanbeigi
Institute for Plasma Research, Kharazmi University, Tehran, Iran

Session 2P: Plasma Chemistry (poster I)

Poster Session
Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Zhi Fang, School of Automation and Electrical Engineering, Nanjing Technology University

2P-91 CHARACTERISTICS OF ATMOSPHERIC-PRESSURE CAPACITIVE DISCHARGE OPERATING ON PURE WATER-VAPOUR AND MIXTURE WITH HELIUM
Z. Kechidi1, A. H. Bellbachir1, M. Announ1
1Faculty of Sciences and Technology, LREA Laboratory University of Medea, Medea, Algeria
2Faculty of Physics, USTO, Laboratory of Analysis and Application of Radiations (LAAR), Oran, Algeria
3Faculty of Sciences and Technology, Laboratory of Materials and Environment, Medea, Algeria

2P-92 MULTI-WALL CARBON NANOTUBE FUNCTIONALIZED WITH CDS NANOPARTICLE BY PLASMA DEPOSITION METHOD
E. Akbarnejad1, Z. Ghorannevis2, M. Ghorannevis1
1Plasma Physics Research Centre, Science and Research Branch, Islamic Azad University, Tehran, Iran
2Department of Physics, College of Basic Sciences, Karaj Branch, Islamic Azad University, Karaj, Iran

2P-93 CONTROL OF TRIBOLUMINUM CASTANEUM IN STORED WHEAT BY CORONA DISCHARGE TREATMENT
M. Amini, M. Ghoranneviss, H. Nikmaram
Plasma Physics Research Centre, Science and Research Branch, Islamic Azad University, Tehran, Iran

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2P-95 THE INFLUENCE OF PLASMA TREATMENT ON THE PROPERTIES OF CARBON AND GRAPHENE BASED MATERIAL
V. Shakeri Siavashani1, N. Ucar1, N. Demirel1, N. Yavuz2, A. Onen3, L. Oksuz4
1Textile Engineering, Istanbul Technical University, Istanbul, Turkey
2Institute of Energy, Istanbul Technical University, Istanbul, Turkey
2P-96 RF ROTATING PLASMA MODIFIED OF CHITOSAN WITH 3,4-ETHYLENEDIOXYTHIOPHENE, THIOPHENE AND FURAN: INVESTIGATION OF NANOFIBERS IN-SITU WITH QUARTZ CRYSTAL MICROBALANCE (QCM) AND ELECTROSPINNING SYSTEM

N. Nohut Maslakci, A. Oksuz
Department of Chemistry, Suleyman Demirel University, Isparta, Turkey

2P-97 ELECTROSPUN FIBERS COATED ONTO PLASMA MODIFIED AND NONMODIFIED WOOLS

N. Nohut Maslakci, A. Oksuz, L. Oksuz, F. Bozduman, E. Eren
Department of Chemistry, Suleyman Demirel University, Isparta, Turkey
Department of Physics, Suleyman Demirel University, Isparta, Turkey
Hydrogen Technologies Research and Application Center, Suleyman Demirel University, Isparta, Turkey

2P-98 NANOPATTERNS BASED ON PLASMA ETCHING FOR NANOSTRUCTURED DEVICE APPLICATIONS

M. Kus, S. Buyukelebi, F. Ozel, K. Kara, N. M. Varal, A. Erdogan, M. Ersoz
Selcuk University, Konya, Turkey
Karamanoglu Mehmetbey University, Karaman, Turkey

2P-99 SYNTHESIS OF MOS2 NANOTUBE/POLYTHIOPHENE COMPOSITE BY ATMOSPHERIC PRESSURE RF GLOW PLASMA

B. Esencan Turkaslan, S. Dikmen, L. Oksuz, A. Oksuz
Department of Chemical Engineering, Suleyman Demirel University, Isparta, Turkey
Department of Chemistry, Suleyman Demirel University, Isparta, Turkey
Department of Physics, Suleyman Demirel University, Isparta, Turkey

2P-100 PLASMA MODIFICATION OF EXPANDED PERLITE PARTICLES ON A ROTATING BED PECVD SYSTEM

M. Gursoy, M. Karaman
Selcuk University, Konya, Turkey

2P-101 PLASMA POLYMERIZED ELECTROSPUN PEDOT-S NANOFIBERS OBTAINED BY IN-SITU RADIO FREQUENCY PLASMA TREATMENT

C. Dulgerbaki, M. Kiristi, F. Bozduman, S. Ahmad, L. Oksuz, A. Uygun Oksuz
Chemistry, SDU, Isparta, Turkey
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Polymer Chemistry, Max Planck Institute, Mainz, Germany

2P-102 THEORETICAL KINETICS INVESTIGATION OF KRYPTON DIELECTRIC BARRIER DISCHARGE FOR EXCIMER LAMP

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Laboratoire de Physique des Plasmas, Universitats Des Sciences et de la Technologie d'Oran Laboratoire de Physique des Plasmas, Oran, Algeria

2P-103 PLASMA-CATALYTIC OXIDATION OF DILUTED FORMALDEHYDE OVER CU-CE OXIDE CATALYSTS

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

2P-104 PLASMA-CATALYTIC DRY REFORMING OF METHANE OVER AL2O3 SUPPORTED METAL CATALYSTS

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

2P-105 DETERMINING THE CONDUCTIVITY BEHAVIOURS OF PLAZMA POLYMERIZED PPY/MNO2 COMPOSITE AGAINST TEMPERATURE

S. Sen Gursoy, U. Yalcin, S. Cogal, G. Celik Cogal
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2P-106 RF-ROTATING PLASMA MODIFICATION OF GRAPHENE WITH POLY(3,4-ETHYLENEDIOXYTHIOPHENE)
S. Cogal¹, F. Bozduman², A. Oksuz³, M. Omastova⁴
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2P-107 PLASMA MODIFIED CHITOSAN/N-ACETYL-2-PYRAZOLINE DERIVATIVE NANOFIBERS
G. Turgut Cin¹, S. Demirel Topel¹, N. Nohut Maslakcı², E. Eren³, A. Uygun Oksuz²
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2P-108 STRUCTURAL, THERMAL AND MORPHOLOGICAL PROPERTIES OF PLASMA POLYMERIZED PPY/MNO₂ COMPOSITE
S. Sen Gursoy¹, G. Celik Cogal², S. Cogal³, F. Bozduman⁴
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2P-109 MODIFICATION OF CARBON NANOTUBE WITH POLY(3,4-ETHYLENEDIIOXYTHIOPHENE) BY USING RF ROTATING PLASMA
S. Cogal¹, F. Bozduman², G. Yurdabak³, A. Oksuz³
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²Department of Physics, Suleyman Demirel University, Isparta, Turkey
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2P-110 MODIFICATION OF CARBON NANOTUBE WITH POLY(3-HEXYLTHIOPHENE) BY USING RF ROTATING PLASMA
G. Celik Cogal¹, S. Cogal², A. Oksuz³
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Session 2P: Switching

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Rina Baksht, Tel Aviv University

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2P-112 EFFECT OF POLYMER BASED NANOCOMPOSITES ON THE ELECTRICAL ARCS IN AIR
V. Doddapaneni¹,², A. Bissal², J. Magnusson², R. Gati³, H. Edin³, T. S. Muhammet¹
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2P-113 SPATIAL DISTRIBUTION OF CHARGED PARTICLE EMISSION IN A COPPER-CHROMIUM HIGH-CURRENT VACUUM ARC
INP Greifswald, Greifswald, Germany

2P-114 SMALL-SIZE CONTROLLED VACUUM SPARK-GAP IN AN EXTERNAL MAGNETIC FIELD
A. N. Dolgov, S. G. Davydov, R. K. Yakubov
All-Russia Research Institute of Automatics (VNIIA), Moscow, Russian Federation

2P-115 LASER TRIGGERED DISCHARGE GAP
V. O. Revazov, S. G. Davydov, A. N. Dolgov, V. P. Selezev, R. K. Yakubov
All-Russia Research Institute of Automatics (VNIIA), Moscow, Russian Federation
2P-116 ELECTRODE EROSION CHARACTERISTICS OF REPETITIVE GAS SPARK SWITCH UNDER AIRTIGHT AND LARGE CURRENT CONDITIONS
J. Wu, R. Han, Y. Liu, H. Zhou, A. Qiu
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2P-117 EFFECT OF DIFFERENT ELECTRODE MATERIALS ON ELECTRODE EROSION CHARACTERISTICS AND FAILURE MODES OF GAS SPARK SWITCH
J. Wu, R. Han, Q. Liu, Y. Jing, Y. Wang, A. Qiu
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2P-118 ELECTRICALLY EXPLODED OPENING SWITCHES FOR HIGH-CURRENT EXPLOSIVE MAGNETIC FLUX COMPRESSION GENERATORS
A. M. Buyko
Russian Federal Nuclear Center - All Russian Scientific Research Institute of Experimental Physics, Sarov, Russian Federation

2P-119 EXPERIMENTAL AND NUMERICAL STUDY OF A WIRE-EXPLOSION-POS DYNAMICS
S. I. Tkachenko1,2, V. A. Gasilov3, G. A. Bagdasarov1, O. G. Olkhovskaya3, G. I. Dolgachev4, Y. G. Kalinin4, A. A. Shvedov4
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2P-120 CHARACTERISTICS OF MICROSECOND-PULSE GLIDING DISCHARGES IN AIR FLOW
Z. Niu1,2, C. Zhang2,3, R. Wang2,3, K. Zhang2, T. Shao2,3
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2P-121 LOW INDUCTANCE SWITCHES FOR PULSED MAGNETIZATION OF HOT PLASMAS
J. Larour1, P. Auvray1, S. D. Moustasizis2, P. Lalouissi3
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Session 2P: Generators & Networks (poster)

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Keiichi Takasugi, Nihon University

2P-122 DEVELOPMENT OF A HIGH PERFORMANCE TIGGER GENERATOR WITH LOW JITTER, FAST RISE TIME
W. Ding, Y. Wang, Y. Gou, X. Zhong, R. Han, Y. Jing, J. Xia
Xi'an Jiaotong University, Xi'an, China

2P-123 GENETIC ALGORITHM APPLIED TO PROGRAMMABLE CURRENT ADDER
Y. Gou1, W. Ding1, Y. Wang1, Y. Jing1, R. Han1, G. Wang2, X. Chen2
1Xi'an Jiaotong University, Xi'an, China
2China Academy of Engineering Physics, Mianyang, China

2P-124 DEVELOPMENT ON ROGOWSKI COIL MEASURING NANOSECONDS RISETIME MEGAMPERE CURRENTS
Y. Jing, W. Ding, R. Han, H. Zhou, Q. Liu, J. Wu, Y. Gou, Y. Wang
State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, China

2P-125 COMPARISON BETWEEN EXPERIMENT AND 3-DIMENTIONAL ELECTROMAGNETIC SIMULATION OF MONOLITHIC RADIAL TRANSMISSION LINES FOR Z-PINCH
C. Mao, X. Zou, X. Wang
Department of Electrical Engineering, Tsinghua University, Beijing, China
Session 2P: Compact Pulsed Power and applications (poster)

Poster Session

Tuesday, May 26 16:00-17:30, Citrine I

Session Chair: Keiichi Takasugi, Nihon University

2P-126 COMPARATIVE RESEARCH OF BIG SIZE MC & MD CATHODES
S. Y. Sokovnin1, M. E. Balezin2

1Experimental Physics Department, Ural Federal University, Yekaterinburg, Russian Federation
2ElectroPhysics Technology Group, IEP UB RAS, Yekaterinburg, Russian Federation

2P-127 FEW SECONDS AND ~40KV COMPACT HIGH VOLTAGE PULSE POWER SUPPLY
S. C. Kim, H. Heo, H. S. Gong, S. H. Nam
Pohang Accelerator Laboratory, Pohang, South Korea

2P-128 A COMPACT HIGH-VOLTAGE, SPIRAL STRIP-LINE PFN TRIGGER GENERATOR
J. M. Koutsoubis, P. G. Pouraimis, A. P. Platis, C. X. Manasis
Electrical Engineering, Technological Educational Institute (TEI) of Sterea Ellada, in Chalkida, Chalkis, Euboea, Greece

2P-129 ULTRAFAST OF-THE-SHELF V-DOT PROBES: THEORY AND EXPERIMENTATION
B. M. Novac1, L. Pecastaing2, M. Wang1, A. deFerron2

