

**IEEE PULSED POWER AND PLASMA SCIENCE
CONFERENCE 2019**

23-28 June 2019

Orlando, Florida

Monday AM

Session: 1Plenary

Plenary Mon AM - Martin Gundersen

Monday 8:15 Room: Seminole Ballroom

Session Chair: Susan Heidger

PULSED POWER AND TRANSIENT PLASMA WITH BIOMEDICAL, DEFENSE, ENERGY, AND ENVIRONMENTAL APPLICATIONS

Martin Gundersen¹

1. *University of Southern California*

Session: 1A

1.2 Computational Plasma Physics I

Monday 9:45 Room: Seminole A/B

Session Chair: John Luginsland

09:45 - 1A1 - Fractional models in solving Maxwell equations and applications

Lay Kee Ang¹, Yee Sin ANG¹, Muhammad Zubair²

1. *Singapore University of Technology and Design*

2. *Information Technology University, Pakistan*

10:00 - 1A2 - (invited) Consistent BGK model for high energy density plasma mixtures

Jeffrey Haack¹, Cory Hauck², Kristian Beckwith³, Michael Murillo⁴

1. *Los Alamos National Laboratory*

2. *Oak Ridge National Laboratory*

3. *Sandia National Laboratories*

4. *Michigan State University*

10:30 - 1A3 - Thermodiffusion of plasma mixtures from molecular dynamics simulations

Abdourahmane Diaw¹

1. *Los Alamos National Lab*

10:45 - 1A4 - Speed-limited Particle-in-cell for Fast Simulation of Slow-plasma Problems

Andrew Chap¹, Thomas Jenkins¹, Greg Werner², John Cary¹

1. *Tech-X Corporation*

2. *University of Colorado*

11:00 - 1A5 - Transition of low-temperature plasma similarity laws from low to high ionization degree regimes

Yangyang Fu¹, Janez Krek², Deqi Wen¹, Peng Zhang¹, John Verboncoeur¹

1. *Michigan State University*

2. *Michigan State University, CMSE*

11:15 - 1A6 - Full-Wave Simulations Of A Combined Plasma Impedance Probe - Plasma Wave Receiver System For Plasma Measurements In The Ionosphere.

Edmund Spencer¹, Robert Arslanbekov², Vladimir Kolobov, Christopher Burns¹

1. *University of South Alabama*

2. *CFDRC Corporation*

11:30 - 1A7 - Numerical study of a coaxial electron sheath

Andrew Fierro¹, Benjamin Yee¹, Matthew Hopkins¹, Allen Robinson¹, George Laity¹

1. *Sandia National Laboratories*

Session: 1B

2.5 Codes and Modeling

Monday 9:45 Room: Space Coast I-III

Session Chair: Ian Rittersdorf

09:45 - 1B1 - (invited) THE MICHELLE CODE: LATEST FEATURES AND ADVANCED APPLICATIONS

John Petillo¹, Alex Burke¹, Aaron Jensen¹, Serguei Ovtchinnikov¹, Eric Nelson¹, George Stantchev², Simon Cooke², Kevin Jensen², Ben Held³, Alan Nichols³

1. *Leidos Corporation*

2. *U.S. Naval Research Laboratory*

3. *National Instruments*

10:15 - 1B2 - BROADBAND BOUNDARY MODEL FOR INJECTION AND ABSORPTION OF EM-WAVES WITH THE HIGDON OPERATOR METHOD

Larry Ludeking¹

1. *OrbitalATK of NGC*

10:30 - 1B3 - Elastostatics in Beam Optics Analyzer

Thuc Bui¹, R. Lawrence Ives¹, David Marsden¹

1. *Calabazas Creek Research, Inc.*

10:45 - 1B4 - PERFORMANCE PORTABLE FINITE VOLUME MAGNETOHYDRODYNAMICS FOR THE EXASCALE ERA

Forrest Glines¹, Philipp Grete², Brian O'Shea²

1. *Sandia National Laboratory*

2. *Michigan State University*

11:00 - 1B5 - Optimization of a Folded Waveguide Traveling Wave Tube Using Impedance Matrices

Aaron Jensen¹, John Petillo¹, Serguei Ovtchinnikov¹, David Chernin¹, Alex Burke¹

1. *Leidos*

11:15 - 1B6 - Importing CAD-Generated Device Geometry to the Neptune EM-PIC Simulation Code

Simon Cooke¹, George Stantchev¹

1. *U.S. Naval Research Laboratory*

11:30 - 1B7 - Smart Modelling of Microwave tube using Deep Learning

Nalini Pareek¹, Purushothaman N.¹, Anirban Bera¹

1. *CSIR CEERI*

Session: 1C

5.1 & 5.2 Opening and Closing Switches I

Monday 9:45 Room: Gold Coast III/IV

Session Chair: Ryan Umstattt

09:45 - 1C1 - Increasing the Pulse Repetition Rate for Solid State Thyatron Replacements

John Waldron¹

1. *Silicon Power*

10:00 - 1C2 - Design and evaluation of SiC GTO module for pulsed power application

Lei Gao¹, Yinghao Meng¹, Kun Zhou¹

1. *Microsystem & Terahertz Research Center, Institute of Electronic Engineering, China Academy of Engineering Physics*

10:15 - 1C3 - High sensitivity HEH monitor

Viliam Senaj¹, David Cabrerizo Pastor¹, Thomas Kramer¹

1. *CERN*

10:30 - 1C4 - Packaging and Evaluation of 100 kV

Photoconductive Switches

Jared Culppepper¹, Adrian Miller¹, Andreas Neuber¹, James Dickens¹
1. Texas Tech University

10:45 - 1C5 - Evaluation methods for electrode erosion under high current, high energy transient arcs

Jiawei Wu¹, Ruoyu Han²

1. Global Energy Interconnection Development and Cooperation Organization
2. Beijing Institute of Technology

11:00 - 1C6 - Simulation of Post-breakdown Transient Resistance of a Plasma Closing Switch Filled with Air, N₂, CO₂, and an Ar/O₂ mixture

Yuan Yao¹, Igor Timoshkin¹, Scott MacGregor¹, Mark Wilson¹, Martin Given¹, Tao Wang

1. University of Strathclyde

11:15 - 1C7 - Experimental study of graphite electrode erosion under premixed atmosphere in spark gap switch

Hongyu Dai¹, Lee Li¹, Shuai Ren¹

1. Huazhong University of Science and Technology

Session: 1D

6.5 Biological and Medical Applications I

Monday 9:45 Room: Seminole C

Session Chair: Dayun Yan

09:45 - 1D1 - (invited) Feedback from cells: how cancer cells could make cold atmospheric plasma jet selective during treatment

Li Lin¹, Dayun Yan¹, Michael Keidar¹

1. The George Washington University

10:15 - 1D2 - Collective Effects of Nanosecond Pulsed Electric Fields on Cells Organized in a Monolayer

Juergen Kolb¹, Fukun Shi¹, Christina Wolff¹, Anna Steuer¹

1. Leibniz Institute for Plasma Science and Technology

10:30 - 1D3 - EVALUATION OF MAGNETIC STIMULATION FOR CELL MEMBRANE PORATION

Qin Hu¹, Ravi Joshi²

1. Central Michigan University
2. Texas Tech University

10:45 - 1D4 - Cell permeabilization and exogenous molecule delivery via microwave treatment

Evelina Loghin¹, Allen Garner², Travis Crawford², Vasile Neculaes³

1. GE Global Research
2. Purdue University
3. GE

11:00 - 1D5 - Microorganism inactivation with Electric Pulses and Drugs

Agni Dhanabal¹, Anand Vadlamani¹, David Detwiler, Allen Garner¹

1. Purdue University

11:15 - 1D6 - Modeling of Fluxes and Surface Coverage of Plasma-Produced Species on Artificial Bone Scaffolding

Juliusz Kruszelnicki¹, Runchu Ma¹, Mark Kushner¹

1. University of Michigan

11:30 - 1D7 - Plasma polymerization of N,N-dimethylacrylamide: cell-repellent or cell-adhesive coatings?

Tim Egghe¹, Pieter Cools¹, Joachim Van Guyse¹, Mahtab Asadian¹, Dmitry Khalenkov¹, Anton Nikiforov¹, Heidi Declercq¹, Andre G. Skirtach¹, Rino Morent¹, Richard Hoogenboom¹, Nathalie De Geyter¹
1. Ghent University

Session: 1E

8.5 Power Supplies and Modulators I

Monday 9:45 Room: Seminole D/E

Session Chair: David E. Anderson

09:45 - 1E1 - (invited) Measurements on Combined 12.5/17.5 kV Prototype Inductive Adder for the CLIC DR Kickers

Janne Holma¹, Mike Barnes¹

1. CERN

10:15 - 1E2 - (invited) Pulsed Resonant Charging Power Supply for the Spallation Neutron Source Extraction Kicker PFN System

Robert Saethre¹, Ben Morris¹

1. Oak Ridge National Lab

10:45 - 1E3 - Controlled Rectifier for Improved Harmonic Performance of a Pulse Step Modulated High Voltage Power Supply

Amit Patel¹

1. ITER-India, Institute for Plasma Research

11:00 - 1E4 - A COMPACT SOLID STATE TRIGGER GENERATOR UTILIZING A FERRITE LOADED AIR CORE TRANSFORMER

Joshua Gilbrech¹, Susan Heidger², James Schrock², Jerald Parker¹, ROBERT RICHTER-SAND¹

1. Leidos
2. U.S. Air Force Research Laboratory

11:15 - 1E5 - Design of Solid-state Marx Modulator with Fast Rising Time and Short Pulse Width

Jung Soo Bae¹, Hyoung Suk Kim², Chan Hun Yu², Kim Shin¹, Sung-Roc

Jang²

1. University of Science & Technology
2. KOREA ELECTROTECHNOLOGY RESEARCH INSTITUTE

11:30 - 1E6 - 100KW PEAK RACKMOUNT MARX WITH DYNAMIC PULSE-TO-PULSE WAVEFORM CONTROL

Kelli Noel¹, Magne Stangenes², Paul Hohen², Michael Valbuena², Christopher Yeckel², Sherry Hitchcock²

1. University of Missouri
2. Stangenes Industries

Session: 1F

10.1/10.2 Converters, Components, Magnetics, Switches and Capacitors

Monday 9:45 Room: Gold Coast I/II

Session Chair: Argenis Bilbao

09:45 - 1F1 - (invited) Study of Cockcroft-Walton Multipliers Driven by AC Sources with Limited Current

Jacob Williams¹, S. D. Kovaleski, Enbo Yang

1. University of Missouri Electrical Engineering and Computer Science

10:15 - 1F2 - Characteristic Analysis of Metal Oxide Resistor under Impulse of Different Wave-Head Time

Wei Zhang¹

1. Xi'an Jiaotong University

10:30 - 1F3 - Analysis of Commercial off-the-shelf 1200 V Silicon Carbide MOSFETs Under Short Circuit Conditions

Jonathan Forbes¹, Fernando Salcedo¹, Cedrick Tchoupe-Nono², Stephen Bayne²

1. Texas Tech University

2. Texas Tech University Center for Pulsed Power and Power Electronics

10:45 - 1F4 - The Current State of Custom Pulse Power Cores Supplied by Metglas Inc.

Eric Theisen¹, John Webb¹

1. Metglas

11:00 - 1F5 - Transient Loading of Ultracapacitors

Charles Nybeck¹, David Wetz¹, David Dodson¹, Alexander Johnston¹, John Heinzl², Joshua Ruddy¹

1. University of Texas at Arlington

2. Naval Surface Warfare Center - Philadelphia Division

11:15 - 1F6 - Investigation into the Reliability of Commercial 1.2-kV SiC MPS Diodes under Surge Current and Avalanche Events

Fernando Salcedo, Jonathan Forbes, Stephen Bayne, Ranbir Singh

Monday PM

Session: 1P

Posters Fundamental Research and Basic Processes and Power Electronics

Monday 13:00 Room: Universal Center

Session Chair: Emily Schrock and John Luginsland

1P01 - Modeling electrical discharge tube using Comsol Multiphysics: Diamond-like Carbon (DLC) thin films

Arezou Zarei¹, Masoud Alimohamadi²

1. Department of physics, Shahrood University of technology, Semnan, Iran

2. Department of physics, Farhangian University, Tehran, Iran

1P02 - Implications of surface roughness on microscale gas breakdown theory

Jacqueline Malayter¹, Russell Brayfield¹, Amanda Loveless¹, Allen Garner¹

1. Purdue University

1P03 - Phase mixing and collisionless dissipation at the boundary sheath of magnetized low temperature plasmas

Dennis Krüger¹, Ralf Peter Brinkmann¹

1. Ruhr University Bochum, Germany

1P04 - RF Gas Breakdown Theory and Experiment as a Function of Gas, Gap Size, Frequency, and Pressure

Amanda Loveless¹, Zach Vander Missen¹, Abbas Semnani¹, Allen Garner¹

1. Purdue University

1P05 - MODELING ELECTRODE CONFIGURATIONS FOR NANOSECOND PULSED PLASMAS

Nancy Isner¹, Tugba Piskin¹, Jonathan Poggie¹, Tatyana Sizyuk¹, Carlo

Scalo¹, Allen Garner¹

1. Purdue University

1P06 - Atomistic Study of Polarization response in Functionalized Barium Titanate Nanoparticles

Jessica Dyer¹, Todd Monson¹, Tyler Stevens¹, Renee Van Ginhoven²

1. Sandia National Laboratories

2. Air Force Research Lab

1P07 - Density rise away from the antenna in a helicon plasma source following resonance cone absorption in a diverging axial magnetic field

Arun Pandey¹, Mainak Bandyopadhyay², Arun Chakraborty²

1. Institute for Plasma Research

2. ITER-India, Institute for Plasma Research

1P08 - Investigation of Electron Emission Characteristics of Multi-finger Ferroelectric Trigger Source for Pseudospark Switch

Udit Narayan Pal¹, Mohit Kumar Verma², B. L. Meena³, Varun⁴, Ajeet

Kumar Dhakar⁵

1. CSIR-Central Electronics Engineering Research Institute, Pilani, India

2. Electrical Engineering Department, National Institute of Technology (NIT), Calicut-673601, India

3. Microwave Devices Area, CSIR- Central Electronics Engineering Research Institute (CEERI), Pilani, Rajasthan-333031, India

4. CSIR- CEERI, Pilani, India and AcSIR, Ghaziabad, India

5. Cyber Physical System Area, CSIR- Central Electronics Engineering Research Institute (CEERI), Pilani, Rajasthan-333031, India

1P09 - Electron emission in liquids

Sarah Lang¹, Allen Garner¹

1. Purdue University

1P10 - Unification of thermionic, field and space charge limited emission

Sarah Lang¹, Allen Garner¹, Adam Darr¹

1. Purdue University

1P11 - Investigating transport properties of collisionless magnetized plasmas in pulsed power systems via high-order kinetic simulations

Genia Vogman¹, James Hammer¹, William Farmer¹

1. Lawrence Livermore National Laboratory

1P12 - Quantifying Streamer Dynamics for Azimuthally Swept 3D Wedges in Pin-to-Plane PIC-DSMC Simulations

Ashish Jindal¹, Chris Moore¹, Andrew Fierro¹, Matthew Hopkins¹

1. Sandia National Laboratories

1P13 - DIELECTRIC-DIRECTED SURFACE FLASHOVER UNDER ATMOSPHERIC CONDITIONS

Paul Clem¹, Chris Moore¹, Laura Biedermann¹

1. Sandia National Laboratories

1P14 - Effects of polarization force on nonlinear structures in a charge varying dusty plasma

YASHIKA GHAI¹, N.S. Saini¹

1. Guru Nanak Dev University

1P15 - Determination of First Townsend Ionization Coefficient by Simulation

Nathan Crosse¹, Thomas Jenkins¹, John Cary¹, Jarrod Leddy¹, David

Smithe¹

1. Tech-X Corporation

1P16 - Investigation of Electron Emission using Molecular Dynamics Simulations

Amanda Loveless¹, Kristinn Torfason², Ágúst Valfell², Allen Garner¹

1. Purdue University

2. Reykjavik University

1P17 - Spontaneous density variations observed in steady-state plasmas sustained using focused microwaves.

Remington Reid¹, Adrian Lopez¹

1P18 - To control the angular momentum of trapped electrons in tapered foam target

Sheetal Punia¹, Manish Dwivedi¹, Hitendra Kumar Malik¹

1. Indian Institute of Technology Delhi

1P19 - Stimulated Raman scattering of the multi-Gaussian beam in a relativistic plasma

Manish Dwivedi¹, RAJAT DHAWAN¹, Hitendra Kumar Malik¹

1. Indian Institute of Technology Delhi, India

1P20 - Analysis of sheath formation and charged species density in collisional electronegative warm plasma

Rajat Dhawan¹, Sheetal Punia¹, Hitendra Kumar Malik¹

1. Indian Institute of Technology Delhi, India

1P21 - Submicroscale Gas Breakdown as a Function of Cathode Protrusions

Russell Brayfield¹, Andrew Fairbanks¹, Amanda Loveless¹, Weihang Li¹,

Catherine Darr¹, Allen Garner¹

1. Purdue University

1P22 - Impulsive Flashover Across Solid/Gas Interfaces:

Breakdown Characteristics and the Path of Spark Channels

Martin Given, Mark Wilson, Scott MacGregor, Zhe Wang, Igor Timoshkin

1P23 - Remote plasma assisted graphene growth for designing graphene/Si hetero-interfaces

Rohit Medwal¹, Charmine Tay², Joseph Vimal Vas³, Mayank Mishra⁴, Rajdeep Rawat

1. Nanyang Technological University

2. Temasek Junior College, Singapore 469278

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

4. National Institute of Education, Nanyang Technological University, Singapore 637616

1P24 - DESIGN, BUILD, AND TEST OF A LOW COST 3D PRINTED SPECTROMETER FOR EXPLOSIVE COPPER AND CONDUCTIVE POLYMER WIRE EXPERIMENTS

Antonio Breno de Alleluia¹, Mark D Johnston², Edl Schamiology¹

1. The University of New Mexico

2. Sandia National Laboratories

1P25 - Dielectric Elastomers: An Investigation in Strain Dependent Electrostatic Pressure of Soft Compliant Dielectrics

Barnard Onyenucheya, James Allen, Jennifer Zirnheld, Kevin Burke

1P26 - Catalytic and Acoustic Nano/Micromotors

Aysegul Uygun Oksuz¹, Gamze Celik Cogal², Gozde Yurdabak Karaca³,

Emre Uygun⁴, Lutfi Oksuz⁵

1. Suleyman Demirel University, Chemistry & Bioengineering Department

2. Suleyman Demirel University, Chemistry Department

3. Suleyman Demirel University, Bioengineering Department

4. Suleyman Demirel University, Civil Engineering Department

5. Suleyman Demirel University, Physics Department

1P27 - Calculation of electron-impact ionization cross sections of dichlorodifluoromethane (R12) and tetrafluoroethane (R134) molecules using Deutsch-Märk (DM) and Binary-Encounter-Bethe (BEB) methods

