

Program 5/18/15

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

¹*Plasma Physics Division, Naval Research Laboratory, Washington, DC, United States*

²*Icarus 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. Nagayama², R. Mancini⁴, T. S. Lane¹, M. K. Flaugh¹

¹*West Virginia University, Morgantown, WV, USA*

²*Sandia National Laboratories, Albuquerque, NM, USA*

³*Lawrence Livermore National Laboratory, Livermore, CA, USA*

⁴*University 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, 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. Tomlinson²

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. Hahn, P. F. Knapp, P. F. Schmit, C. L. Ruiz, D. B. Sinars, T. J. Awe, E. C. Harding, C. A. Jennings, I. C. Smith, D. C. Rovang, G. A. Chandler, M. E. Cuneo, D. C. Lamppa, M. R. Martin, R. D. McBride, J. L. Porter, G. A. Rochau
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 INSTABILITY 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

²Nuclear Engineering, University of Florida, Gainesville, FL, United States

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. Letizia^{1,2}, 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. Gavrilenko¹, I. A. Ivanov², A. A. Kasatov², S. A. Kuznetsov¹, M. A. Makarov², K. I. Mekler², S. V. Polosatkin², V. V. Postupaev², A. F. Rovenskikh², S. L. Sinitsky², V. F. Sklyarov², 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. Glyavin^{1,2}, M. V. Morozkin¹, A. I. Tsvetkov¹, L. V. Lubyako¹

¹*Institute of Applied Physics RAS, Nizhny Novgorod, Russian Federation*

²*GYCOM Ltd., Nizhny Novgorod, Russian Federation*

11:45 1C-4 TERAHERTZ POLARIMETRIC EMISSION AND DETECTION USING A CUBIC CRYSTAL

G. Gaborit¹, M. Bernier¹, A. Biciunas², J. -L. Coutaz¹

¹*Photo, IMEP-LAHC, UMR 5130, Le Bourget-du-Lac, France*

²*Center for Physical Sciences and Technology, Vilnius, Lithuania*

12:00 1C-5 (invited) THZ BACKWARD-WAVE OSCILLATORS FOR PLASMA DIAGNOSTIC IN NUCLEAR FUSION

C. Paoloni¹, L. Yue², X. Tang², F. Zhang³, B. Popovic⁴, L. Himes⁴, R. Barchfels⁴, D. Gamzina⁴, R. Letizia¹, M. Mineo¹, N. C. Luhmann⁴

¹*Lancaster University, Lancaster, United Kingdom*

²*University of Electronic Science and Technology of China, Chengdu, China*

³*Beijing Vacuum Electronics Research Institute, Beijing, China*

⁴*University of California Davis, Davis, Ca, USA*

12:30 1C-6 MODELING OF A WAVEGUIDE MICROWAVE PULSE COMPRESSION SYSTEM USING TRANSMISSION LINE THEORY AND EQUIVALENT CIRCUITS

S. P. Savaidis¹, S. A. Mitilneos¹, N. A. Stathopoulos¹, Z. C. Ioannidis^{2,1}

¹*Department of Electronics Engineering, Technological Education Institute of Piraeus, Athens, Greece*

²*Faculty of Physics, National and Kapodistrian University of Athens, Athens, Greece*

12:45 1C-7 (invited) METAMATERIAL-BASED PLANAR THZ SOURCES

Z. Duan¹, X. Tang¹, Y. Wang¹, Y. Gong¹, M. Chen²

¹*School of Physical Electronics, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

²*Department of Physics, Massachusetts Institute of Technology, Cambridge, MA, USA*

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

K. W. Struve, N. R. Joseph, R. D. Thomas, V. J. Harper-Slaboszewicz

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

A. S. Chuvatin¹, T. d'Almeida², F. Lassalle², V. L. Kantsyrev³, A. S. Safronova³, I. K. Shrestha³, V. V. Shlyaptseva³, A. Stafford³, M. E. Weller³

¹*Laboratoire de Physique des Plasmas, Ecole Polytechnique, Palaiseau, France*

²*CEA, DAM, GRAMAT, Gramat, France*

³*University 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

¹*Experimental Physics Department, Ural Federal University, Yekaterinburg, Russian Federation*

²*ElectroPhysics 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. Franke, 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

¹*Institute of Quantum Science, Nihon University, Tokyo, Japan*

²*Anan 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

¹*Universidade da Madeira, Funchal, Portugal*

²*Siemens AG, Corporate Technology, Erlangen, Germany*

³*Siemens 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

T. Lho, D. -H. Shin, C. -H. Cho, S. -H. Ma, Y. -C. Hong

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

¹*LAPLACE, Universite de Toulouse, Toulouse, France*

²*LPSC, Universite Joseph Fourier, Grenoble, France*

³*IRFM, 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

¹*Biomedical Engineering, Baskent University, Ankara, Turkey*

²*College 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

Physics Department, Technion, Haifa, Israel

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. Dupljanin¹, M. Radjenovic-Radmilovic¹, S. Dujko¹, Z. L. Petrovic¹, J. De Urquijo²

¹*University of Belgrade, Institute of Physics, Belgrade, Serbia*

²*Instituto 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. Luo¹, D. Dai¹, Y. X. Han¹, L. C. Li¹, T. Shao²

¹*School of Electric Power, South China University of Technology, Guangzhou, China*

²*Institute 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. Israelyan, 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

¹*Michigan State University, East Lansing, MI, United States*

²*Max 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

Departement de Physique Energetique, 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

Y. Shi, Z. Shi, K. Wang, J. Wu, S. Jia, L. Wang

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. Wilczek¹, J. Trieschmann¹, J. Schulze², E. Schuengel², R. P. Brinkmann¹, A. Derzsi³, I. Korolov³, Z. Donko³, T. Mussenbrock¹

¹*Institute for Theoretical Electrical Engineering, Ruhr-University Bochum, Bochum, Germany*

²*West Virginia University, Department of Physics, Morgantown, USA*

³*Institute 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 BREMSSTRAHLUNG EMISSION

M. Oloumi, M. Habibi, H. Hossein Khani, S. Magidi, F. Pouraram

Nuclear Science and Technology Research Institute, AEOL, 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

¹*Institute of Engineering Science, University of Science and Technology of China, Hefei, Anhui, China*

²*School 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. Khrabrov¹, A. Smolyakov², D. Sydorenko³, Y. Raitses¹

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

¹*Department of Physics, Bangladesh University of Engineering and Technology (BUET), Dhaka-1000, Dhaka, Bangladesh*

²*Department of Physics, Jahangirnagar University, Dhaka, Bangladesh*

1P-36 TIME DEPENDENT NONPLANAR DIA SHOCK WAVES IN MULTI-COMPONENT DUSTY PLASMAS WITH DISTINCT TEMPERATURE SUPER-THERMAL 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

¹*Department of Physics and Technology, IETP, al-Farabi Kazakh National University, Almaty, Kazakhstan*

²*Instituto de Matematica Pura y Aplicada, Universidad Politencia 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, Kazakstan

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. Frolov^{1,2}

¹*Saratov State University, Saratov, Russian Federation*

²*Saratov 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

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1P-43 SIMULATION INVESTIGATION OF A HIGH-EFFICIENCY X-BAND MAGNETICALLY INSULATED LINE OSCILLATOR

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1P-44 STABILIZED OPERATION OF A MICROWAVE COMPRESSOR DRIVEN BY RELATIVISTIC S-BAND MAGNETRON

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1P-45 RELATIVISTIC VIRCATOR WITH AN ELECTROMAGNETIC BANDGAP MEDIUM

A. Elfrgani, G. Atmatzakis, S. C. Yurt, C. G. Christodoulou, E. Schamiloglu

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1P-46 MEASUREMENTS OF AN ELECTRON BEAM DRIVEN BY A NONLINEAR TRANSMISSION LINE

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1P-47

1P-48 COMPACT A6 MAGNETRON WITH A NEODYMIUM

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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

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1P-50 SHOCK WAVE IMPLOSION IN WATER WITH DIFFERENT BOUNDARY CONDITIONS

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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

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1P-52 ANALYSIS OF WIRE EXPLOSION SYSTEM FOR GENERATING STRONG SHOCK WAVES IN WATER

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1P-53 SIMPLE MIXED EQUATION-OF-STATE MODEL OF NONIDEAL PLASMA FOR SIMULATION OF UNDER-WATER WIRE EXPLOSION

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1P-54 DIFFERENT BREAKDOWN MODES OF ELECTRICAL EXPLODING ALUMINUM WIRES IN AIR

J. Wu, X. Li, Z. Yang

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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. Olevnik¹, A. V. Branitskii¹, E. V. Grabovskii¹, J. N. Laukhin¹, P. V. Sasorov¹, I. N. Frolov¹, S. I. Tkachenko², A. I. Khiryanova²

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1P-56 DIFFUSION OF THE STRONG MAGNETIC FIELDS INTO THE CONDUCTOR

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1P-57 THE SURFACE TEMPERATURE MODEL FOR MAGNETICALLY INSULATED TRANSMISSION LINE

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1P-58 MODELING OF PLASMA CONDITIONS AND SPECTRAL PROPERTIES OF RADIATION-HEATED MATTER

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1P-59 VISRAD, 3-D TARGET DESIGN AND RADIATION SIMULATION CODE

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1P-60 CIRCUIT SIMULATION OF MAGNETICALLY DRIVEN HYPER-VELOCITY FLYER PLATE LAUNCHING EXPERIMENT ON PTS FACILITY

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Session 1P: Fast Z pinches (poster)

Poster Session

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

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

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1P-62 EFFECT OF THE AXIAL MAGNETIC FIELD ON A RADIATING Z-PINCH PLASMA

R. Baksh, A. Roussikh, A. Zhigalin, N. Labetskaya, S. Chaikovskii, V. Oreshkin

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1P-63 EXPERIMENTAL AND NUMERICAL INVESTIGATIONS ON THE FAST ELECTRICAL EXPLOSION OF SINGLE ALUMINUM WIRE IN VACUUM

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1P-64 STUDY ON ELECTRICAL EXPLOSION OF BARE AND INSULATION COATED TUNGSTEN WIRES

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1P-65 STUDIES OF THE X-RAY RADIATION FROM GAS-PUFF Z-PINCHES ON COBRA.