1School of Electronic, Electrical and Systems Engineering, Loughborough University, Loughborough, United Kingdom
2SIAME, Pau University, Pau, France

2P-130 PERFORMANCE OF THE TPS PULSE MAGNETS
National Synchrotron Radiation Research Center, Hsinchu, Taiwan

2P-131 ALL SOLID STATE PULSED POWER SOURCE BASED ON PHOTOCONDUCTIVE SWITCHES:
FROM MODULE TO GENERATOR
J. Yuan, W. Xie, H. Liu, X. Ma, P. Jiang, L. Wang, J. Liu, H. Li
Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, China

2P-132 Status of MJ Power Conditioning System for High Power Laser Facility
Z. Qi, D. Chen, G. Lai, L. Guo, H. Tang, Y. Luan, D. Li, P. Zhou, Y. Li
China Academy of Engineering Physics, Mianyang, Sichuan, China

2P-133 WIDEBAND ROGOWSKI COIL BASED ON LOW RESISTANCE INTEGRATING RESISTOR
R. Han, J. Wu, Y. Jing, Q. Liu, H. Zhou, W. Ding
State Key Laboratory of Electrical Insulation for Power Equipment, Xi'an Jiaotong University, Xi'an, China

2P-134 COMPACT SEMICONDUCTOR-BASED MARX GENERATOR DESIGN FOR MICROSECOND
PULSED ELECTRON BEAM DEVICES
G. Mueller, M. Sack
Institute for Pulsed Power and Microwave Technology, Karlsruhe Institute of Technology, Karlsruhe, Germany

2P-135 COMPACT EQUIPMENT USED FOR UNDERWATER ELECTRICAL WIRE EXPLOSION
R. Han, J. Wu, H. Zhou, Y. Chao, Q. Qiu, X. Li
Xi'an Jiaotong University, Xi'an, Shaanxi, China

Session PL5: Plenary PL5

Wednesday, May 27 09:00-10:00, Citrine II-III

Session Chair: Don Shiffler, AFRL

9:00 PL5-1 MITIGATION OF RAYLEIGH-TAYLOR INSTABILITY IN HIGH-ENERGY-DENSITY
PLASMAS
A. L. Velikovich
Naval Research Lab, Washington DC, USA
Session 5A: Computational Plasma Physics

Wednesday, May 27 10:30-13:00, Opal I

Session Chair: Anatoly A Kudryavtsev, St. Petersburg State University

10:30 5A-1 AN NUMERICAL APPROACH FOR SIMULATIONS OF THE MODE PROPAGATION IN A MICROWAVE DRIVEN PLASMA DISCHARGE
D. Szeremley1, T. Mussenbrock1, R. P. Brinkmann1, M. Zimmermanns2, I. Rolles2, D. Eremin1
1Theoretical Electrical Engineering, Ruhr University Bochum, Bochum, Germany
2Institute of Microwave Systems, Ruhr University Bochum, Bochum, Germany

10:45 5A-2 IMPROVEMENT OF THE HYBRID MODEL FOR GLOW DISCHARGE THROUGH INCORPORATION OF THE ELECTRON ENERGY BALANCE EQUATION
E. Eylenceoglu1, I. Rafatov1, A. Kudryavtsev2
1Physics, Middle East Technical University, Ankara, Turkey
2Physics, Saint Petersburg State University, St. Petersburg, Russia

11:00 5A-3 THREE-DIMENSIONAL, HIGH-ORDER SEMI-IMPLICIT PARTICLE-IN-CELL SOLVER BASED ON A DISCONTINUOUS GALERKIN SPECTRAL ELEMENT METHOD
P. Ortwein, S. Keller, C. -D. Munz
Institute of Aerodynamics and Gas Dynamics, University of Stuttgart, Stuttgart, Germany

11:15 5A-4 COMPLEX-FREQUENCY SHIFTED PERFECTLY MATCHED LAYERS WITH RESPECT TO PARTICLE TREATMENT IN A PARTICLE-IN-CELL SCHEME
S. M. Copplestone, C. -D. Munz
Institute of Aerodynamics and Gas Dynamics, University of Stuttgart, Stuttgart, Germany

11:30 5A-5 FROM STATIONARY 2-DIMENSIONAL TO TRANSIENT GLOBAL (VOLUME-AVERAGED) MODELS OF THE MICROWAVE DEPOSITION REACTOR FED WITH O2
E. H. Kemaneci1,2, E. Carbone3, M. Jimenez-Diaz4, W. Graef5, M. van Straalen6, S. Rahimi2, J. van Dijk2, G. Kroesen2
1Theoretical Electrical Engineering, Ruhr University Bochum, Bochum, Germany
2Physics, Universität Zürich, Zürich, Switzerland
3Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands
4Institut für Physik, Universität Karlsruhe, Karlsruhe, Germany
5Physics, Catholic University of Louvain, Louvain-la-Neuve, Belgium
6Université Paul Sabatier, Toulouse, France

11:45 5A-6 PHYSICS-BASED PRECONDITIONERS FOR FLUID-PLASMA SIMULATIONS WITH ELECTROMAGNETICS
K. Beckwith1, P. H. Stoltz2, S. F. McCormick2, J. W. Ruge2
1Tech-X Corp., Boulder, CO, United States
2Front Range Scientific Computations, Lake City, CO, United States

12:00 5A-7 MINI-PIC - A PARTICLE-IN-CELL (PIC) CODE ON UNSTRUCTURED GRIDS FOR NEXT GENERATION PLATFORMS
M. T. Bettencourt
1352, Sandia National Labs, Albuquerque, United States

12:15 5A-8 RELATIVISTIC MODELING CAPABILITIES IN PERSEUS EXTENDED MHD SIMULATION CODE FOR HED PLASMAS
N. D. Hamlin, C. E. Seyler
School of Electrical and Computer Engineering, Cornell University, Ithaca, NY, United States

12:30 5A-9 FIELD-ALIGNED SEMI-LAGRANGIAN METHODS FOR TURBULENCE SIMULATIONS OF STRONGLY MAGNETIZED PLASMAS
Y. Guclu1, E. Sonnendrucker1, M. Mehrenberger2
1Div. of Numerical Methods for Plasma Physics, Max-Planck-Institut für Plasma Physik, Garching bei München, Germany
2Institut de Recherche Mathématique Avancée, University of Strasbourg, Strasbourg, France

12:45 5A-10 COMPUTING DC DISCHARGES IN A WIDE RANGE OF CURRENTS WITH COMSOL MULTIPHYSICS: TIME-DEPENDENT SOLVERS VS. STATIONARY SOLVERS
P. G. C. Almeida1, M. S. Benilov1, M. D. Cunha1, J. G. L. Gomes1, D. Tereshonok2
1Universidade da Madeira, Funchal, Portugal
2Institute for High Temperatures of the Russian Academy of Sciences, Moscow, Russia
Session 5B: Fast Wave and Slow Wave Devices

Wednesday, May 27 10:30-13:00, Opal II

Session Chair: Edl Schamiloglu, University of New Mexico

10:30 5B-1 PROGRESS ON THE DEVELOPMENT OF THE EUROPEAN GYROTRON FOR ITER - FIRST EXPERIMENTAL RESULTS
1Institute for Pulsed Power and Microwave Technology (IHM), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
2The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E), Barcelona, Spain
3Plasma Physics Research Center (CRPP), Ecole Polytechnique Federale de Lausanne (EPFL), Lausanne, Switzerland
4Plasma Physics Institute, National Research Council of Italy (CNR), Milano, Italy
5School of Electrical and Computer Engineering, National Technical University of Athens (NTUA), Athens, Greece
6Thales Electron Devices (TED), Velizy-Villacoublay, France
7Faculty of Physics, National and Kapodistrian University of Athens, Athens, Greece

10:45 5B-2 STUDY OF SUB-TERAHERTZ HIGH POWER GYROTRON FOR ECH&CD SYSTEM OF DEMO
K. Sakamoto1, T. Kariya2, Y. Oda1, R. Minami2, R. Ikeda1, K. Kajiwara1, T. Kobayashi1, K. Takahashi1, S. Moriyama1, T. Imai2
1RF Heating Technology Group, Japan Atomic Energy Agency, Naka, Ibaraki, Japan
2Plasma Research Center, University of Tsukuba, Tsukuba, Ibaraki, Japan

11:00 5B-3 (invited) SUMMATION OF EMISSION FROM SUPERRADIANT SOURCES AS A WAY TO OBTAIN EXTREME POWER DENSITY MICROWAVES
N. S. Ginzburg1, A. W. Crossi2, A. A. Golovanov1, A. D. R. Phelps3, I. V. Romanchenko1, V. V. Rostov1, K. A. Sharypov1, V. G. Shpak1, S. A. Shumaiov1, M. R. Ul masculos2, M. I. Yalandin3, I. V. Zotova4
1Institute of Applied Physics, RAS, N.Novgorod, Russia
2Dept. of Physics, University of Strathclyde Glasgow, Glasgow, UK
3Institute of High-Current Electronics, SB RAS, Tomsk, Russia
4Institute of Electrophysics, UB RAS, Ekaterinburg, Russia

11:30 5B-4 A COMPACT MAGNETICALLY INSULATED TRANSMISSION LINE OSCILLATOR WITH TE11 MODE OUTPUT
D. Wang, F. Qin, S. Xu
Laboratory of High Power Microwave Technology, Institute of Applied Electronics, Mianyang, China

11:45 5B-5 DEVELOPMENT AND MODELING OF A G-BAND SHEET-BEAM TRAVELING WAVE TUBE AMPLIFIER WITH GRATING SLOW-WAVE STRUCTURE
T. A. Karetnikova1, A. G. Rozhnev1, N. M. Ryskin2, G. V. Torgashov2, N. I. Sinitsyn2, A. A. Burtsev3, P. D. Shalaev3
1Department of Nonlinear Physics, Saratov State University, Saratov, Russian Federation
2Saratov Branch, Institute of Radio Engineering and Electronics RAS, Saratov, Russian Federation
3Almaz, Saratov, Russian Federation

12:00 5B-6 INVESTIGATING THE POWER FLOW IN A RELATIVISTIC MAGNETRON WITH RADIAL OUTPUT
J. G. Leopold, A. S. Shlapakovski, A. F. Sayapin, Y. E. Krasik
Physics Department, Technion, Haifa, Israel

12:15 5B-7 MULTI-GW RELATIVISTIC BACKWARD WAVE OSCILLATOR WITH TM02 OPERATING MODE
V. V. Rostov1, R. V. Tsygankov1, A. V. Gunin1, A. A. Elchaninov1, J. C. Ju2, W. Li2, H. W. Yang2, J. Zhang2
1High Current Electronics Institute, Tomsk, Russian Federation
2College of Optoelectronic Science and Engineering, Changsha, China

12:30 5B-8 SIMULATIONS OF A 100 KW CW, 650 MHZ GRIDDED MAGNETRON
M. E. Read, M. -C. Lin, T. Bui, R. L. Ives
Calabazas Creek Research Inc., San Mateo, CA, United States
Session 5C: Plasma, Ion and Electron Sources

Wednesday, May 27 10:30-13:00, Onyx

Session Chair: Yakov E Krasik, Physics Department, Technion

10:30 5C-1 EXPERIMENTAL STUDY OF VACUUM ARC WITH LOW CATHODE CURRENT DENSITY AS A SOURCE OF METAL PLASMA
R. K. Amirov¹, N. A. Vorona¹,², A. V. Gavrikov¹,², G. D. Liziakin¹, V. P. Polistchook¹, I. S. Samoylov¹, V. P. Smirnov¹, R. A. Usmanov¹,², I. M. Yartzev¹
¹Joint Institute for High Temperatures of the Russian Academy of Sciences, Moscow, Russian Federation
²Moscow Institute of Physics and Technology, Dolgoprudny, Russian Federation

10:45 5C-2 SPECIAL FEATURES OF PLASMA GENERATION AND BEAM FORMATION FOR FORE-VACUUM PLASMA ELECTRON SOURCES
E. M. Oks¹,²
¹Physics Department, Tomsk State University of Control System and Radioelectronics, Tomsk, Russian Federation
²Plasma Sources Department, High Current Electronics Institute, Tomsk, Russian Federation

11:00 5C-3 LONG-LIFE, HIGH QE PHOTOCATHODES
L. Ives¹, E. Montgomery², G. Collins¹, L. Falce¹, R. Karimov¹, D. Marsden¹
¹Calabazas Creek Research, Inc., San Mateo, CA, United States
²Institute for Research in Electronics and Applied Physics, University of Maryland, College Park, MD, United States