Binary-Encounter-Bethe (BEB) methods

Feng Tang¹, Xiong Jiayu², Zhang Boya², Lv Qishen¹, Li Xingwen²

1. Shenzhen Power Supply Bureau Co., Ltd.

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

1P28 - Two-dimensional Numerical Simulation of Nanosecond

Pulsed Discharge in Sulfur Hexafluoride gas at High Pressure

wang haiyang¹

1. Northwest institute of nuclear technology

1P29 - NUMERICAL SIMULATION OF CORONA DISCHARGE IN NEEDLE ELECTRODE CONFIGURATION IN A LARGE-SCALE SPACE

Liu Zhi¹, Li Chuan¹, Wang Pengyu¹, Zhang Ming¹

1. HUST

1P30 - Progress Porting VPIC to Several Modern Architectures

William Nystrom¹, Robert Bird¹, Luis Chacon¹, Guangye Chen¹, William Daughton¹, Patrick Kilian¹, Ari Le¹, Scott Luedtke¹, Adam Stanier¹, David Stark¹, Lin Yin¹, Brian Albright¹

1. Los Alamos National Laboratory

1P31 - Speed-Limited Particle-in-Cell Modeling of Low-Temperature Plasma Discharges

Tom Jenkins¹, Andrew Chap¹, Greg Werner², John Cary³

1. Tech-X Corporation

2. University of Colorado

3. Tech-X Corporation and University of Colorado

1P32 - Simplified Radiation Model for Atmospheric Plasmas

Michael Mallon¹, Marina Kühn-Kauffeldt¹, Jose-Luis Marques-Lopez, Jochen Schein

1. University of the Bundeswehr Munich

1P33 - Advanced optimization and machine learning for magnetron design

Anton Spirkin¹, Peter H. Stoltz¹, John W. Luginsland²

1. Tech-X Corporation

2. Confluent Sciences

1P34 - A Dey-Mitra-conforming Poisson Solver for Nanoscale Vacuum Channel Transistor Applications

Gregory Werner¹, John Cary¹

1. University of Colorado

1P35 - MODELING POWER-FLOW USING THE PERSEUS/FLEXO AND HYDRA MHD SIMULATION CODES

Nathaniel Hamlin¹, Mark Hess¹, Charles Seyler²

1. Sandia National Laboratories

2. Cornell University

1P36 - Fractal features of Ag-DLC films based on two morphological images

Azizollah Shafikhani¹, Arezou Zarei²

1. 1- Physics department, Alzahra University; 2-School of Physics, Institute for research in fundamental sciences (IPM)

2. Physics department, Alzahra University

1P37 - Diode Design For Increased Radiation Dose in HERMES III Far-Field

Troy Powell¹, Andy Biller¹, Keith Cartwright¹, Timothy Renk¹, Timothy

Pointon¹

1. Sandia National Laboratories

1P38 - Thermodynamic properties and transport coefficients of C4F7N/CO2 thermal plasma as an alternative to SF6

Lisong Zhang, Mingtian Ye, Lei Pang, Qiaogen Zhang

1P39 - A High Order Convected Scheme Solution of the Wigner-Poisson System

Matthew Link¹, Michael S. Murillo¹, Andrew Christlieb¹, Frank Graziani², Mark Sherlock²

1. Michigan State University

2. Lawrence Livermore National Lab

IP40 - Data storage of particle-in-cell simulations for big data analysis of capacitively coupled plasma reactors

Yeun Jung Kim¹, Jin Seok Kim¹, Hae June Lee¹
1. Pusan National University

IP41 - A Fluid Solver approach via Discontinuous Galerkin Methods to Viscoelastic Models for dense plasmas

PIERSON GUTHREY¹, MICHAEL MURILLO¹, Andrew CHRISTLIEB¹
1. MICHIGAN STATE UNIVERSITY

IP42 - Momentum Coupling in Magnetized Plasmas

David COOKE¹, Remington REID¹, James Patton¹, Ashley Stiles²
1. Air Force Research Lab
2. Assurance Tech Corp

IP43 - Experimental Investigation of Colliding Plasma Flows

Andrew Hamilton¹, Vladimir Sotnikov
1. Air Force Research Laboratory

IP44 - Characteristics of nonlinear structures in a multicomponent superthermal plasma with electron beam

SUNIDHI SINGLA¹, YASHIKA GHAI¹, N.S. SAINI¹
1. GURU NANAK DEV UNIVERSITY, AMRITSAR

IP45 - Laboratory Simulations of Solar Wind Interactions with Airless Bodies: Magnetic Anomalies and Wakes

Tobin Munsat¹, LiHsia Yeo¹, Xu Wang¹
1. University of Colorado

IP46 - Numerical simulation of a spark channel expansion in water and its comparison with an experimental result

Vitaliy Stelmashuk¹, Petr Hoffer¹, Karel Kolacek¹, Jaroslav Štraus¹
1. Institute of Plasma Physics of Czech Academy of Sciences

IP47 - Electron heating mode transitions in a capacitively coupled oxygen discharge

Jon Tomas Gudmundsson¹, Andrea Proto¹
1. University of Iceland

IP48 - Ion collection characteristics from a pulsed laser-induced barium plasma with an injection of thermal electrons

Jian Chen¹, Jing Li¹, HEPING LI¹
1. Tsinghua University

IP49 - NANOSECOND DISCHARGE IN AIR IN “NEEDLE – ELECTROLYTE” SYSTEM

Vasyl Chyhin¹
1. Vasyl

IP50 - Study of Ion-Temperature Effects On a Collisional Magnetized Dusty Plasma Sheath Using Fluid Simulation Method

Shesaraj Bhandari¹
1. Central Department Of Physics

IP51 - Analogue of chemical potential of Coulomb dust balls in neon cryogenic plasma

Dmitry Polyakov¹, Valeria Shumova¹, Leonid Vasilyak¹
1. Joint Institute for High Temperatures of the Russian Academy of Sciences

IP52 - Phase transitions in cryogenic dusty plasma in neon

Valeria Shumova¹, Dmitry Polyakov¹, Leonid Vasilyak¹
1. Joint Institute for High Temperatures of the Russian Academy of Sciences

IP53 - Collision of shock waves in a non-Maxwellian strongly coupled dusty plasma

Papihra Sethi¹, N. S. Saini¹
1. Guru Nanak Dev University, Amritsar

IP54 - Study Of Dust Kinetic Alfvén Periodic Waves In Nonextensive Plasmas

RUPINDER KAUR¹, N.S. Saini¹, kuldeep singh¹
1. GURU NANAK DEV UNIVERSITY, AMRITSAR

IP55 - Pulsed power-induced CO2 dissociation for CO production

Wilfred Hoeben¹, Tom Huiskamp, Guus Pemen¹
1. Eindhoven University of Technology

IP56 - Modeling of the Plasma Chemistry in an Electron Beam Induced Discharge

Tzvetelina Petrova¹, John Giuliani¹, Stephen Swanekamp¹, Steve Richardson¹, Stuart Jackson¹, Paul Adamson¹, Joseph Schumer¹
1. Naval Research Laboratory

IP57 - Generation of carbon monoxide from carbon dioxide using nanosecond pulsed discharge

Tatsuya Ichiki¹, Asuki Iwasaki¹, Douyan Wang², Takao Namihira²
1. Graduate School of Science and Technology, Kumamoto University
2. Institute of Pulsed Power Science, Kumamoto University

IP58 - Impact of gas-chemistry model accuracy on modeling intense electron beam driven plasma

Paul Adamson¹, Steve Richardson¹, Tzvetelina Petrova¹, Stephen Swanekamp¹, John Giuliani¹, Stuart Jackson¹, David Hinshelwood¹, Joseph Schumer¹
1. Naval Research Laboratory

IP59 - CHARACTERISTICS AND PARAMETERS OF PLASMA OF MERCURY FREE UV-VUF RADIATORS ON RADICALS OF HYDROXYL (OH) WITH PUMPING BY NANOSECOND CAPACITIVE AND BARRIER DISCHARGES

Vasyl Chyhin

IP60 - DETAILED GAS ANALYSIS IN NANO SECOND PULSED NON-EQUILIBRIUM PLASMA PROCESSING OF HYDROCARBONS FOR MASS BALANCE

Shariful Islam Bhuiyan¹, Kungpeng Wang¹, Christopher Campbell¹, Abdullah Hil Baký¹, David A. Staack¹
1. Texas A&M university

IP61 - Effects of non-Maxwellian electron energy distribution function on plasma chemistry in Cl₂ and CF₄

Xifeng Wang¹, Alexander Khrabrov², Igor Kaganovich²
1. University of Michigan
2. Princeton Plasma Physics Laboratory

IP62 - Synthesis and material characterization of silver nanofluids produced through laser ablation in liquids

Rizbi Hasan¹, Magesh Rajan¹
1. South Dakota School of Mines and Technology

IP63 - Spectroscopic investigation of air excited and ionized by an electron beam

S. L. Jackson¹, D. D. Hinshelwood¹, S. B. Swanekamp¹, Tz. B. Petrova¹, J. L. Giuliani¹, A. S. Richardson¹, P. E. Adamson¹, J. W. Schumer¹
1. Plasma Physics Division, Naval Research Laboratory

IP64 - Relativistic Hermite-cosine-Gaussian laser beam self-focusing in the collisional plasmas

Masoud Alimohamadi¹, Arezou Zarei²
1. Department of Physics, Frahangian University, Tehran, Iran
2. Department of Physics, Sahrood University of Technology, shahrood, Iran

IP65 - Development of a plasma source to accommodate an LIF dip measurement system

John Foster¹, Christopher Durot¹, Jenny Smith¹

1. *University of Michigan*

IP66 - What different effects can be taken by different liquid-dissolved gases on the concentration of aqueous RONS?

YING YANG¹, LanLan Nie¹, XinPei Lu¹

1. *Huazhong University of Science and Technology*

IP67 - Design of High-Voltage Pulse Generator Control System for CSNS Linac RF System

Maliang Wan¹, Wenzhong Zhou¹, Zhencheng Mu¹, Jian Li², Xinan Xu², Meifei Liu¹, Bo Wang¹, Linyan Rong¹, Zhixin Xie¹, Zonghua Zhang², Jimin Qiao²

1. *Dongguan Branch, Institute of High Energy Physics, Chinese Academy of Sciences*

2. *Institute of High Energy Physics, Chinese Academy of Sciences*

IP68 - Compact Rapid Capacitor Charger for Mobile Marx Generator Applications

Argenis Bilbao¹, Stephen Bayne¹

1. *U.S. Army Research Laboratory*

IP69 - A Compact 100 kW high-voltage power supply with balanced bipolar output

Jordan Chaparro¹, Kevin Lawson², Matthew McQuage³

1. *Naval Surface Warfare Center*

2. *Booz Allen Hamilton*

3. *NSWCDD*

IP70 - An energy adder circuit for hybrid energy harvesting system

Andréa Villarim¹, Cleonilson Protasio

1. *Federal University of Paraíba - Brazil*

IP71 - Ablation and Breakdown Characteristics of High Current Gas Spark Switch with Different Profiles

Yu Wang, Yongmin Zhang, Aici Qiu, Yong Lu, Qiaojue Liu

IP72 - Measurement of Diode Reverse Recovery Losses as a Function of Switching Frequency

David Wetz¹, Christopher Martinez¹, Jacob Sanchez¹, Joshua Ruddy¹

1. *University of Texas at Arlington*

IP73 - High Rate Charge and Discharge of High Voltage Capacitors

Christopher Martinez¹, David Wetz¹, Jacob Sanchez¹, Joshua Ruddy¹

1. *University of Texas at Arlington*

IP74 - Skin effect in coaxial conductors of pulse facilities

Boris Fridman¹, Maxim Medvedev¹

1. *Efremov Institute of Electrophysical Apparatus*

IP75 - Multi-pulse performance of amorphous metal magnetic cores at high magnetization rates

Daisy Acosta-Lech¹, Timothy Lee Houck¹, Michael K. Misch², Koby

Sugihara²

1. *Lawrence Livermore National Laboratory*

2. *Mission Support and Test Services*

IP76 - Compatibility of SLA and FDM printed components with common insulating oils

Casey Ottesen¹, Haylie Orozco¹, Elisha Converse², Brad Hoff³, Steven

Hayden², Sabrina Maestas³, Craig Kief¹

1. *COSMIAC at University of New Mexico*

2. *Aramco Research Center - Boston, Aramco Services Company*

3. *Air Force Research Laboratory*

IP77 - Optimization of L-band waveguide circulators for a broad bandwidth and high transmission operation

Kaviya Aranganadin¹, Ming-Chieh Lin¹, Hua-Yi Hsu²

1. *Hanyang University*

2. *National Taipei University of Technology*

IP78 - Study on Pulse Characteristics of GaN HEMTs

Dong Wei Gang¹

1. *Fudan University*

IP79 - An Eigenvalue Approach to Study SPIDER RF Oscillator Operating Space

Ferdinando Gasparini¹, Mauro Recchia¹, Marco Bigi¹, Alberto Maistrello¹,

Andrea Zamengo¹, Elena Gaio¹

1. *Consorzio RFX (CNR, ENEA, INFN, Università di Padova, Acciaierie Venete Spa), Corso Stati Uniti, 4, Padova, Italy*

IP80 - OUTPUT CHARACTERISTICS OF HORN ANTENNAS IN TRANSIENT REGIME

Jing-Shyang Yen¹, Xuan-De Huang², Chia-Wei Lin², Kaviya Aranganadin³,

Chii-Ruey Lin⁴, Jwo-Shiun Sun¹, Hua-Yi Hsu², Ming-Chieh Lin³

1. *Department of Electronic Engineering, National Taipei University of Technology*

2. *Department of Mechanical Engineering, National Taipei University*

3. *Department of Electrical and Biomedical Engineering, Hanyang University*

4. *Department of Mechanical Engineering, Minghsin University of Science and Technology*

IP81 - E-band Power Combining Experiment for High Power Millimeter Waves

Ahmed Elfgani¹, Firas Ayoub¹, Marios Patriotis¹, Edl Schamiloglu¹

1. *University of New Mexico*

IP82 - High Power Cuk Converter for Fusion Science Applications

Alex Henson¹, Tim Ziemba, James Prager¹, Kenneth E. Miller¹, Satbeer Singh¹

1. *Eagle Harbor Technologies, Inc.*

IP83 - Investigation of laser-excited nonlinear modes in an under dense plasma using 2D simulation code

Ameneh Kargarian

IP84 - Plasma water treatment and oxidation of organic matter in water

Kamau Wright¹

1. *University of Hartford*

Session: 2Plenary

Plenary Mon PM - Manfred Thumm (2018 NPSS Merit Award)

Monday 14:30 Room: Seminole Ballroom

Session Chair: Edl Schamiloglu

The Wendelstein 7-X Stellarator: Plasma Generation, Heating and Current-Drive with the Worldwide Largest Electron Cyclotron Heating Facility

Manfred Thumm¹, on behalf of the W7-X Team²

1. *Karlsruhe Institute of Technology, IHM*

2. *Max-Planck-Institute for Plasma Physics*

Session: 2A

1.3 Space Plasmas

Monday 16:00 Room: Gold Coast I/II

Session Chair: David Cooke

16:00 - 2A1 - Parametric Interaction of VLF and ELF Waves and Impact on Energetic Electrons in a Radiation Belt

Vladimir Sotnikov¹

1. Air Force Research Laboratory

16:15 - 2A2 - Modulational instability and study of freak waves in an ion beam plasma with two temperature superthermal electrons

Nimardeep Kaur¹, Kuldeep Singh¹, N.S. Saini¹

1. Guru Nanak Dev University

16:30 - 2A3 - SOLAR WIND DRIVEN WHISTLER INSTABILITY IN EARTH'S CUSP REGION

M N S Qureshi¹

1. GC University, Lahore

16:45 - 2A4 - Low energy electron irradiation induced charging of dielectric materials: measurements and analyses.

Mohamed Belhaj¹, Sarah Dadouch¹

1. ONERA

17:00 - 2A5 - Modeling DSX Plasma Interactions Using Nascap-2k

Myron Mandell¹, david cooke², James McCollough², William Johnston², Adrian Wheelock², Dale Ferguson², Victoria Davis¹

1. Leidos

2. US Air Force Research Lab

Session: 2B

3.1 Plasma, Ion, and Electron Sources I

Monday 16:00 Room: Seminole D/E

Session Chair: John Harris

16:00 - 2B1 - Transients on Arc and Converter currents in the Multicusp Cesium Surface Conversion H - Source at LANSCE

David Kleinjan¹

1. Los Alamos National Laboratory

16:15 - 2B2 - Atmospheric Pressure Breakdown and Evidence for Field Emission in GHz Split-Ring Resonators

Zane Cohick¹, Michael Lanagan¹, Douglas Wolfe¹, Benjamin Hall²

1. The Pennsylvania State University

2. Lasers for Innovative Solutions

16:30 - 2B3 - Experimental, analytical and computational studies of electron gun grid heating

Andrew Cross¹, Kristopher Frutschy¹, Allen Garner², Vasile Neculaes³

1. GE Global Research

2. Purdue University

3. GE

16:45 - 2B4 - Generation of deuterium ions in a vacuum arc and in a glow discharge with a hollow cathode

Valeria Frolova¹, Alexey Nikolaev², Efim Oks¹, Alexey Vizir², Georgy Yushkov²

1. Tomsk State University of Control Systems and Radioelectronics

2. High Current Electronics Institute, Tomsk, Russia

17:00 - 2B5 - Power Consumption in a Miniature Microwave Inductively Coupled Plasma Source

Ilija Stefanović¹, Michael Klute¹, Ralf-Peter Brinkmann², Nikita Bibinov¹,

Wolfgang Heinrich³, Horia-Eugen Porteanu³, Peter Awakowicz⁴

1. Ruhr-University Bochum

2. Ruhr-Universität Bochum, Faculty of Electrical Engineering and Information Technology, Institute for Theoretical Electrical Engineering, Germany

3. Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Berlin, Germany

4. Ruhr-Universität Bochum, Faculty of Electrical Engineering and Information Technology, Institute for Electrical Engineering and Plasma Technology, Germany

17:15 - 2B6 - Test beds for electron emission studies

Michel CARON¹, Martial Toury¹, Laurent Hourdin¹, Remi Nicolas¹,

Bertrand Etchessahar¹, Rodolphe Rosol¹, Jerome Magnan¹, Remi Maisony¹

1. CEA

Session: 2C

5.2 & 5.3 Transmission Lines and Transformers and High Energy Density Storage

Monday 16:00 Room: Gold Coast III/IV

Session Chair: Joel Ennis and Jose Rossi

16:00 - 2C1 - Development of a 1MW pulsed air core electromagnetic toroidal coupler for wireless power transmission with reduced stray emission

Fatima Zahra Boudara¹, Marc Rivaletto², Laurent Pecastaing¹, Antoine Silvestre De Ferron¹, Jean-pierre Brasile³, Sylvain Paquet³

1. Laboratory SIAME

2. Pau University

3. Effitech

16:15 - 2C2 - Assessing Effective Medium Theories for Designing Composites for Nonlinear Transmission Lines

Xiaojun Zhu¹, Andrew J. Fairbanks¹, Allen L. Garner¹

1. Purdue University

16:30 - 2C3 - Development and Diagnostics on Composites for Nonlinear Transmission Lines

Andrew Fairbanks¹, Xiaojun Zhu¹, Julio Hernandez¹, Shengjie Gao¹, Wenzhou Wu¹, Tyler Tallman¹, Allen Garner¹

1. Purdue University

16:45 - 2C4 - DESIGN AND TESTING OF A COMPACT 40 KV CAPACITOR BASED ON NANODIELECTRIC COMPOSITES

Kevin O'Connor¹, Robert Kutz¹, Milton Miranda¹, Mark Prelas², Randy Curry³

1. NanoElectromagnetics, LLC

2. University of Missouri Center for Physical and Power Electronics

3. University of Missouri

17:00 - 2C5 - Application of Propylene Carbonate-Based Nano-Fluid in Pulse Forming Line