T. A. Shelkovenko, S. A. Pikuz, N. Qi, P. W. L. de Grouchy, B. R. Kusse, D. A. Hammer

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1P-66 NEON AND ARGON MULTI-NOZZLE GAS PUFF Z-PINCH STUDIES ON COBRA

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1P-67 RADIATIONS DURING OF INITIAL PHASE OF HIGH-VOLTAGE ATMOSPHERIC DISCHARGE

A. V. Agafonov, A. V. Oginiv, A. S. Rusetskiy, V. A. Ryabov, K. V. Shpakov, A. P. Chubenko

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1P-68 STUDY OF Z-PINCH X-RAY EMISSION IN THE IMPLOSION OF FIBER ARRAYS AT THE ANGARA-5-1 FACILITY

A. N. Gritsuk¹, V. V. Aleksandrov¹, E. V. Grabovskiy¹, I. G. Малютин¹, K. N. Mitrofanov¹, G. M. Oleinik¹, G. S. Volkov¹, A. P. Shevelko²

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1P-69 EXPERIMENTAL INVESTIGATION OF THE EFFECTS OF AN AXIAL MAGNETIC FIELD ON THE MAGNETO RAYLEIGH-TAYLOR INSTABILITY IN ABLATING PLANAR FOIL PLASMAS

D. A. Yager-Elorriaga, N. M. Jordan, S. G. Patel, A. M. Steiner, Y. Y. Lau, R. M. Gilgenbach, M. Weis
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1P-70 STUDY OF THE HYBRID X-PINCH WITH AN EXTERNAL AXIAL MAGNETIC FIELD

S. A. Pikuz¹, T. A. Shelkovenko¹, J. B. Greenly¹, L. A. Atoyan¹, D. A. Hammer¹, I. N. Tilikin², A. R. Mingaleev², G. V. Ivanenkov², A. V. Agafonov²

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1P-71 STUDIES OF CYLINDRICAL LINER Z-PINCHES AT 1 MA ON COBRA

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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
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1P-73 CALCULATION OF ELECTRON AVALANCHE FORMATION TIME AND BREAKDOWN TIME LAG OF UIPF1

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1P-74 CALCULATION OF WAVE PROPAGATION DELAY IN A PLASMA FOCUS DEVICE AND ITS EFFECT ON BREAKDOWN TIME LAG

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1P-75 CALCULATION OF MINIMUM BREAKDOWN VOLTAGE IN A MATHER TYPE PLASMA FOCUS DEVICE (UIPF1)

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1P-76 MEASUREMENT OF THE ENERGY SPECTRUM OF THE ELECTRON BEAM IN A SMALL PLASMA FOCUS DEVICE USING X-RAY SPECTRUM

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1P-77 PLASMA DYNAMICS IN GAS EMBEDDED CONICAL WIRE ARRAY Z-PINCH PLASMAS

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1P-78

1P-79 NUMERICAL INVESTIGATION ON THE EFFECT OF ABLATOR PRESSURE TO ISOLATE SPHERICAL FUEL COMPRESSION FROM CYLINDRICAL Z-PINCH IMPLOSION

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Session 1P: Insulation and Dielectric Breakdown (poster)

Poster Session

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

Session Chairs: Chao Chang, SLAC, Stanford University
Natalia Yu Babaeva, Joint Institute for High Temperatures Russian Academy of Sciences

1P-80 EFFECT OF PLASMA CHANNEL PARAMETERS ON THE SHOCK-WAVE DYNAMICS AT BLAST-HOLE ELECTRO-FRACTURE OF CONCRETE LUMPS

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1P-81 SIMULATION OF LEADER INCEPTION FROM OVERHEAD TRANSMISSION LINES UNDER LIGHTNING BACKGROUND

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1P-82 CIRCUIT MODELS FOR BAND PASS FILTER OF RF FRONT-END SYSTEM DAMAGED BY HIGH POWER ELECTROMAGNETIC PULSE

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1P-83 ELEMENTAL COMPOSITION AND ELECTRIC PROPERTIES OF POLYCRYSTALLINE ALUMINA CERAMIC AFTER METAL ION BEAM TREATMENT

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1P-84 SCATTERING CROSS SECTIONS AND ELECTRON TRANSPORT COEFFICIENTS FOR ELECTRONS IN CF3I

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1P-85 NONSTATIONARY FLUID DYNAMICS IN INHOMOGENEOUS ELECTRIC FIELD

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1P-86 INITIATION OF BREAKDOWN IN STRINGS OF BUBBLES IMMERSSED IN TRANSFORMER OIL: PASCHEN CURVES AND PROXIMITY OF BUBBLES

N. Y. Babaeva, D. V. Tereshonok, G. V. Naidis
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1P-87 SURFACE MORPHOLOGY AND CHEMICAL CHARACTERISTICS OF GIS EPOXY INSULATORS UNDER MICROSECOND-PULSE EXCITATION

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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

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1P-89 STRONG DISCHARGE PROCESSES BY ATMOSPHERIC PLASMA JET ARRAY WITHOUT EXTERNAL GROUND ELECTRODE

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1P-90 LARGE VOLUME AIR PLASMA FOR FRUIT STERILIZATION

A. -A. H. Mohamed¹, S. M. Shariff², M. Benganem¹, A. A. Almashraqi¹, A. H. Basher¹, S. A. Ouf³

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1P-91 DEVELOPMENT OF A HYBRID MPI/OPENMP MASSIVELY PARALLEL 3D PARTICLE-IN-CELL MODEL OF A MAGNETIZED PLASMA SOURCE

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1P-92 GRAPHENE SYNTHESIS BY ATMOSPHERIC PRESSURE MICROWAVE PLASMA

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1P-93 EXPERIMENTAL STUDIES ON ELECTRO-OPTICAL CHARACTERISTICS OF PULSED STREAMER DISCHARGE ON WATER SURFACE

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1P-94 MASS SPECTROSCOPY AND ICCD ANALYSIS OF COUPLED AND UNCOUPLED MODE IN A GATLING-GUN LIKE PLASMA SOURCE

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1P-95 PLASMA-ASSISTED IGNITION AND COMBUSTION OF METHANE-AIR MIXTURES USING DIELECTRIC BARRIER DISCHARGE

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1P-96 INFLUENCE OF GAS FLOW ON DISCHARGE MODE IN COAXIAL ARGON DBD UNDER ATMOSPHERIC PRESSURE

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1P-97 A LOW-POWER MAGNETIC-FIELD-ASSISTED PLASMA JET GENERATED BY DIRECT-CURRENT GLOW DISCHARGE AT ATMOSPHERIC PRESSURE

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1P-98 RESEARCH STATUS OF ELECTRON BEAM PLASMA FOR AERODYNAMIC APPLICATIONS IN CHINA

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1P-99 OPTICAL EMISSION OF HELIUM CRYOPLASMA

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1P-100 THE EFFECT OF LOW-TEMPERATURE PLASMA TREATMENT ON THE PLANT SEEDS

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1P-101

1P-102 INVESTIGATION OF BINDING PROPERTIES OF MICROCAPSULES ON LOW PRESSURE PLASMA TREATED TEXTILES

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1P-103 EFFECTS OF PLASMA TREATMENTS ON THE ADHESION BETWEEN POLYESTER FABRICS AND SILICONE RUBBER COATING

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1P-104 NEW PLASMA PATTERNING OF AG NANOWIRE USING HIGH PRESSURE MICRO-DISCHARGE

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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

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1P-106 INTERACTION BETWEEN PT CATALYST AND OZONE FOR CATALYTIC CARBON MONOXIDE OXIDATION

K. -T. Kim, S. Jo, H. S. Kang, S. H. Pyun, D. H. Lee, Y. -H. Song

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1P-107 CHARACTERISTICS OF HELIUM PLASMA JET DRIVEN BY MICROSECOND PULSES WITH DIFFERENT CONFIGURATIONS

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1P-108 OPTIMIZATION OF LOW-PRESSURE PLASMA REACTOR FOR HIGH-SPEED SURFACE TREATMENT OF POLYIMIDE SUBSTRATE

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1P-109 MEASUREMENT OF THE CHARGE ON DIELECTRIC SURFACE OF A DBD PLASMA ACTUATOR

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IP-110 MODIFICATION OF THE SURFACE LAYER OF METAL MATERIALS UNDER THE COMBINED INFLUENCE OF HIGH INTENSITY PULSED ION BEAM AND MAGNETRON SPUTTERING

G. E. Remnev, O. M. Lebedynskiy, V. N. Legostaev, S. K. Pavlov, A. V. Petrov, E. A. Smoliansky, A. V. Stepanov
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IP-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
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IP-112 APPLICATION OF THE HOLLOW CATHODE EFFECT FOR LOCAL ION NITRIDING OF THE MACHINE PARTS

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IP-113 OBTAINING USEFUL PROPERTIES OF DIFFERENT MATERIALS BY USING MAGNETRON SPUTTERING

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IP-114 COMPUTER MODELING OF LOCAL ION NITRIDING PROCESS WITH HOLLOW CATHODE EFFECT

K. N. Ramazanov, Y. G. Khusainov, I. V. Zolotov
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IP-115 THE PREPARATION OF MICROPOROUS PVDF MEMBRANES WITH DITHIOPHOSPHATES AND MODIFICATION OF SURFACE PROPERTIES BY HELICON PLASMA

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IP-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
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IP-117 SOLID STATE BATTERY MANUFACTURING WITH THERMIONIC VACUUM ARC AND RF SPUTTERING

S. Pat¹, S. Ozen¹, V. Senay², S. Korkmaz¹, Z. Pat³
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IP-118 CALCULATIONS OF ELECTRIC AND MAGNETIC FIELDS AND OHMIC HEATING IN THE VACUUM INTERRUPTER

S. D. Kuznetsov¹, S. F. Garanin¹, V. A. Glazunov¹, V. B. Yakubov¹, V. N. Borisenkova², P. P. Misyura³
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IP-119 AN ATMOSPHERIC-PRESSURE, ROOM-TEMPERATURE, COLD MICRO PLASMA

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Huazhong University of Science and Technology, WuHan, China

IP-120 YIELD OF HYDROGEN PEROXIDE, OZONE AND NITRITE NITROGEN WITH DBD ARRAYS IN WATER MIST SPRAY

B. Chen^{1,2,3,4}, Y. Gan^{1,3}, Y. Wu^{1,3}, C. Zhu^{1,2,5}, J. Fei^{4,5}, F. Zhou^{1,3}, J. Wang^{1,3}, J. Wang^{1,3}
¹*Hohai University Nantong Institute of Marine and Offshore Engineering, Nantong, China*
²*Jiangsu Province Key Laboratory of Environmental Engineering, Nanjing, China*
³*Department of Mathematics and Physics, Hohai University, Changzhou, China*
⁴*College of Energy and Electrical Engineering, Hohai University, Nanjing, China*
⁵*Jiangsu 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. Li^{1,2}, J. Li^{1,2}, P. Dong^{1,2}, L. W. Zhang^{1,2}, J. D. Long^{1,2}, Y. T. Xie^{1,2}

¹*Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, China*

²*Key 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

¹*Faculty of Physics, Tomsk State University, Tomsk, Russian Federation*

²*Institute 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

Nazarbaevy University Research and Innovation System PI, Astana, Kazakstan

17:00 2A-3 EXCITATION OF ION ACOUSTIC WAVES IN PLASMAS WITH ELECTRON EMISSION FROM WALLS

I. D. Kaganovich¹, A. V. Khrabrov¹, D. Sydorenko², A. Smolyakov³, Y. Raitses¹

¹*PPPL, Princeton, United States*

²*University of Alberta, Alberta, Canada*

³*University of Saskatchewan, Saskatoon, Canada*

17:15 2A-4 FIELD EMISSION CURRENT GENERATION IN A HIGH PRESURE NOBLE GAS

N. P. Lockwood¹, G. A. Pitz¹, S. B. Fairchild², M. A. Lange³

¹*Directed Energy Directorate, Air Force Research Laboratory, Kirtland AFB, NM, United States*