11:15 5C-4 THE ELECTRON ENERGY DISTRIBUTION IN A LOW-PRESSURE SYSTEM COMBINED INDUCTIVE AND CAPACITIVE DISCHARGE
J. S. Kim, G. C. Kim, H. J. Lee, H. J. Lee
Pusan National University, Busan, South Korea

11:30 5C-5 (invited) CHARACTERIZATION OF AN ELECTROTHERMAL PLASMA WITH POLYMER AND METAL SOURCE MATERIALS
T. E. Gebhart, J. R. Echols, A. L. Winfrey
Nuclear Engineering Program, University of Florida, Gainesville, FL, United States

12:00 5C-6 A NOVEL PLASMA SOURCE FOR PLASMA WAKEFIELD ACCELERATORS
E. Oz, J. Moody, F. Batsch, P. Muggli
Max Planck Institute for Physics, Munich, Germany

12:15 5C-7 CHARACTERIZATION OF NEGATIVE ION BEAM EXTRACTED FROM A NEGATIVE ION SOURCE WITH A PARTICLE-IN-CELL MODEL
L. Garrigues, G. Fubiani, J. P. Boeuf
CNRS/Laplace, Toulouse, France

Session 5D: Plasmas for Lighting, Displays, and Microdischarges

Wednesday, May 27 10:30-13:00, Quartz

Session Chair: Juergen Kolb, INP Greifswald
10:30 5D-1 THREE MODES IN THE ARRAY OF SURFACE MICRO-DISCHARGE IN ATMOSPHERIC PRESSURE He+N2 MIXTURE
D. Li, T. He, D. Liu, M. G. Kong
Xi’an Jiaotong University, Xi’an Shanxi, China

10:45 5D-2 BIFURCATIONS OF STEADY-STATE SOLUTIONS IN DC GLOW MICRODISCHARGES
P. G. C. Almeida, M. S. Benilov, D. F. N. Santos
Universidade da Madeira, Funchal, Portugal

11:00 5D-3 STREAMER INHIBITION CHARACTERISTICS OF SURFACE DIELECTRIC BARRIER DISCHARGE IN DIFFERENT ELECTRODE CONFIGURATIONS
Y. Zhang, J. Li
Dalian University of Technology, College of Electrical Engineering, Dalian, China

11:15 5D-4 NANOSECOND, PULSED MICRODISCHARGE UV AND VUV SOURCES
J. Stephens, D. Mauch, S. Feathers, J. Mankowski, J. Dickens, A. Neuber
Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, United States

11:30 5D-5 SPATIOTEMPORAL EVOLUTION OF A SINGLE-ELECTRODE NANOSECOND PULSED MICROPLASMA JET OVER WATER
S. Song, J. L. Lane, C. Jiang
Frank Reidy Center for Bioelectronics, Old Dominion University, Norfolk, VA, United States

11:45 5D-6 ENHANCED EFFICIENCY OF ATOMIC OXYGEN GENERATION IN A SINGLE-ELECTRODE, 5 NS PULSED MICROPLASMA JET
J. Lane, S. Song, J. Neuber, C. Jiang, J. Sanders, A. Kuth, M. Gundersen
1Frank Reidy Research Center for Bioelectronics, Old Dominion University, Norfolk, VA, United States
2Department of Electrical Engineering-Electrophysics, University of Southern California, Los Angeles, CA, United States

12:00 5D-7 (invited) MINI SPRITES AND MINI BLUE JETS IN RUNAWAY ELECTRONS PREIONIZED DIFFUSE DISCHARGES
V. F. Tarasenko
Dep. Optical Radiation Laboratory, High Current Electronics Institute, Tomsk, Russian Federation

12:30 5D-8 EXPERIMENTAL STUDY AND SIMULATION OF DISCHARGES EVOLVEMENT OF AN ARRAY MICRO-HOLLOW CATHODE (MHC) TRIGGERED BY NANOSECOND PULSES AT AN ATMOSPHERIC PRESSURE
C. Zhang, K. Liu
Institute of Electric Light Sources, Fudan University, Shanghai, China

12:45 5D-9 FULLY KINETIC SIMULATION OF ATMOSPHERIC PRESSURE MICROCAVITY DISCHARGE DEVICE
Sandia National Labs, Albuquerque, NM, United States

Session 5E: Nonequilibrium Plasma Applications

Wednesday, May 27 10:30-13:00, Topaz

Session Chair: Jean-Pierre Boeuf, Universite de Toulouse, LAPLACE, CNRS

10:30 5E-1 (invited) SURFACE DIELECTRIC BARRIER DISCHARGE ACTUATOR: ELECTRICAL, OPTICAL AND MECHANICAL CHARACTERIZATION
E. Moreau, N. Benard
Pprime Institute - CNRS, University of Poitiers, Poitiers, France

11:00 5E-2 CHARACTERIZATION OF A COLD ATMOSPHERIC PRESSURE PLASMA JET DRIVEN BY NANOSECOND HIGH-VOLTAGE PULSES
M. Boselli, V. Colombo, M. Gherardi, R. Laurita, A. Liguori, P. Saniboni, E. Simoncelli, A. Stancampiano
Department of Industrial Engineering, Alma Mater Studiorum - University of Bologna, Bologna, Italy

11:15 5E-3 IMPROVEMENT OF DYNAMIC RANGE OF ELECTRON ENERGY PROBABILITY FUNCTION FROM TWO ASYMMETRICAL COLLECTING AREA PROBE DATA FILTERED BY SAVITZKY-GOLAY AND BLACKMAN WINDOW METHODS
11:30 5E-4 INFLUENCES OF MICROPLASMA GENERATED MICROBUBBLE BY MODERATE ENVIRONMENTAL PRESSURE
P. Xiao, M. Burnette, D. Staack
Mechanical Engineering Department, Texas A&M University, College Station, TX, United States

11:45 5E-5 ELECTRON PROPERTIES OF RADIO-FREQUENCY CAPACITIVE DISCHARGE AT ATMOSPHERIC PRESSURE
S. Park¹, W. Choe¹, S. Y. Moon¹, K. Kim¹, J. Y. Park¹
¹Department of Physics, Korea Advanced Institute of Science and Technology, Daejeon, Republic of Korea
²Department of Quantum System Engineering, Chonbuk National University, Jeonju, Republic of Korea

12:00 5E-6 HIGH VOLTAGE ATMOSPHERIC COLD PLASMA TREATMENT OF FRESH CANTALOupe TO IMPROVE SAFETY AND QUALITY
J. L. Jensen¹, T. Lim¹, B. Applegate¹, K. M. Keener¹,²
¹Department of Food Sciences, Purdue University, West Lafayette, IN, USA
²Agricultural and Biological Engineering, Purdue University, West Lafayette, IN, USA

12:15 5E-7 HIGH-SPEED LOW-COST SURFACE TREATMENTS USING A NOVEL ATMOSPHERIC-PRESSURE PLASMA SOURCE
D. Kovacik, P. Stahel, J. Rahel, M. Cernak
Department of Physical Electronics, Faculty of Science, Masaryk University, Brno, Czech Republic

Session 3P: Plasma Chemistry Poster (poster II)

Session Chair: Dingxin Liu, Xi'an Jiaotong University

14:00 PL6-1 LIGHTNING-DRIVEN PHENOMENA IN NEAR-EARTH SPACE
U. Inan
Koc Universitesi, Istanbul, Turkey

Session 3P-1

3P-2 THE GENERATION AND CHARACTERISTICS OF ATMOSPHERIC PRESSURE PLASMA JET ARRAY IN ARGON
Z. Fang, W. J. Wu, Z. F. Ding
School of Automation and Electrical Engineering, Nanjing Technology University, Nanjing, Jiangsu Province, China

3P-3 STUDY OF CHARACTERISTICS OF NE-XE BARRIER DISCHARGE EXCIMER LAMPS USING A 2-D FLUID MODEL FOR SINUSOIDAL VOLTAGE WAVEFORM
S. Saidi
Physique Energetique, Oran, Algeria

3P-4 CHEMICAL KINETIC SIMULATION OF ANALYSIS OF NOX REMOVAL BY NEGATIVE CORONA DISCHARGE
A. K. Ferouani1,2, M. Lemerini2, M. Houalef3, Y. Guaybess4
1Department of Physics, Ecole Preparatoire en Sciences et Techniques, Tlemcen, Algeria
2Department of Physics, LPT, University A. Belkaid, Tlemcen, Algeria
3Department of Maths, Ecole Preparatoire en Sciences et Techniques, Tlemcen, Algeria
4Department of Physics, University Hassan II, Casablanca, Morocco

3P-5 MODELLING OF SPREADING OF PULSED ELECTRON BEAM INTO HIGH PRESSURE GASES
N. E. Aktaev, G. E. Remnev
National Research Tomsk Polytechnic University, Tomsk, Russia, Russian Federation

3P-6 A NEW EXPERIMENTAL SYSTEM FOR PLASMA EDUCATION
D. S. Korkmaz1, S. Pat2
1Education Faculty, Eskişehir Osmangazi University, Eskişehir, Turkey
2Physics Department, Eskişehir Osmangazi University, Eskişehir, Turkey

3P-7 SCATTERING CROSS SECTION SET FOR ELECTRONS IN CH3OCH3
O. M. Sasic, S. Dupljanin, Z. L. Petrovic
University of Belgrade, Institute of Physics, Belgrade, Serbia

3P-8 THE STUDY OF PARTITION EXCITATION ATMOSPHERIC PRESSURE NON EQUILIBRIUM PLASMA SOURCE ARRAY
Z. Yi, Z. Zhang, Z. Zhang, Y. Gao
Dalian Maritime University, Dalian, China

3P-9

3P-10 STUDY OF VOLTAGE EFFECT ON SYNTHESIS OF SILVER NANOPARTICLES BY CYLINDRICAL DIELECTRIC BARRIER DISCHARGE PLASMA
Z. Bahrami, M. R. Khani, B. Shokri
Physics Department, Shahid Beheshti University G.C., Evin, Tehran, Iran

3P-11 FASTNESS PROPERTIES OF PLASMA TREATED WOOL
F. Nuralın1, F. Bozduman2
1Chemistry, Gazi University, Ankara, Turkey
2Physics, Suleyman Demirel University, Isparta, Turkey

3P-12

3P-13 INDUCTIVELY COUPLED PLASMA FOR GRAPHENE PRODUCTION
Physics Department, Suleyman Demirel University, Isparta, Turkey

3P-14 PENNING ELECTRONS ENERGY SPECTRA IN DC HE-AR MICRODISCHARGE
A. A. Kudryavtsev1, M. S. Stefanova2, P. M. Pramatarov2, A. I. Saifutdinov1
1Physics, St.Petersburg State University, St. Petersburg, Russian Federation
2Institute of Solid State Physics, Bulgarian Academy of Sciences, Sofia, Bulgaria

3P-15 STREPTAVIDIN COATING ON THE SURFACE OF POLYSTYRENE MICROPLATES BY PLASMA TECHNIQUE AND DEVELOPMENT OF ELISA SYSTEMS FOR HUMAN PAPILLOMA VIRUS (HPV)
S. O. Kose, E. Kose, B. Yildiz, R. Say, A. Ersoz
Analytical Chemistry, Bionkit LTD. Şti., Eskişhir, Turkey

3P-16 PROTEIN A COATING ON THE SURFACE OF POLYSTYRENE MICROPLATES BY PLASMA TECHNIQUE AND DEVELOPMENT OF ELISA SYSTEMS FOR HEAT SHOCK PROTEIN 70 (HSP70)
B. Yildiz, E. Kose, S. Ozgun Kose, R. Say, A. Ersoz
R&D, Bionkit, Eskişhir, Turkey

3P-17 VIBRATIONAL AND ROTATIONAL TEMPERATURES OF NO A 2Σ+ METASTABLE STATE IN N2-O2 MIXTURE MICROWAVE DISCHARGE
H. Tan, A. Nezu, H. Akatsuka
Tokyo Institute of Technology, Tokyo, Japan

3P-18 PLASMA CHEMICAL COMPLEX PROCESSING OF SOLID FUEL
A. B. Ustimenko, V. E. Messerle, O. A. Lavrichshev
Plasmatemhetics, Research Institute of Experimental and Theoretical Physics of Kazakhstan National University, Almaty, Kazakhstan