Zicheng Zhang¹, Yanpan Hou¹, Shifei Liu¹, Hanwu Yang¹, Jiande Zhang¹, Baoling Qian¹

1. National University of Defense Technology, China

17:15 - 2C6 - High Current Density Pulse Transmission Experiments with Different Conductor Materials on the Primary Test Stand

Wenkang Zou¹, Guilin Wang¹, Bin Wei¹

1. Institute of Fluid Physics, China Academy of Engineering Physics

Session: 2D

6.4/6.5 Environmental, Biological, and Medical Applications

Monday 16:00 Room: Seminole C

Session Chair: Katharina Stapelmann

16:00 - 2D1 - (invited) On the VUV optical emission of N-APPJs

XinPei Lu¹, FengWu Liu¹, Nie LanLan¹
1. *Huazhong University of Science and Technology*

16:30 - 2D2 - A Bipolar High Voltage Pulse Generator Used for Irreversible Electroporation Ablation

Lanxi Li¹, Weidong Ding¹, Jiaqi Yan¹, Saikang Shen¹, Yanan Wang¹, Jiayin Yan¹, Yinan Zhu, Zheng Zhongbo¹, Chongjian Ge¹
1. *Xi'an Jiaotong University*

16:45 - 2D3 - A Bipolar Nanosecond Pulse Generator with High Repetition Frequency Used for Irreversible Electroporation

Saikang Shen, Jiaqi Yan¹, Lanxi Li¹, Weidong Ding¹
1. *Xi'an Jiaotong University*

17:00 - 2D4 - Downstreaming of valuable compounds from microalgae with spark discharges, instigated by 100-ns high voltage pulses

Katja Zocher¹, Raphael Rataj, Anna Steuer¹, Juergen Kolb¹
1. *Leibniz Institute for Plasma Science and Technology*

17:15 - 2D5 - A MULTILAYER STRUCTURE OF COMPRESSED WATER FLOW GENERATED BY RE-STRIKE IN UNDERWATER ELECTRICAL WIRE EXPLOSION

Huantong Shi¹, Guofeng YIN¹, Yuanfei FAN¹, Jian WU¹, Xingwen LI¹
1. *Xi'an Jiaotong University*

Session: 2E

7.1 Explosive Power Generators

Monday 16:00 Room: Space Coast I-III

Session Chair: Bucur Novac

16:00 - 2E1 - (invited) Pulse Compression Considerations for High Current Ranchero Generators

Timothy Foley¹, Thomas Gianakon¹, Christopher Rousculp¹, Robert Watt¹, James Goforth¹
1. *Los Alamos National Lab*

16:30 - 2E2 - 3D Magneto-Hydrodynamic Modelling of an Overstressed Helical Magnetic Flux Compression Generator

Anthony Johnson¹, Andrew Young¹, Adam White¹, Jalal Javedani¹, Roger Richardson¹, Jerome Solberg¹
1. *Lawrence Livermore National Laboratory*

16:45 - 2E3 - Design and simulation of compact explosively-driven magnetic flux compression (MFC) generators for high energy applications.

George Vunni¹, Paul Berning¹, Peter Bartkowski¹
1. *US Army Research Laboratory*

17:00 - 2E4 - A 2-D Numerical Model for the Estimation of the Time Varying Inductance of an Explosively-Driven Helical Flux Compression Generator

Ashish Sharma¹, Joy Thomas Meledath¹
1. *Indian Institute of Science*

17:15 - 2E5 - Ignition Mechanisms of Polymer Bonded Explosives during Drilling

Raimi Clark¹, Ryan Lee¹, Austin Hewitt¹, Tyler Buntin², David Barnett², James Dickens², W. A. Harrison³, E. Tucker⁴, John Mankowski², Andreas Neuber²

1. *Center for Pulsed Power and Power Electronics (P3E)*
2. *Texas Tech University*
3. *CNS Pantex*
4. *Mission Engineering Development Group*

Session: 2F

9.1 Optical, X-ray, FIR, and Microwave Diagnostics and 9.3 Pulsed Power Diagnostics

Monday 16:00 Room: Seminole A/B

Session Chair: Clayton Myers

16:00 - 2F1 - Hyperfine structure and isotopic shift analysis of uranium transitions using LIF of laser-produced plasma

S. S. Harilal¹, E. Kautz¹, B. E. Bernacki¹, M. C. Phillips¹
1. *Pacific Northwest National Laboratory*

16:15 - 2F2 - Propagation process of streamers and time history of reduced electric field during nanosecond pulsed discharge in coaxial electrode in atmospheric air

Terumasa Ryu¹, Hitoshi Yamaguchi, Douyan Wang¹, Takao Namihira¹
1. *Institute of Pulsed Power Science, Kumamoto University*

16:30 - 2F3 - Importance of RF Measurements in Pulsed-Plasma Applications

Stephen Heagy¹
1. *Bird*

16:45 - 2F4 - Influencing Factors and Error Analysis of Pulse Current Measurement With Air-core Rogowski Coil

Yao Xu¹, Xiaobing Zou¹, Xinxin Wang¹
1. *Tsinghua University*

17:00 - 2F5 - A Multi-Material Velocimetry Detector for Pulsed Power Flow Studies

Mark Hess¹, G. Laity, Brian Hutsel¹, Chris Jennings¹, Daniel Dolan¹, Carlos Aragon¹, Kurt Tomlinson², Kyle Peterson¹
1. *Sandia National Laboratories*
2. *General Atomics*

17:15 - 2F6 - Broadband Power Measurements of High-Voltage, 10-ns Pulses for Plasma Ignition for Combustion

Christopher Tremble¹, David Alderman¹, Jason Sanders², Dan Singleton², Chunqi Jiang¹
1. *Old Dominion University*
2. *Transient Plasma Systems, Inc.*

Tuesday AM

Session: 3Plenary

Plenary Tues AM - John Verboncoeur (2019
Plasma Science and Applications Award)

Tuesday 8:15 Room: Seminole Ballroom

Session Chair: Joe Schumer (PSAC ExCom Chair)

Session: 3A

4.2 Particle Acceleration with Laser and Beams

Tuesday 9:45 Room: Gold Coast I/II

Session Chair: Jens Osterhoff

**09:45 - 3A1 - (invited) Progress of beam driven plasma
acceleration at FLASHForward**

Lucas Schaper¹, Alexander Aschikin¹, Simon Gerd Bohlen², Gregory Boyle¹, Theresa Karoline Bruemmer¹, Richard D'Arcy¹, Severin Diederichs³, Brian Foster⁴, Matthew James Garland⁵, Lars Goldberg¹, Pau Gonzales Caminal³, Sven Karstensen⁶, Alexander Knetsch¹, Peng Kuang¹, Vladyslav Libov, Carl A. Lindström¹, Kai Ludwig¹, Alberto Martinez de la Ossa¹, Timon Mehling⁷, Martin Meisel¹, Pardis Niknejadi¹, Jens Osterhoff¹, Kristjan Poder¹, Paul Pourmussavi³, Martin Quast³, Jan-Hedrik Roeckemann¹, Bernhard Schmidt¹, Sarah Schroeder³, Jan-Patrick Schwinkendorf⁸, Bridget Sheeran³, Gabriele Tauscher³, Stephan Wesch¹, Paul Winkler³, Ming Zeng¹

1. DESY

2. Hamburg University (DE)

3. Universitaet Hamburg

4. University of Oxford (GB)

5. CERN

6. DESY Hamburg

7. Lawrence Berkeley National Lab

8. Deutsches Elektronen-Synchrotron DESY

**10:15 - 3A2 - Time-dependent behavior of capillary discharge
devices for plasma-wakefield acceleration**

Gregory Boyle¹, Erik Adli², James Anthony Chappell³, Nathan Cook⁴, Roberto Corsini⁵, Richard D'Arcy¹, Anthony Dyson⁶, Wilfrid Farabolini⁷, Simon Hooker⁶, Carl A. Lindström¹, Martin Meisel¹, Jan-Hedrik Roeckemann¹, Lucas Schaper¹, Kyrre Ness Sjobaek², Matthew Wing⁸, Jens Osterhoff¹

1. DESY

2. University of Oslo (NO)

3. University of London (GB)

4. RadiaSoft LLC

5. CERN

6. University of Oxford

7. Université Paris-Saclay (FR)

8. University College London

**10:30 - 3A3 - Proton Driven Plasma Wakefield Acceleration:
AWAKE at CERN - Concept, Experiment and Latest Results**
Mathias Hüther¹

1. Max-Planck-Institut für Physik (DE)

**10:45 - 3A4 - Acceleration of Helical Electron Beams using Light
springs**

José Tito Mendonça¹

1. IPFN - Instituto Superior Tecnico, Univ. Lisboa, Portugal

11:00 - 3A5 - Study of the effects of laser pulse intensity

**modulations on the plasma oscillations and electron energy gain
in the bubble regime.**

Anatoliy Shapolov¹, Balazs Fekete¹, Matyas Kiss¹, Sandor Szatmari², Sergei Kukhlevsky¹

1. Institute of Physics, University of Pecs

2. Institute of Physics, University of Szeged

**11:15 - 3A6 - Experimental demonstration of a laser proton
accelerator with accurate beam control through image-relaying
transport**

Chen Lin¹, Jungao Zhu¹, Minjian Wu¹, Qing Liao¹, Yixing Geng¹, Kun Zhu¹, Chengcai Li¹, Xiaohan Xu¹, Dongyu Li¹, Yinren Shou¹, Tong Yang¹, Pengjie Wang¹, Jiaer Chen¹, Yanying Zhao¹, Wenjun Ma¹, Haiyang Lu¹, Xueqing Yan¹

1. Peking University

**11:30 - 3A7 - The effect of an oblique magnetic field on the
electron acceleration in a laser-produced ion channel**

Ameneh Kargarian¹

1. Plasma physics research Institute

Session: 3B

2.6 Non-Fusion Microwave Systems and 2.7
Microwave Plasma Interaction I

Tuesday 9:45 Room: Seminole D/E

Session Chair: Sarita Prasad and John Leopold

**09:45 - 3B1 - Practical Tunable Electrically Small Antenna
Design for Transportable Ionospheric Heating**

Benedikt Esser¹, James Dickens¹, John Mankowski¹, Andreas Neuber¹

1. Texas Tech University

**10:00 - 3B2 - ROLE OF PHOTON PROCESSES IN THE RF
BREAKDOWN OF AIR**

Xiaoli Qiu¹, Benedikt Esser¹, John Mankowski¹, James Dickens¹, Andreas Neuber¹, Ravi Joshi¹

1. Texas Tech University

**10:15 - 3B3 - NUMERICAL EVALUATION OF
MULTIPACTOR IN RECTANGULAR WAVEGUIDES
PROBED BY THE EVOLUTION OF ELECTRON
DISTRIBUTIONS**

Hieu Nguyen¹, Xiaoli Qiu¹, John Mankowski¹, James C. Dickens¹, Andreas

A. Neuber¹, Ravi P. Joshi¹

1. Texas Tech University

**10:30 - 3B4 - A 2.85 GHZ PULSED RF SOURCE FOR
MULTIPACTOR RESEARCH UTILIZING GAN HEMTS
CAPABLE OF 2 KW**

Benedikt Esser¹, Zachary Shaw¹, James Dickens¹, Andreas Neuber¹

1. Texas Tech University

**10:45 - 3B5 - NUMERICAL EVALUATIONS OF
ENERGY-DEPENDENT SECONDARY ELECTRON
EMISSION BY INCIDENT ELECTRONS AND CHARGED
IONS**

Hieu Nguyen¹, Xiaoli Qiu¹, Joy Acharjee¹, John Mankowski¹, James C.

Dickens¹, Andreas Neuber¹, Ravindra Joshi¹

1. Texas Tech University

**11:00 - 3B6 - Design and Implementation of an Ultra-wideband
Multipactor Test Cell**

Mirhamed Mirmozafari¹, Sirous Nourgostar¹, Dan Enderich¹, Nader

Behdad¹, John Booske¹

1. University of Wisconsin-Madison

11:15 - 3B7 - (invited) Map-Based Multipactor Theory for

Two-Carrier Operation

Moiz Siddiqi¹, Rami Kishek¹

1. *University of Maryland, College Park*

Session: 3C

6.5 Biological and Medical Applications II

Tuesday 9:45 Room: Seminole C

Session Chair: Li Lin

09:45 - 3C1 - The cell activation phenomena in the cold atmospheric plasma cancer treatment

Dayun Yan¹, Wenjun Xu², Li Lin¹, Jonathan Sherman³, Michael Keidar¹

1. *The George Washington University*

2. *State Key Laboratory of Electric Insulation and Power Equipment,*

3. *Neurological Surgery*

10:00 - 3C2 - Mathematical Modeling of Tumor Growth and Response to Electrochemotherapy

Jennifer Firehammer¹, Lakshya Mittal¹, Matthew DeWitt², Raji

Sundararajan¹, Allen Garner¹

1. *Purdue University*

2. *Luna Innovations*

10:15 - 3C3 - Single cell laser mediated molecule delivery – infrared laser based microinjection

Vasile Neculaes¹, Allen Garner², Dylow Dimitry, Lohin Evelina³

1. *GE*

2. *Purdue University*

3. *GE Global Research*

10:30 - 3C4 - Electrochemotherapy Enhances the Curcumin Effect on TNBC Cells in a Dosage and Energy Dependent Manner

Lakshya Mittal¹, Allen Garner¹, Ignacio Camarillo¹, Xinhua Chen, Ravi Joshi², Raji Sundararajan¹

1. *Purdue University*

2. *Texas Tech University*

10:45 - 3C5 - (invited) THE INFLUENCE OF SURFACE HUMIDITY ON DISINFECTION USING COLD PLASMAS

Ankit Moldgy¹, Gaurav Nayak¹, Hamada Aboubakr², Sagar Goyal², Peter Bruggeman¹

1. *Department of Mechanical Engineering, University of Minnesota*

2. *Veterinary Diagnostic Laboratory, University of Minnesota*

11:15 - 3C6 - Comparison of Plasma Sporicide Using Different Power Sources in Atmospheric-Air

Hao Wang¹, Liyang Zhang¹, Haiyun Luo¹, Xinxin Wang¹

1. *Tsinghua University*

11:30 - 3C7 - A novel device enhanced the active antimicrobial components in the plasma treated solution

Hangbo Xu¹, ruonan Ma

1. *Zhengzhou University*

Session: 3D

7.2 High Current and High Power Pulsers I

Tuesday 9:45 Room: Space Coast I-III

Session Chair: Weihua Jiang

09:45 - 3D1 - (invited) HIGH POWER DIELECTRIC DIODE STUDIES AT SANDIA NATIONAL LABORATORY

MICHAEL MAZARAKIS¹, JONATHAN CUSTER¹, MARK KIEFER¹,

JOSHUA LECKBEE¹, DEL ANDERSON², RAYMOND CIGNAC²,

TRINH TUNG², FRANK WILKINS², ROBERT OBREGON²

1. *SANDIA NATIONAL LABORATORIES*

2. *NATIONAL SECURITY TECHNOLOGIES*

10:15 - 3D2 - Field-Circuit Coupling Simulation of Petawatt-class Z-Pinch Accelerator

QUAN ZHOU, Xiaobing Zou¹, Xinxin Wang¹

1. *Tsinghua University*

10:30 - 3D3 - Compact Marx Generator to Drive a Low-Impedance MILO

Tyler Buntin¹, James Dickens¹, Andreas Neuber¹, Ravi Joshi¹, John

Mankowski¹, Matthew Abide¹

1. *Texas Tech University*

10:45 - 3D4 - Large Scale System Using Pulsed Electric Fields as an Invasive Fish Barrier

Michael Kempkes¹, Timothy Hawkey¹, Ian Roth¹, Marcel Gaudreau¹

1. *Diversified Technologies, Inc.*

11:00 - 3D5 - Analysis of triggering behaviour of Marx generators by using Spice simulations

Benjamin Lassalle¹

1. *ITHPP*

11:15 - 3D6 - Characterization of Nano-second Pulsed Power Generator Synchronizing Double Inductive Energy Storage Circuits with Semiconductor Opening Switch

Taichi Sugai¹, Kosuke Yawata¹, Yiwen Yang¹, Akira Tokuchi², Weihua

Jiang¹

1. *Nagaoka University of Technology*

2. *Pulsed Power Japan Laboratory Ltd.*

11:30 - 3D7 - MHD Modeling of Shock Physics Experiments with the PHELIX Portable High Magnetic Field Driver

Christopher Rousculp¹, M S Freeman¹, D A Fredenburg, F Fierro, J R

Griego, F G Mariam, J T Bradley, L P Neukirch, D M Oro, A R Patten, R B

Randolph, W A Reass, R E Reinovsky, A Saunders, Z Tang, P J Turchi, J T

Dunwoody, T J Voorhees

1. *Los Alamos National Laboratory*

Session: 3E

6.2 High-Pressure and Thermal Plasma Processing

Tuesday 9:45 Room: Gold Coast III/IV

Session Chair: Paul Rumbach

09:45 - 3E1 - Optical emission behavior of electrical wire explosions in different media

Ruoyu Han¹, Jiawei Wu²

1. *Beijing Institute of Technology*

2. *Global Energy Interconnection Development and Cooperation Organization*

10:00 - 3E2 - Characteristics of negative-polarity DC superimposed nanosecond pulsed discharge and its applications

Hirofumi Yamashita¹, Yasuaki Torigoe¹, Douyan Wang², Takao Namihira²

1. *Graduate School of Science and Technology, Kumamoto University - Japan*

2. *Institute of Pulsed Power Science, Kumamoto University - Japan*

10:15 - 3E3 - Quantification of OH radicals generated by nanosecond pulsed discharge plasma

Kiyotaka Okada¹, Kazuki Oishi¹, Shintaro Kodama¹, Douyan Wang², Takao Namihira²

1. *Graduate School of Science and Technology, Kumamoto University - Japan*

2. *Institute of Pulsed Power Science, Kumamoto University - Japan*

10:30 - 3E4 - Electric discharge destruction of reinforced concrete sleeper in the system of superimposed electrodes.