²*Materials Directorate, Air Force Research Laboratory, Wright-Patterson AFB, NM, United States*

³*TechFlow 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

¹*Nuclear Engineering, University of Florida, Gainesville, FL, United States*

²*Department of Mechanical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States*

³*Nuclear 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. Puač, 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

¹*Chemistry, Lille University, Villeneuve d'Ascq, France*

²*Chemistry, 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. Nielsen¹, D. Ziska¹, N. L. Bennett², D. R. Welch³, T. M. Romero⁴

¹*Sandia National Laboratories, Albuquerque, NM, United States*

²*National Security Technologies, LLC, Las Vegas, NV, United States*

³*Voss Scientific, LLC, Albuquerque, NM, United States*

⁴*Leidos, 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. Koss^{1,2}, O. S. Vaulina^{1,2}

¹*JIHT RAS, Moscow, Russian Federation*

²*MIPT, Dolgoprudny, Russian Federation*

17:15 2C-3 A NOVEL COLD CATHODE SHEET-BEAM PLASMA CATHODE ELECTRON GUN AND ITS BEAM DIAGNOSTICS

N. Kumar^{1,2}, U. N. Pal^{1,2}, R. Prakash^{1,2}

¹*CSIR-CEERI, Pilani, Rajasthan, India*

²*AcSIR, New Delhi, Delhi, India*

17:30 2C-4 ELECTRON SOURCE BASED ON THE LTD AND PLASMA-FILLED DIODE

A. Zherlitsyn, 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 VACUUM ARC DISCHARGE.

S. A. Popov^{1,2}, R. Methling³, A. V. Batrakov^{1,2}, D. Uhrlandt³, K. -D. Weltmann³

¹*Institute of High Current Electronics, Siberian Branch, Russian Academy of Sciences (IHCE SB RAS), Tomsk, Russian Federation*

²*Tomsk Polytechnic University, Tomsk, Russian Federation*

³*Leibniz-Institute for Plasma Science and Technology e.V. (INP Greifswald), Greifswald, Germany*

18:15 2C-7 OPTIMIZATION BEAM CURRENT OF MULTICUSP ION SOURCE BY MODIFYING STRUCTURE

Y. H. Yeon¹, J. C. Lee¹, M. Ghergherehchi², J. S. Chai²

¹*WCU Department of Energy Science, Sungkyunkwan University, Suwon, South Korea*

²*School of Information & Communication Engineering, Sungkyunkwan University, Suwon, South Korea*

Session 2D: Laser Produced Plasmas

Monday, May 25 16:30-18:15, Quartz

Session Chair: Andrey Brantov, P.N. Lebedev Physical Institute of the Russian Academy of Sciences

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. Bennaceur-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. Bystryi^{1,2}, I. Morozov^{1,2}

¹*Joint Institute for High Temperatures of Russian Academy of Sciences (JIHT RAS), Moscow, Russian Federation*

²*National 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

V. L. Kantsyrev, A. S. Safronova, K. A. Schultz, V. V. Shlyaptseva, I. K. Shrestha, M. C. Cooper, E. E. Petkov, A.

Stafford, W. Cline, P. Wiewior, J. J. Moschella, O. Chalyy

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

¹*Instituto de Fisica, Pontificia Universidad Catolica de Chile, Santiago, Chile*

²*Departamento de Fisica, Universidad Tecnica Federico Santamaria, Santiago, Chile*

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

¹*AFRL, Albuquerque, NM, United States*

²*Boeing DES, Albuquerque, NM, United States*

³*University 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. Andreev^{1,2}

¹*ELI-ALPS, ELI-HU Nkft, Szeged, Hungary*

²*Max-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 Woedtke¹

¹*ZIK Plasmatis, INP Greifswald, Greifswald, Germany*

²*Department of Surgery, Ernst-Moritz-Armdt-University Greifswald, Greifswald, Germany*

17:00 2E-2 EFFECT OF NONTHERMAL ATMOSPHERIC PRESSURE PLASMA ON BREAST CANCER CELLS

S. Mirpour¹, N. Jalali Farahani², M. Nikkha³, N. Soleimani³, S. Piroozmand³, H. R. Ghomi¹

¹*Laser and Plasma Institute, Shahid Beheshti University, Tehran, Iran*

²*Plasma Research Center, Science and Research Branch, Azad University, Tehran, Iran*

³*Nanobiotechnology 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. Pouvesle

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

¹*Department of Gastroenterology, Kobe University, Kobe, Japan*

²*Energy Sciences, Tokyo Institute of Technology, Yokohama, Japan*

³*Bioengineering, 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 Oksuz³, L. Oksuz²

¹*Department of Chemistry, Ordu University, Ordu, Turkey*

²*Department of Physics, Suleyman Demirel University, Isparta, Turkey*

³*Department of Chemistry, Suleyman Demirel University, Isparta, Turkey*

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, Ashtarak, Armenia

11:15 3A-3 FLOATING POTENTIAL FLUCTUATION USING LASER HEATED EMISSIVE PROBE (LHEP) AND ITS NONLINEAR ANALYSIS

A. K. Sarma¹, P. Mehta², V. Mitra¹, J. Ghosh³, B. Sarma¹

¹*School of Advanced Sciences (SAS), VIT University Chennai, Chennai, Tamil Nadu, India*

²*Venus International College of Technology, Gandhinagar, Gujarat, India*

³*Institute 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 Silva^{2,3}, M. J. Brunger^{2,4}

¹*Research School of Physics and Engineering, Australian National University, Canberra, ACT, Australia*

²*School of Chemical and Physical Sciences, Flinders University, Adelaide, SA, Australia*

³*Universidade Federal de Mato Grosso, Barra do Garcas, Mato Grosso, Brazil*

⁴*Institute of Mathematical Sciences, University of Malaya, Kuala Lumpur, Malaysia*

11:45 3A-6 THE LXCAT PROJÉT: 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

¹*Theoretical Physics Division, PINSTECH, Islamabad, Pakistan*

²*TPD, 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. Tang², D. Yu³, C. Zhang¹

¹*School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China*

²*Academy of Fundamental and Interdisciplinary, Harbin Institute of Technology, Harbin, China*

³*Energy Science and Engineering, Harbin Institute of Technology, Harbin, China*

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. Hramov^{1,2}, S. A. Kurkin^{2,1}, A. A. Badarin^{1,2}, A. A. Koronovskiy^{2,1}

¹*REC 'Nonlinear Dynamics of Complex Systems', Saratov State Technical University, Saratov, Russian Federation*

²*Faculty 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. Kurkin^{1,2}, A. A. Badarin¹, A. A. Koronovskii^{1,2}, A. E. Hramov^{2,1}

¹*Saratov State University, Saratov, Russian Federation*

²*Saratov 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. Sinitzky^{1,2}, A. V. Arzhannikov^{1,2}, N. S. Ginzburg³, P. V. Kalinin^{1,2}, N. Y. Peskov³, A. S. Sergeev³, V. D.

Stepanov^{1,2}, V. Y. Zaslavsky³

¹*Plasma Department, Budker Institute of Nuclear Physics Novosibirsk, Novosibirsk, Russian Federation*

²*Physics Department, Novosibirsk State University, Novosibirsk, Russian Federation*

³*Plasma Physics and High Power Electronics Division, Plasma Physics and High Power Electronics Division, Institute of Applied Physics, Nizhni 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

G. B. Greening, N. Jordan, S. C. Exelby, R. M. Gilgenbach, D. Simon, Y. Y. Lau

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

¹*Pulsed Power and Power Electronics, Texas Tech University, Lubbock, Texas, United States*

²*Physics 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. Ransohoff¹, S. Tian¹, D. Hammer¹, S. Pikuz², T. Shelkovenko²

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. Djangobegov¹, A. O. Schishlov¹, S. F. Medovschikov¹, A. V. Branitskii¹, V. A. Gasilov², O. G. Olkhovska², P. V. Sasorov², A. P. Shevelko³, S. I. Tkachenko⁴

¹CDPD, SRC RF TRINITI, Moscow, Troitsk, Russian Federation

²Keldysh 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, Dolgoprudny, 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

N. M. Jordan, D. A. Yager-Elorriaga, A. M. Steiner, S. G. Patel, Y. Y. Lau, R. M. Gilgenbach

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. Lorange¹, M. C. Cooper¹, S. G. Patel², A. M. Steiner², D. A. Yager-Elorriaga², N. M. Jordan², R. M. Gilgenbach², C. A. Coverdale³, B. Jones³, K. M. Williamson³, 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

A. G. Rousskikh, A. S. Zhigalin, N. A. Labetskaya, S. A. Chaikovskii, R. B. Baksht, V. I. Oreshkin

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. Cikhart¹, J. Kortanek¹, B. Cikhartova¹, K. Rezac¹, D. Klir¹, 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

K. -S. Seo, J. -H. Cha, D. -H. Kim, H. J. Lee, H. -J. Lee

Department of Electrical and Computer Engineering, Pusan National University, Busan, South Korea

11:00 3D-3 DIAGNOSTICS OF BENT X-RAY DIAGNOSTIC CRYSTALS

N. R. Pereira¹, A. T. Macrander², S. Stoupin², E. O. Baronova³

¹*Ecopulse, Inc., Springfield VA, United States*

²*XSD, Advanced Photon Source, Argonne IL, United States*

³*Kurchatov Institute, Moscow, Russia*

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 Appliquée - 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

¹*Racah Institute of Physics, The Hebrew University, Jerusalem, Israel*

²*Plasma 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. Talebitaher², P. M. E. Shutler³, R. S. Rawat¹, P. Lee¹

¹*Natural Sciences and Science Education, National Institute of Education, NTU, Singapore, Singapore*

²*Energy Research Institute, Nanyang Technological University, Singapore, Singapore*

³*Mathematics 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-Sadowska², W. Surala², D. Zaloga², R. Miklaszewski¹, E. Zielinska¹, K. Tomaszewski³

¹*Division of Magnetised Plasma, Institute of Plasma Physics and Laser Microfusion (IFPiLM), Warsaw, Poland*

²*Plasma Studies Division, National Centre for Nuclear Research (NCBJ), Otwock, Poland*

³*ACS 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. Wang^{1,2}, Y. Shen^{1,3}, C. Zhang^{1,2}, T. Shao^{1,2}

¹*Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China*

²*Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China*

³*School 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

S. K. Kundu¹, E. M. Kennedy¹, J. C. Mackie¹, C. I. Holdsworth², T. S. Molloy¹, V. V. Gaikwad¹, B. Z. Dlugogorski³
¹*Discipline of Chemical Engineering, University of Newcastle, Newcastle, NSW, Australia*
²*Discipline of Chemistry, University of Newcastle, Newcastle, NSW, Australia*
³*School of Engineering and Information Technology, Murdoch University, Perth, WA, Australia*