Session 3P: Fast-Wave Devices (poster)
3P-19 StudY of the multi-modes behaviour in a high harmonic large orbit gyrotron

X. Li, Y. Alfadhl, X. Chen
School of Electronic Engineering and Computer Science, Queen Mary University of London, London, United Kingdom

3P-20 Optimization of starting conditions of terahertz range gyrotons by increasing of electron interaction time in the "depressed" resonator

N. S. Ginzburg, M. Y. Glyavin, I. V. Zotova, I. V. Zheleznov
Institute of Applied Physics RAS, N. Novgorod, Russian Federation

3P-21 High power W-band gyro-bwo experiments

Department of Physics, Strathclyde University, Glasgow, United Kingdom

Session 3P: Slow Wave Devices (poster)

3P-22

3P-23 Investigation of the effect of helix tape-thickness on the performance of plasma-filled helix traveling-wave tubes

A. Mahmoudi
Faculty of Engineering, School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran

3P-24 Non-resonant metamaterials for high-power vacuum electronics applications

A. Hopper, R. Seviour
International Institute for Accelerator Applications, University of Huddersfield, Huddersfield, United Kingdom

3P-25 Design and simulation of an S-band cloverleaf amplifier using icepic

P. D. Gensheimer1, J. J. Watrous2, R. W. Ziolkowski2
1AFRL, Kirtland AFB, NM, United States
2Confluent Sciences, LLC, Albuquerque, NM, United States

3P-26 High power microwave source loaded by a two-spiral metamaterial structure for Cherenkov radiation

S. C. Yurt, A. Elfgani, E. Schamiloglu
Electrical and Computer Engineering, University of New Mexico, Albuquerque, United States

3P-27 Evolution of wave dispersion in periodic structures with increasing amplitude of corrugation

S. C. Yurt, A. Elfgani, K. Ilyenko, M. I. Fuks, E. Schamiloglu
Electrical and Computer Engineering, University of New Mexico, Albuquerque, United States

3P-28 Testing of the A6 magnetron with radial extraction on the pulserrad electron beam accelerator

S. Prasad, J. W. McConaha, C. J. Leach, C. J. Buchenauer, M. Fuks, E. Schamiloglu
Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States
3P-29 EXPERIMENTAL RESEARCH OF MAGNETICALLY INSULATED TRANSMISSION LINE OSCILLATOR WITH METAL ARRAY CATHODE
F. Qin¹, D. Wang¹, S. Xu¹, Y. Wu¹, Z. Fan²
¹Key Laboratory on High Power Microwave Technology, Institute of Applied Electronics, China Academy of Engineering Physics, Mianyang, Sichuan, China
²Graduate School, China Academy of Engineering Physics, Beijing, China

3P-30 TEST OF A HIGH EFFICIENCY RELATIVISTIC MAGNETRON WITH DIFFRACTION OUTPUT (MDO) AND SPHERICAL CATHODE ENDCAP*
C. J. Leach, S. Prasad, M. Fuks, J. Buchenauer, J. McConaha, E. Schamiloglu
Electrical and Computer Engineering Dept., University of New Mexico, Albuquerque, NM, United States

3P-31 COMPACT A6 MAGNETRON WITH A NEODYMIUM PERMANENT MAGNET
J. W. McConaha, S. Prasad, C. Leach, M. Fuks, E. Schamiloglu
Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

3P-32 EMITTANCE GROWTH ANALYSIS OF ELECTRON BEAMS DUE TO NONLINEAR FOCUSING FIELDS OF PPM MAGNETS
K. E. Nichols, B. E. Carlsten
Los Alamos National Laboratory, Los Alamos, NM, United States

3P-33 VARIATION OF RELATIVISTIC BWO GENERATION MODE CONSIDERING THE FEATURES OF PULSED GUIDING MAGNETIC FIELD
V. V. Rostov¹, K. A. Sharypov², V. G. Shpak⁵, S. A. Shunailov², M. R. Ul'masculov², M. I. Yalandin²
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Session 3P: Codes and Modeling (poster)

Poster Session

Wednesday, May 27 15:00-16:30, Citrine I

Session Chair: Thuc Bui, Calabazas Creek Research, Inc.

3P-34 MODELING OF INDUCTIVELY COUPLED PLASMA SOURCE WITH ARGON/OXYGEN GAS MIXTURE FOR ETCHING
S. M. Balouza¹, H. Abou-Gabal¹, A. Abdelrazek²
¹Nuclear & Radiation Engineering, Faculty of Engineering, Alexandria University, Alexandria, Egypt
²Engineering Math & Physics, Faculty of Engineering, Alexandria University, Alexandria, Egypt

3P-35 BUMBLEBEE: A 1D3V RELATIVISTIC PIC/MCC SOFTWARE FOR LASER-PLASMA INTERACTION
X. L. Jin, T. Huang, W. L. Chen, J. Q. Li, H. L. Ling, B. Li, Z. H. Yang
School of Physical Electronics, University of Electronic Science and Technology of China, Chengdu, Sichuan, China

3P-36 THREE-DIMENSIONAL FINITE-ELEMENT SIMULATION OF ION THRUSTER OPTICS SYSTEM
T. Huang, X. L. Jin, Q. Hu, B. Li, Z. H. Yang
School of Physical Electronics, University of Electronic Science and Technology of China, Chengdu, Sichuan, China

3P-37 TOROIDAL FIELD RIPPLE ESTIMATION USING THE COMSOL MULTIPHYSICS SOFTWARE IN CIRCULAR CROSS SECTION TOKAMAKS
B. Mahdavipour, A. Salar Elahi, M. Ghoranneviss
Plasma Physics Research Center, Science and Research Branch, Islamic Azad University, Tehran, Iran

3P-38 DEVELOPING CHEMISTRY, VISUALIZATION, AND RF SHEATH MODELING TOOLS FOR FUSION AND LOW-TEMPERATURE PLASMA SIMULATIONS
T. G. Jenkins, K. Beckwith, J.D. Smith, S. E. Kruger, A. Y. Pankin, C. M. Roark, D. N. Smithe, P. H. Stoltz, S. C. Zhou
Tech-X Corporation, Boulder, CO, United States

Session 3P: Plasma, Ion and Electron Sources (poster)
Poster Session

Wednesday, May 27 15:00-16:30, Citrine I

Session Chair: Efim M Oks, High Current Electronics Institute

3P-39 RF ION SOURCE MODELING USING FLUID-BASED PLASMA MODELS
K. Beckwith, S. Veitzer, P. H. Stoltz
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3P-40 PLASMA LENS CLEARING OF THE MICRODROPLETS IN CATHODIC ARC PLASMA FLOW
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¹Plasma Sources Laboratory, High Current Electronics Institute, Tomsk, Russian Federation
²Institute of Physics NASU, Kiev, Ukraine

3P-41 STUDY OF THE ELECTRIC FIELD SCREENING EFFECT ON LOW NUMBER OF CARBON FIBER FIELD EMITTERS
W. Tang¹, D. Shiffer¹, M. LaCour², K. Golby¹, T. Knowles³
¹Air Force Research Laboratory, Albuquerque, NM, United States
²Leidos Inc., Albuquerque, NM, United States
³Energy Science Laboratory Inc., San Diego, CA, United States

3P-42 CHARACTERISTICS OF A SINGLE-UNIT, PLASMA GUN GENERATOR FOR RADIOGRAPHY APPLICATIONS
J. Macdonald¹, B. M. Novac², P. Senior², K. Omar¹, M. Sinclair¹, I. R. Smith²
¹Applied Physics, AWE, Aldermaston, United Kingdom
²School of Electronic, Electrical and Systems Engineering, Loughborough University, Loughborough, United Kingdom

3P-43 BEAM PLASMA PRODUCED BY ELECTRON BEAM IN DIELECTRIC CAVITY
D. B. Zolotukhin, V. A. Bur dovitsin, E. M. Oks
Department of Physics, Tomsk State University of Control Systems and Radioelectronics (TUSUR), Tomsk, Russian Federation

3P-44 PARAMETERS OF VACUUM ARC PLASMA WITH DEUTERIUM AND HYDROGEN SATURATED ZIRCONIUM CATHODE
S. A. Barengolts¹, D. Y. Karnauchov², A. G. Nikolaev³, K. P. Savkin³, E. M. Oks³, I. V. Uimanov⁴, V. P. Frolova³, D. L. Shmelev³, G. Y. Yushkov³
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³Institute of High Current Electronics, Siberian Branch, RAS, Tomsk, Russian Federation
⁴Institute of Electrophysics, Ural Branch, RAS, Yekaterinburg, Russian Federation

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3P-46 MAGNETIC THIN FILMS DEPOSITION USING DC GRID-ATTACHED MAGNETRON.
E. M. Oks¹, A. V. Tsunkov¹, M. V. Shandrikov², A. V. Vizir³, K. P. Savkin²
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3P-47 STUDY OF EXPLOSIVE ELECTRON EMISSION FROM A PIN CATHODE USING HIGH RESOLUTION POINT-PROJECTION X-RAY RADIOGRAPHY
P. N. Lebedev Physical Institute RAS, Moscow, Russian Federation

3P-48 CHARACTERISTICS OF AN ATMOSPHERIC GLIDING ARC PLASMA
R. Hosseinirad, M. R. Khani, M. Shahpanah, M. Adharni, B. Shokri
Laser & Plasma Research Institute, Shahid Beheshti University, Tehran, Iran

3P-49 OPTICAL INVESTIGATIONS OF CATHODE PLASMA DYNAMICS OF LONG PULSE ELECTRON ACCELERATOR GESA
W. An¹, G. Mueller¹, R. Fetzer¹, A. Weisenburger¹, V. Engelko²
¹Karlsruhe Institute of Technology, Karlsruhe, Germany
²Efremov Institute of Electrophysical Apparatus, St. Petersburg, Russia

3P-50 COMPUTATIONAL CHARACTERIZATION OF THE ELECTROTHERMAL ENERGETIC PLASMA SOURCE (ETEPS) CONCEPT FOR HIGH-ENTHALPY FLOW
3P-51 ELECTROSTATIC PROBE MEASUREMENT OF THE PIEZOELECTRIC TRANSFORMER PLASMA SOURCE
E. A. Baxter, S. D. Kovala, N. P., Norgard
Electrical and Computer Engineering, University of Missouri-Columbia, Columbia, MO, United States

3P-52 THREE-DIMENSION NUMERICAL SIMULATION OF A LARGE-SCALE RECTANGULAR SURFACE WAVE PLASMA SOURCE
Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, China

3P-53 HIGH CHARGE STATES METAL ION BEAM BASED ON VACUUM SPARK DISCHARGE
E. M. Oks1,2, V. P. Frolova2, G. Y. Yushkov2, A. G. Nikolaev2, K. P. Savkin2
1Tomsk State University of Control System and Radioelectronics, Tomsk, Russian Federation
2High Current Electronics Institute, Tomsk, Russian Federation

3P-54 FIELD ASSISTED PHOTONEMISSION DC-PULSED CATHODE FOR 5TH GENERATION LIGHT SOURCES AND ACCELERATORS THEORETICAL STUDY
J.-L. J. Babigeon1, N. Holtzer2, M. El Kahlid1
1Laboratoire de l'Accelerateur Lineaire, CNRS, Orsay, France
2Consultant, Strasbourg, France

3P-55 COMPUTATIONAL STUDY OF REAL TIME MODIFICATION FOR PURE ELECTROTHERMAL GUN BALLISTICS
S. Mittal, L. Winfrey
Virginia Polytechnic Institute and State University, Blacksburg, VA, United States

3P-56 SIMULATION OF THE PROCESSES ACCOMPANYING THE FORMATION AND TRANSPORTATION OF AN ELECTRON BEAM IN A GAS-FILLED ELECTRON-OPTICAL SYSTEM WITH A PLASMA EMITTER
N. Rempe1, S. Kornilov1, A. Grishkov2
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3P-57 EVALUATION AND ANALYSIS OF SOURCE LINERS AND EJECTED MATERIALS FROM AN ELECTROTHERMAL PLASMA DISCHARGE
J. R. Echols1, M. D. Hamer2, T. E. Gebhart1, A. L. Winfrey1
1University of Florida, Gainesville, FL, United States
2Enercon Services Inc., Germantown, MD, United States