Evgeniy Petrenko, Igor Protopopov¹, Artem Yudin¹
1. Tomsk Polytechnic University

10:45 - 3E5 - Single-step Synthesis of Molybdenum Carbide Nanoparticles by Wire Explosion Process

Prem Ranjan¹, R. Sarathi¹, Ramkishore Kumar², P. Selvam², R. Jayaganthan³, H. Suematsu⁴
1. Department of Electrical Engineering, IIT Madras, Chennai, 600036 India
2. Department of Chemistry, IIT Madras, Chennai, 600036 India
3. Department of Engineering Design, IIT Madras, Chennai, 600036 India
4. Extreme Energy-Density Research Institute, Nagaoka University of Technology, Nagaoka 940-2188, Japan

11:00 - 3E6 - DEVELOPMENT OF 3D ELECTROMAGNETIC THERMAL FLUID SIMULATION FOR ELUCIDATION OF MOVEMENT FACTORS IN VACUUM ARC

Soshi Iwata¹, Yusuke Nemoto¹, Ren Zhenwei¹, Yoshifumi Maeda¹, Toru Iwao¹
1. Tokyo City University

11:15 - 3E7 - ANALYSIS OF NITROGEN CONTAMINATION PROCESS INTO ARC AFFECTED BY LATERAL GAS FLOW VELOCITY IN ATMOSPHERIC PRESSURE

Yoshifumi Maeda¹, Toru Iwao¹
1. Tokyo City University

11:30 - 3E8 - Optical and electrical diagnostic of surface arcs

Suryakant Gupta¹, Keena Kalaria¹, Naresh Vaghela¹
1. Institute for plasma research

Session: 3F

1.1 Basic Phenomena I

Tuesday 9:45 Room: Seminole A/B
Session Chair: Ricky Ang

09:45 - 3F1 - (invited) Hot electron emission processes in waveguide integrated graphene

Rehan Kapadia¹, Fatemeh Rezaeifar¹, Ragib Ahsan¹
1. University of Southern California

10:15 - 3F2 - Electron Emission and Gas Breakdown: Unification of Theory from Schrodinger's Equation to Paschen's Law

Amanda Loveless¹, Adam Darr¹, Allen Garner¹
1. Purdue University

10:30 - 3F3 - Microscale Gas breakdown voltage dependence on electrode surface

Russell Brayfield¹, Andrew Fairbanks¹, Amanda Loveless¹, Shengjie Gao¹, Caleb Darr¹, Jacqueline Malayter¹, Wenzhou Wu¹, Allen Garner¹
1. Purdue University

10:45 - 3F4 - Quantum effects in electron emission from nanodiamond

Stanislav Baturin¹, Oksana Chubenko², Andreas Schroeder³, Sergey Baryshev⁴
1. PSD Enrico Fermi Institute, University of Chicago
2. Department of Physics, Arizona State University
3. Department of Physics, University of Illinois at Chicago
4. Department of Electrical and Computer Engineering, Michigan State University

11:00 - 3F5 - Particle Emission Investigation from an Anode Liquid Surface of Electrolyte in Atmospheric Pressure DC Glow

Yao Kovach¹, John Foster¹

1. University of Michigan

11:15 - 3F6 - ENGINEERED TUNNELING ELECTRICAL CONTACTS

Sneha Banerjee¹, John Luginsland, Peng Zhang¹
1. Michigan State University

11:30 - 3F7 - A COORDINATE INVARIANT THEORY FOR SPACE CHARGE LIMITED EMISSION USING VARIATIONAL CALCULUS

Adam Darr¹, Allen Garner¹
1. Purdue University, West Lafayette

Tuesday PM

Session: 2P

Poster - Microwave Generation and Plasma Interactions and Pulsed Power Switches and Components

Tuesday 13:00 Room: Universal Center
Session Chair: Jason Sanders, Jose Rossi, Joel Ennis

2P01 - Modeling a compact A6 relativistic magnetron operating with permanent magnets

John Leopold¹, Uri Dai², Yakov Krasik¹
1. Physics Department, Technion, Israel Institute of Technology
2. DDR&D, IMOD

2P02 - Modeling the wakefield excitation by a 28 GHz microwave pulse in a plasma filled waveguide

Y. Cao¹, Y. P. Bliokh¹, J.G. Leopold¹, V. Rostov², Ya. Slutsker¹, Ya.E. Krasik³
1. Physics Department, Technion, Israel Institute of Technology
2. Institute of High Current Electronics, Russian Academy of Sciences, Tomsk, Russia
3. Physics Department, Technion, Israel Institute of Technology

2P03 - Effects of the Mesh Anode Transparency on the Operation Characteristics of the Virtual Cathode Oscillator

Se-Hoon Kim¹, Chang-Jin Lee¹, Kwang-Cheol Ko¹
1. Hanyang University

2P04 - Particles charge dissipation in Ku-band relativistic HPM source

Antoine Chauloux¹, Jean-Christophe Diot¹, Stéphane Tortel¹
1. CEA - Gramat

2P05 - Fast-Wave and Slow-Wave Interactions in the Rippled-Field Magnetron

Andrey Andreev, Edl Schamiloglu¹, Samuel Smith¹, Ahmed Elfrgani¹, Dmitrii Andreev¹, Stacie Hernandez¹, Artem Kuskov¹
1. University of New Mexico

2P06 - Frequency tunable X-band Relativistic Backward Wave Oscillator

Jean-Christophe Diot¹, Antoine Chauloux¹, Jeremy Pothee¹, Thierry Chanconie¹, Stéphane Tortel¹
1. CEA

2P07 - Examination of stability against beam parameters in a Ku band helix TWT

Necati Haytural, Ferhat Bozduman, Lutfi Oksuz¹

1. Suleyman Demirel University

2P08 - Metamaterial Based RF Source

Rebecca Seviour¹, Simon Foulkes²

1. Supervisor

2. University of Huddersfield

2P09 - Cold Test Validation of Metamaterial Based Rectangular Slow Wave Structure for High Power Backward-Wave Oscillators

Doğancan Eser¹, Şimşek Demir²

1. PhD Student

2. IEEE member

2P10 - Simulation of an Industrial Magnetron Using Cathode Modulation

Andong Yue¹, Jim Browning¹, Mike Worthington², John Cippola²

1. Boise State University

2. L3 Technologies

2P11 - NLTL Frequency Chirp through Dynamic Bias of Inductor Cores

Emily Schrock¹, D. Phillip Coleman¹, Seth Miller¹, John Borchardt¹

1. Sandia National Laboratories

2P12 - The Influence of Magnetic Field Profile on the Downstream Electrons and the Output Mode of MDO

Shen Shou Max Chung¹

1. Department of Electrical Engineering, National Penghu University

2P13 - Hybrid Kinetic-Fluid Simulations of a Ku-band MILO

Peter Stoltz¹, John W. Luginsland², Anton Spirkin¹, Christine Roark

1. Tech-X Corporation

2. Confluent Sciences

2P14 - W-band 2D Periodic Lattice Oscillator

Colin Whyte¹, MacLachlan Amy¹, Robertson Craig¹, Cross Adrian¹, Zhang

Liang¹, Donaldson Craig¹, Phelps Alan¹, Ronald Kevin¹

1. University of Strathclyde

2P15 - Operation of a Gyromagnetic Line with Magnetic Axial Bias

Fernanda Yamasaki¹, Jose Rossi², Elizete Gonçalves Lopes Rangel¹,

Edl Schamiloglu³, Leandro Carvalho Silva¹

1. INPE

2. National Institute for Space Research

3. University of New Mexico

2P16 - Simulations of a W-Band Circular TWT

Khandakar Nusrat Islam¹, Edl Schamiloglu¹

1. University of New Mexico

2P17 - Pulsed RF Signal Irradiation Using a Low Voltage NLTL Coupled to a DRG Antenna

Jose O. Rossi¹, Leandro Carvalho Silva², Lucas Reis Raimundi¹, Elizete

Goncalves Lopes Rangel², Edl Schamiloglu³

1. National Institute for Space Research

2. INPE

3. University of New Mexico

2P18 - E-band Overmoded Relativistic Backward Wave Oscillator

Liangjie Bi¹, Ahmed Elfrgani², Edl Schamiloglu²

1. University of New Mexico, University of Electronic Science and Technology of China

2. University of New Mexico

2P19 - 3D ICEPIC SIMULATION OF AN X-BAND RELATIVISTIC TWISTRON

Paul Gensheimer¹, Timothy Fleming¹

1. AFRL/RDH

2P20 - Simulations of Surface Inhomogeneities in Field Emission

Kristinn Torfason¹, Ágúst Valfellis¹, Andrei Manolescu¹

1. Reykjavik University

2P21 - Beam-Current Loss in Emittance-Dominated High-Frequency Tubes

Muhammed Zuboraj¹, Bruce Carlsten

1. Los Alamos National Laboratory

2P22 - Confinement of dust balls in neon cryogenic plasma

Valeria Shumova¹, Dmitry Polyakov², Leonid Vasilyak¹

1. Joint Institute for High Temperatures of the Russian Academy of Sciences

2. Joint Institute for High Temperatures of Russian Academy of Sciences

2P24 - Hybrid Quantum-Hydrodynamics/Kinetics Model for Dense Plasma Mixtures

Lucas J. Stanek¹, Kris Beckwith², Jeffrey Haack³, Michael S. Murillo⁴

1. Michigan State University and Sandia National Laboratories

2. Sandia National Laboratories

3. Los Alamos National Laboratory

4. Michigan State University

2P25 - Magneto-hydrodynamic Simulation for Wire Array Underwater Electrical Explosions

Zhigang Liu¹, Dun Qian¹, Xiaobin Zou¹, Xinxin Wang¹

1. Tsinghua University

2P26 - Plasma Simulation and Modeling of Pseudospark Discharge for High Density and Energetic Electron Beam Generation

Varun¹, Prasoon Shukla², Adrian Cross³, Kevin Ronald³, Udit Narayan Pal⁴

1. CSIR-CEERI, Pilani, India and AcSIR, Ghaziabad, India

2. IAcademy of Scientific and Innovative Research, Ghaziabad, U.P.-201002, India

3. University of Strathclyde

4. CSIR-Central Electronics Engineering Research Institute, Pilani, India

2P27 - PIC-DSMC numerical grid heating in collisional plasmas: Application to streamer discharge simulations

Chris Moore¹, Ashish Jindal¹, Andrew Fierro¹, Keith Cartwright¹, Matthew

Hopkins¹

1. Sandia National Laboratories

2P28 - Dispersion Engineering for O and M-Types High Power Microwave Sources

Artem Kuskov¹, Dmitrii Andreev¹, Ahmed Elfrgani¹, Stacie Hernandez¹,

Braulio Martinez-Hernandez¹, Edl Schamiloglu¹

1. University of New Mexico

2P29 - Fast A-Stable Implicit Scheme and Scalable Software MOLTN For Electromagnetics

Mathialakan Thavappiragsam¹, Andrew Christlieb¹, John Luginsland²,

Pierson Guthery¹

1. Michigan State University

2. Confluent Sciences, LLC

2P30 - Electrostatic Finite Element Numerical Modeling of Spark Gap and Related Accelerator Structures

Greg Dale¹, Salvador Portillo², Rena Berdine²

1. Los Alamos National Labs

2. University of New Mexico

2P31 - Modeling of gas recirculation effects in nanosecond-pulsed high-frequency discharges

Steve Adams¹, Jared Miles¹, Asher Straubing², Kristina Lemmer³, Hannah

Watts³

1. Air Force Research Laboratory
2. University of Dayton Research Institute
3. Western Michigan University

2P32 - Study of two-surface multipactor susceptibility using Monte Carlo simulation

Zizhuo Huang¹, Peng Zhang¹
 1. Michigan State University

2P33 - High Power Radio Frequency Pulse Shaping For a 1.5MW S Band Magnetron Source

Michael Abdalla¹, Dirk Frew², Nick Myers², Michael Skipper¹, Jane Lehr³, Michael Butcher², Manuel Alan²
 1. ASR Corporation
 2. Verus Research
 3. University of New Mexico

2P34 - Feasibility Study of Guiding High Power Microwave with Laser Created Plasma Ring Channels or Photonic Crystals in Air

Shen Shou Max Chung¹
 1. Department of Electrical Engineering, National Penghu University, Penghu, Taiwan, R.O.C.

2P35 - Investigation into the Propagation of Electron Beams of Different Shapes through Gas-Filled Space Using PIC Simulations

Prasoon Shukla¹, Varun², Udit Narayan Pal³, B. N. Basu⁴
 1. Academy of Scientific and Innovative Research, Ghaziabad, U.P.-201002, India
 2. CSIR-CEERI, Pilani, India and AcSIR, Ghaziabad, India
 3. CSIR-Central Electronics Engineering Research Institute, Pilani, India
 4. Sir J. C. Bose School of Engineering, Supreme Knowledge Foundation Group of Institutions, Mankundu, W.B.-712139, India.

2P36 - Electron Temperature and Density Measurements of Plasma Generated at the Focus of a CW Microwave Beam

Adrian Lopez¹, Remington Reid¹, John Foster²
 1. Air Force Research Laboratory
 2. University of Michigan

2P37 - Multipactor in Coaxial Transmission Lines

Nicholas M. Jordan¹, Flynn B. Darby¹, Stephen V. Langellotti¹, Y. Y. Lau¹, Ronald M. Gilgenbach¹
 1. University of Michigan

2P38 - DIAMOND FILM GROWTH USING A MICROWAVE PLASMA JET CHEMICAL VAPOR DEPOSITION

Chun-Yu Lin¹, Jing-Shyang Yen², Jwo-Shiun Sun², Hua-Yi Hsu¹, Ming-Chieh Lin³
 1. Department of Mechanical Engineering, National Taipei University of Technology
 2. Department of Electronic Engineering, National Taipei University of Technology
 3. Department of Electrical and Biomedical Engineering, Hanyang University,

2P39 - Suppressing single-surface multipactor discharges using non-sinusoidal electric field

Deqi Wen¹, Asif Iqbal¹, Peng Zhang¹, John P Verboncoeur¹
 1. Michigan State University

2P40 - Linear plasma experiment for non-linear microwave interaction experiments

colin whyte¹, Kieran Wilson¹, Alan Phelps¹, Adrian Cross¹, Alan Cairns², Robert Bingham, Bengt Eliasson¹, Mark Koepke³, David Speirs¹, Craig W. Robertson¹, Philip MacInnes¹, Ruth Bamford⁴, Kevin Ronald¹
 1. University of Strathclyde
 2. University of St Andrews

3. West Virginia University
4. STFC Rutherford Appleton Laboratory

2P41 - Air-plasma Characterization at THz Frequency range

Yin-Dong Huang¹
 1. School of Electronic Science and Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi 710049, China

2P42 - Electric field profiles in high gain GaAs photoconductive closing switches

Maksim Verkholetov¹, Ilya Prudaev¹
 1. Tomsk State University

2P43 - STUDY ON TRANSFORMER NEUTRAL POINT DC ISOLATION DEVICE BASED ON PLASMA-JET TRIGGERED GAS SWITCH

Shuhan Liu¹, Zheng Zhao¹, Yi Sun¹, Qingyu Li¹, Xinyun Zhang¹, Dongdong Huang¹, Jiarui Ren¹, Jiangtao Li¹
 1. School of Electrical Engineering, Xi'an Jiaotong University

2P44 - Perspectives of Supercritical Fluids for Switching Applications

Guus Pemen¹, Tom Huiskamp, Bert van Heesch², Wilfred Hoebein¹
 1. Eindhoven University of Technology
 2. TUE

2P45 - High performance triggering transformer for stack of series connected thyristors

Viliam Senaj¹, David Cabrero Pastor¹, Thomas Kramer¹
 1. CERN

2P46 - Data acquisition system for HEH monitor

David Cabrero Pastor¹, Viliam Senaj¹, Thomas Kramer¹
 1. CERN

2P47 - Development and Switching Characterization Study of Hot Cathode Thyatron for Pulse Modulator Applications in Linear Accelerator

Udit Narayan Pal¹, Mahesh Kumar², B. L. Meena², Ram Prakash Lamba², Harish Kumar Dwivedi³, A. R. Tillu⁴
 1. CSIR-Central Electronics Engineering Research Institute, Pilani, India
 2. Microwave Devices Area, CSIR- Central Electronics Engineering Research Institute (CEERI), Pilani, Rajasthan-333031, India
 3. Maharishi University of Information Technology, Lucknow, India
 4. Bhabha Atomic Research Centre (BARC), Mumbai, India

2P48 - DIFFERENT PATTERNS OF CURRENT QUENCHING PHENOMENA DURING PSEUDOSPARK DISCHARGE

Jiaqi Yan¹, Saikang Shen¹, Weidong Ding¹, Lanxi Li¹
 1. Xi'an Jiaotong University

2P49 - Performance of 20-kV, 20-A Silicon Carbide High-Voltage Modules

Miguel Hinojosa¹, Aderinto Ogunniyi¹
 1. Army Research Laboratory

2P50 - Surface Passivation of GaAs Photoconductive Semiconductor Switches with Silicon Resin

Yong-Pyo Kim¹, Pyeung Hwi Choi¹, Min-Seong Kim², Jiheon Ryu², Sung-hyun Baek², Sung-Min Hong¹, Sungbae Lee¹, Jae-Hyung Jang¹
 1. Gwangju Institute of Science and Technology
 2. Agency for Defense Development

2P51 - Comparison of Lateral and Vertical Photoconductive Semiconductor Switches Fabricated on 4H-SiC

Pyeonghwi Choi¹, Yong-Pyo Kim¹, Min-Seong Kim², Jiheon Ryu², Sung-Hyun Baek², Sung-Min Hong¹, Sung-Bae Lee¹, Jae-Hyung Jang¹
 1. Gwangju Institute of Science and Technology (GIST)
 2. The 4th R&D Institute, Agency for Defense Development

2P52 - Recovery Characteristics of a Plasma Closing Switch Filled with Air, N₂, CO₂, and an Ar/O₂ mixture

Yuan Yao¹, Igor Timoshkin¹, Scott MacGregor¹, Mark Wilson¹, Martin Given¹, Tao Wang¹
1. University of Strathclyde

2P53 - The Influence of Electrode Profile on Repetition Performance of Corona-stabilized Switch

Longjie Li¹, Yongsheng Wang¹, Jiangtao Li
1. Xi'an Jiaotong University

2P54 - Polarity Effect of Repetitive Corona Stabilization Breakdown

Longjie Li¹, Zheng Zhao¹, Jiangtao Li¹
1. School of Electrical Engineering, Xi'an Jiaotong University

2P55 - On the performance of triggered closing switches deployed in high explosive pulsed power experiments

Andrew Young¹, Ronnie Speer¹, Antonio Ferriera¹, Gary Mease¹, Aric Pearson¹, Ashton Ray¹
1. Lawrence Livermore National Laboratory

2P56 - MODERNIZATION OF THE MARX AND RIMFIRE TRIGGERING SYSTEMS FOR THE HERMES-III ACCELERATOR

Chris Grabowski¹, Nathan Joseph¹, SEAN COFFEY¹, Guillermo Archuleta¹, Ethan Gutierrez¹, Benjamin Hughes¹, John Lott¹, Robert Natal¹, Israel Owens¹, John Santillanes¹, Andrew Shay¹, Brent Smart¹, Gary Tilley¹, Keith Tunell¹
1. Sandia National Laboratories

2P57 - Silicon Carbide drift step recovery diode structures evaluated as >10kV nanosecond pulse power switches using Mixed-Mode simulation

Stephen Arthur¹, Reza Ghandi¹
1. GE Global Research Center

2P58 - Skin Effect and Energy Losses in Toroidal Core of Pulse Transformer

Boris Fridman¹, Konstantin Lobanov¹
1. Efremov Institute of Electrophysical Apparatus

2P59 - A High-gain nanosecond pulse generator based on inductor energy storage and pulse forming line voltage superposition

Jianhao Ma¹, shoulong dong¹, hongmei liu¹, liang Yu, Chenguo Yao
1. Chongqing University

2P60 - A Compensated Low-frequency Method for the Excitation Characteristics Measurement of Ferromagnetic Components

Xin Liu¹, Cheng Zhang², Shibin Liang³, Chenguo Yao
1. China Academy of Engineering Physics
2. Institute of Electronic Engineering, China Academy of Engineering Physics
3. Electric Power Test&Research Institute (group) Co., LTD

2P61 - STUDY ON SHEATH INDUCED VOLTAGE AND SPATIAL TEMPERATURE FIELD OF LONG-DISTANCE 330/110KV CABLE SHARED THE SAME PIPE JACKING