11:30 3E-5 IMPROVING THE OPERATING PROPERTIES OF PARTS OF TITANIUM ALLOYS BY SURFACE HARDENING IN HIGH DENSITY PLASMA OF GLOW DISCHARGE

K. N. Ramazanov, I. V. Zolotov, Y. G. Khusainov, R. F. Khusnutdinov
Ufa State Aviation Technical University, Ufa, Russian Federation

11:45 3E-6 SECONDARY ARCING IN SPACE ENVIRONMENT

A. V. Batrakov^{1,2}, E. L. Dubrovskaya¹, K. V. Karlik¹, A. V. Schneider¹
¹*Institute of High Current Electronics SB RAS IHCE SB RAS, Tomsk, Russian Federation*
²*National Research Tomsk Polytechnic University, Tomsk, Russian Federation*

12:00 3E-7 OPTICAL SENSOR FOR THE VECTORIAL ANALYSIS OF THE PLASMA INDUCED ELECTRIC FIELD

G. Gaborit^{1,2}, J. Dahdah², F. Lecoche², T. Treve², P. Jarrige², L. Gillette^{1,2}, J. Piquet³, L. Duvillearet²
¹*Photo, IMEP-LAHC, UMR 5130, Le Bourget-du-Lac, France*
²*R&D, Kapteos, St Helene-du-lac, France*
³*MB Electronique, Moirans, France*

12:15 3E-8 CONVERSION OF METHANE INTO HYDROGEN AND C2 HYDROCARBONS IN A DIELECTRIC BARRIER DISCHARGE REACTOR

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

12:30 3E-9 HYDROPHOBIC AND WEAR-RESISTIBLE SURFACE COATING OF CARBON STEEL USING LINEAR MICROWAVE PLASMA WITH TE-TEM MODE POWER COUPLING

M. -K. Han¹, J. -H. Cha¹, T. Kim¹, D. -H. Kim¹, H. J. Lee¹, H. -J. Lee¹, M. W. Kim²
¹*Department of Electrical and Computer Engineering, Pusan National University, Busan, South Korea*
²*Finetech Co., Ltd, Hwaseong, Gyeonggi, South Korea*

Session 4A: Dusty & Strongly Coupled Plasmas

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

Session Chair: Holger Kersten, University 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, K. 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
¹*Theoretische Physik und Astrophysik, University of Kiel, Kiel, Germany*
²*Institute 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?

L. P. Schepers¹, J. Beckers¹, T. W. Tukker², W. L. IJzerman³

¹*Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands*

²*Philips Research, Eindhoven, Netherlands*

³*Philips Lighting, Eindhoven, Netherlands*

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

A. W. Cross, H. Yin, D. Bowes, W. He, K. Ronald, L. Guo, Y. Yin, L. Zhang, D. C. Speirs, C. W. Robertson, A. D. R. Phelps

Department of Physics, Strathclyde University, Glasgow, United Kingdom

14:15 4B-2 ADVANCES IN BEAM OPTICS ANALYZER

T. Bui¹, M. Read¹, M. C. Lin¹, B. Tallis², H. Tran²

¹*Calabazas Creek Research, Inc., Mountain View, CA, United States*

²*North 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 DEPOSITION REACTOR AT 2.45 GHZ

K. Bouherine¹, A. Tibouche¹, M. Labiode¹, N. Ikhlef¹, O. Leroy²

¹*Laboratoire d'Etudes et Modelisation en Electrotechnique, Universite de Jijel, Jijel, Algeria*

²*Laboratoire 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

¹*Theoretical Electrical Engineering, Ruhr University Bochum, Bochum, Germany*

²*Electrical 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

¹*Institut fuer Theoretische Physik und Astrophysik, University of Kiel, Kiel, Germany*

²*Institut 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. Humphreys³, M. L. Walker³

¹*Princeton University, Princeton, NJ, United States*

²*Princeton Plasma Physics Laboratory, Princeton, NJ, United States*

³*General Atomics, Princeton, NJ, United States*

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

G. Sahoo¹, R. Paikaray¹, S. Samantaray^{1,2}, P. Das¹, J. Ghosh³, M. B. Chowdhuri³, A. K. Sanyasi^{1,3}

¹Ravenshaw University, Cuttack, Odisha, India

²Christ College, Cuttack, Odisha, India

³Institute For Plasma Research, Bhat, Gandhinagar, India

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

15:30 4C-6

15:45 4C-7 SEMI ANALYTIC DETERMINATION OF EQUILIBRIUM PLASMA PARAMETER OF DAMAVAND TOKAMAK

E. Noori, Y. Sadeghi

Plasma Research School, Nuclear Science and Technology Research Institute, Tehran, Iran

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. Wurster⁴, K. -D. Weltmann¹, G. Daeschlein⁵, S. Emmert², T. von Woedtke¹

¹Plasma Bioengineering, Leibniz-Institute for Plasma Science and Technology (INP Greifswald), Greifswald, Germany

²Department of Dermatology, Venerology 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. Zhang^{1,2}, 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. Basher¹, S. A. Ouf², S. M. Shariff³, M. Benghanem¹, A. A. Almashraqi¹, A. -A. H. Mohamed¹

¹Physics Department/Faculty of Science, Taibah University, Madinah, Saudi Arabia

²Biology 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. Korobeynikov¹, A. V. Melekhov²

¹*Power Engineering, Novosibirsk State Technical University, Novosibirsk, Russian Federation*

²*Laser Plasma, Institute 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. Kozhevnikov¹, A. V. Kozyrev¹, L. A. Zjulkova², N. S. Semeniuk²

¹*Faculty of Physics, Tomsk State University, Tomsk, Russian Federation*

²*Institute 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^{1,2}, V. F. Tarasenko³, R. Wang^{1,2}, T. Shao^{1,2}

¹*Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China*

²*Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China*

³*Institute of High Current Electronics, Russian Academy of Sciences, Tomsk, Russia*

15:15 4E-6 NANOSECOND HIGH POWER MICROWAVE WINDOW BREAKDOWN DIANOSTIC AND ITS MECHANISM

C. Chang^{1,2}, Y.D. Li², J. Verboncoeur³, C. Chen¹

¹*Laboratory on Science and Technology of High Power Microwave, Xi'an, Shaanxi, China*

²*Key Laboratory of Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, Xi'an, Shaanxi, China*

³*Department 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. Chvyreva¹, A. J. M. Pemen¹, T. Christen²

¹*Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

²*Corporate-Research, ABB Switzerland Ltd., Baden, Switzerland*

15:45 4E-8 POLARITY EFFECTS ON BREAKDOWN STRENGTH FOR HIGH ENERGY STORAGE LIQUID DIELECTRICS IN MICROSECOND REGIME

W. Zhen¹, Z. Zicheng¹, Z. Jiande¹, S. Zuyin²

¹*College of Optoelectronic Science and Engineering, National University of Defense Technology, Changsha, China*

²*Military 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

Session Chair: Lutfi Oksuz, Suleyman Demirel University

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 Alfadhli, QMUL

2P-1 ON THE ROLE OF THE QUANTUM IMAGE FORCES ON THE INITIAL STAGE OF A PICOSECOND GAS DISCHARGE

Y. A. Barenholts¹, S. I. Beril¹, S. A. Barenholts²

¹*Shevchenko Dniester State University, Tiraspol, Moldova*

²*Prohorov 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. Liu, X. Niu, H. -F. Li

University of Electronic Science and Technology of China, Chengdu, Sichuan, China

2P-4 IONIC CONDUCTIVITY OF LI0.5-XLA0.5THI-XO3 ELECTROLYTE

S. Gulen¹, G. Aygun¹, L. Ozyuzer¹, M. Ozdemir²

¹*Physics Department, İzmir Institute of Technology, İzmir-Urla, Turkey*

²*Department of Electrical and Electronics Engineering, Gediz University, İzmir-Seyrek, Turkey*

2P-5 CHARACTERIZATION OF VO2 FILMS GROWN BY MAGNETRON SPUTTERING

H. Yuce¹, M. Koklu², G. Aygun¹, L. Ozyuzer¹

¹*Department of Physics, İzmir Institute of Technology, İzmir, Turkey*

²*Department of Electrical-Electronics Engineering, Gediz University, İzmir, 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

¹*High Current Electronics Institute, Tomsk, Russian Federation*

²*Institute 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. Kellet³, K. Ronald¹

¹*Department of Physics, Strathclyde University, Glasgow, United Kingdom*

²*Rutherford Appleton Laboratory, STFC, Oxford, United Kingdom*

³*Department of Physics, West Virginia University, Morgantown, United States of America*

⁴*School 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

¹*Department of Physics, Strathclyde University, Glasgow, United Kingdom*

²*John 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. Ozyuzer¹

¹*Department of Physics, Izmir Institute of Technology, Urla, 35430, Izmir, TURKEY*

²*Department of Applied Physics, Tokyo University of Science, Tokyo, JAPAN*

³*Department 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

¹*Microwave Tubes Division, CSIR-CEERI Pilani, Pilani, Rajasthan, India*

²*Physics 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. Shukla^{1,2}, N. Kumar^{1,2}, U. N. Pal^{1,2}, R. Prakash^{1,2}

¹*Microwave Tubes Division, CSIR-Central Electronics Engineering Research Institute, Pilani, Rajasthan, India*

²*Academy 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. Zimmermanns², I. Rolfes², D. Eremin¹

¹*Theoretical Electrical Engineering, Ruhr University Bochum, Bochum, Germany*

²*Institute 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

¹Electronics and Telecommunication, Assistant Proff, Mumbai, Maharashtra, India

²Applied Physics, Assistant Proff, Mumbai, Maharashtra, India

³Electronics and Telecommunication, Proff, Mumbai, Maharashtra, India

2P-16 A SIMPLIFIED 2-D FLUID MODEL OF PLASMA FORMATION UNDER PULSED HIGH POWER MICROWAVES IN ATMOSPHERIC GASES

S. Lin^{1,2}, S. Beeson², 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

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2P-18

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

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2P-21 HIGH-SPEED SPECTRALLY-RESOLVED IMAGING OF THE LASER ABLATION PLASMA

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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

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2P-23 MODIFICATION OF DIFFERENT AREAS OF COPPER SURFACE BY DIFFUSE DISCHARGES AT ATMOSPHERIC PRESSURE

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2P-24 CORROSION RESISTANCE OF SiO₂ THIN FILM COATED BIOMEDICAL Ti-13Nb-13Zr TITANIUM ALLOY BY E-BEAM

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2P-25 A STUDY ON CHARACTERIZATION OF POLYMER-COATED WOOL FABRICS USING PLASMA POLYMERIZATION

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2P-26 DEPOSITION OF TRANSPARENT SiO_xNY THIN FILM ON PET BY PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION

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2P-27 EFFECTS OF HYDROGEN FLUX AND PRESSURE ON THE STRUCTURAL PROPERTIES OF PECVD-SYNTHESIZED CARBON THIN FILMS

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2P-28 SYNTHESIS OF FEW-LAYER GRAPHENE FILMS BY CONTROLLABLE C₄F₈ PLASMA ETCHING SiC

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2P-29 6C-8 GRAPHENE SYNTHESIS BY PECVD

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2P-30 VACUUM ARC EXPLOSIVE CELLS

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2P-31 IMPROVING PHOTOVOLTAIC EFFICIENCY BY RF ROTATING PLASMA MODIFIED NANOTUBES

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2P-32 SYNTHESIS AND ANALYSIS OF TITANIUM NITRIDE THIN FILM IN ATMOSPHERIC THERMAL PLASMA TORCH

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2P-33 NITRIDING OF SUPER-FERRITIC STAINLESS STEEL BY PLASMA IMMERSION ION IMPLANTATION IN RADIO FREQUENCY AND ECR-MICROWAVE PLASMA SYSTEM

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2P-35 STUDIES OF PULSED PLASMA-ION STREAMS DURING THEIR FREE PROPAGATION AND INTERACTION WITH SIC-TARGETS

E. E. Skladnik-Sadowska, R. Kwiatkowski, K. Malinowski, M. J. Sadowski, K. Czaus, D. Zaloga, J. Zebrowski, K. Nowakowska-Langier

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2P-36 PARALLEL AND SEQUENTIAL TESTS OF RADIATION RESISTANCE OF DOUBLE FORGED TUNGSTEN IN VARIOUS PLASMA DEVICES

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2P-37 IMPURITY ISSUES IN MATERIAL IRRADIATION STUDIES IN PLASMA FOCUS DEVICE

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2P-38 DYE-SENSITIZED SOLAR CELL PRODUCED WITH PLASMA COATING METHOD

I. U. Koc¹, N. C. Bezir¹, L. Oksuz¹, A. Uygun Oksuz², G. Y. Karaca², F. Bozduman¹

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

Poster Session⁴

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

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2P-40 STUDIES ON BIOCIDAL ACTIVITY OF AN UV-C DBD LAMP

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2P-41 RADIATION CALCULATION IN ELECTRODED AND MICROWAVE HID LAMPS

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2P-42 THREE-DIMENSIONAL MODELLING OF SELF-ORGANIZATION PHENOMENA IN CATHODE BOUNDARY LAYER DISCHARGES USING COMSOL MULTIPHYSICS

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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

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2P-44 FORMATION OF MULTIPLE AXIAL POTENTIAL STRUCTURES IN EXPANDING RF PLASMAS

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2P-45 HOLLOW CATHODES FOR HALL THRUSTERS: MODELLING AND SCALING TRENDS

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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

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2P-48 USING FLUORESCENCE TO MEASURE HYDROGEN PEROXIDE CONCENTRATIONS IN PLASMA ACTIVATED MEDIA

J. Sears, S. Mohades, H. Razavi, M. Laroussi

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2P-49 APPLICATION OF UNDERWATER ELCTRIC BARRIER DISCHARFE AS A WASHING SYSTEM TO INACTIVATE SALMONELLA TYPHIMURIUM ON PERILLAR LEAVES

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2P-50 ATMOSPHERIC PEN PLASMA STERILIZING HELP PAPER SURFACE

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2P-51 INHIBITION BY LOW-TEMPERATURE PLASMA JET ON THE VIABILITY OF HEPATOMA CELLS AND ITS MECHANISM

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2P-52 A BATTERY-OPERATED ATMOSPHERIC-PRESSURE PLASMA ROD FOR BIOMEDICAL APPLICATIONS

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2P-53 COLD ATMOSPHERIC PRESSURE PLASMA JET FOR TOOTH ROOT CANAL DISINFECTION

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2P-54 CHARACTERISTICS OF DIABETIC WOUND HEALING RATE AND ENZYMES ACTIVITY AFTER ATMOSPHERIC PRESSURE PLASMA TREATMENT

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2P-55 THE EFFECT OF ATMOSPHERIC PRESSURE PLASMA JET ON MACROPHAGE ACTIVATION

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2P-56 THE EFFECT OF NON-THERMAL ATMOSPHERIC PRESSURE MICROWAVE-PULSED PLASMA ON STAPHYLOCOCCUS AUREUS AND FIBROBLAST L929 CELLS

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2P-57 APPLICATIONS OF NON-THERMAL ATMOSPHERIC PRESSURE PLASMA IN PREVENTION AND REGENERATION OF ORAL DISEASES

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2P-58 RF-TITANIUM DIOXIDE PLAZMA MODIFIED GRAPHENE COATED ELECTRODES FOR PROTEIN SENSING

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2P-59 MEASUREMENT OF STERILIZATION ABILITY AND REACTIVE SPECIES OF VARIOUS PLASMA BUBBLED-UP WATER

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2P-60 THE TREATMENT WITH NON-THERMAL PLASMA ON HACAT HUMAN KERATINOCYTES CAN BLOCK TNF- α AND IFN- γ MEDIATED PRO-INFLAMMATORY GENE EXPRESSIONS

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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

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2P-62 PULSED PLASMA PROCESSING OF INSTRUMENTAL STEELS

A. Zhukeshov, A. Amrenova, A. Gabdullina, Z. Moldabekov, S. Beysenbaev, K. Serik

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2P-63 A METHOD TO REALIZE MULTIPOINT IGNITION WITH MICROWAVE PLASMA

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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

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2P-65 A NOVEL STRAIN GAUGE APPLIED TO STRONG ELECTROMAGNETIC FIELD

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2P-66 STUDY OF ARC PLASMA JET EFFECTIVE PARAMETERS (POWER AND FLOW RATE)

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2P-67 THERMAL INSTABILITY IN NON-UNIFORMITIES ON THE SURFACE OF CATHODES OF VACUUM ARCS

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2P-68 FABRICATION AND CHARACTERIZATION OF INDIUM TIN OXIDE AND BILAYER MOLYBDENUM THIN FILMS ON GLASS AND POLYIMIDE

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2P-69 CLEANING AND MODIFICATION OF THE NEAR-SURFACE LAYERS OF METALS UNDER THE ACTION OF RUNAWAY ELECTRON PREIONIZED DIFFUSE DISCHARGE

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2P-70 PHYSICS OF SPOTLESS MODE ON CATHODES OF METAL VAPOR ARCS

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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

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2P-73 BOUNDARY CONDITIONS AT THE PLASMA-CATHODE INTERFACE IN HIGH-PRESSURE ARCS

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2P-74 GASEOUS BREAKDOWN IN THE TOWNSEND DISCHARGE

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2P-75 MODIFICATION OF PASCHEN'S LAW FOR THE NONUNIFORM ELECTRIC FIELD BETWEEN TWO PLANE-PARALLEL ELECTRODES

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2P-76 THE INFLUENCE OF AMBIPOLAR ELECTRIC FIELD ON THE EDF FORMATION AND THE ELECTRON PROCESSES IN PARTIALLY IONIZED PLASMAS

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2P-77 CONTROL OF PARTICLES DISTRIBUTION FUNCTIONS BY MAGNETIC FIELD IN HELICON PLASMA DISCHARGE

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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

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2P-79 DYNAMIC BEHAVIORS OF HELIUM ATMOSPHERIC PRESSURE PLASMA JET INVESTIGATED BY STEAK IMAGES

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2P-80

2P-81 EQUATION OF STATE OF DENSE KRYPTON PLASMA IN THE PARTIAL IONIZATION REGIME

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2P-82 THE SAG OF THE POTENTIAL IN LOW PRESSURE REFLEX DISCHARGE

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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

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2P-85 ROLE OF CIRCULARLY POLARIZED DISPERSIVE ALFVEN WAVE IN SOLAR WIND TURBULENCE

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2P-86 EFFECTS OF ELECTRON SUPRATHERMALITY AND POSITRON DENSITY ON ION ACOUSTIC DRESSED SOLITONS IN AN ELECTRON-POSITRON-ION PLASMA

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2P-87 PROPAGATION OF DUST ACOUSTIC WAVES IN A DUSTY PLASMA IN THE PRESENCE OF ION NONTHERMALITY AND BACKGROUND NONEXTENSIVITY

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2P-88 DUST-ION-ACOUSTIC SOLITARY WAVES IN A DEGENERATE PAIR PLASMA

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2P-89 MODIFIED JEANS INSTABILITY OF MAGNETIZED QUANTUM VISCOUS PLASMA WITH ROTATION

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2P-90 MAXIMUM MAGNETIC FIELD IN COSMIC OUTFLOWS SYSTEMS

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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

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³*Faculty 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
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²*Department of Physics, College of Basic Sciences, Karaj Branch, Islamic Azad University, Karaj, Iran*

2P-93 CONTROL OF TRIBOLIUM CASTANEUM IN STORED WHEAT BY CORONA DISCHARGE TREATMENT

M. Amini, M. Ghorannevis, H. Nikmaram
Plasma Physics Research Centre, Science and Research Branch, Islamic Azad University, Tehran, Iran

2P-94

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
¹*Textile Engineering, Istanbul Technical University, Istanbul, Turkey*
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⁴Department of Physics, 4SDU, 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 Maslakci¹, A. Oksuz¹, L. Oksuz², F. Bozduvan², E. Eren³

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

M. Kus¹, S. Buyukcelebi¹, F. Ozel², K. Kara¹, N. M. Varal¹, A. Erdogan¹, M. Ersoz¹

¹Selcuk University, Konya, Turkey

²Karamanoglu Mehmetbey University, Karaman, Turkey

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

B. Esencan Turkaslan¹, S. Dikmen², L. Oksuz³, A. Oksuz²

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³Department 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. Dulgerbaki¹, M. Kiristi¹, F. Bozduvan², S. Ahmad³, L. Oksuz², A. Uygun Oksuz¹

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³Polymer Chemistry, Max Planck Institute, Mainz, Germany

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

R. KEMITI, H. Loukil, A. Belasri

Laboratoire de Physique des Plasmas, Universit e 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. Zhu¹, X. Tu¹, X. Gao²

¹Electrical Engineering and Electronics, University of Liverpool, Liverpool, United Kingdom

²State Key Laboratory of Clean Energy Utilization, Zhejiang University, Hangzhou, China

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

Y. Zeng, S. Liu, D. Mei, X. Tu

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 GURSOY¹, U. Yalcin¹, S. Cogal², G. Celik Cogal³

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²Polymer Engineering, Mehmet Akif Ersoy University, Faculty of Engineering and Architecture, Burdur, Turkey

³Materials Technology Engineering, Mehmet Akif Ersoy University, Institute of Natural and Applied Sciences, Burdur, Turkey

2P-106 RF-ROTATING PLASMA MODIFICATION OF GRAPHENE WITH POLY(3,4-ETHYLENEDIOXYTHIOPHENE)

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³Department of Chemistry, Suleyman Demirel University, Isparta, Turkey