3P-58 METAL AND GAS ION SOURCE FOR MODIFICATION OF ORGANIC POLYMERS SURFACES
E. M. Oks1, K. P. Savkin1, I. V. Puhova1, G. Y. Yushkov1, M. V. Shandrikov1, A. V. Vizir1, I. A. Kurzina2
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3P-59 DEVELOPMENT OF A HYBRID HELICON-ECR PLASMA SOURCE
A. M. Hala
KACST, Riyadh, Saudi Arabia

3P-60 RUNAWAY ELECTRON BEAM GENERATION AND DISRUPTION AT PULSED GAS DISCHARGE
M. M. Tsventoukh
Lebedev Physical Institute RAS, Moscow, Russian Federation

3P-61 PRIMARY EXPERIMENT ON HIGH CURRENT HOLLOW CATHODE ION SOURCE
Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, Sichuan Province, China

Session 3P: Fusion - Magnetic, Inertial, and Magneto-Inertial (poster)

Poster Session

Wednesday, May 27 15:00-16:30, Citrine I

Session Chair: Mark Gilmore, University of New Mexico
3P-62 STABLE PLASMA AT CONVEX-CONCAVE FIELD LINES
M. M. Tsventoukh¹, G. V. Krashkevskaya¹, A. S. Prishvitsyn²
¹Lebedev Physical Institute RAS, Moscow, Russian Federation
²National Research Nuclear University MEPhI, Moscow, Russian Federation

3P-63 KINETIC SIMULATION OF DIRECT X-B MODE CONVERSION FOR HIGH-β SPHERICAL TORUS NSTX IN THE NONLINEAR REGIME USING PARTICLE IN CELL METHOD
M. Ali Asgarian¹, M. Abbasi²,³
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²Plasma Physics Research School, NSTRI, Tehran, Iran
³Department of Energy Engineering and Physics, Amirkabir University of Technology, Tehran, Iran

3P-64 INVESTIGATION OF LARGE AMPLITUDE UHR LOCALIZED OSCILLATION AND ITS INFLUENCE ON REDUCTION OF DIRECT X-B MODE CONVERSION EFFICIENCY FOR HIGH-β NSTX IN NONLINEAR REGIME
M. Abbasi¹,², M. Ali Asgarian³, Y. Sadeghi¹, S. Sobhanian⁴
¹Plasma Physics Research School, NSTRI, Tehran, Iran
²Department of Energy Engineering and Physics, Amirkabir University of Technology, Tehran, Iran
³Department of Advanced Sciences and Technology, University of Isfahan, Isfahan, Iran
⁴Department of Physics, Tabriz University, Tabriz, Iran

3P-65 ANALYSIS OF WAVE INSTABILITIES EVOLUTION IN PLASMA AND TURBULENT PROCESSES IN FLUID
D. N. Karbushev, V. I. Khvessyk, T. N. Polozova
Bauman Moscow State Technical University, Moscow, Russian Federation

3P-66 DETERMINATION OF ELECTRON ENERGY DISTRIBUTION FUNCTION IN TOKAMAK PLASMA
F. S. Mir Mohammad Ali Roudaki, A. Salar Elahi, M. Ghoranneviss
Plasma Physics Research Center, Science and Research Branch, Islamic Azad University, Tehran, Iran

3P-67 SIMULATION OF MAGNETIC FIELD PERTURBATION COILS ON IR-T1 TOKAMAK
Y. Adlitalab, P. Khorshid, E. Abizimoghadam
Dept. of Physics, Islamic Azad University, Mashhad Branch, Mashhad, Iran

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3P-69 PERFORMANCE OF THE PULSE FLASH LAMP IN THE LASER INERTIAL CONFINEMENT FUSION
Z. Yang, S. Jia, X. Li, J. Wu
College of Electrical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China

3P-70 TIME INTEGRATED STUDY OF X-RAY EMISSION BY APF PLASMA FOCUS DEVICE
M. Habibi
Energy Engineering and Physics, Amirkabir University of Technology, Iran, Iran

3P-71 INCREASING PERFORMANCE OF THE FRCXH PLASMA INJECTOR SYSTEM
C. Grabowski¹, J. H. Degnan¹, M. Domonkos⁵, E. L. Ruden¹, G. A. Wurden⁵
¹Air Force Research Laboratory, Kirtland AFB, NM, United States
⁵Los Alamos National Laboratory, Los Alamos, NM, United States

3P-72 MODELING EXPERIMENTS OF NEW COMPACT HOHLRAUM CONFIGURATION WITH MULTIPLE PARALLEL-DRIVEN X-RAY SOURCES WITH APPLICATION OF VISRAD CODE
V. V. Shlyaptseva¹, V. L. Kantsyrev¹, A. S. Safronova¹, I. K. Shrestha¹, M. C. Cooper¹, A. Stafford¹, A. S. Chuvatin²
¹University of Nevada, Reno, Reno, NV, United States
²École Polytechnique, Palaiseau, France

3P-73 THERMAL DAMAGE MECHANISM OF PULSED XENON LAMP SILICA ENVELOPE DURING HIGH-POWER DISCHARGE
J. Liu, H. Li, X. Guo, R. Wu, R. Shao, H. Liang, W. Lin, L. Hu
laser source center, Shanghai Institute of Optics and Fine Mechanics, The Chinese Academy of Sciences, Shanghai, China

Session 3P: Intense Electron and Ion Beams (Poster)

Poster Session
Wednesday, May 27 15:00-16:30, Citrine I

Session Chair: Mark D Johnston, Sandia National Laboratories

**3P-74 NUMERICAL MODELING OF DROPLETS GROWTH AND THEIR THERMAL RADIATION FROM METALLIC TARGETS HEATED BY HEAVY ION BEAMS**
A. V. Ostrik
RAS, Institute of Problems of Chemical Physics, Chernogolovka, Russia

**3P-75 MAGNETICALLY INSULATED COAXIAL DIODE NON-LINEAR PROPERTIES**
V. V. Rostov1,2, K. A. Sharypov2, V. G. Shpak2, S. A. Shunailov2, M. R. Ull' masculov2, M. I. Yalandin2
1High Current Electronics Institute, Tomsk, Russian Federation
2Institute of Electrophysics, Ekaterinburg, Russian Federation

**3P-76 INFRARED-IMAGE DIAGNOSTICS OF A LOW-ENERGY, HIGH-CURRENT ELECTRON BEAM TRANSPORTED THROUGH A PLASMA CHANNEL IN A GUIDE MAGNETIC FIELD**
A. V. Batrakov1,2, P. P. Kiziridi1, G. E. Ozur1
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2National Research Tomsk Polytechnic University, Tomsk, Russian Federation

**3P-77 HYBRID SIMULATION OF INTERACTION BETWEEN ELECTRON-BEAM-GENERATED PLASMAS AND AIR FLOW**
D. D. Zou
Electrical Engineering, Huazhong University of Science and Technology, Wuhan, China

**3P-78 STUDY OF ELECTRON BEAM DYNAMICS IN A PLANAR DIODE WITH EXPLOSIVE EMISSION CATHODE**
A. Gurinovich, S. Anishchenko, V. Baryshevsky, E. Gurinovich, E. Gurnevich, P. Molchanov, A. Rovba
Research Institute for Nuclear Problems, Minsk, Belarus

**3P-79 BEAM CURRENT MEASUREMENT SYSTEM OF TRIODE ELECTRON GUN FOR 6 MEV SKKU X-BAND LINAC**
J. Lee, Y. Yeon, H. Kim, S. Lee, J. Chai
Department of Energy Science, SungKyunKwan University, Suwon si, South Korea

**3P-80 FORMATION OF HIGH-BRIGHTNESS REB TO GENERATE THz RADIATION IN BEAM-PLASMA SYSTEM**
S. L. Sinitsky1,2, A. V. Arzhannikov1,2, V. T. Astrelin1,2, M. A. Makarov1, V. D. Stepanov1,2
1Plasma Department, Budker Institute of Nuclear Physics, Novosibirsk, Russian Federation
2Physics Department, Novosibirsk State University, Novosibirsk, Russian Federation

**3P-81 SPECTROSCOPIC DETERMINATION OF MAGNETIC FIELDS IN HIGH ENERGY ELECTRON BEAM DIODES**
M. D. Johnston1, S. G. Patel1, D. J. Muron1, M. L. Kiefer1, Y. Maron2
1Sandia National Laboratories, Albuquerque, NM, United States
2Weizmann Institute of Science, Rehovot, Israel

**3P-82 MAGNETIC FIELD MEASUREMENTS ON THE SELF MAGNETIC PINCH DIODE AT SNL USING ZEEMAN SPLITTING**
S. G. Patel1, M. D. Johnston1, D. J. Muron1, T. J. Webb1, M. L. Kiefer1, R. M. Gilgenbach2
1Radiographic Technologies, Sandia National Labs, Albuquerque, NM, United States
2Plasma, Pulsed Power, and Microwave Lab, University of Michigan, Ann Arbor, MI, United States

**3P-83 TRANSPORTATION OF A PULSED ION BEAM FORMED BY A SELF-MAGNETICALLY INSULATED DIODE**
Y. I. Isakova, A. I. Pushkarev, I. P. Khaylov
High technology physics institute, Tomsk Polytechnic University, Tomsk, Russian Federation

**3P-84 ROD-PINCH DIODE EXPERIMENTS AT A 1.2 MV PULSED POWER GENERATOR**
J. Yuan, W. Xie, H. Li, S. Feng, B. Wei, H. Liu, L. Wang, X. Ma, Y. Qing, Y. Huang, S. Ding
Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, China

Session 3P: Particle Acceleration with Lasers and Beams (poster)

Poster Session
3P-85 CAIRNS-GUREVICH EQUATION FOR SOLITON IN PLASMA EXPANSION
K. Annou, D. Bara, D. Bennaceur-Doumaz
MIL, CDTA, Baba Hassen, Algeria

3P-86 OPTIMUM TRAPPING CONDITION FOR LASER WAKEFIELD ACCELERATION OF ELECTRONS IN AN INHOMOGENEOUS PLASMA
K. Gopal¹, I. Nam², D. N. Gupta¹, H. Suk²
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²Department of Physics and Photon science, Gwangju Institute of Science and Technology, Gwangju 500 712, South Korea, Gwangju, South Korea

3P-87 IMPULSE ION IMPLANTER
A. V. Stepanov, V. I. Shaminin, G. E. Remnev, A. V. Petrov
Tomsk Polytechnic University, Tomsk, Russian Federation

3P-88 THE PROTOTYPE RF POWER COUPLERS FOR THE RAON NORMAL CONDUCTING CAVITIES
W. K. Han, B. H. Choi, H. J. Kim, J. Han, M. O. Hyun, O. R. Choi
Accelerator Systems Division, Institute for Basic Science, Daejeon, South Korea

3P-89 OPTIMIZATION STUDIES ON CSRR LOADED WAVEGUIDE FOR PARTICLE ACCELERATOR APPLICATIONS
R. Letizia¹,², E. Sharples¹,²
¹Lancaster University, Lancaster, United Kingdom
²Cockcroft Institute, Warrington, United Kingdom

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3P-91 ENHANCED BETATRON RADIATIONS BY OFF-AXIS LASER INJECTION IN A CAPILLARY PLASMA SOURCE
S. Lee¹, T. -H. Lee¹, H. S. Uhm², I. Nam³, H. Suk¹
¹Department of Physics and Photon Science, Gwangju Institute of Science and Technology (GIST), Gwangju, South Korea
²Department of Electronic and Biological Physics, Kwangwoon University, Seoul, South Korea

3P-92 MONOENERGETIC ION ACCELERATION BY LASER DRIVEN SHOCK WAVES
A. S. Nindrayog¹, A. Macchi², F. Pegoraro²
¹Department of Physics, Lyallpur Khalsa College, Jalandhar, Punjab, India
²Department of Physics, E-Fermi, University of Pisa, Pisa, Italy

Session 3P: Radiation Physics and X-Ray Lasers (poster)

Poster Session

Wednesday, May 27 15:00-16:30, Citrine I

Session Chair: Stephane Sebban, LOA

3P-93 PCA MODELING OF THE L-SHELL COPPER X PINCH PLASMA PRODUCED BY THE COMPACT GENERATOR OF ECOLE POLYTECHNIQUE
J. Larour¹, L. Aranchuk¹, M. F. Yilmaz², A. Eleyan³, Y. Danisman³
¹Laboratoire de Physique des Plasmas, Ecole Polytechnique, UPMC, CNRS, Palaiseau, France
²Engineering Department, Turgut Ozal University, Ankara, Turkey
³Mevlana University, Konya, Turkey