Shuhan Liu¹, Yi Sun¹, Chenjie Li¹, Yifeng Wang¹, Xin Feng¹, Yuhao Liu¹, Jiangtao Li¹
1. School of Electrical Engineering, Xi'an Jiaotong University

2P62 - A comprehensive design procedure for high voltage pulse power transformers

Michael Jaritz¹, Reto Christen¹, Matthias Bucher¹, Jasmin Smajic¹, Andreas Stöckli², Michael Bader², Thomas Franz¹

1. University of Applied Sciences Rapperswil
2. Astrol AG

2P63 - Study on aging characteristics of DC transmission line arrester considering impact load

Mengzhen Li¹
1. Xi'an Jiaotong University

2P64 - Research on Distribution Problem of Overvoltage Online Monitoring Device on Distribution Lines

Yuhao Liu, Jiangtao LI, Shuang He, Xin Feng¹
1. Xi'an Jiaotong University

2P65 - Design of A Long Pulse High Energy Water Transmission Line to Drive HPM Sources

Ian Chavez¹, Edl Schamiloglu¹, Kostyantyn Ilyenko², Yatsenko Tetyana², Salvador Portillo¹
1. University of New Mexico - Electrical and Computer Engineering Department
2. Department of Vacuum Electronics of the Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine

2P66 - A 1 MV Tesla pulsed transformer

Matthew Woodyard¹, Bucur Novac¹, Peter Senior¹
1. Loughborough University

2P67 - Comparison of decomposition by-products of C4F7N/CO₂ mixed gas under AC discharge breakdown and partial discharge

Yongyan Zhou¹, Chenwei Li², Nian Tang¹, Boya Zhang², Li Li¹, Xingwen Li², Xiaodian Li¹
1. Electric Power Research Institute of Guangdong Power Grid Co. Ltd
2. Xi'an Jiaotong University

2P68 - Design of a Dielectric Compression Bushing for Compact, High-Voltage Applications

Michael Butcher¹, Manuel Alan¹, Dirk Frew¹, Michael Skipper², Michael Abdalla²
1. Verus Research
2. ASR Corporation

2P69 - A sequential characterization method for the insulation evaluation of the rod-plane gap under repetitive frequency nanosecond pulses in high-pressure nitrogen

Zheng Zhao¹, Dongdong Huang¹, Jiangtao Li¹
1. Xi'an Jiaotong University

2P70 - Experimental approach of the dielectric strength of a vacuum insulator

Baptiste Cadilhon¹, Laurent Courtois¹, Eric Pasini¹
1. CEA

2P71 - Effect of Dielectric Coating on Breakdown Strength in High Pressure SF₆

Chuyu Sun¹, Haiyang Wang¹, Linshen Xie¹
1. Northwest Institute of Nuclear Technology

2P72 - INFLUENCE OF THE CREEPAGE DISTANCE ON SURFACE FLASHOVER OF THE EPOXY INSULATION UNDER AC VOLTAGE IN C4F7N-CO₂ MIXTURES

Zhongbo Zheng¹, Weidong Ding¹, Zhichuang Li¹, Yishu Liu¹, Yue Li¹, Chongjian Ge¹, Jiayin Yan¹
1. Xi'an Jiaotong University

2P73 - Electric Field Analysis of 35kV Line Arrester Under Different Environmental Conditions

Mengzhen Li¹
1. Xi'an Jiaotong University

2P74 - STUDY OF DISSOCIATION CHARACTERISTIC OF SF6-N2 MIXTURES UNDER CORONA DISCHARGE WITH PIN-TO-PLATE ELECTRODE

Jiayin Yan¹, Weidong Ding, Yanan Wang¹, Saikang Shen¹, Lanxi Li¹, Zheng Zhongbo¹

1. Xi'an Jiaotong University

2P75 - THE DISCHARGE CHARACTERISTICS OF C5 AND ITS MIXTURES IN UNIFORM FIELD UNDER AC VOLTAGE

Yue Li, Zhichuang Li¹, Jiayin Yan¹, Zheng Zhongbo¹, Yishu Liu, Yanan Wang¹, Alfred Suzan, Weidong Ding¹

1. Xi'an Jiaotong University

2P76 - C5F100/N2 GAS MIXTURE TO SUBSTITUTE SF6 IN HIGH VOLTAGE APPLICATIONS

yue li, Zhichuang Li, Jiaqi Yan¹, Yishu Liu, Zheng Zhongbo¹, Yanan Wang¹, Alfred Suzan, Weidong Ding¹

1. Xi'an Jiaotong University

2P77 - Investigation of impulsive breakdown of interfaces formed by ester insulating liquids and solid dielectrics

Chris Williamson¹, Igor Timoshkin¹, Scott MacGregor¹, Mark Wilson¹, Martin Given¹

1. Strathclyde University

2P78 - Research on the spectrum of the surface flashover of the high-gain GaAs photoconductive semiconductor switch

Shaoqiang Wang¹, Wei Shi¹, Cheng Ma¹, Hong Liu¹, Lei Hou¹

1. Xi'an University of Technology

2P79 - Modes of kHz AC discharge in liquid phase H2O

Xiaoliang Tang¹, Siyuan Dong, Zidian Liu, Gao Qiu

1. Plasma Physics & Application Lab., Department of Applied Physics, College of Science, Donghua University.

2P80 - Insulator Technologies to Achieve Maximum Electric Field Holdoff

Cameron Harjes¹, Jon Cameron Pouncey¹, Jane Lehr¹

1. UNM

2P81 - Impact on electrodes during plasma decomposition of carbon dioxide

Kamau Wright¹, Toby Poole¹, Chittaranjan Sahay¹

1. University of Hartford

Session: 4Plenary

Plenary Tues PM - Uri Shumlak

Tuesday 14:30 Room: Seminole Ballroom

Session Chair: Stuart Jackson

Sustained Fusion Reactions from a Sheared-Flow-Stabilized Z Pinch

Uri Shumlak¹

1. University of Washington

Session: 4A

8.5 Power Supplies and Modulators II

Tuesday 16:00 Room: Seminole C

Session Chair: Mark Sinclair

16:00 - 4A1 - (invited) Roadmap on the Development of Klystron Modulators for ESS

Carlos Martins¹

1. European Spallation Source

16:30 - 4A2 - Optimal Design of a High Voltage High Frequency Transformer and Power Drive System for Long Pulse

Modulators

Max Collins¹, Carlos Martins²

1. Lund University

2. European Spallation Source

16:45 - 4A3 - Saturating Pulse Transformer Circuits Using Advanced Magnetic Materials

Jon Pouncey¹, Jane Lehr¹, Brad Maynard¹, J. Martin Taccetti²

1. University of New Mexico

2. Los Alamos National Lab

17:00 - 4A4 - Integrated Klystron Test Stand

Rebecca Simpson¹, Michael Kempkes¹, Marcel Gaudreau¹, Luan Jashari¹

1. Diversified Technologies, Inc.

17:15 - 4A5 - Design of a Wide Band Test system with Interchangeable Antenna Modules

Jon Mayes¹, William Nunnally¹, Jeremy Byman¹, Matthew Lara¹, Chris Hatfield¹, David Kohlenberg¹

1. Applied Physical Electronics L.C.

Session: 4B

1.2 Computational Plasma Physics II

Tuesday 16:00 Room: Seminole A/B

Session Chair: Yangyang Fu

16:00 - 4B1 - Macroparticle combination algorithm for plasma PIC simulation

Jarrold Leddy¹, John Cary², David Smithe¹

1. Tech-X Corporation

2. University of Colorado

16:15 - 4B2 - Benchmarking the Kinetic Global Model framework (KGMf): EEDF evaluations in low-temperature argon plasmas

Janez Krek¹, Yangyang Fu², John Verboncoeur²

1. Michigan State University, CMSE

2. Michigan State University

16:30 - 4B3 - (invited) Advanced Implicit and Hybrid Techniques for the Simulation of High Density Volumetric and Electrode Plasmas

Dale Welch¹, David Rose¹, Carsten Thoma¹, Dustin Offermann¹, Chris Mostrom¹, Robert Clark¹, Thomas Genoni¹

1. Voss Scientific

17:00 - 4B4 - A multi-term spherical harmonic expansion of the Boltzmann equation for modeling low-temperature collisional plasmas

J.L. Giuliani¹, D.D. Hinshelwood¹, I.M. Rittersdorf, P.F. Ottinger², Tz.B.

Petrova¹, A.S. Richardson¹, S.B. Swanekamp¹, P. Adamson¹, S.L. Jackson¹

1. Plasma Physics Division, Naval Research Laboratory

2. Syntek Technologies, Arlington, VA 22203

17:15 - 4B5 - The rigid-beam model as a test case for simulations of plasma generated by an intense electron beam

Steve Richardson¹, Stephen Swanekamp¹, Tzvetelina Petrova¹, John Giuliani¹, Paul Adamson¹, David Hinshelwood¹, Stuart Jackson¹, Joseph Schumer¹

1. Naval Research Laboratory

Session: 4C

1.4 Partially Ionized Plasmas

Tuesday 16:00 Room: Gold Coast III/IV

Session Chair: Tobin Munsat

16:00 - 4C1 - (invited) Measurement of Photoionization Rates and Quenching Pressures

Justin K. Smith, Lisa E. Fisher, Jane M. Lehr, Michael D. Abdalla, Michael Skipper

16:30 - 4C2 - Experiment on the propagation of relativistic pulsed electron beam in plasma

R. Maissonny¹, Fabien Dorchies², Claude Fourment³, Thomas Lahens⁴

1. CEA, DAM, GRAMAT, F-46500 Gramat, France

2. Universite de Bordeaux-CNRS-CEA, CELIA, Talence F-33405 France

3. CEA

4. CEA-CESTA, Le Barp, F-33116 France

16:45 - 4C3 - Plume morphologies and their formation mechanism of an atmospheric pressure argon plasma jet excited by a biased voltage

Xuechen LI¹

1. Hebei University

17:00 - 4C4 - PLASMA PROPAGATION SPEED MODEL FOR INVESTIGATION OF ELECTRON TEMPERATURE AND PLASMA DENSITY OF AR PLASMA IN ATMOSPHERIC PRESSURE MICRO-DBD

PRADOONG SUANPOOT¹, Jirapong SORNSAKDANUPHAP¹, Bhagirath GHIMIRE², Guangsup CHO², Eun Ha CHOI²

1. Maejo University Phrae Campus

2. Kwangwoon University

17:15 - 4C5 - Overview and challenges of partially magnetized plasma modeling

Kentaro Hara¹

1. Texas A&M University

17:30 - 4C6 - Characteristics of pulsed discharge plasma with porous electrode without dielectric barrier at atmospheric pressure

Jie Li¹, Xi Li², Pan Dong¹, zhen yang², Jidong Long¹, Linwen Zhang¹

1. Institute of fluid physics

2. China Academy of Engineering Physics

Session: 4D

4.1 Fusion (Inertial, Magnetic and Alternate Concepts)

Tuesday 16:00 Room: Space Coast I-III

Session Chair: Adam Sefkow

16:00 - 4D1 - Radiative stabilization of the shock-driven interfacial instabilities in double-shell targets

Jiwei Li¹, Zhensheng Dai¹, Shiyang Zou, Shaoping Zhu¹, Xiantu He¹

1. Institute of Applied Physics and Computational Mathematics

16:15 - 4D2 - Numerical Analysis of Direct-drive Golden Double-shell Implosion

Yan Xu

16:30 - 4D3 - The preliminary experiment of driven pressure enhancement by hybrid drive on ShenGuang Laser facility

Ji Yan¹

1. Research Center of Laser Fusion

16:45 - 4D4 - EXPERIMENTAL STUDY OF FAST

DEUTERONS AND ELECTRONS IN DPF FUSION PLASMA

Pavel Kubes, Marek Sadowski¹, Marian Paduch², Jakub Cikhardt², Daniel Klir³, Jozef Kravarik³, Karel Rezac³, Balzhima Cikhardtova³, Roch Kwiatkowski¹

1. NCNR

2. IPPLM

3. CTU

17:00 - 4D5 - STAGNATION PERFORMANCE SCALING OF MAGNETIZED LINER INERTIAL FUSION

Matthew Gomez, David Yager-Elorriaga¹, Clayton Myers¹, Stephen Slutz¹, Matthew Weis¹, Christopher Jennings¹, Derek Lamma¹, Adam Harvey-Thompson¹, Matthias Geissel¹, Patrick Knapp¹, Eric Harding¹, Stephanie Hansen¹, Michael Mangan¹, Carlos Ruiz¹, Gordon Chandler¹, Tim Webb¹, Tommy Moore¹, George Laity¹, David Ampleford¹, Kyle Peterson¹, Greg Rochau¹, Daniel Sinar¹, Kelly Hahn²

1. Sandia National Laboratories

2. Lawrence Livermore National Laboratory

17:15 - 4D6 - Generating an imploding rotating plasma in MagLIF targets

Pierre Gourdain¹, Klaus Weide², Petros Tzeferacos², Marissa Adams¹

1. University of Rochester

2. University of Chicago

Session: 4E

9.1 Optical, X-ray, FIR and Microwave Diagnostics

Tuesday 16:00 Room: Gold Coast I/II

Session Chair: Peter Bruggeman

16:00 - 4E1 - GAS CONCENTRATION DISTRIBUTION NEAR SURFACE IN AN IMPINGEMENT OF ATMOSPHERIC PRESSURE PLASMA JET BY TWO-DIMENSIONAL FILTERED RAYLEIGH SCATTERING

Yuanfu Yue¹, Yedhu Krishna², Gaetano Magnotti²

1. University of Minnesota

2. King Abdullah University of Science and Technology

16:15 - 4E2 - Electric field measurement of discharge development in long sparks

Zhehao Pei¹, Xing Fan, Kai Bian, Qiaogen Zhang, Weijiang Chen, Shengxin Huang

1. Xi'an Jiaotong University

16:30 - 4E3 - ELECTRIC FIELD MEASUREMENTS IN A NANOSECOND PULSED ATMOSPHERIC PRESSURE PLASMA JET IN HELIUM

Mahsa Mirzaee¹, Marien Simeni Simeni¹, Peter Bruggeman¹

1. Department of Mechanical Engineering, University of Minnesota

16:45 - 4E4 - A new collisional radiative model for neon low temperature plasma

Rajesh Srivastava¹, Reetesh Kumar Gangwar², Shubham Baghel¹, Shivam

Gupta¹

1. IIT Roorkee

2. IIT Tirupati

17:00 - 4E5 - ELECTRON PROPERTY MEASUREMENT OF A HIGH REPETITIVELY PULSED HELIUM PLASMA JET USING LASER THOMSON SCATTERING

James Horne¹, Jared Miles², Steve Adams³, Stephen Mammack², Campbell Carter², Chunqi Jiang⁴

1. Frank Reidy Research Center for Bioelectrics, Old Dominion University

2. Air Force Research Laboratory, Wright-Patterson Air Force Base

3. Air Force Research Laboratory

4. Old Dominion University

17:15 - 4E6 - Incoherent laser Thomson scattering diagnostics for streamer discharge in He gas

Kyohei Eguchi¹, Ryo Fujita¹, Douyan Wang², Kentaro Tomita³, Takao Namihira²

1. Graduate school of Science and Technology, Kumamoto University - Japan
2. Institute of Pulsed Power Science, Kumamoto University - Japan
3. Interdisciplinary Graduate School of Engineering Science, Kyushu University- Japan

17:30 - 4E7 - Advanced streamer imaging techniques

Siebe Dijkstra¹, Sander Nijdam²

1. TU/e
2. Eindhoven University of Technology

Session: 4F

2.7 Microwave Plasma Interaction II

Tuesday 16:00 Room: Seminole D/E

Session Chair: John Leopold and John Verboncoeur

16:00 - 4F1 - Direct Detection of Multipactor in Waveguide Structures

Zachary Shaw¹, Luke R. Silvestre¹, Benedikt Esser¹, James Dickens¹, John Mankowski¹, Andreas Neuber¹

1. Texas Tech University

16:15 - 4F2 - TEMPORAL STUDY OF DUAL FREQUENCY MULTIPACTOR ON A DIELECTRIC

Asif Iqbal¹, John Verboncoeur¹, Peng Zhang¹

1. Department of Electrical and Computer Engineering, Michigan State University

16:30 - 4F3 - The Effects of Multipactor on the Quality of a Signal in a Transmission Line

Patrick Wong¹, Yue Ying Lau², Peng Zhang¹, Nick Jordan², Ronald

Gilgenbach², John Verboncoeur¹

1. Michigan State University
2. University of Michigan

16:45 - 4F4 - CST PARTICLE STUDIO SIMULATIONS OF COAXIAL MULTIPACTOR SUSCEPTIBILITY AND EVOLUTION

Stephen V. Langelotti¹, Nicholas M. Jordan¹, Y.Y. Lau¹, Ronald M.