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2P-107 PLASMA MODIFIED CHITOSAN/N-ACETYL-2-PYRAZOLINE DERIVATIVE NANOFIBERS

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³Hydrogen Technologies Research and Application Center, Suleyman Demirel University, Isparta, Turkey

2P-108 STRUCTURAL, THERMAL AND MORPHOLOGICAL PROPERTIES OF PLASMA POLYMERIZED PPY/MNO₂ COMPOSITE

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2P-109 MODIFICATION OF CARBON NANOTUBE WITH POLY(3,4-ETHYLENEDIOTHIOPHENE) BY USING RF ROTATING PLASMA

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³Department of Chemistry, Suleyman Demirel University, Isparta, Turkey

2P-110 MODIFICATION OF CARBON NANOTUBE WITH POLY(3-HEXYLTHIOPHENE) BY USING RF ROTATING PLASMA

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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

2P-111

2P-112 EFFECT OF POLYMER BASED NANOCOMPOSITES ON THE ELECTRICAL ARCS IN AIR

V. Doddapaneni^{1,2}, A. Bissal², J. Magnusson², R. Gati³, H. Edin², T. S. Muhammet¹

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²Department of Electromagnetic Engineering, KTH Royal Institute of Technology, 100 44 Stockholm, Sweden

³Switchgear Group, ABB Corporate Research, 5405 Baden-Dattwil, Switzerland

2P-113 SPATIAL DISTRIBUTION OF CHARGED PARTICLE EMISSION IN A COPPER-CHROMIUM HIGH-CURRENT VACUUM ARC

S. Franke, M. Lisnyak, S. Gorchakov, A. Khakpour, R. Methling, A. Pipa, D. Uhrlandt, K. -D. Weltmann

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. Seleznev, 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

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

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

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

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. Tkachenko^{1,2}, V. A. Gasilov³, G. A. Bagdasarov³, O. G. Olkhovskaya³, G. I. Dolgachev⁴, Y. G. Kalinin⁴, A. A. Shvedov⁴

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⁴*NRC, Moscow, Russian Federation*

2P-120 CHARACTERISTICS OF MICROSECOND-PULSE GLIDING DISCHARGES IN AIR FLOW

Z. Niu^{1,2}, C. Zhang^{2,3}, R. Wang^{2,3}, K. Zhang², T. Shao^{2,3}

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³*Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China*

2P-121 LOW INDUCTANCE SWITCHES FOR PULSED MAGNETIZATION OF HOT PLASMAS

J. Larour¹, P. Auvray¹, S. D. Moustazis², P. Lalouis³

¹*Laboratoire de Physique des Plasmas, Ecole Polytechnique, Palaiseau, France*

²*Technical University of Crete, Chania, Crete, Greece*

³*Institute of Electronic Structure and Laser, FORTH, Heraklion, Crete, Greece*

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

¹*Xi'an Jiaotong University, Xi'an, China*

²*China Academy of Engineering Physics, Mianyang, China*

2P-124 DEVELOPMENT ON ROGOWSKI COIL MEASURING NANOSECONDS RISE TIME 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-DIMENSIONAL 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

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²*ElectroPhysics 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

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²*SIAME, Pau University, Pau, France*

2P-130 PERFORMANCE OF THE TPS PULSE MAGNETS

Y. L. Chu, F. Y. Lin, C. S. Yang, C. S. Fann, C. H. Chang

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. Rolfes², 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. Eylenceoğlu¹, 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. Kemaneci^{1,2}, E. Carbone³, M. Jimenez-Diaz⁴, W. Graef², M. van Stralen⁵, S. Rahimi², J. van Dijk², G. Kroesen²

¹Theoretical Electrical Engineering, Ruhr University Bochum, Bochum, Germany

²Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands

³Univ. Grenoble Alpes, Grenoble, France

⁴Universite Paul Sabatier, Toulouse, France

⁵Draka Comteq Fibre BV, Eindhoven, Netherlands

11:45 5A-6 PHYSICS-BASED PRECONDITIONERS FOR FLUID-PLASMA SIMULATIONS WITH ELECTROMAGNETICS

K. Beckwith¹, P. H. Stoltz¹, 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. Sonnendruker¹, 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

I. G. Pagonakis¹, F. Albajar², S. Alberti³, K. Avramidis¹, W. Bin⁴, T. Bonicelli², F. Braunmueller³, A. Bruschi⁴, I. Chelis⁵, F. Cismondi², G. Gantenbein¹, V. Hermann⁶, K. Hesch¹, J. -P. Hogge³, J. Jelonnek¹, J. Jin¹, S. Illy¹, Z. Ioannidis⁷, T. Kobarg¹, G. Latsas⁷, F. Legrand⁶, M. Lontano⁴, B. Piosczyk¹, Y. Rozier⁶, T. Rzesnicki¹, A. Samartsev¹, C. Schlatter³, M. Thumm¹, I. G. Tigelis⁷, M. -Q. Tran³, T. -M. Tran³, J. Weggen¹, J. L. Vomvoridis⁵

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²*The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E), Barcelona, Spain*

³*Plasma Physics Research Center (CRPP), Ecole Polytechnique Federale de Lausanne (EPFL), Lausanne, Switzerland*

⁴*Plasma Physics Institute, National Research Council of Italy (CNR), Milano, Italy*

⁵*School of Electrical and Computer Engineering, National Technical University of Athens (NTUA), Athens, Greece*

⁶*Thales Electron Devices (TED), Velizy-Villacoublay, France*

⁷*Faculty 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

¹*RF Heating Technology Group, Japan Atomic Energy Agency, Naka, Ibaraki, Japan*

²*Plasma 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. Cross¹, A. A. Golovanov¹, A. D. R. Phelps², I. V. Romanchenko³, V. V. Rostov³, K. A. Sharypov⁴, V. G. Shpak⁴, S. A. Shunailov⁴, M. R. Ul'masculov⁴, M. I. Yalandin⁴, I. V. Zotova⁴

¹*Institute of Applied Physics, RAS, N.Novgorod, Russia*

²*Dept. of Physics, University of Strathclyde Glasgow, Glasgow, UK*

³*Institute of High-Current Electronics, SB RAS, Tomsk, Russia*

⁴*Institute 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. Ryskin¹, G. V. Torgashov², N. I. Sinitsyn², A. A. Burtsev³, P. D. Shalaev³

¹*Department of Nonlinear Physics, Saratov State University, Saratov, Russian Federation*

²*Saratov Branch, Institute of Radio Engineering and Electronics RAS, Saratov, Russian Federation*

³*Almaz, 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

¹*High Current Electronics Institute, Tomsk, Russian Federation*

²*College 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

12:45 5B-9 ADVANCED COATINGS FOR RF SOURCES

L. Ives¹, L. Falce¹, M. Flannery², T. Desai², G. Collins¹

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

²*Advanced Cooling Technologies, Inc., Lancaster, PA, 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. Vorona^{1,2}, A. V. Gavrikov^{1,2}, G. D. Liziakin¹, V. P. Polistchook¹, I. S. Samoylov¹, V. P. Smirnov¹, R. A. Usmanov^{1,2}, I. M. Yartzev¹

¹*Joint Institute for High Temperatures of the Russian Academy of Sciences, Moscow, Russian Federation*

²*Moscow 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. Oks^{1,2}

¹*Physics Department, Tomsk State University of Control System and Radioelectronics, Tomsk, Russian Federation*

²*Plasma 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

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

²*Institute for Research in Electronics and Applied Physics, University of Maryland, College Park, MD, United States*

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

12:30 5C-8 EXPERIMENTAL RESULTS FOR UNIFORMITY AND IEDF CONTROL WITH PHASE-LOCKED RF SOURCE AND BIAS ON AN INDUCTIVELY COUPLED PLASMA SYSTEM

D. J. Coumou¹, S. C. Shannon²

¹*MKS Instruments Inc., ENI Products, Rochester, NY, United States*

²*Department of Nuclear Engineering, North Carolina State University, Raleigh, NC, United States*

12:45 5C-9 A SELF-MAGNETIC FIELD PENNING-LIKE VACUUM ARC ION SOURCE DESIGN

J. Long, P. Dong, Y. Peng

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

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. Lane¹, S. Song¹, J. Neuber¹, C. Jiang¹, J. Sanders², A. Kuthi², M. Gundersen²

¹*Frank Reidy Research Center for Bioelectronics, Old Dominion University, Norfolk, VA, United States*

²*Department 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

M. M. Hopkins, R. P. Manginell, J. J. Boerner, C. H. Moore, M. W. Moorman

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. Sanibondi, 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

H. -J. Roh, N. -K. Kim, S. Ryu, S. -H. Lee, S. -R. Huh, G. -H. Kim
Energy Systems Engineering, Seoul National University, Seoul, South Korea

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. Moon², K. Kim¹, J. Y. Park¹

¹*Department of Physics, Korea Advanced Institute of Science and Technology, Daejeon, Republic of Korea*

²*Department 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. Keener^{1,2}

¹*Department of Food Sciences, Purdue University, West Lafayette, IN, USA*

²*Agricultural 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

12:30 5E-8 PREPARATION OF ANTIBACTERIAL NON-WOVEN FABRIC VIA ATMOSPHERIC PRESSURE PLASMA PROCESS

X. Deng¹, A. Nikiforova¹, C. Leys¹, D. Vujosevic²

¹*Department of Applied Physics, Ghent University, Ghent, Belgium*

²*Center for Medical Microbiology, Institute of Public Health, Podgorica, Montenegro*

Session PL6: Plenary PL6

Wednesday, May 27 14:00-15:00, Citrine II-III

Session Chair: Edl Schamiloglu, University of New Mexico

14:00 PL6-1 LIGHTNING-DRIVEN PHENOMENA IN NEAR-EARTH SPACE

U. Inan

Koc Universitesi, Istanbul, Turkey

Session 3P: Plasma Chemistry Poster (poster II)

Poster Session

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

Session Chair: Dingxin Liu, Xi'an Jiaotong University

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. Ferouani^{1,2}, M. Lemerini², M. Houalef³, Y. Guaaybess⁴

¹*Department of Physics, Ecole Preparatoire en Sciences et Techniques, Tlemcen, Algeria*

²*Department of Physics, LPT, University A. Belkaid, Tlemcen, Algeria*

³*Department of Maths, Ecole Preparatoire en Sciences et Techniques, Tlemcen, Algeria*

⁴*Department 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

¹*Education Faculty, Eskişehir Osmangazi University, Eskişehir, Turkey*

²*Physics 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. Yu, 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. Nuralin¹, F. Bozduman²

¹*Chemistry, Gazi University, Ankara, Turkey*

²*Physics, Suleyman Demirel University, Isparta, Turkey*

3P-12

3P-13 INDUCTIVELY COUPLED PLASMA FOR GRAPHENE PRODUCTION

Y. Durmaz, F. Bozduman, U. Koc, M. Ismael, S. Nore, A. Gulec, L. Oksuz

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

¹*Physics, St. Petersburg State University, St. Petersburg, Russian Federation*

²*Institute 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. Yildaz, R. Say, A. Ersoz