3P-94 LINEAR DISCRIMINANT ANALYSIS OF ELECTRON BEAM EFFECTS ON THE RELATIVISTIC LASER-PRODUCED K-SHELL AL PLASMAS
M. F. Yilmaz¹, Y. Danisman², A. S. Safronova¹, V. L. Kantsyrev³, P. Viewior¹, A. Stafford³, I. K. Shrestha³, V. V. Shlyaptseva², A. Y. Faenov⁴
Session 3P: Environmental and Industrial Applications (poster II)

Poster Session

Wednesday, May 27 15:00-16:30, Citrine I

Session Chair: Xinpei Lu, Huazhong University of Science and Technology, China

3P-98 COMBINING CATALYSIS WITH NON-THERMAL PLASMA FOR VOLATILE ORGANIC COMPOUNDS ABATEMENT
Z. Xiao, K. Liu
Institute of Electric Light Sources, Fudan University, Shanghai, China

3P-99 EXACT ION ENERGY IN PLASMA IMMERSION ION IMPLANTATION
N. Sakudo, N. Ikenaga, K. Matusi, N. Sakumoto
Kanazawa Institute of Technology, Hakusan, Ishikawa, Japan

3P-100 THE MO DOPED GAN THIN FILM GROWTH USING THERMIONIC VACUUM ARC (TVA)
S. Ozen1, V. Şenay2, S. Pat1, S. Korkmaz1
1Physics Department, Eskisehir Osmangazi University, Eskisehir, Turkey
2Primary Science Education Department, Bayburt University, Bayburt, Turkey

3P-101 STERILIZATION OF MICROORGANISM SPORES WITH PLASMA-EXCITED NEUTRAL GAS AT ATMOSPHERIC PRESSURE
K. Matsu, N. Ikenaga, N. Sakudo
Kanazawa Institute of Technology, Hakusan, Japan

3P-102 ON THE PLASMA SYSYEM FOR CO2 DISSOCIATION
H.-Y. Chang
Physics, KAIST, Daejeon, South Korea

3P-103 PLASMA TREATMENT FOR THE INACTIVATION OF ESCHERICHA COLI IN WATER
M. S. Ismail1, F. Bozduman1, A. Gulec1, S. Noree1, M. Al-Mamoori2, Y. Durmaz1, I. U. Koc1, S. U. Ulusoy2
1Physics, Suleyman Demirel University, Isparta, Turkey
2Biology, Suleyman Demirel University, Isparta, Turkey

3P-104 PLASMA HELP PREPARATION OF ELECTROSPUN CARBON NANOFIBERS
F. Uygun1, F. Bozduman1, N. Nohut2, A. Uygun Oksuz2, L. Oksuz1
1Department of Physics, Suleyman Demirel University, Isparta, Turkey
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3P-105 CONTINUOUS PLASMA-CHEMICAL PROCESSING OF FABRICS AT ATMOSPHERIC PRESSURE
D. Kovacik1,2, P. Stahel1, R. Krumpolec2, M. Cernak1,2
1Department of Physical Electronics, Faculty of Science, Masaryk University, Brno, Czech Republic
2Department of Experimental Physics, Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava, Slovak Republic

3P-106 HUMAN HEALTH IMPACT OF MULTIFUNCTIONAL TEXTILES OBTAINED BY USING PLASMA TECHNOLOGY
R. M. Aileni1, L. Oksuz2, L. Surdu3
1Information Technology, INCDTP, Bucharest, Romania
2Research, PLAZMATEK, Isparta, Turkey
3Material Investigation, INCDTP, Bucharest, Romania

3P-107 LIFE CYCLE AND ENVIRONMENT IMPACT FOR TEXTILE MATERIALS FUNCTIONALIZED BY USING PLASMA TECHNOLOGY
R. M. Aileni1, L. Oksuz2, L. Surdu3
1Information Technology, INCDTP, Bucharest, Romania
2Research, PLAZMATEK, Isparta, Turkey
3Material Investigation, INCDTP, Bucharest, Romania

3P-108 SURFACE PROPERTIES OF PLASMA TREATED WOOL AND DENIM
G. Yurdabak1, L. Oksuz2, F. Bozduman2, M. Kiristi2, I. Komur1, A. Uygun Oksuz1
1Department of Chemistry, Suleyman Demirel University, Isparta, Turkey
2Department of Physics, Suleyman Demirel University, Isparta, Turkey

3P-109 WATER AND GAS TREATMENT BY USING PULSED CORONA DISCHARGE TECHNIQUE
M. Kebriaei, A. Ketabi, A. Halvaei
Department of Electrical and Computer Engineering, University of Kashan, Kashan, Iran

3P-110 OPTIMIZATION OF A LABORATORY SCALE BIOMASS PLASMA GASIFICATION REACTOR
J. I. van der Walt, P. N. Makaringe
R&D, Necsa, Pelindaba, South Africa

3P-111 DIRECT AND FAST GROWTH OF A SIGAAS THIN FILM BY MEANS OF THERMIonic VACUUM ARC
V. Senay1, S. Ozen2, S. Pat2, S. Korkmaz2
1Science Education, Bayburt University, Bayburt, Turkey
2Physics, Eskisehir Osmangazi University, Eskisehir, Turkey

Session 3P: Diagnostics: Optical and X-ray, Microwave and FIR, and Particle (poster)

Poster Session

Wednesday, May 27 15:00-16:30, Citrine I

Session Chairs: Simon Bland, Imperial College London
Anatoli S. Shlapakovski, Technion

3P-112 INVESTIGATION OF SHEATH EFFECT ON THE RESONANCE FREQUENCIES OF CURLING PROBE
A. Arshadi, R. P. Brinkmann
Ruhr University Bochum, Ruhr University Bochum, TET Institute, Bochum, Germany

3P-113 FINITE PLASMA SHEATH CORRECTIONS APPLIED TO ELECTROSTATIC PROBES
C. Ribeiro
Centro de Investigacion en Ciencias Atomicas Nucleares y Moleculares, School of Physics, University of Costa Rica, San Jose, Costa Rica

3P-114 THE FIRST RESULTS OF THE HEAVY ION BEAM PROBING DIAGNOSTIC (HIBP) ON THE URAGAN-2M TORSATRON.
L. Krupnik1, O. Zhezhera1, O. Chmyga1, G. Deshko1, O. Kozachek1, O. Komarov1, S. Khrebtov1, Y. Tashchev1, G. Lesnyakov1, I. Tarasov1, S. Perfilov2
1IPP NSC KIPT, Kharkov, Ukraine
2ITP, NRC Kurchatov Institute, Moscow, Russia
3P-115 SPECTROSCOPIC STUDY ON THE TEMPERATURE EVOLUTION OF EXPLODING WIRES IN UNDERWATER DISCHARGES
K. Lee¹, K. -J. Chung¹, D. -K. Kim², Y. S. Hwang¹
¹Department of Nuclear Engineering, Seoul National University, Seoul, South Korea
²Agency for Defence Development, Daejeon, South Korea

3P-116 A SIMPLE AXICON-BASED OPTICAL DIAGNOSTIC FOR MEASURING CYLINDRICALLY SYMMETRICAL PLASMA RADIAL MOVEMENT
F. Veloso, H. Bhuyan, M. Favre, E. Wyndham
Instituto de Fisica, Pontificia Universidad Catolica de Chile, Santiago, Chile

3P-117 DIAGNOSIS OF A HYBRID X-PINCH BY MEANS OF ABSORPTION SPECTROSCOPY
A. D. Cahill, S. A. Pikuz, T. A. Shchelkovenko, D. A. Hammer
Electrical and Computer Engineering, Cornell University, Ithaca, NY, United States

3P-118 DIAGNOSING PULSED POWER PRODUCED PLASMAS WITH X-RAY THOMSON SCATTERING
J. C. Valenzuela¹, C. Krauland¹, D. Mariscal¹, I. Krasheninnikov¹, F. N. Beg¹, R. Presura², P. Wiewior², A. Covington², T. Ma³, C. Niemann³
¹Center for Energy Research, University of California, San Diego, La Jolla, CA, United States
²University of Nevada, Reno, Reno, NV, United States
³Lawrence Livermore National Laboratory, Livermore, CA, United States

3P-119 ARI LASER INDUCED FLUORESCENCE SYSTEM FOR MEASUREMENT OF NEUTRAL DYNAMICS IN A LARGE SCALE HELICON PLASMA
M. Gilmore, R. Kelly, A. G. Lynn, T. R. Desjardins
University of New Mexico, Albuquerque, NM, United States

3P-120 SCHLIEREN TECHNIQUE AS A POSSIBLE WAY TO DETERMINE GAS TEMPERATURE IN COLD NON-EQUILIBRIUM PLASMA JETS
A. M. Astafiev¹, A. A. Kudryavtsev¹, O. M. Stepanova¹, M. E. Pinchuk²
¹St.Petersburg State University, St. Petersburg, Russian Federation
²Institute for Electrophysics and Electric Power of RAS, St. Petersburg, Russian Federation

Session 3P: Late Submissions (poster)
Poster Session
Wednesday, May 27 15:00-16:30, Citrine I

3P-121 NEW ROUTE TO SYNTHESIS OF POLYOXOTUNGSTATE/OXY-GRAPHENE NANCOMPOSITE MULTILAYER FILMS FOR PHOTOCATALYST OF HYDROGEN EVOLUTION
Emre Çıtak¹,²,³, Yasemin Topal¹,²,³, Mustafa Karaman¹,²,³, Mahmut Kus¹,²,³, Mustafa Ersoz¹,²,³
¹Selcuk University, Advanced Technology Research and Application Center Konya Turkey
²Selcuk University, Department of Chemistry Konya, Turkey
³Selcuk University, Department of Chemical Engineering, Konya Turkey

3P-122 SEWAGE SLUDGE NEUTRALIZATION USING PLASMA TECHNOLOGY
Zydrunas Kavaliauskas, Vitas Valincius, Romualdas Kezelis, Mindaugas Milieska
Lithuanian Energy Institute, Breslaujos str. 3, LT-44403 Kaunas, Lithuania

Session 6A: Microwave Plasma Interaction
Wednesday, May 27 16:30-18:30, Opal I
Session Chair: Adrian Cross, Strathclyde University

16:30 6A-1 GAS HEATING AND SHOCKWAVE EFFECTS ON MICROWAVE STREAMER DEVELOPMENT IN ATMOSPHERIC PRESSURE AIR
Session 6A: Plasma Physics I

16:45 6A-2 NUMERICAL STUDY ON HIGH POWER MICROWAVE FLASHOVER AND BREAKDOWN ON OUTPUT-WINDOW BY EM-FLUID SIMULATION
Y. Dong, Q. Zhou, W. Yang, Z. Dong, H. Zhou
Institute of Applied Physics and Computational Mathematics, Beijing, China

17:00 6A-3 PLASMA EMPOWERED LIMESTONE MINERAL FILLER FOR ASPHALT PERFORMANCE APPLICATIONS
S. Sargin Karahancer¹, M. Kiristi², S. Terzi¹, M. Saltan¹, A. Uygun Oksuz², L. Oksuz³
¹Civil Engineering Department, Selcuk University, Konya, Turkey
²Chemistry Department, Selcuk University, Konya, Turkey
³Physics Department, Selcuk University, Konya, Turkey

17:15 6A-4 SELF-CONSISTENT PLASMA DENSITY EVOLUTION DURING RF ENERGY EXTRACTION FROM A MICROWAVE PULSE COMPRESSOR
A. S. Shlapakovski¹, L. Beilin¹, M. Donskoy¹, E. Schamiloglu², Y. E. Krasik¹
¹Physics Department, Technion, Haifa, Israel
²Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, USA

17:30 6A-5 SWITCHING OF CIRCULAR WAVEGUIDE H₁₁ MODE BY PLASMA OF GAS MICROWAVE DISCHARGE
V. S. Igumnov, S. N. Artemenko, V. A. Avgustinovich, S. A. Gorev, S. A. Novikov, Y. G. Yushkov
Laboratory №46, National Research Tomsk Polytechnic University, Tomsk, Russian Federation

17:45 6A-6 DECOMPOSITION OF P-XYLENE BY MICROWAVE PLASMA GENERATED AT ATMOSPHERIC PRESSURE
C. Liu, G. Zhang, L. Hou, B. Zhang, Q. Wang
Department of Electrical Engineering, Tsinghua University, Beijing, China