Gilgenbach¹

1. University of Michigan

17:00 - 4F5 - Multipactor dynamics under obliquely incident rf electric field

De-Qi Wen¹, Peng Zhang¹, Yangyang Fu¹, Janez Krek¹, John P

Verboncoeur¹

1. Michigan State University

17:15 - 4F6 - SECONDARY ELECTRON YIELD MEASUREMENTS ON MATERIALS OF INTEREST TO HIGH VACUUM ELECTRONIC COMMUNICATION DEVICES

Talal Ahmed Malik, Sal Portillo¹, Joe Chen, Raul Gutierrez, Ryan Johnson, EdL Schamiloglu¹, M. Gilmore¹

1. University of New Mexico

17:30 - 4F7 - PREDICTING SECONDARY ELECTRON YIELD FROM FIRST PRICIPLES CALCULATIONS

Ryan Johnson¹, Raul Gutierrez, Salvador Portillo¹, Mark Gilmore¹, EdL

Schamiloglu¹

1. University of New Mexico

Wednesday AM

Session: 5Plenary

Plenary Wed - Alexander Kim (2019 Erwin Marx Award)

Wednesday 8:30 Room: Seminole Ballroom

Session Chair: Bryan Oliver

The Story of the LTD Development

Alexander A. Kim¹

1. Institute of High Current Electronics, Siberian Branch, Russian Academy of Sciences

Session: 5A

1.1 Basic Phenomena II

Wednesday 10:00 Room: Seminole A/B

Session Chair: Patrick Wong

10:00 - 5A1 - (invited) Direct observation of the current evolution in a small-scale self-compressing plasma column

Christine Stollberg¹, Eyal Kroupp¹, Dmitry Mikitchuk¹, Marko Cvejić¹,

Ramy Doron¹, Evgeny Stambulchik¹, Y. Maron¹, Amnon Fruchtman², Uri Shumlak³, John Giuliani⁴

1. Weizmann Institute of Science

2. Holon Institute of Technology, Israel

3. University of Washington

4. Plasma Physics Division, Naval Research Laboratory

10:30 - 5A2 - Identification of the Corona Point in Point-to-Plane Geometries in Atmospheric Air

Leonardo Rossetti¹, Jane Lehr¹

1. University of New Mexico

10:45 - 5A3 - On three different ways to quantify the degree of ionization in sputtering magnetrons

Alexandre Butler¹, Nils Brenning², Michael A. Raadu²,

Jon Tomas Gudmundsson³, Tiberiu Minea¹, Daniel Lundin¹

1. Université Paris-Sud

2. KTH Royal Institute of Technology

3. University of Iceland

11:00 - 5A4 - Nonlinear Electron Power Absorption in Capacitively Coupled Radio Frequency Discharges

Sebastian Wilczek¹, Jan Trieschmann², Ralf Peter Brinkmann¹, Julian Schulze¹, Zoltán Donkó³, Thomas Mussenbrock²

1. Ruhr University Bochum

2. Brandenburg University of Technology Cottbus-Senftenberg

3. Wigner Research Centre for Physics

11:15 - 5A5 - Observation of positive and negative nanosecond pulsed streamers in a coaxial electrode using a quadruple emICCD camera system

Hitoshi Yamaguchi, Terumasa Ryu¹, Douyan Wang², Takao Namihira²

1. Kumamoto University

2. Institute of Pulsed Power Science, Kumamoto University

11:30 - 5A6 - Comparison of Shockwave Characteristics Induced by Wire Explosion and Water Gap Discharge

Yi Liu¹, Yijia Ren², Siwei Liu², Fuchang Lin¹, Yang Liu²

1. 1. State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science & Technology, Wuhan, Hubei Province, China 2. Key

Laboratory of Pulsed Power Technology (Huazhong University of Science and Technology), Ministry of Education, Wuhan, Hubei Province, China
2. State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science & Technology, Wuhan, Hubei Province, China

11:45 - 5A7 - Influence of conductivity on streamer propagation and shockwave intensity in underwater pulsed discharge

YI LIU¹, Siwei Liu¹, Yijia Ren¹, Fuchang Lin¹, Yang Liu¹

1. Huazhong University of Science and Technology

Session: 5B

2.1 Intense Beam Microwave Generation

Wednesday 10:00 Room: Gold Coast I/II

Session Chair: Rebecca Seviour

10:00 - 5B1 - (invited) Limits to High Power Amplification

John Luginsland¹, Jack Watrous¹, David Simon², Brad Hoff²

1. Confluent Sciences, LLC

2. Air Force Research Laboratory

10:30 - 5B2 - Rep-rated Testing of a Compact Magnetron with Diffraction Output (MDO) and Plans for Testing the Full MDO

Dmitrii Andreev¹, Artem Kuskov¹, Daniel Reass¹, Andrew Sandoval¹, Edl Schamiloglu¹, Yeong-Jer Chen², Jack Kreger², Jordan Chaparro²

1. University of New Mexico

2. NSWC

10:45 - 5B3 - Experimental Results of a Metamaterial-Enhanced Resistive Wall Amplifier Prototype

Patrick Forbes¹, John Booske¹, Nader Behdad¹

1. Electrical and Computer Engineering Department University of Wisconsin-Madison

11:00 - 5B4 - High Power Amplification Experiments on a Recirculating Planar Crossed-Field Amplifier

Steven Exelby¹, Geoffrey Greening¹, Nicholas Jordan¹, Drew Packard¹, Yue

Ying Lau¹, Ronald Gilgenbach¹, Brad Hoff², David Simon²

1. University of Michigan

2. Air Force Research Laboratory

11:15 - 5B5 - Inter-Digital Magnetron and Rippled-Field Magnetron: Two Remarkable Reincarnations of a Voltage-Tunable Magnetron

Andrey Andreev¹, Dmitrii Andreev¹, Samuel Smith¹, Stacie Hernandez¹,

Ahmed Elfrgani¹, Edl Schamiloglu¹

1. University of New Mexico

11:30 - 5B6 - High-Power Microwave Generation by a Double-Anode Virtual Cathode Oscillator

Kazuki Nagao¹, Kazuya Sakurai¹, Wataru Takatsu¹, Van Thuan Pham¹, Taichi Sugai¹, Weihua Jiang¹

1. Nagaoka University of Technology

11:45 - 5B7 - Problems of development a cold-cathode magnetron in pulse mode for application in an accelerator

Sergiy Cherenshchykov, Sergiy Cherenshchykov

Session: 5C

4.6 Fast Z Pinches I

Wednesday 10:00 Room: Seminole D/E

Session Chair: Steve Richardson

10:00 - 5C1 - (invited) New insights in pulsed power driven

explosion of underwater wires and wire arrays

Simon Bland¹, David Yanuka¹, Alexander Rososhek², Savva Theocharous¹, Sergey Efimov², Margie Olbinado³, Alexander Rack³, Ya.E. Krasik²

1. Imperial College London

2. Technion

3. European Synchrotron Radiation Facility

10:30 - 5C2 - Thomson Scattering on Laboratory Plasma Jets to Study Current Polarity Effects

Jacob Banasek¹, Sophia Rocco¹, Tom Byvank¹, William Potter¹, Bruce Kusse¹, Dave Hammer¹

1. Cornell University

10:45 - 5C3 - ALUMINUM DOUBLE PLANAR WIRE ARRAYS AND DOUBLE PLANAR FOIL LINERS ON THE UNR AND UM PULSED POWER DRIVERS

Christopher Butcher¹, Victor Kantsyrev¹, Alla Safronova¹, Ishor Shrestha¹, Jeffrey Rowland¹, Veronica Shlyaptseva¹, Austin Stafford¹, Paul Campbell², A. M. Steiner², Stephanie Miller², D. A. Yager-Elorriaga², Nick Jordan², Ryan McBride², Ronald Gilgenbach²

1. University of Nevada, Reno

2. University of Michigan

11:00 - 5C4 - Photonic Doppler Velocimetry (PDV) of Bare and Dielectric-Coated Aluminum Exploded by Intense Current

Bruno Bauer¹, Trevor Hutchinson¹, Thomas Awe², Sheri Payne², Daniel Dolan², Brian Hutsel², Jamin Pillars², Bonnie Mckenzie², Sonal Patel², Kevin Yates³, Vladimir Ivanov¹, Stephan Fuelling¹, Richard Siemon, Seth Kreher¹, Christopher Rousculp³, Irvin Lindemuth¹, Edmund Yu²

1. University of Nevada, Reno

2. Sandia National Laboratories

3. Los Alamos National Laboratory

11:15 - 5C5 - Shock waves generated by underwater electrical explosion of a single wire

Sasha Rososhek¹, Sergey Efimov¹, Viktor Gurovich¹, A. Virozub¹, Somesh Tewari, Ya.E. Krasik²

1. Technion

2. Physics Department, Technion, Israel Institute of Technology

11:30 - 5C6 - (invited) Irradiation of silicon targets by outflows emitted by conical wire array Z-pinches.

Felipe Veloso¹, Gonzalo Muñoz-Cordovez¹, Mario Favre, Donovan Diaz-Droguett¹, Vicente Valenzuela-Villaseca¹, Milenko Vescovi¹, Heman Bhuyan², Edmund Wyndham³

1. P Universidad Catolica de Chile

2. Pontificia Universidad Católica de Chile

3. Instituto de Física, Pontificia Universidad Católica de Chile

Session: 5D

6.1 Nonequilibrium Plasma Applications I

Wednesday 10:00 Room: Seminole C

Session Chair: Guodong Meng

10:00 - 5D1 - (invited) EFFECTIVE METHANE CONVERSION BY NEGATIVE NANOSECOND REPETITIVELY PULSED DISCHARGE

Cheng Zhang¹, Shuai Zhang¹, Hao Sun¹, Bangdou Huang¹, Yuan Gao¹, Tao Shao¹, Zehui Liu¹

1. Key Laboratory of Power Electronics and Electric Drive, Institute of Electrical Engineering, Chinese Academy of Sciences

10:30 - 5D2 - The dynamics of the microplasmas inside a capillary

Shuqun Wu, Xueyuan Liu, Chang Liu, Yuxiu Chen, Chaohai Zhang

10:45 - 5D3 - PLASMA TREATMENT ON HEAVY OIL

MODEL COMPOUNDS IN A NANOSECOND PULSED DBD REACTOR

Hao Sun¹, Shuai Zhang¹, Yuan Gao¹, Cheng Zhang¹, Tao Shao¹

1. Key Laboratory of Power Electronics and Electric Drive, Institute of Electrical Engineering, Chinese Academy of Sciences

11:00 - 5D4 - Development of Low Frequency Dielectric Barrier Discharge using Rotatable Electrodes

Tatsuo Ishijima¹, Kentaro Morimoto¹, Naw Rutha Paw¹, Takuma Kimura², Mohammad Rasel Pervez¹, Eugen Stamate³, Yasunori Tanaka¹, Yoshihiko Uesugi¹

1. Kanazawa University

2. National Institute of Technology Ishikawa College

3. Technical University of Denmark

11:15 - 5D5 - Plasma assisted Chemical Looping reactions using nano-catalysts for co-production of syngas and hydrogen

Rajagopalan Ranganathan¹, Zhongqi Liu¹, Steven Fondriest¹, Robert

Dupont², Amelia Biase³, Laura Holifield¹, Ruigang Wang¹, Mruthunjaya Uddi¹

1. University of Alabama

2. Michigan Technological University

3. Smith College Picker Engineering Department, MA

11:30 - 5D6 - Transient Plasma-based Remediation of Nanoscale Particulate Matter

Sisi Yang, Sriram Subramanian, Dan Singleton, Christi Schroeder, William Schroeder, Martin Gundersen, Stephen Cronin

11:45 - 5D7 - Pattern Dependent Profile Distortion in Plasma Etching of High Aspect Ratio Features

Shuo Huang¹, Seungbo Shim², Sang Ki Nam², Wonyup Ko², Mark Kushner¹

1. University of Michigan

2. Samsung Electronics Co. Ltd.

Session: 5E

7.3 Compact Pulsed Power

Wednesday 10:00 Room: Space Coast I-III

Session Chair: Laurent Pecastaing

10:00 - 5E1 - (invited) Pulsed Power Technology and Application Development at Nagaoka University of Technology

Weihua Jiang¹, Taichi Sugai¹, Akira Tokuchi¹

1. Nagaoka University of Technology

10:30 - 5E2 - Advanced NanoDielectric Material Scaling for Further Size Reduction of Ultra-High Voltage, 500 kV Capacitor Prototypes

Randy Curry¹, Luke Brown¹, Samuel Dickerson¹, Sarah Mounter¹, Aaron

Maddy¹, Madison Schwinn¹

1. University of Missouri

10:45 - 5E3 - First implementation of a solid-state Impedance-Matched Marx Generator

Tom Huiskamp¹, Jeroen van Oorschot¹

1. Eindhoven University of Technology

11:00 - 5E4 - PORTABLE SHORT PULSE NEUTRON SOURCE FOR IDENTIFICATION AND LOCALIZATION OF CLANDESTINE NUCLEAR MATERIALS

Brady Gall¹, Michael Heika², Michael Blasco², Joseph Bellow², Bernard

Meehan³, Jessie Walker⁴, Mark Gerling⁵, Yuri Podpaly⁶

1. Mission Support and Test Services LLC

2. NNSS

3. NSTec

4. Los Alamos National Laboratory

5. Sandia National Laboratories

6. Lawrence Livermore National Laboratory

11:15 - 5E5 - Low Energy Laser Triggering at 1535 nm

Jon Pouncey¹, Jane Lehr², Josh Foster³, Scott Hamlin³

1. University of New Mexico

2. University of New Mexico

3. MegaWatt Lasers Inc

11:30 - 5E6 - Microsecond Fast, 100 kV Modular Pulse Charger

Tyler Klein¹, Andreas Neuber¹, James Dickens¹

1. Texas Tech University

11:45 - 5E7 - New Marx based generator using IGBTs for adjustable quasi-rectangular pulses

Yahia ACHOUR¹, Jacek Starzyński¹, Andrzej Łasica²

1. Military University of technology

2. Warsaw University of Technology

Session: 5F

10.3 System Modeling, Thermal, EMI and Circuits

Wednesday 10:00 Room: Gold Coast III/IV

Session Chair: Heather O'Brien

10:00 - 5F1 - (invited) Investigation of Low Amplitude Lighting Strikes On Low Voltage Electrical Systems

David Barnett¹, Landon Collier¹, William Brooks¹, Andreas Neuber¹, John Mankowski¹, James Dickens¹, Anthony Harrison², W. A. Harrison³, David Hattz³

1. Texas Tech University

2. CERN

3. CNS Pantex

10:30 - 5F2 - Modeling of Pulse Transformer Based on Impedance Characteristics Measurement and Two-port Network Theory

Xin Liu¹, Cheng Zhang¹, Xian Liu¹

1. Institute of Electronic Engineering, China Academy of Engineering Physics

10:45 - 5F3 - Characterization of Sustained Series dc Arc Duration for Advanced Detection Schemes

Bailey Hall¹, Dennis Grosjean², Dan Schweickart³, Jin Wang¹

1. The Ohio State University

2. Innovative Scientific Solutions, Inc.

3. Air Force Research Laboratory-WPAFB

11:00 - 5F4 - Three-Dimensional Model of the Saturn Accelerator Water Tri-plate Transmission Line Connection to the Vacuum Insulator Stack

Ken Struve¹

1. Sandia National Laboratories

11:15 - 5F5 - Denying Unmanned Aerial Vehicle Invasion using High Power Electromagnetic Waves

Jing-Shyang Yen¹, Jwo-Shiun Sun¹, Xuan-De Huang¹, Chia-Wei Lin¹,

Hua-Yi Hsu¹, Chii-Ruey Lin², Kaviya Aranganadin³, Ming-Chieh Lin³

1. National Taipei University of Technology

2. Minghsin University of Science and Technology

3. Hanyang University

11:30 - 5F6 - Solid State Power Emulator to Evaluate H-Bridge Module Temperature Comparison

Richard Thomas¹, Lauren Boteler¹

1. Army Research Laboratory

11:45 - 5F7 - Lumped Circuit Model of Multi-Pulse Laser

Triggered Gas Switch with Braginskii Resistivity

Joe Chen¹, Salvador Portillo¹, Gregory Dale²

1. University of New Mexico

2. Los Alamos National Laboratory

Wednesday PM

Session: 3P

Poster - Industrial/Commercial/Medical Applications and Plasma and Pulse Power Diagnostics

Wednesday 13:30 Room: Universal Center

Session Chair: Li Lin, Shutong Song, and Yunping Zhang

3P01 - Novel High Voltage Pulsing to Generate Uniform Glow Discharge Air Plasma for Environment Friendly Inline Treatment of Textile

Vishal Jain¹, Kushagra Nigam¹, Nisha Tanwani¹, Adam Sanghariyati¹,

Nimish Sanchania¹, Sudhir kumar Nema¹

1. Institute for Plasma Research

3P02 - Reactive Sputtering of Aluminum Acetylacetonate for Deposition of Alumina Films

Ricardo Blanco¹, Larissa de Almeida², Rafael Ribeiro², Luciana Rossino³,

Nilson Cruz¹, Elidiane Rangel⁴

1. São Paulo State University (UNESP)

2. São Paulo State University (UNESP), Institute of Science and Technology,

Sorocaba, Av. Três de Março, 511, Sorocaba, São Paulo 18087-180, Brazil

3. Sorocaba Technological College – FATEC

4. Paulista State University

3P03 - Investigation on Utilizing Audio Square Wave and Radio-Frequency Plasmas for Cleaning of Vacuum Diode Electrodes

Ricky Tang¹, Derek Lamppa¹

1. Sandia National Laboratories

3P04 - Spectroscopic Measurement of Active Species Generated in Streamer Discharge on Water Surface

Takuya Hayashi¹, Souhei Toyoda¹, Tomokazu Kanna¹, Takashi Sakugawa¹

1. Kumamoto University

3P05 - Reillumination of Expiring Corona-like Pulsed Discharges in Water

Raphael Rataj, Hans Höft¹, Juergen Kolb¹

1. Leibniz Institute for Plasma Science and Technology (INP)

3P06 - Plasma Properties in a High Pressure ALD Reactor

Chenhui Qu¹, Pulkit Agarwal², Yukinori Sakiyama², Adrien LaVoie², Mark

J. Kushner¹

1. University of Michigan

2. Lam Research Corp.

3P07 - Electrical Discharge in Gas-liquid Mixture: Breakdown Voltage and Energy Deposition Distribution in Each Phase

KUNPENG WANG¹, David Staack¹

1. Texas A&M University

3P08 - Evaluation of electric field and charge on bio-substrates induced by nanosecond pulsed helium plasma jet

xi li¹, shutong song¹, David Alderman¹, Muhammad Arif Malik², Richard Heller¹, Chunqi Jiang¹

1. Old Dominion University

2. Hampton University

3P09 - TWO TEMPERATURE SIMULATION OF SUBATMOSPHERIC ARC DISCHARGE

Madhusudhan Kundrapu¹, Andrew Chap¹, Michel de Messieres¹, Carles Corbella², Michael Keidar²

1. Tech-X Corporation
2. The George Washington University

3P10 - Gas Temperature Determination of Nonthermal Plasma Through Boltzmann Plot Method

Marcus Ashford¹, James Allen², Jennifer Zirnheld³, Kevin Burke³

1. Primary Contributor
2. Secondary Contributor
3. Faculty Supervisor

3P11 - Temporal Gas Temperature Measurement of Single Filament in Atmospheric Pressure Plasma Jet

Jiayin Li¹, Fan Wu, Xinpei Lu

1. Huazhong University of Science and Technology

3P12 - One-dimensional Numerical Simulation on Nanosecond Pulsed Discharge

Guofeng Lou¹, Fangtian Ma¹

1. University of Science & Technology Beijing, China

3P13 - Corona Discharge Induced Submicron Water Droplet Coalescence and Growth in a Subsaturated Cloud Chamber

Pengyu Wang¹, Jiawei Li², Chuan Li³, Zhi Liu², Ming Zhang³, Yong Yang³, Kexun Yu³

1. State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical Engineering and Electronics, Huazhong University of Science and Technology
2. International Joint Research Laboratory of Magnetic Confinement Fusion and Plasma Physics, Huazhong University of Science and Technology
3. State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science and Technology

3P14 - Argon cold atmospheric pressure plasma jet enhancing seed germination and seedlings growth of fenugreek (*Trigonella foenum-graecum*)

Tahar Boutraa¹, Sahar Fadhalmawla¹, Jamal Almarashi¹, Abdel-Aleam Mohamed¹

1. Taibah University

3P15 - The Characteristics of Ozone Generation in the Atmospheric Dielectric Barrier Discharges

SICHAN KIM¹, Byung-Koo Son¹, Hyun Cho¹, Yun-Jung Kim¹, Bong-Joo Park¹, Guangsup Cho¹

1. KWANGWOON UNIVERSITY / Department of Electrical and Biological Physics

3P16 - THIN-FILM DEPOSITION OF AL₂O₃-FILLED EPOXY RESIN USING PULSED PLASMA IN AR/O₂/TEOS MIXTURE

Tingting Wang¹, Cheng Zhang², Fei Kong², Hao Sun³, Haofan Lin², Tao Shao²

1. CSG Technology Research Center
2. Key Laboratory of Power Electronics and Electric Drive, Institute of Electrical Engineering, Chinese Academy of Sciences
3. University of Chinese Academy of Sciences

3P17 - Investigation on shock wave generated by underwater discharge due to different progress of plasma

Mitsuhiko Sato¹, Koki Takaura¹, Takashi Sakugawa², Hamid Hosano²

1. Kumamoto University
2. Institute of Pulsed Power Science

3P18 - CALCULATION OF ARC CONDUCTANCE

AFFECTED BY FLOW FIELD FOR IMPROVEMENT OF CURRENT INTERRUPTION PERFORMANCE

Yuya Ishikawa¹, Yuji Komai, Yoshifumi Maeda¹, Toru Iwao¹

1. Tokyo City University

3P19 - Spectroscopic Characteristics of Pulsed Arc Discharge in Supercritical Nitrogen