Analytical Chemistry, Bionkit LTD. ŞTi., Eskişehir, 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, Eskişehir, 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

Plasmatechnics, Research Institute of Experimental and Theoretical Physics of Kazakhstan National University, Almaty, Kazakhstan

Session 3P: Fast-Wave Devices (poster)

Poster Session

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

Session Chair: Adrian Cross, Strathclyde University

3P-19 STUDY OF THE MULTI-MODES BEHAVIOUR IN A HIGH HARMONIC LARGE ORBIT GYROTRON

X. Li, Y. Alfadhil, 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

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

Department of Physics, Strathclyde University, Glasgow, United Kingdom

Session 3P: Slow Wave Devices (poster)

Poster Session

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

Session Chair: Edl Schamiloglu, University of New Mexico

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. Ziolkowski³

¹*AFRL, Kirtland AFB, NM, United States*

²*Confluent Sciences, LLC, Albuquerque, NM, United States*

³*ECE Department, University of Arizona, Tucson, AZ, United States*

3P-26 HIGH POWER MICROWAVE SOURCE LOADED BY A TWO-SPIRAL METAMATERIAL STRUCTURE FOR CHERENKOV RADIATION

S. C. Yurt, A. Elfrgani, 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. Elfrgani, 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 PULSERAD 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. Shpak², S. A. Shunailov², M. R. Ul'masculov², M. I. Yalandin²

¹High Current Electronics Institute, Tomsk, Russian Federation

²Institute of Electrophysics, Ekaterinburg, Russian Federation

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. Mahdavi^{pour}, 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. -D. 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

Tech-X Corp., Boulder, CO, United States

3P-40 PLASMA LENS CLEARING OF THE MICRODROPLETS IN CATHODIC ARC PLASMA FLOW

V. I. Gushenets¹, A. S. Bugaev¹, E. M. Oks¹, A. A. Goncharov², A. N. Dobrovolsky²

¹*Plasma Sources Laboratory, High Current Electronics Institute, Tomsk, Russian Federation*

²*Institute 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. Shiffler¹, M. LaCour², K. Golby², T. Knowles³

¹*Air Force Research Laboratory, Albuquerque, NM, United States*

²*Leidos Inc., Albuquerque, NM, United States*

³*Energy 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

¹*Applied Physics, AWE, Aldermaston, United Kingdom*

²*School 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. Burdovitsin, 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. Barenholts¹, D. Y. Karnachov², A. G. Nikolaev³, K. P. Savkin³, E. M. Oks³, I. V. Uimanov⁴, V. P. Frolova³, D. L. Shmelev⁴, G. Y. Yushkov³

¹*Prohorov General Physics Institute RAS, Moscow, Russian Federation*

²*Lebedev Physical Institute, RAS, Moscow, Russian Federation*

³*Institute of High Current Electronics, Siberian Branch, RAS, Tomsk, Russian Federation*

⁴*Institute of Electrophysics, Ural Branch, RAS, Yekaterinburg, Russian Federation*

3P-45

3P-46 MAGNETIC THIN FILMS DEPOSITION USING DC GRID-ATTACHED MAGNETRON.

E. M. Oks¹, A. V. Tyunkov¹, M. V. Shandrikov², A. V. Vizir², K. P. Savkin²

¹*Tomsk State University of Automated Control Systems and Radioelectronics, Tomsk, Russian Federation*

²*Institute of High Current Electronics, Tomsk, Russian Federation*

3P-47 STUDY OF EXPLOSIVE ELECTRON EMISSION FROM A PIN CATHODE USING HIGH RESOLUTION POINT-PROJECTION X-RAY RADIOGRAPHY

I. N. Tilikin, E. V. Parkevich, T. A. Shelkovenko, A. R. Mingaleev, A. V. Agafonov, S. A. Pikuz

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. Adhami, 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

¹*Karlsruhe Institute of Technology, Karlsruhe, Germany*

²*Efremov Institute of Electrophysical Apparatus, St. Petersburg, Russia*

3P-50 COMPUTATIONAL CHARACTERIZATION OF THE ELECTROTHERMAL ENERGETIC PLASMA SOURCE (ETEPS) CONCEPT FOR HIGH-ENTHALPY FLOW

S. Mittal, L. Winfrey
Virginia Tech, Blacksburg, VA, United States

3P-51 ELECTROSTATIC PROBE MEASUREMENT OF THE PIEZOELECTRIC TRANSFORMER PLASMA SOURCE

E. A. Baxter, S. D. Kovaleski, 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

C. Lan, L. Zheng, J. Long, Y. Peng, Z. Yang, J. Li, P. Dong
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. Oks^{1,2}, 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 PHOTOEMISSION DC-PULSED CATHODE FOR 5TH GENERATION LIGHT SOURCES AND ACCELERATORS THEORETICAL STUDY

J. -L. J. Babigeon¹, N. Holtzer², M. El khaldi¹
¹Laboratoire de l'Accelérateur 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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²Institute of High Current Electronics SB RAS, Tomsk, Siberia, Russian Federation

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
¹Institute of High Current Electronics, Tomsk, Russian Federation
²National Research Tomsk State University, Tomsk, Russian Federation

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

P. Dong, J. Long, J. Li, C. Lan, L. Zheng, Y. Peng, J. Shi
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. Krashevskaya², A. S. Prishvitsyn²

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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

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³*Department 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

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3P-65 ANALYSIS OF WAVE INSTABILITIES EVOLUTION IN PLASMA AND TURBULENT PROCESSES IN FLUID

D. N. Karbushev, V. I. Khvesyuk, 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. Adltalab, P. Khorshid, E. Abizimoghadam

Dept. of Physics, Islamic Azad University, Mashhad Branch, Mashhad, Iran

3P-68

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 FRCHX PLASMA INJECTOR SYSTEM

C. Grabowski¹, J. H. Degnan¹, M. Domonkos¹, E. L. Ruden¹, G. A. Wurden²

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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

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²*Ecole 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, K. A. Sharypov², V. G. Shpak², S. A. Shunailov², M. R. Ul'masculov², M. I. Yalandin²

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²*Institute 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. Batrakov^{1,2}, P. P. Kiziridi¹, G. E. Ozur¹

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3P-77 HYBRID SIMULATION OF INTERACTION BETWEEN ELECTRON-BEAM-GENERATED PLASMAS AND AIR FLOW

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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. Sinitsky^{1,2}, A. V. Arzhannikov^{1,2}, V. T. Astrelin^{1,2}, M. A. Makarov¹, V. D. Stepanov^{1,2}

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3P-81 SPECTROSCOPIC DETERMINATION OF MAGNETIC FIELDS IN HIGH ENERGY ELECTRON BEAM DIODES

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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

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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

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

Session Chair: Stephane Sebban, LOA

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 INHOMOGENIOUS PLASMA

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3P-87 IMPULSE ION IMPLANTER

A. V. Stepanov, V. I. Shamanin, 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. Letizia^{1,2}, E. Sharples^{1,2}
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²*Cockcroft Institute, Warrington, United Kingdom*

3P-90

3P-91 ENHANCED BETATRON RADIATIONS BY OFF-AXIS LASER INJECTION IN A CAPILLARY PLASMA SOURCE

S. Lee¹, T. -H. Lee¹, H. S. Uhm², I. Nam¹, H. Suk¹
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3P-92 MONOENERGETIC ION ACCELERATION BY LASER DRIVEN SHOCK WAVES

A. S. Nindrayog¹, A. Macchi², F. Pegoraro²
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²*Department 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
¹*Laboratoire de Physique des Plasmas, Ecole Polytechnique, UPMC, CNRS, Palaiseau, France*
²*Engineering Department, Turgut Ozal University, Ankara, Turkey*
³*Mevlana 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. Safronova³, V. L. Kantsyrev³, P. Viewior³, A. Stafford³, I. K. Shrestha³, V. V. Shlyaptseva³, A. Y. Faenov⁴

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³Physics Department, University of Nevada, Reno, NV, USA

⁴Institute for Academic Initiatives, Osaka University, Suita, Osaka, Japan

3P-95 EXPERIMENTAL STUDY OF NEON SOFT X-RAY AT SAHAND PLASMA FOCUS

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³Natural Sciences and Science Education, National Institute of Education, Nanyang Technological University, Singapore, Singapore

3P-96 A NOVEL METHOD TO GENERATE X-RAY CONTINUOUSLY BY TRIBOLUMINESCENCE

S. Furuya

Saitama Institute of Technology, Fukaya, Japan

3P-97 INFLUENCE OF PREIONIZATION ON IRRADIATION CHARACTERISTICS OF PULSED XENON LAMP

H. Li, R. Wu, R. Shao, J. Liu, W. Lin

R&D Center of Laser Source, Shanghai Institute of Optics and Fine Mechanics, The Chinese Academy of Sciences, Shanghai, China

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. Şenay^{1,2}, S. Pat¹, S. Korkmaz¹

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²Primary Science Education Department, Bayburt University, Bayburt, Turkey

3P-101 STERILIZATION OF MICROORGANISM SPORES WITH PLASMA-EXCITED NEUTRAL GAS AT ATMOSPHERIC PRESSURE

K. Matsui, N. Ikenaga, N. Sakudo

Kanazawa Institute of Technology, Hakusan, Japan

3P-102 ON THE PLASMA SYSTEM FOR CO₂ DISSOCIATION

H. -Y. Chang

Physics, KAIST, Daejeon, South Korea

3P-103 PLASMA TREATMENT FOR THE INACTIVATION OF ESCHERICHIA COLI IN WATER

M. S. Ismael¹, F. Bozduman¹, A. Gulec¹, S. Noree¹, M. Al-Mamoori¹, Y. Durmaz¹, I. U. Koc¹, S. U. Ulusoy²

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3P-104 PLASMA HELP PREPARATION OF ELECTROSPUN CARBON NANOFIBERS

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3P-105 CONTINUOUS PLASMA-CHEMICAL PROCESSING OF FABRICS AT ATMOSPHERIC PRESSURE

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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

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3P-108 SURFACE PROPERTIES OF PLASMA TREATED WOOL AND DENIM

G. Yurdabak¹, L. Oksuz², F. Bozduman², M. Kiristi¹, I. Komur¹, A. Uygun Oksuz¹

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3P-109 WATER AND GAS TREATMENT BY USING PULSED CORONA DISCHARGE TECHNIQUE

M. Kebriyai, 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

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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

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²*Agency 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. Shelkovenko, 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. Krashennikov¹, F. N. Beg¹, R. Presura², P. Wiewior², A. Covington², T. Ma³, C. Niemann⁴

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³*Lawrence Livermore National Laboratory, Livermore, CA, United States*

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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

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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 Citak^{1,3}, Yasemin Topal^{1,2}, Mustafa Karaman^{1,3}, Mahmut Kus^{1,3}, Mustafa Ersoz^{1,2}

¹*Selcuk University, Advanced Technology Research and Application Center Konya Turkey*

²*Selcuk University, Department of Chemistry Konya, Turkey*

³*Selcuk University, Department of Chemical Engineering, Konya Turkey*

3P-122 SEWAGE SLUDGE NEUTRALIZATION USING PLASMA TECHNOLOGY

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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

K. Kourtzanidis¹, F. Rogier¹, J. -P. Boeuf²

¹ONERA, Toulouse, France

²LAPLACE, Universite de Toulouse, Toulouse, France

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, Suleyman Demirel University, Isparta, Turkey

²Chemistry Department, Suleyman Demirel University, Isparta, Turkey

³Physics Department, Suleyman Demirel University, Isparta, 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

18:00 6A-7 DISPERSION RELATION FOR DEEPER CORRUGATION OF A RIPPLED WALLED SLOW WAVE STRUCTURE

N. Pareek^{1,2}, M. Ahmad¹, N. Kumar^{1,2}, U. N. Pal^{1,2}, R. Prakash^{1,2}

¹PDT/MWT, Ceeri Pilani, Pilani, Rajasthan, India

²AcSIR, Delhi, India

18:15 6A-8 THE CONCEPT OF EQUIPMENT THERMAL POWER PLANT BOILERS INSTALLATIONS MICROWAVE IGNITION PULVERIZED COAL MIXTURE.