Session 6B: Plasma Chemistry II

Wednesday, May 27 16:30-18:30, Opal II

16:30 6B-1 PLASMA COMBUSTION MECHANISM FOR SMALL HYDROCARBONS
A. Starikovskiy
Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ, United States

16:45 6B-2 MORPHOLOGY CONTROL OF GRAPHENE BY PECVD
A. Jafari, M. Ghoranneviss, M. R. Hantehzadeh
Plasma Physics Research Centre, Science and Research Branch, Islamic Azad University, Tehran, Iran

17:00 6B-3 INITIATED PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION (I-PECVD) OF POLY(ALKYL ACRYLATES)
M. Karaman, M. Gursoy, T. Ucar, E. Demir, E. Yenice
Chemical Engineering, Selcuk University, Konya, Turkey
17:15 6B-4 INFRARED SPECTROSCOPY OF CH4/N2 AND C2HM/N2 (M =2, 4, 6) GAS MIXTURES AND DEPOSITION OF NITROGEN-CONTAINING POLYMER FILMS IN A DIELECTRIC BARRIER DISCHARGE
H. C. Thejaswini, V. Sushkov, R. Hippler
1Mechanical & Aerospace Engineering, Case Western Reserve University, Cleveland, OH 44106, USA
2Institute of Physics, University of Greifswald, 17487 Greifswald, Germany

17:30 6B-5 MASS TRANSFER AND CHEMICAL PROCESSES IN THE INTERACTION BETWEEN SURFACE MICRO-DISCHARGE AND DEIONIZED WATER
D. Liu, Z. Liu, D. Li, M. G. Kong
Xi’an Jiaotong University, Xi’an Shanxi, China

17:45 6B-6 DECONTAMINATION OF SAFFRON BY COLD ATMOSPHERIC PRESSURE ARGON PLASMA JET
H. Nikmaram, M. Ghoranneviss, M. Amini
Plasma Physics Research Centre, Science and Research Branch, Islamic Azad University, Tehran, Iran

18:00 6B-7 STUDY OF ETHANOL PLASMA POLYMERS DEPOSITED IN CAPACITIVELY COUPLED PLASMAS
S. Sabooohi, M. Jasieniak, B. R. Coad, A. Michelmore, H. J. Griesser
Mawson Institute, University of South Australia, SA 5095, Australia

18:15 6B-8 PLASMA-CATALYTIC DESTRUCTION OF BENZENE IN A HYBRID SURFACE/PACKED-BED DISCHARGE OVER AgxCe1-x/γ-AI2O3 CATALYST
N. Jiang, J. Li, N. Lu, K. Shang, Y. Wu
College of Electrical Engineering, Dalian University of Technology, Dalian, China

Session 6C: Plasma Material Interactions

Wednesday, May 27 16:30-18:45, Onyx

Session Chair: Rajdeep Singh Rawat, National Institute of Education, Nanyang Technological University

16:30 6C-1 PLASMA-MATERIAL INTERACTION IN IR-T1 TOKAMAK
M. Ghoranneviss, S. Meshkani, A. Jafari
Plasma Physics Research Centre, Science and Research Branch, Islamic Azad University, Tehran, Iran

16:45 6C-2 SMALL PARTICLE TRANSPORT EXPERIMENTS IN VACUUM AND GAS USING PULSED-POWER Z-PINCH LINER-ON-TARGET DRIVE AND DIAGNOSED WITH PROTON RADIOGRAPHIC IMAGING.
Los Alamos National Laboratory, Los Alamos, NM, United States

17:00 6C-3 INVESTIGATION OF NON-THERMAL ATMOSPHERIC PRESSURE PLASMA JET IN CONTACT WITH LIQUIDS- USING ICCD CAMERA
W. B. Adress, Y. Abe, B. W. Graham
1Medical Instrumentation Engineering, Technical College, Mosul, Iraq
2Centre for Plasma Physics, Queen’s University Belfast, Belfast, UK

17:15 6C-4 CROSSLINKING OF WATER-SOLUBLE PULLULAN NANOFIBROUS MATS THROUGH ATMOSPHERIC PLASMA TREATMENT
V. Colombo, M. L. Focarete, M. Gherardi, C. Gualandi, R. Laurita, A. Liguori, L. Paltrinieri, A. Stancampiano
Alma Mater Studiorum - University of Bologna, Bologna, Italy

17:30 6C-5 ATMOSPHERIC PRESSURE NON-THERMAL PLASMA FOR THE PRODUCTION OF COMPOSITE MATERIALS
17:45 6C-6 STRUCTURAL AND ELECTRICAL CHARACTERIZATION OF MAGNETRON SPUTTERED MOOX THIN FILMS
Z. Ghorannevis1, E. Akbarnejad2, M. Ghoranneviss2
1Department of Physics, College of Basic Sciences, Karaj Branch, Islamic Azad University, Alborz, Alborz, Iran
2Science & Research Branch, Physics Department, Islamic Azad University, Tehran, Iran

18:00 6C-7 COAXIAL ELECTROSPUN PCL/PVA-CHITOSAN NANOFIBERS: A NOVEL NON-VIRAL GENE DELIVERY SCAFFOLD
Z. Sultanova1, G. Kabay1, G. Kaleli1, M. Mutlu2
1Micro and Nanotechnology Graduate Program, Institute of Science and Technology, Ankara, Turkey
2Department of Biomedical Engineering, Engineering Faculty, Ankara, Turkey

Session 6D: High Energy Density Matter

Wednesday, May 27 16:30-18:30, Quartz

Session Chair: Igor Golovkin, Prism Computational Sciences, Inc.

16:30 6D-1 STUDY OF THE FEASIBILITY OF WARM DENSE MATTER GENERATION USING METAL FOIL ELECTRIC EXPLOSION UNDER MEGAAMPERE CURRENT DRIVE
S. F. Garanin1, S. D. Kuznetsov1, R. E. Reinovsky2
1All-Russian Research Institute of Experimental Physics (VNIIEF), Sarov, Russian Federation
2Los Alamos National Laboratory, Los Alamos, NM, USA

16:45 6D-2 GENERATION OF FAST CUMULATIVE WATER JETS BY UNDERWATER ELECTRICAL EXPLOSION OF CONICAL WIRE ARRAYS
D. Shafer, V. T. Gurovich, D. Yanuka, E. Zvulun, S. Gleizer, G. R. Toker, Y. E. Krasik
Physics, Technion Israel Institute of Technology, Haifa, Israel

17:00 6D-3 NONLINEAR MAGNETIC DIFFUSION AND THE SURFACE EXPLOSION OF METALS IN FAST RISING MEGAGAUSS MAGNETIC FIELD
S. A. Chaikovsky, V. I. Oreshkin, N. A. Labetskaya, I. M. Datsko, N. A. Ratakhin
Institute of High Current Electronics SB RAS, Tomsk, Russian Federation

17:15 6D-4 RESONANT ABSORPTION EFFECTS IN NEON INTERACTION WITH ULTRAINTENSIVE (SOFT) X-RAY LASER PULSES WITH PHOTON ENERGY FROM 800 TO 1300 eV
J. Zeng, J. Yuan
Physics Department, National University of Defense Technology, Changsha, China

17:30 6D-5 MULTIPHASE EQUATIONS OF STATE FOR METALS UNDER PULSED POWER INFLUENCES
K. V. Khishchenko
Joint Institute for High Temperatures RAS, Moscow, Russian Federation

17:45 6D-6 INVERSE PROBLEM OF THE CURRENT PULSE RECONSTRUCTION ACCORDING TO THE PENETRATION RATE OF ELECTRIC FIELD INDUCED INSIDE THE TUBULAR ELECTRODE
A. I. Khirianova1, S. I. Tkachenko1, E. V. Grabovskii2, G. M. Oleinik2, P. S. Sasorov2
1Department of Radio Engineering and Cybernetics, MIPT (Moscow Institute of Physics and Technology State University), Dolgoprudny, Russian Federation
2Troitsk Institute for Innovation and Fusion Research, Moscow Troitsk, Russian Federation

18:00 6D-7 (invited) HEAT WAVES AND IONIZATION FRONTS
R. P. Drake, P. A. Keiter, J. S. Davis
University of Michigan, Ann Arbor, MI, United States
Session 6E: Plasma Thrusters

Wednesday, May 27 16:30-18:15, Topaz

Session Chairs: J. N. Benford, Microwave Sciences, Lafayette, CA, United States

16:30 6E-1 HYBRID SIMULATION OF WEAKLY-IONIZED RAREFIED ARC-JET FLOWING SUPERSONICALLY ALONG DIVERGING MAGNETIC FIELD
A. Laosunthara, S. Tsuno, T. Nakahagi, H. Akatsuka
Tokyo Institute of Technology, Tokyo, Japan

16:45 6E-2 INITIAL OPERATION OF THE CUBESAT AMBIPOLAR THRUSTER
University of Michigan, Ann Arbor, MI, United States

17:00 6E-3 (invited) AZIMUTHAL MICRO-INSTABILITY INSIDE A WALL-LESS HALL THRUSTER
L. Garrigues1, S. Mazouffre2, J. Vaudolon2, S. Tsikata2
1CNRS/LAPLACE, Toulouse, France
2CNRS/ICARE, Orleans, France

17:30 6E-4 INSTABILITIES AND TRANSPORT IN PLASMAS WITH EXB DRIFT
A. Smolyakov1, I. Romadanov1, W. Frias1, A. Koshkarov1, Y. Raitses2, I. Kaganovich2
1University of Saskatchewan, Saskatoon, Saskatchewan, Canada
2Princeton Plasma Physics Laboratory, Princeton, NJ, USA

17:45 6E-5 (invited) PLASMA PHYSICS OF STARSHIPS
J. N. Benford
Microwave Sciences, Lafayette, CA, United States

Session PL7: Plenary PL7

Thursday, May 28 09:00-10:00, Citrine II-III

Session Chair: Rajdeep Singh Rawat, National Institute of Education, Nanyang Technological University

9:00 PL7-1 PLASMA SOURCES FOR BIOMEDICAL APPLICATIONS: PAST, PRESENT, AND FUTURE
X. Lu
Huazhong University of Sci & Tech, State Key Laboratory of AEET, Wuhan, Hubei, China

Session 7A: Basic Phenomena - II

Thursday, May 28 10:30-13:00, Opal I

Session Chair: Jean-Pierre Boeuf, Universite de Toulouse, LAPLACE, CNRS

10:30 7A-1 THEORETICAL INVESTIGATION OF ANODE SPOT FORMATION AND ITS CHARACTERISTICS BY THE APPLICATION OF KAPPA DISTRIBUTION FUNCTION AS A TOOL FOR NON-EQUILIBRIUM STEADY STATE (NESS) PLASMAS
S. Jahanbakhsh, M. Celik
Department of Mechanical Engineering, Bogazici University, Istanbul, Turkey

10:45 7A-2 EFFECT OF DIELECTRIC TEMPERATURE ON AR ATMOSPHERIC PRESSURE NONEQUILIBRIUM PLASMA JET WITH DIFFERENT DIELECTRIC MATERIALS
J. Song1, Y. Wang1, Y. Piao2, J. Tang1, D. Yu1
1School of Energy Science and Engineering, Harbin Institute of Technology, Harbin/Heilongjiang, China
2School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin/Heilongjiang, China

11:00 7A-3 IMAGING STUDIES OF PLASMA STREAMERS IN LIQUIDS FOR THE PRODUCTION OF HYDROGEN-RICH GAS
A. Dimberger1, S. D. Kovaleski1, P. Norgard1, S. Mededovic Thagard2, J. Franelemont2
1Academy of Fundamental and Interdisciplinary Sciences, Harbin Institute of Technology, Harbin/Heilongjiang, China
2Princeton Plasma Physics Laboratory, Princeton, NJ, USA
11:15 7A-4 OBSERVATION OF TWO-ION-STREAM INSTABILITY IN SHEATH-PRESHEATH TRANSITION REGION BY LIF MEASUREMENT
N. -K. Kim, G. -H. Kim
Department of Energy Systems (Nuclear) Engineering, Seoul National University, Seoul, South Korea

11:30 7A-5 INTERFEROMETRIC STUDY ON THE SHOCK WAVE COLLISIONS DURING DOUBLE LASER PRODUCED PLASMAS
W. Wei, Z. Yang, J. Wu, X. Li, Q. Wang
Xi'an Jiaotong University, Xi'an, Shaanxi, China