Tomohiro Furusato¹, Tsuyoshi Kiyan², Daishi Suzuki²

1. Nagasaki University
2. Kindai University

3P20 - Research on Nanoparticle Production by TIG Pulsed Arc Discharge

Daishi Suzuki¹, Tsuyoshi Kiyan¹

1. Kindai University

3P21 - Development of 3D Electromagnetic Thermal Fluid Simulation for Elucidation of Gas Contamination Process of Circuit Breaker

Shoya Nishizawa¹, Yoshifumi Maeda¹, Toru Iwao¹

1. Tokyo City University

3P22 - Performance of a Pulsed Electromagnetic Micropropulsion System with Low Energy Surface Flashover Igniter

Adam Patel¹, Yunping Zhang¹, Alexey Shashurin¹

1. Purdue University

3P23 - High density plasma thruster

Dejan Nikic¹, James Grossnickle¹

1. The Boeing Company

3P24 - STUDY ON STABILITY OF AN INNOVATIVE IGNITION TECHNOLOGY FOR MICRO-CATHODE ARC THRUSTER

Chongjian Ge¹, Yanan Wang¹, Le Cheng¹, Tianbo Zhang¹, Weidong Ding¹, Jinyue Geng¹

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

3P25 - Pulsed power supply design for vacuum arc thrusters application

Marvin Kuehn¹, Jochen Schein¹

1. Bundeswehr University Munich (BUM)

3P26 - Study of Conductivity on Hydrogen Peroxide Concentration by High Repetitive Underwater Discharge

Daiki Sugawara¹, Shunsei Kawamura¹, Hisanori Sone¹, Masahiro Akiyama¹

1. Iwate University

3P27 - Sterilization of E. coli in seawater using discharge in water and dielectric barrier discharge

Hisanori Sone¹, Shunsei Kawamura¹, Koichi Takaki¹, Katsuyuki Takahashi¹, Masahiro Akiyama¹

1. Iwate University

3P28 - Flexible Control of Pulsed Power Generator for Research Applications with Sensors

Masahiro Akiyama¹, Shunsei Kawamura¹

1. Iwate University

3P29 - Plasma source for generating ultrasonic and ultraviolet radiation in water

Joseph Groele¹, John Foster¹

1. University of Michigan

3P30 - Production of crushed sand using underwater pulsed discharge

Naoki Matsumoto¹, Masaaki Yano¹, Takao Namihira², Douyan Wang², Mitsuhiro Shigeishi¹
1. Graduate School of Science and Technology, Kumamoto University, Japan
2. Institute of Pulsed Power Science, Kumamoto University in Japan

3P31 - Aggregation inhibition of nanoparticle dispersion by nonthermal plasma irradiation

Katsushi Suenaga¹, Ayumu Hyodo¹, Yuta Kawamura¹, Douyan Wang², Takao Namihira²
1. Graduate School of Science and Technology, Kumamoto University, Japan
2. Institute of Pulsed Power Science, Kumamoto University, Japan

3P32 - Experimental Research on Solar Panels Fragmentation by Electro-Hydraulic Effect with Application of Pulsed Power

Mengyao Zhang¹, Baipeng Song¹, Ling Jiang², Jun Kang², Zhanlin Li², Yao Chen², Guanjun Zhang¹
1. Xi'an Jiaotong University
2. Electric Power Research Institute of State Grid Qinghai Electric Power Company

3P33 - Calculation and Analysis of Self-resistance of Grounding Material

Jiayin Yan¹, Zhu Yinan¹, Lanxi Li¹
1. Xi'an Jiaotong University

3P34 - Growth of photocatalytically active coatings on aluminum by Plasma Electrolytic Oxidation

Livia Sottovia¹, Elidiane C Rangel², Nilson C Cruz³
1. Laboratory of Technological Plasmas - Unesp, Sorocaba, Brazil
2. Laboratory of Technological Plasmas, Paulista State University
3. Sao Paulo State University

3P35 - Re-orientation of BN nanosheet induced by pulsed electric field and its effect on thermal properties of epoxy resin-based nanocomposites

Yan Mi¹, Lulu Liu¹, Lu Gui¹, Xin Ge¹
1. Chongqing University

3P37 - Electric breakdown in granite as a function of pressure and temperature conditions

Tony IMBERT¹, Thierry REESS², Antoine de Ferron³, Laurent PECASTAING², Gauthier Demol¹, Baptiste Guegan¹
1. ITHPP
2. UNIV PAU & ADOUR, Laboratoire des Sciences de l'Ingénieur Appliquées à la Mécanique et au Génie Electrique, IPRA, EA4581, 64000, Pau, France
3. Pau University

3P38 - Excess ion energy being essential for ultra-shallow implantation

Noriyuki Sakudo¹, Noriaki Ikenaga¹
1. Kanazawa Institute of Technology

3P39 - Investigation of Energy Control in Coaxial Reactor for Ozone Production by Using Nanosecond Pulsed Powers

Yoshifumi Sanuki¹, Yuki Utsumi¹, Kenji Teranishi¹, Naoyuki Shimomura¹
1. Tokushima University

3P40 - Improvement of ozone generation characteristics with shorter rise time of nanosecond pulse voltage

Hideaki Fukuoka¹, Shuhei Iida², Douyan Wang³, Takao Namihira³
1. Graduate School of Science and Technology
2. Graduate School of Science and Technology, Kumamoto University – Japan
3. Institute of Pulsed Power Science, Kumamoto University – Japan

3P41 - Short Term Atmospheric Pressure Cold Plasma treatment: A Novel Strategy for enhancing the Substrate Utilization in a thermophile, Geobacillus sp. strain WSUCF1

Magesh Rajan¹, Navanietha Rathinam¹, Rajesh Sani¹
1. South Dakota School of Mines and Technology

3P42 - Plasma Kinetics Study of a Repetitive 10-ns Pulsed Plasma Ignition for Combustion

David Alderman¹, Christopher Tremble¹, Shutong Song¹, Jason Sanders², Dan Singleton, Chunqi Jiang¹
1. Old Dominion University
2. Transient Plasma Systems, Inc.

3P43 - Temperature effect on the surface flashover plasma of the GIS insulator

Shijie LU¹, Liangen ZHANG¹, Hongtao ZHONG², Guo-ming MA¹, Cheng-rong LI¹, Yu YIN³, Boyuan CUI³, yuyi WU³
1. North China Electric Power University
2. Princeton University
3. China Electric Power Research Institute

3P44 - Erosion characteristics for different geometric electrodes in an AC rotating arc reactor

Kwan-Tae Kim¹, Hongjae Kang¹, Chan Mi Jung¹, Sungkwon Jo¹, Dae Hoon Lee¹, Young-Hoon Song¹
1. Korea Institute of Machinery and Materials

3P45 - Statistical examination of spoke evolution in HiPIMS

Peter Klein¹, James W. Bradley², Jaroslav Hnilica¹, Petr Vašina¹
1. Masaryk University
2. University of Liverpool

3P46 - Lorentz Force Eddy Currents for Nondestructive Testing

Agni Dhanabal¹, Trevor Drouillard¹, Robert Kile¹, Paul Melnik², Kenneth Miller², James Prager², Timothy Ziemba², Allen Garner¹
1. Purdue University
2. Eagle Harbor Technologies

3P47 - Pulsed High Voltage Assisted Laser Self-Induced Plasma Shutter for High Spatial Resolution Laser Remote Sensing

Taieb Gasmi Cheriif¹
1. Saint Louis University-Madrid Campus

3P48 - Design of optimal pulse solenoid structure for industrial application Y.Livshitz, former CTO Pulsar, Yavne, Israel

Yuri Livshitz¹

3P49 - Atmospheric plasma for treatment of perfluoroalkyl substances (PFAS) in water: reactor design and performance evaluation

Mubbshir Saleem¹, Mirko Magarotto¹, Omar Biondo¹, Pavarin Daniele¹, tampieri francesco¹, Cristina Paradisi¹, ester marotta¹, Marco Manente
1. University of Padova

3P50 - CELL GEOMETRY-INVARIANT CALCULATION OF PLASMA MEMBRANE POTENTIAL DUE TO ELECTRIC PULSES USING VARIATIONAL CALCULUS

Adam Darr¹, Allen Garner¹
1. Purdue University

3P51 - Modification of the Hodgkin-Huxley wave behavior by electroporation

Amanda Loveless¹, Martin Lopez de Bertodano¹, Allen Garner¹
1. Purdue University

3P52 - MODELING PLASMA SPECIES FORMATION FOR HIGH VOLTAGE ATMOSPHERIC COLD PLASMAS

Nancy Isner¹, Allen Garner¹
1. Purdue University

3P53 - Magnetic field effects on efficiency of non-viral gene delivery using magnetic nanoparticles

Vasile Neculaes¹, Brian Bales², Allen Garner³, Evelina Loghin², JB Mathieu²

1. GE
2. GE Global Research
3. Purdue University

3P54 - Effects of Nanosecond Pulsed Electric Fields Application and Combination of Anticancer Drug on Cancer Cell

Soichiro Enomoto¹, Yasuo Yamamoto¹, Daisuke Konishi¹, Mana Futawaka¹, Yuki Kusuhashi¹, Kenji Teranishi¹, Yoshihiro Uto¹, Naoyuki Shimomura¹

1. Tokushima University

3P55 - Cold atmospheric plasma for cancer immunotherapy

Zhitong Chen¹, Richard Wirz¹

1. University of California, Los Angeles

3P56 - Variation of Physical Parameters in Plasma Wound Healing

Jimo Lee¹, Won Seok Kim², Ki Beom Bae³, Jae Koo Lee², Gunsu Yun²

1. POSTECH
2. Pohang University of Science and Technology
3. Pohang Techno Park

3P57 - THE CURRENT TECHNOLOGY OF PLASMA SKINCARE AESTHETIC DEVICES

Guangsup Cho¹, Byung-Koo Son¹, Sichan Kim¹, Chanwoo Moon¹, Hyun Cho¹, Yun Jung Kim¹, Bong Joo Park¹

1. KWANGWOON UNIVERSITY / Department of Electrical and Biological Physics

3P58 - The Influence of Applying High Electrical Field Pulses on Unfolded Protein Response of cells

Akira Izutani¹, Yuji Furumoto¹, Yoshimasa Hamada¹, Masato Miyake¹, Kenji Teranishi¹, Naoyuki Shimomura¹, Seiichi Oyadomari¹

1. Tokushima University

3P59 - Inactivation process observation of HeLa cells induced by atmospheric-pressure pulsed plasma jet

Tomohiro Ueji¹, Ken Watanabe¹, Yudai Suzuki¹, Takao Namihira¹, Douyan Wang¹

1. Kumamoto University

3P60 - Optimization of GFP introduction into HL-60 cells with a combination of two different rectangular pulses

Susumu Kono¹, Nobuaki Tominaga¹

1. National Institute of Technology, Ariake College

3P61 - NON-THERMAL PLASMA TREATMENT OF ARABIDOPSIS THALIANA WITH EFFECT ON EARLY DEVELOPMENT AND THE ACCUMULATION OF HORMONES GERMINATED SEEDLINGS

Dongjie Cui¹, Zhen Jiao¹, Ruonan Ma¹

1. Zhengzhou University

3P62 - Improved electrode configuration for the production of plasma activated water

Yun Sik Jin¹, Chuhyun Cho¹, HaChang-seung Ha, Chaehwa Shon, Daejong Kim, Seong-Tae Han

1. Korea Electrotechnology Research Institute

3P63 - Gas-phase active particles measurement of three typical atmospheric pressure plasma jets

Lanlan Nie, Fan Wu, Jiayin Li, Xinpei Lu

3P64 - Time-resolved ATR-FTIR to Reveal inactivation Kinetics of E. coli by Atmospheric DBD Plasma

Liyang Zhang¹, Hao Wang¹, Haiyun Luo¹, Xinxin Wang¹

1. Tsinghua University

3P65 - SURFACE DISCHARGE PLASMA INHIBITED THE BIOSYNTHESIS OF STAPHYLOXANTHIN IN STAPHYLOCOCCUS AUREUS

Yupan Zhu¹, Hangbo Xu¹

1. Plasma biomedicine

3P66 - PLASMA SOURCE FOR KILLING BACTERIA AND BIOFILMS ON SURFACES

Jim Browning¹, Kate Benfield¹, Tiffany Berntsen¹, Daniel Moyer¹, Spencer

Goering¹, Mariah Provost¹, Zeke Kennedy¹, Amanda White¹, Adam

Croteau¹, Ryan Harper¹, Ken Cornell¹, Julia Oxford¹, Don Plumlee¹

1. Boise State University

3P67 - Comparison of atmospheric pressure plasma sources for biofilm decontamination

Martina Modic¹, Nataša Hojnik, James Walsh², Uros Cvelbar¹

1. Jozef Stefan Institute
2. University of Liverpool

3P68 - Investigation of bactericidal characteristics in packaged condition in high frequency high voltage pulse sterilization of food

Naoya Minemura¹, Masashi Kuwako¹, Kazuya Hoki¹, Hiromi Sato¹, Yasushi

Minamitani¹, Aika Yokoi², Akira Nakono²

1. Yamagata University

2. Ichimasa Kamaboko Co., Ltd

3P69 - Consideration of sterilizing method for Stacked Pieces in Packaged Foods Using Pulsed Plasma

Katsunari Itakura¹, Daisuke Tsutsuji¹, Koki Saito¹, Yasushi Minamitani¹

1. Yamagata University

3P70 - Gold nanofluid synthesis using laser induced plasmas in liquids

Magesh Rajan¹

1. South Dakota School of Mines and Technology

3P71 - High Power Microwave Pulse Testing of Electronic Devices using Reverberating Chambers

Tomas Hurtig¹, Hanna Sundberg¹, Mattias Elfsberg¹, Sten Nyholm¹, Niklas

Wellander²

1. Division of Defence & Security, Systems and Technology FOI – Swedish Defence Research Agency

2. Division of Command and Control Systems FOI – Swedish Defence Research Agency

3P72 - Reliable collisional radiative model for Zn laser produced plasma through electron impact fine structure resolved cross sections

Shivam Gupta¹, Reetesh Kumar Gangwar², Rajesh Srivastava¹

1. IIT Roorkee India

2. IIT Tirupati India

3P73 - Visible Spectroscopy Techniques for Diagnosing Plasmas in High-Energy-Density Power-Flow Systems

Mark D. Johnston¹, Sonal G. Patel¹, Michael E. Cuneo¹, E. Stambulchik²,

R. Doron², Yitzhak Maron²

1. Sandia National Laboratories

2. Weizmann Institute of Science

3P74 - Development of an LIF-dip system to measure electric field magnitude

Christopher Durot¹, Jenny Smith¹, John Foster¹

1. University of Michigan

3P75 - DIAGNOSTICS OF CAPACITIVE ENERGY STORAGE

Artur Gromov¹, Andrey Esafov², Boris Fridman¹, Alexey Ivanov¹, Stanislav

Karpikov², Vladimir Kuzmenkov¹, Andrey Pekhotny¹, Roman Ramazanov¹, Roman Serebrov¹, Anna Shalava¹

1. Efremov Institute of Electrophysical Apparatus
2. JSC "Avangard"

3P76 - Measurement on Electrical Conductivity of Exploding Copper Wire During Current Dwell Time

Sungbin Park¹, Kyoung-Jae Chung¹, Jong Hyeon Ryu¹, Kern Lee¹, Y. S. Hwang¹

1. Seoul National University

3P77 - A FREQUENCY RESPONSE TEST DEVICE FOR NANO-SECOND COAXIAL RESISTOR DIVIDER

Jiayin Yan¹, Weidong Ding, Yanan Wang¹, Saikang Shen¹, Lanxi Li¹, Zheng Zhongbo¹, Chongjian Ge¹

1. Xi'an Jiaotong University

3P78 - LUMPED PARAMETER MODEL AND ANALYSIS OF WIDE BAND RESISTANCE CAPACITANCE PARALLEL VOLTAGE DIVIDER FOR OVERVOLTAGE MONITORING

Kaisheng Mei, Jiayin Yan¹, Weidong Ding¹, Saikang Shen¹, shuo Chen

1. Xi'an Jiaotong University

3P79 - Design and calibration of a solenoid used on magnetized plasma experiments and of B-dot probes for measuring the strong magnetic fields using commercial electronic components

Raul Melean¹, Sallee Klein¹, Heath LeFevre¹, Jackson Williams², Mario Manuel³, Gregory Elijah Kemp², Derek Mariscal², Paul Campbell¹, Ryan McBride¹, Carolyn Kuranz¹

1. University of Michigan
2. Lawrence Livermore National Laboratory
3. General Atomics

3P80 - Diagnosis of Microwave Plasma Line for Plasma Enhanced Chemical Vapor Deposition

Chi Chen¹, Wenjie Fu¹, Xiaoyun Li¹, Yang Yan¹

1. University of Electronic Science and Technology of China

3P81 - Analysis of Cygnus Electrical Signals

Hoai-Tam (Tam) Truong¹, Keith Hogge¹, Michael Misch¹, John Smith², Michael Garcia³, Eugene Ormond³, Martin Parrales³

1. Mission Support and Test Services, LLC
2. Los Alamos National Laboratory
3. Sandia National Laboratories

3P82 - Exploring Signatures of Inner MITL Plasma Formation using Dedicated Experimental Platforms at the Z Pulsed Power Facility

George Laity¹, Carlos Aragon¹, Nichelle Bennett¹, David Bliss¹, Dan Dolan¹, Andrew Fierro¹, Matthew Gomez¹, Mark Hess¹, Brian Hutsel¹, Chris Jennings¹, Mark Johnston¹, Michael Kossow¹, Derek Lamppa¹, Clayton Myers¹, Sonal Patel¹, Andrew Porwitzky¹, Allen Robinson¹, David Rose², Eduardo Waisman¹, Tim Webb¹, Dale Welch², Michael Cuneo¹

1. Sandia National Laboratories
2. Voss Scientific

3P83 - Design of Ultra Wide Band Large Capacitance Load Pulse Source

Dongdong Huang¹, Jiangtao Li¹, Shuang He¹, Zheng Zhao¹, Longjie Li¹, Shuhan Liu¹, Jiarui Ren¹, Xinyun Zhang¹

1. Xi'an Jiaotong University

3P84 - Design and calibration of magnetic pick-up coil (B-dot) probes for measuring strong magnetic fields using commercial electronic components

Raul Melean¹, Jackson Williams², LeFevre Heath¹, Sallee Klein¹, Paul Campbell¹, Mario Manuel³, Gregory Elijah Kemp², Ryan McBride¹, Carolyn Kuranz¹

1. University of Michigan

2. Lawrence Livermore National Laboratory

3. General Atomics

3P85 - Z Line-VISAR: Spatially Resolved Load Current Diagnostic at the Z Pulsed Power Facility

David Bliss¹, Clayton Myers¹, K Austin², Jacob Baker¹, R Bettencourt², Erlan Bliss², J Celeste², Peter Celliers², T Clancy², S Cohen², Michael Crosley², Phil Datte², David Erskine², Duane Fratanduono², Gene Frieders², J Galbraith², James Hammer², Mark Hess¹, J Jackson², Christopher Jennings¹, Drew Johnson¹, Michael Jones¹, D Koen², J Lusk², A Martinez², W Massey², Thomas McCarville², Robert McDonald², H McLean², Kumar Raman², S Rodriguez², Decker Spencer¹, P Springer², Gene Vergel de Dios², J Wong²