A. M. Danylenko¹, N. V. Danylenko¹, B. İbrahimoglu², I. İbrahimoglu²

¹Research and Production Firm Ukrplasma, Kharkiv, Ukraine

²Anadolu Plazma Technology Center, Ankara, Turkey

Session 6B: Plasma Chemistry II

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

Session Chair: Xin Tu, University of Liverpool

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 C₂H₄/N₂ (M =2, 4, 6) GAS MIXTURES AND DEPOSITION OF NITROGEN-CONTAINING POLYMER FILMS IN A DIELECTRIC BARRIER DISCHARGE

H. C. Thejaswini¹, V. Sushkov², R. Hippler²

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 Center, Science and Research Branch, Islamic Azad University, Tehran, Iran

18:00 6B-7 STUDY OF ETHANOL PLASMA POLYMERS DEPOSITED IN CAPACITIVELY COUPLED PLASMAS

S. Saboohi, 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 Ag_xCe_{1-x}/γ-Al₂O₃ 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.

R. E. Reinovsky, C. L. Rousculp, W. A. Reass, D. M. Oro, J. R. Griego, P. J. Turchi, A. Saunders, F. G. Mariam, C. Morris

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. Adress¹, Y. Abe², B. W. Graham²

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

N. Bloise¹, M. Sanpaolesi¹, L. Visai¹, V. Colombo², M. Gherardi², M. L. Focarete², C. Gualandi², R. Laurita², A. Liguori², N. Mauro³, A. Manfredi³, P. Ferruti³, E. Ranucci³

¹University of Pavia, Pavia, Italy

²Alma Mater Studiorum - University of Bologna, Bologna, Italy

³University of Milan, Milan, Italy

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. Chaikovskiy, 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

J. Sheehan, T. A. Collard, M. E. Ostermann, E. T. Dale, B. N. Wachs, B. W. Longmier
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
¹*CNRS/LAPLACE, Toulouse, France*
²*CNRS/ICARE, Orleans, France*

17:30 6E-4 INSTABILITIES AND TRANSPORT IN PLASMAS WITH EXB DRIFT

A. Smolyakov¹, I. Romadanov¹, W. Frias¹, A. Koshkarov¹, Y. Raiteses², I. Kaganovich²
¹*University of Saskatchewan, Saskatoon, Saskatoon, Canada*
²*Princeton 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. Tang³, D. Yu¹
¹*School of Energy Science and Engineering, Harbin Institute of Technology, Harbin/Heilongjiang, China*
²*School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin/Heilongjiang, China*
³*Academy of Fundamental and Interdisciplinary Sciences, 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. Dirnberger¹, S. D. Kovaleski¹, P. Norgard¹, S. Mededovic Thagard², J. Franclemont²

¹University of Missouri, Columbia, MO, United States

²Plasma Research Laboratory, Clarkson University, Potsdam, NY, 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. Wei¹, Z. Yang¹, J. Wu¹, X. Li¹, Q. Wang²

¹*Xi'an Jiaotong University, Xi'an, Shaanxi, China*

²*Xi'an University of Technology, 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. Zhou¹, Y. Piao¹, Y. Wang¹, J. Tang², C. Zhang¹

¹*School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin/Heilongjiang, China*

²*Academy of Fundamental and Interdisciplinary Sciences, 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^{1,2}, H. Mao-gang²

¹*Physics, GC University Faisalabad, Faisalabad, Punjab, Pakistan*

²*Key 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. Kaïbi¹, A. Guittoum², R. M. Öksüzöğlü³, C. Yavru³, S. Özgün³, M. Boudissa⁴, M. Kechouane¹

¹*Physics of Materials Laboratory (LPM), Faculty of Physics, University Of Sciences And Technology Houari Boumediene, Algiers, Algeria*

²*02 Bd Frantz Fanon, BP 399, Nuclear Research Centre of Algiers, Algiers, Algeria*

³*Faculty of Engineering, Department of Materials Sciences and Engineering, İki Eylül Campus, University of Anadolu, 26555 Eskişehir, Turkey*

⁴*ENMC 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

S. Sebban¹, A. Depresseaux¹, J. Gautier¹, F. Tissandier¹, A. Lifschitz¹, H. T. Kim^{1,2}, P. Zeitoun¹, E. Oliva³, G. Maynard³, J. Nejd⁴, M. Kozlova⁴, S. Jacquemot⁵

¹*Laboratoire d'Optique Appliquée, CNRS, Ecole Polytechnique, Palaiseau, France*

²*Advanced Photonics Research Institute, GIST, Gwangju, Korea*

³Laboratoire de Physique des Gaz et des Plasmas, CNRS Universite, Orsay, France

⁴ELI Beamlines Project, Institute of Physics of the ASCR, Prague, Czech Republic

⁵Laboratoire pour l'Utilisation des Lasers Intenses, Ecole Polytechnique, Palaiseau, France

11:30 7B-3 DESIGN AND PRIMARY RESULTS OF X-RAY HEATING ALUMINUM FOIL EXPERIMENTS AT PTS FACILITY

J. Li, X. Huang, H. Cai, S. Duan, S. Zhang, X. Ren, K. Wang, J. Dan, S. Zhou, Q. Xu, C. Ji, S. Feng, M. Wang, W. Xie, J. Deng

Key Laboratory of Pulsed Power, Institute of Fluid Physics, CAEP, Mianyang 621999, China

11:45 7B-4 HIGH-ENERGY ELECTRON GENERATIONS BY A HIGH POWER LASER AND A DENSITY-TAPERED GAS CELL

H. Suk, I. Nam, M. Kim, S. Lee

Dept. of Physics and Photon Science, Gwangju Institute of Science and Technology, Gwangju, South Korea

12:00 7B-5

12:15 7B-6 ASYMMETRIC LASER-PULSE BASED MAGNETIC FIELD ENHANCEMENT IN A PLASMA

K. Gopal, M. Singh, D. N. Gupta

University of Delhi, Department of Physics and Astrophysics, Delhi-110007, India

12:30 7B-7 DESIGN AND SIMULATION OF A NOVEL KLYNAC DEVICE FOR GENERATION OF BREMSSTRAHLUNG RADIATION

K. E. Nichols, B. E. Carlsten, A. Malyzhenkov

Los Alamos National Laboratory, Los Alamos, NM, United States

12:45 7B-8 THE ELECTRON DYNAMICS IN AN ION CHANNEL IN PRESENCE OF AN INHOMOGENEOUS BACKGROUND MAGNETIC FIELD

A. Kargaryan, A. Sadighzadeh

Plasma Physics Research School, Tehran, Iran

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 Appliquee - Ecole Polytechnique, ENSTA ParisTech, CNRS - France, Palaiseau, France

11:30 7C-4 CAPACITIVE ENERGY STORES WITH NANOSECOND ENERGY TRANSFER

I. V. Lavrinovich¹, A. P. Artyomov¹, A. S. Zhigalin¹, V. I. Oreshkin¹, N. A. Ratakhin¹, A. G. Roussikh¹, A. V. Fedyunin¹, S. A. Chaikovskiy¹, A. A. Erfort¹, V. F. Feduschak²

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. Roch, 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

A. V. Agafonov, A. V. Oginiv, A. S. Rusetskiy, V. A. Ryabov, K. V. Shpakov, A. P. Chubenko

P.N. Lebedev Physical Institute, Moscow, Russian Federation

10:45 7D-2 THE RESEARCH AND APPLICATION AN X-PINCH ON COMPACT PULSED POWER GENERATORS

A. P. Artyomov, S. A. Chaikovskiy, V. I. Oreshkin, N. A. Ratakhin, A. V. Fedunin, I. V. Lavrinovich, A. G. Rousskikh, A. S. Zhigalin

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. Bourham¹, L. Winfrey³

¹*Department of Nuclear Engineering, North Carolina State University, Raleigh, NC, United States*

²*Department of Physics, Benha University, Benha, Egypt*

³*Nuclear 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 Bendixsen¹, S. C. Bott-Suzuki¹, S. W. Cordaro¹, M. Krishnan², S. Chapman², P. Coleman²

¹*Center for Energy Research, University of California San Diego, La Jolla, CA, United States*

²*Alameda 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. Bulanov², C. G. R. Geddes³, H. -S.

Mao³, C. B. Schroeder³, E. Esarey³, W. P. Leemans³

¹*Keldysh Institute of Applied Mathematics RAS, Moscow, Russian Federation*

²*University of California, Berkeley, Californian, United States of America*

³*Lawrence 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. Velikovich³

¹*Weizmann Institute of Science, Rehovot, Israel*

²*HRS Fusion, West Orange, NJ, USA*

³*Naval Research Laboratory, Washington, DC, USA*

12:30 7D-9 NUMERICAL INVESTIGATION ON PLASMA FORMATION AND CURRENT TRANSFER IN ELECTRICAL EXPLOSION OF SINGLE WIRE

K. Wang, Z. Shi, Y. Shi, J. Wu, S. Jia, L. Wang

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 PROPOGATION 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

¹*Chemical and Petrochemical Engineering Department, Egypt-Japan University of Science and Technology (E-just), New Borg El-Arab City, Alexandria, Egypt*

²*Electronics 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. Bednarski³, S. Yu⁴, J. Zhang⁴, J. Fang⁴

¹*Bioelectrics, Leibniz Institute for Plasma Science and Technology, Greifswald, Germany*

²*Pulse Plasma Systems, Institute of Plasma Physics, Prague, Czech Republic*

³*Institute of Pharmacy, University of Greifswald, Greifswald, Germany*

⁴*Academy 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

¹*IW-MS, Airbus Group Innovations, Munich, Germany*

²*IWS, 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