11:45 7A-6 PHOTOIONIZATION RELEVANT EXTREME ULTRAVIOLET EMISSION FROM DEVELOPING LOW TEMPERATURE PLASMAS IN AIR
J. C. Stephens, A. Fierro, S. Beeson, J. Dickens, A. Neuber
Center for Pulsed Power and Power Electronics, Texas Tech University, Lubbock, TX, United States

12:00 7A-7 EFFECT OF MAGNETIC FIELD ON THE PROPAGATION OF AR ATMOSPHERIC PRESSURE NONTHERMAL PLASMA JETS
D. Zhou, Y. Piao, Y. Wang, J. Tang, C. Zhang
School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin/Heilongjiang, China

12:15 7A-8 SELF-ORGANIZED PATTERN FORMATION IN AN ATMOSPHERIC-PRESSURE SINGLE DIELECTRIC BARRIER DISCHARGE
J. Zhang, Y. Wang, D. Wang
Dalian University of Technology, Dalian, China

12:30 7A-9 THERMAL CONDUCTIVITY OF 3D COMPLEX (DUSTY) PLASMAS USING HOMOGENOUS NONEQUILIBRIUM MOLECULAR DYNAMICS COMPUTER EXPERIMENT
A. Shahzad, H. Mao-gang
1Physics, GC University Faisalabad, Faisalabad, Punjab, Pakistan
2Key Laboratory of Thermo-Fluid Science and Engineering of Ministry of Education (MOE), Xi'an Jiaotong University, Xi'an, Shaanxi, China

12:45 7A-10 MICROSTRUCTURE EVOLUTION AND MAGNETIC PROPERTIES OF NANOCRYSTALLINE Ni75Fe25 THIN FILMS: EFFECTS OF SUBSTRATE AND THICKNESS.
A. Kahi, A. Guittoum, R. M. Öksüzoğlu, C. Yavru, S. Özgün, M. Boudissa, M. Kechouane
1Physics of Materials Laboratory (LPM), Faculty of Physics, University Of Sciences And Technology Houari Boumediene, Algiers, Algeria
202 Bd Frantz Fanon, BP 399, Nuclear Research Centre of Algiers, Algiers, Algeria
3Faculty of Engineering, Department of Materials Sciences and Engineering, Iki Eyübi̇l Campus, University of Anadolu, 26555 Eskisehir, Turkey
4ENMC Laboratory, Physics Department, University of Sétif, Sétif, 19000, Algeria

Session 7B: Particle Acceleration with Lasers and Beams, Radiation Physics and X-Ray Lasers

Thursday, May 28 10:30-13:00, Opal II

Session Chair: Hyyong Suk, Gwangju Institute of Science and Technology

10:30 7B-1 (invited) OPTIMIZATION OF LASER TRIGGERED PROTON SOURCE AND NEW MECHANISMS OF ION ACCELERATION: FROM THIN SOLID-DENSE FOILS TO LOW-DENSE TARGET
A. V. Brantov, P. A. Ksenofontov, V. Y. Bychenkov
P.N. Lebedev Physical Institute of the Russian Academy of Sciences, Moscow, Russian Federation

11:00 7B-2 (invited) FEMTOSECOND SOFT X-RAY LASER BY IONIZATION TEMPORAL GATING
1Laboratoire d'Optique Appliquée, CNRS, Ecole Polytechnique, Palaiseau, France
2Advanced Photonics Research Institute, GIST, Gwangju, Korea
Session 7C: Compact Pulsed Power and Applications

Thursday, May 28 10:30-13:00, Onyx

Session Chair: Georg Mueller, Karlsruhe Institute of Technology

10:30 7C-1 (invited) DESIGN AND CHARACTERIZATION OF A MARX GENERATOR FOR LOW IMPEDANCE HPM AND RADIOGRAPHIC LOADS
A. Kuskov, A. Elshafiey, S. Horne, S. Portillo
Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

11:00 7C-2 COMPARING A DES TO A BREECH FED RAILGUN USING A SPICE SIMULATION
S. Hundertmark
ERG, ISL, Saint Louis, France

11:15 7C-3 EVOLUTION OF A LASER FILAMENTATION TRIGGERED ELECTRIC DISCHARGE IN AIR
G. Point, L. Arantchouk, J. Carbonnel, A. Mysyrowicz, A. Houard
Laboratoire d'Optique Appliquée - Ecole Polytechnique, ENSTA ParisTech, CNRS - France, Palaiseau, France

11:30 7C-4 CAPACITIVE ENERGY STORES WITH NANOSECOND ENERGY TRANSFER
1High Energy Density, Institute of High Current Electronics (HCEI SB RAS), Tomsk, Russian Federation
2Joint Institute for High Temperatures RAS, Moscow, Russian Federation

11:45 7C-5 (invited) EXPERIMENTS WITH TWO STAGES OF THE AUGMENTED ELECTROMAGNETIC LAUNCHER (MASEL)
M. Roeh, S. Hundertmark
French German Research Institute of Saint Louis (ISL), Saint-Louis, France

12:15 7C-6 COMPACT LTD FOR PULSED POWER APPLICATIONS
W. Jiang, A. Tokuchi
Nagaoka University of Technology, Nagaoka, Niigata, Japan

12:30 7C-7 A COMPACT REPETITIVE PFN-MARX GENERATOR
Z. Li, J. Yang, L. Liu
College of Photoelectric Science and Engineering, National University of Defense Technology, Changsha, China

12:45 7C-8 NON-THERMAL PLASMA EXCITED BY COMPACT NANOSECOND SOLID-STATE PULSE FORMING LINE IN ATMOSPHERIC AIR
J. Li, Y. Liu, X. Li, P. Dong, W. Wang
Institute of Fluid Physics, CAEP, Mianyang, Sichuan, China

Session 7D: Fast Z pinches II

Thursday, May 28 10:30-13:00, Quartz
Session Chair: Alexander L. Velikovich, Naval Research Laboratory

10:30 7D-1 RADIATIONS DURING OF INITIAL PHASE OF HIGH-VOLTAGE ATMOSPHERIC DISCHARGE
P.N. Lebedev Physical Institute, Moscow, Russian Federation

10:45 7D-2 THE RESEARCH AND APPLICATION AN X-PINCH ON COMPACT PULSED POWER GENERATORS
Institute of High Current Electronics SB RAS, Tomsk, Russian Federation

11:00 7D-3 INVESTIGATION OF A SPHERICAL PLASMA FOCUS CONCEPT AS A NEUTRON AND BREMSSTRAHLUNG RADIATION SOURCE
Y. Ay¹, M. A. Abd-Al-Halim², M. Bourham³, L. Winfrey³
¹Department of Nuclear Engineering, North Carolina State University, Raleigh, NC, United States
²Department of Physics, Benha University, Benha, Egypt
³Nuclear Engineering Program, University of Florida, Gainesville, FL, United States

11:15 7D-4 EXPERIMENTS AND SIMULATIONS OF MAGNETICALLY DRIVEN IMPLOSIONS IN HIGH REPETITION RATE DENSE PLASMA FOCUS
L. S. Caballero Bendixen¹, S. C. Bott-Suzuki¹, S. W. Cordaro¹, M. Krishnan², S. Chapman², P. Coleman²
¹Center for Energy Research, University of California San Diego, La Jolla, CA, United States
²Alameda Applied Sciences Corporation, San Leandro, CA, United States

11:30 7D-5 EXTENDED MHD PLASMA JETS WITH EXTERNAL MAGNETIC FIELDS
T. Byvank, P. C. Schrafel, C. E. Seyler, B. R. Kusse
Cornell University, Ithaca, NY, United States

11:45 7D-6 3D MHD SIMULATION OF CAPILLARY DISCHARGE FOR THE BELLA PROJECT
G. A. Bagdasarov¹, P. V. Sasorov¹, V. A. Gasilov¹, O. O. Olkhovskaya¹, S. S. Bulanov¹, C. G. R. Geddes¹, H. -S. Mao¹, C. B. Schroeder¹, E. Esarey², W. P. Leemans³
¹Keldysh Institute of Applied Mathematics RAS, Moscow, Russian Federation
²University of California, Berkeley, California, United States of America
³Lawrence Berkeley National Laboratory, Berkeley, California, United States of America

12:00 7D-7 (invited) MEASUREMENTS OF THE MAGNETIC FIELD DISTRIBUTION IN A Z-PINCH PLASMA DURING AND NEAR STAGNATION, USING POLARIZATION SPECTROSCOPY
G. Rosenzweig¹, E. Kroupp¹, A. Starobinets¹, A. Fisher¹, Y. Maron¹, H. R. Strauss², J. L. Giuliani³, W. J. Thornhill³, A. L. Velikovich¹
¹Weizmann Institute of Science, Rehovot, Israel
²HRS Fusion, West Orange, NJ, USA
³Naval Research Laboratory, Washington, DC, USA

12:30 7D-9 NUMERICAL INVESTIGATION ON PLASMA FORMATION AND CURRENT TRANSFER IN ELECTRICAL EXPLOSION OF SINGLE WIRE
Dept. of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China

Session 7E: Environmental and Industrial Applications II
Thursday, May 28 10:30-13:00, Topaz

Session Chair: Dongping Liu, Dalian Nationalities University

10:30 7E-1 EXPERIMENTAL AND NUMERICAL STUDY OF SHOCK WAVE PROPAGATION PRODUCED BY UNDERWATER ELECTRICAL WIRE EXPLOSION
Y. Chao, H. Zhou, R. Han, X. Li
Xi'an Jiaotong University, Xi'an, Shaanxi, China

10:45 7E-2 TEMPORAL EVOLUTION OF PLASMA SUSTAINED IN SINGLE BUBBLES IN LIQUID WATER
Y. Yang, Y. Tu, H. Xia, X. Lu
Huazhong University of Science and Technology, Wuhan, China

11:00 7E-3 INVESTIGATION OF THE DECOLORIZATION EFFICIENCY OF PIN-TO-PLATE CORONA DISCHARGE PLASMA SYSTEM FOR INDUSTRIAL WASTEWATER TREATMENT
A. El-Tayeb1, A. H. El-Shazly1, M. F. El - Kady1, A. B. Abdel-Rahman2
1Chemical and Petrochemical Engineering Department, Egypt-Japan University of Science and Technology (E-just), New Borg El-Arab City, Alexandria, Egypt
2Electronics and Communications Engineering Department, Egypt-Japan University of Science and Technology (E-just), New Borg El-Arab City, Alexandria, Egypt

11:15 7E-4 DEGRADATION OF PHARMACEUTICAL RESIDUES IN WATER BY PULSED CORONA DISCHARGES - INVESTIGATION OF REACTION MECHANISM
R. Banaschik1, J. F. Kolb1, C. Miron1, K. -D. Weltmann1, P. Lukes2, P. Bednar3, S. Yu4, J. Zhang4, J. Fang4
1Bioelectrics, Leibniz Institute for Plasma Science and Technology, Greifswald, Germany
2Pulse Plasma Systems, Institute of Plasma Physics, Prague, Czech Republic
3Institute of Pharmacy, University of Greifswald, Greifswald, Germany
4Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China

11:30 7E-5 DIELECTRIC BARRIER DISCHARGE GENERATED FROM THE LIQUID ELECTROLYTE
D. Pavlinak, O. Galmiz, M. Zemanek, M. Cernak
Masaryk University Brno, Brno, Czech Republic

11:45 7E-6 TREATMENTS OF DYE WASTEWATER BY WATER SPOUT IN THE PULSED DBD
S. Jiang, K. Liu, Y. Wen
Institute of Electric Light Sources, Fudan University, Shanghai, China

12:00 7E-7 INVESTIGATION ON ATMOSPHERIC PLASMA SURFACE TREATMENT FOR STRUCTURAL BONDING OF TITANIUM AND CFRP
J. Haag1, T. Mertens1, L. Kotte2, S. Kaskel2
1IW-MS, Airbus Group Innovations, Munich, Germany
2IWS, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany

12:15 7E-9 INVESTIGATION ON THE PULSE-MODULATED RATIO FREQUENCY DISCHARGE AND ITS APPLICATION ON THE NOX REMOVAL
Q. Wang, D. Wang
School of Physics and Optoelectronic Engineering, Dalian University of Technology, Dalian, 116023, China