1. Sandia National Laboratories
2. Lawrence Livermore National Laboratory

3P86 - Vacuum Ultraviolet Spectroscopy for Power Flow Studies on the 1 MA, 100 ns MAIZE LTD

Trevor Johannes Smith¹, Stephanie Miller¹, Paul Campbell¹, Jeff Woolstrum¹, Nicholas Jordan¹, George Laity², Ryan McBride¹

1. University of Michigan
2. Sandia National Laboratories

3P87 - Design and Performance of a 6 GHz Analog Optical Link

Matthew Lara¹, Jon Mayes¹

1. Applied Physical Electronics L.C.

3P88 - Design and Analysis on Coil Parameter of Linear Rogowski Coil for Measurement of High Frequency Pulsed Current

Kyoko Fujiwara¹, Fumihiko Tamura², Akira Tokuchi³, Kazumasa Takahashi¹, Toru Sasaki¹, Takashi Kikuchi¹

1. Nagaoka University of Technology
2. National Institute of Technology, Nagaoka College / Nagaoka University of Technology
3. Pulsed Power Japan Laboratory Ltd. / Nagaoka University of Technology

3P89 - Investigation of the Structural, Thermal and Electrical Properties of Plasma Polymerized o-Methoxyaniline Thin Films

Md. Mehdi Masud¹, Md. Abu Hashan Bhuiyan², David A. Strubbe³

1. Graduate Student
2. Professor of Physics
3. Assistant Professor of Physics

3P90 - 2016 Cygnus Refurbishment

Steve Huber¹, Bill Skarda¹, PAUL FLORES¹, Isidro Molina², Monty Larsen¹, Keith Hogge¹, John Smith³, Mike Garcia⁴, Eugene Ormond⁴, Stephen Mitchell¹, Nichele Prock¹, Joe Delash¹

1. Mission Support and Test Services, LLC
2. Keystone International
3. Los Alamos National Laboratory
4. Sandia National Laboratories

Session: 6A

1.2 Computational Plasma Physics III

Wednesday 15:30 Room: Seminole A/B

Session Chair: Christine Roark

15:30 - 6A1 - Sparse Grid Discontinuous Galerkin Methods for the Vlasov-Maxwell System

Zhanjing Tao¹, Wei Guo², Yingda Cheng¹

1. Michigan State University
2. Texas Tech University

15:45 - 6A2 - A Kernel Based High Order "Explicit"

Unconditionally Stable Constrained Transport Method for Ideal

Magnetohydrodynamics

FIRAT CAKIR¹, Andrew Christlieb¹, YAN JIANG²

1. MICHIGAN STATE UNIVERSITY

2. University of Science and Technology of China

16:00 - 6A3 - Convergence Ratio Effects on Ultra-thin Foil Liner Implosion and Explosion Stability

Jeff Woolstrum¹, David Yager-Elorriaga², Paul Campbell¹, Stephanie Miller¹, N. M. Jordan³, Charles Seyler⁴, Ryan McBride¹

1. University of Michigan

2. Sandia National Laboratories

3. University of Michigan, Ann Arbor, MI 48109, USA

4. Cornell University

16:15 - 6A4 - (invited) Multi-Species Plasma-Electromagnetic Models for Pulsed Power Applications

Kris Beckwith¹

1. Sandia National Laboratories

16:45 - 6A5 - Using Coupled Dust Motion to Analyze Plasma-Dust Interactions

Lorin Matthews¹, Dustin Sanford¹, Peter Hartmann², Marlene Rosenberg³, Eva Kostadinova¹, Truell Hyde¹

1. Baylor University

2. Wigner Research Centre for Physics

3. University of California at San Diego

17:00 - 6A6 - Statistics and Propagation Modeling of Atmospheric Lightning

William Brooks¹, David Barnett¹, John Mankowski¹, James Dickens¹, W. A. Harrison², David Hattz², Andreas Neuber¹

1. Texas Tech University

2. CNS Pantex

17:15 - 6A7 - Numerical model of acoustic wave generated by free-burning AC arc

Chen Zhe¹, Li Handong, Wang Xinxin

1. Tsinghua University

Session: 6B

4.6 Fast Z Pinches II

Wednesday 15:30 Room: Seminole D/E

Session Chair: Farhat Beg

15:30 - 6B1 - (invited) Investigating Ion Energy Partitioning in Gas-puff Z-pinches with Thomson Scattering

Sophia Rocco¹, Jacob Banasek¹, E. Sander Lavine¹, William Potter¹, David Hammer¹

1. Cornell University

16:00 - 6B2 - Implosion dynamics and magneto-Rayleigh-Taylor instability in gas-puff z-pinch experiments at 1-MA

E. Sander Lavine¹, Sophia Rocco¹, William Potter¹, Jacob Banasek¹, Thomas Hentschel¹, Niansheng Qi¹, John Greenly¹, Dave Hammer¹, Bruce Kusse¹

1. Cornell University

16:15 - 6B3 - Time-Dependent Helical Magnetic Field Effects on Cylindrical Liner Implosions

Paul Campbell¹, Tanner Jones¹, Jeff Woolstrum¹, Nick Jordan¹, John Greenly², William Potter², E. Sander Lavine², Charles Seyler², Bruce Kusse², Dave Hammer², Ryan McBride¹

1. University of Michigan

2. Cornell University

16:30 - 6B4 - HIGH VOLTAGE COAXIAL VACUUM GAP BREAKDOWN FOR PULSED POWER LINERS

Sam Cordaro¹, Simon Bott-Suzuki¹, Levon Atoyan², Tom Byvank², William Potter², Bruce Kusse², John Greenly²

1. University of California, San Diego

2. Cornell University

16:45 - 6B5 - Characterization of Slow Current Driven X-pinch based X-ray Source

Sanjay Andola¹, Jigyasa Batra¹, Ashutosh Jaiswar¹, Alok Kumar Saxena¹, Trilok Chand Kaushik¹

1. Applied Physics Division, Bhabha Atomic Research Centre, Mumbai

17:00 - 6B6 - Investigation on the early stage plasma instabilities in magnetized cylindrical liners

Guanqiong Wang¹, Xiaoguang Wang¹, Delong Xiao¹, Yang Zhang¹, Ning Ding¹, Chongyang Mao¹, Shunkai Sun¹, Chuang Xue¹, Xiaojian Shu¹

1. Institute of applied physics and computational mathematics

17:15 - 6B7 - Numerical study on magneto-Rayleigh-Taylor instabilities for thin liner implosions on the PTS facility

Xiao-guang Wang¹, Shun-kai Sun, De-long Xiao, Guan-qiong Wang, Yang Zhang, Shao-tong Zhou, Xiao-dong Ren, Qiang Xu, xian-bin Huang, Ning Ding, Xiaojian Shu

1. Institute of Applied Physics and Computational Mathematics, Beijing 100088, China

Session: 6C

2.7 Microwave Plasma Interaction III

Wednesday 15:30 Room: Gold Coast III/IV

Session Chair: John Leopold

15:30 - 6C1 - (invited) The interaction of a high-power sub-nanosecond microwave pulse with preliminarily formed plasma in a waveguide

Yang Cao¹, John Leopold¹, Y. P. Bliokh¹, Ya.E. Krasik¹, Vladislav Rostov²

1. Technion - Israel Institute of Technology

2. Institute of High Current Electronics

16:00 - 6C2 - The Experimental Study of Time Resolved Inductively Coupled Plasma for Fast Control of High Power Millimeter-wave

Mun Seok Choë¹, Ashwini Sawant¹, Ingeun Lee¹, Wonjin Choi¹, Hong Eun Choi¹, Taegyu Han¹, EunMi Choi¹

1. Ulsan National Institute of Science and Technology (UNIST)

16:15 - 6C3 - Theoretical investigation of a novel microwave driven ICP plasma jet

Michael Klute¹, Horia-Eugen Porteanu², Ilija Stefanovic³, Nikita Bibinov¹, Wolfgang Heinrich⁴, Peter Awakowicz³, Ralf Peter Brinkmann⁵

1. Ruhr University

2. Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik

3. Ruhr-Universität Bochum, Faculty of Electrical Engineering and Information Technology, Institute for Electrical Engineering and Plasma Technology, Germany

4. Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Berlin, Germany

5. Ruhr University Bochum

16:30 - 6C4 - Inductively Coupled Plasma at Atmospheric Pressure, a Challenge for Miniature Devices

Horia-Eugen Porteanu¹, Ilija Stefanovic², Bibinov Nikita², Michael Klute³, Peter Awakowicz², Ralf-Peter Brinkmann³, Wolfgang Heinrich⁴

1. Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik

2. Ruhr-Universität Bochum, Faculty of Electrical Engineering and Information Technology, Institute for Electrical Engineering and Plasma Technology, Germany

3. Ruhr-Universität Bochum, Faculty of Electrical Engineering and

Information Technology, Institute for Theoretical Electrical Engineering, Germany
4. Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Berlin, Germany

16:45 - 6C5 - VARIABLE-FREQUENCY CAPACITIVELY COUPLED PLASMA AS A TUNABLE RF ELEMENT

Andrei Khomenko¹, Sergey Macheret¹
1. Purdue University

17:00 - 6C6 - Modeling a microwave plasma enhanced chemical vapor deposition system using finite element method

Yilang Jiang¹, Kaviya Aranganadin¹, Ming-Chieh Lin¹, Jing-Shyang Yen², Hua-Yi Hsu²
1. Hanyang University
2. National Taipei University of Technology

17:15 - 6C7 - Toward a Wideband and High-Isolation Power Limiter

Abbas Semnani¹, Zach Vander Missen¹, Dimitrios Peroulis¹
1. Purdue University

Session: 6D

5.1 & 5.2 Opening and Closing Switches II

Wednesday 15:30 Room: Space Coast I-III

Session Chair: Jason Sanders

15:30 - 6D1 - Nanosecond Rise-time, Laser Diode Driven, Wide Bandgap Photoconductive Switches as Fast, High-Voltage MOSFET Replacements for Bioelectrics and Accelerator Applications

Stephen Sampayan¹, Kristin Sampayan¹
1. Opcondys, Inc.

15:45 - 6D2 - Laser triggered solid state pulse charging system utilizing GaAs PCSS technology

Nathan Zamerovski¹, Jonathan Parson¹, John Krile¹, Ricky Rodriguez¹, Josh Grimes¹, Charlie Anderson¹, Andreas Neuber², Jim Dickens², Jeff Pierce³
1. Scientific Applications and Research Associates
2. Texas Tech University
3. Systems Optical

16:00 - 6D3 - Performance Comparison of Commercial GaN HEMT under Repetitive Overcurrent Operations

Jose Rodriguez¹, Matthew Kim¹, Stephen Bayne¹, Heather O'Brien², Aderinto Ogunniyi²
1. Texas Tech University
2. Army Research Laboratory

16:15 - 6D4 - Analysis of a New 15-kV SiC n-GTO under Pulsed Power Applications

Matthew Kim¹, Tsz Tsoi¹, Jonathan Forbes¹, Stephen Bayne¹, Heather O'Brien², Aderinto Ogunniyi², Sei-Hyung Ryu³
1. Texas Tech University
2. Army Research Laboratory
3. Wolfspeed

16:30 - 6D5 - Improving Fast SiC MOSFET Switching Using an Inductive Gate Drive Approach

Micah LaPointe¹, Landon Collier¹, James Dickens¹, John Mankowski¹, Andreas Neuber¹
1. Texas Tech University

16:45 - 6D6 - Switching Characterization of Multi-gap and Multi-aperture High Power Pseudospark Switch (PSS)

Udit Narayan Pal¹, Mohit Kumar Verma², B. L. Meena³, Ram Prakash

Lamba³, Klaus Frank⁴

1. CSIR-Central Electronics Engineering Research Institute, Pilani, India
2. Electrical Engineering Department, National Institute of Technology (NIT), Calicut-673601, India
3. Microwave Devices Area, CSIR- Central Electronics Engineering Research Institute (CEERI), Pilani, Rajasthan-333031, India
4. Department of Physics, Friedrich-Alexander-University (FAU), Erlangen, D-91058, Germany

17:00 - 6D7 - DEPENDENCE OF TRIGGER PULSE PARAMETERS ON CURRENT QUENCHING IN PSEUDOSPARK DISCHARGE

Jiaqi Yan¹, Saikang Shen¹, Weidong Ding¹, Lanxi Li¹
1. Xi'an Jiaotong University

17:15 - 6D8 - GTO Like Thyristors Triggered in Impact-Ionization Wave Mode

Thomas Kramer¹, Sergei Lyubutin², Viliam Senaj¹, Boris Slovickovsky², Anton Gusev², Sergei Rukin², Vitaly Patrakov², Michael Barnes¹
1. CERN
2. Institute of Electrophysics UB RAS

Session: 6E

6.4 Environmental, Industrial, and Display Applications I

Wednesday 15:30 Room: Seminole C

Session Chair: Juergen Kolb

15:30 - 6E1 - (invited) Three Decades of Pulsed Power Development for Rock Fracturing and Associated Applications

Steven Pronko¹, William Moeny¹
1. Tetra Corporation

16:00 - 6E2 - Enhancement of shock wave from underwater electrical wire explosion by replacing one thicker wire with many thinner wires

Dun Qian¹, Liuxia Li¹, Xiaobing Zou¹, Xinxin Wang¹
1. Tsinghua University

16:15 - 6E3 - Modification of the functional surface cover, structural defects and technological properties of natural diamonds under the nonthermal influence of repetitive high-power nanosecond pulses

Igor Bunin¹, Nataliya Anashkina¹
1. Institute of Comprehensive Exploitation of Mineral Resources of the Russian Academy of Science

16:30 - 6E4 - Efficiency of rock destruction by a pulse generator based on a linear pulse transformer

Ivan Lavrinovich¹, Denis Molchanov¹
1. HCEI SB RAS

16:45 - 6E5 - Computational Study of a Pulsed Power Source based Electromagnetic Manufacturing Process

DEEPAK KAUSHIK¹, M. Joy Thomas²
1. IISc Bangalore
2. Indian Institute of Science

17:00 - 6E6 - Characteristics of Near-Field Shockwaves Induced by Underwater Pulsed Discharges

Liangli Xiong¹, Yi Liu¹, Mingan Wu², Fuchang Lin¹, Yuan Pan¹, Siwei Liu¹
1. State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science & Technology, Wuhan, Hubei Province, China
2. School of Electrical Engineering and Automation, Wuhan University, Wuhan, Hubei Province, China

17:15 - 6E7 - Impact Velocity Control for Electromagnetic Pulse

Welding Based on Modular Discharge Current Shaping

Yan Zhou¹, Chengxiang Li, Jian Du, Xianmin Wang, Zhigang Liao

1. Chongqing University

Session: 6F

8.2 Generators and Networks and 8.3 Repetitive Systems

Wednesday 15:30 Room: Gold Coast I/II

Session Chair: Brett Huhman

15:30 - 6F1 - A high-repetition rate, magnetic core, pulse transformer based, fast 120 kV generator

Jessica Stobbs¹, Bucur Novac¹, Peter Senior¹, Tom Huiskamp, Frank Beckers², Guus Pemen²

1. Loughborough University

2. Eindhoven University of Technology

15:45 - 6F2 - AN ALTERNATIVE CIRCUITRY FOR A TRANSFORMER COUPLED LC INVERSION GENERATOR

Rainer Bischoff¹

1. French-German Research Institute of Saint-Louis (ISL)

16:00 - 6F3 - A 30kV, 200kHz Solid-state Pulsed Power Generator Based on the Drift Step Recovery Diodes

wang haiyang¹

1. Xi'an jiaotong university

16:15 - 6F4 - (invited) 8-Stage Pulse Generator for Generation of Bipolar Rectangular Pulses

Martin Sack¹, Dennis Herzog², Martin Hochberg¹, Georg Mueller²

1. Karlsruhe Institute of Technology

2. Institute for Pulsed Power and Microwave Technology (IHM), Karlsruhe Institute of Technology (KIT), Germany

16:45 - 6F5 - A Novel High-frequency Pulse Generator Based on Bipolar and Marx Topologies

Shoulong Dong¹, liang Yu, Jianhao Ma, Xiaoyu Wang, hongmei liu¹,

Chenguo Yao

1. Chongqing University

17:00 - 6F6 - Design and Performance of a 2 m EUT MIL STD 461 (RS-105) Test System

Jon Mayes¹, Bill Nunnally¹, Eric Perry¹, Matthew Lara¹, Chris Hatfield¹,

Jeremy Byman¹, David Kohlenberg¹, Paul Flores¹, Tim Henke¹, Stephane Del Rosario¹

1. Applied Physical Electronics L.C.

17:15 - 6F7 - Dynamic Modeling of Pulsed Alternators using LTspice

Cesar Negri¹, Saeed Daneshvardehnavi¹, Michael Giesselmann¹

1. Texas Tech University

Thursday AM

Session: 6Plenary

Plenary Thurs - Thomas Mehlhorn (2019 Peter Haas Award)

Thursday 8:30 Room: Seminole Ballroom

Session Chair: Ron Gilgenbach (2017 Peter Haas Award)

Pulsed Power as a Science: Predictive simulations for beams, z-pinches, and other applications

Tom Mehlhorn¹

1. Naval Research Laboratory

Session: 7A

3.2 Intense Electron and Ion Beams

Thursday 10:00 Room: Gold Coast I/II

Session Chair: Peng Zhang

10:00 - 7A1 - USE OF HERMES-III FOR PULSED NEUTRON PRODUCTION PRODUCED BY INTENSE ION BEAMS AT THE 14 MEV LEVEL AT SANDIA NATIONAL LABORATORIES

Timothy Renk¹, Paul Ottinger², Russell Durrer³

1. Sandia National Laboratories

2. Syntek Technologies

3. Sigma Science, Inc.

10:15 - 7A2 - Thermionic and Field emission model of 2D materials cathode

Lay Kee ANG¹, Yee Sin ANG¹

1. Singapore University of Technology and Design

10:30 - 7A3 - INCORPORATING RESISTANCE INTO THE UNIFICATION OF FIELD EMISSION AND SPACE CHARGE-LIMITED EMISSION WITH COLLISIONS

Adam Darr¹, Amanda Loveless¹, Allen Garner¹

1. Purdue University

10:45 - 7A4 - Exact Solution for Two-Color Laser Induced Photoemission from a Biased Metal Surface

Yi Luo¹, Peng Zhang¹

1. Michigan State University

11:00 - 7A5 - Shocks induced by fast high-fluence electron beam deposition on Aluminum targets: hydrodynamic simulations initialized by electron beam measurements.

Nicolas Szalek¹, Béatrice Birel¹, Bruno Cassany¹, Alain Galtié¹, Jacques Gardelle¹, David Hébert

1. CEA

11:15 - 7A6 - Optical Imaging of the Self Magnetic Pinch Diode on the Merlin IVA

Mark Sinclair¹, Andrew Blackwood¹, Matt Childs¹, David George¹, James Threadgold¹

1. AWE

11:30 - 7A7 - The effective way of improving the performance of a novel multipacting cathode with high current density

Ye Dong¹, Qingxiang Liu², Xiangqiang Li², Haijing Zhou³, Zhiwei Dong³

1. T. I. School of Physical Science and Technology, Southwest Jiaotong University, Chengdu, China; 2. Institute of Applied Physics and

Computational Mathematics, Beijing, China

2. School of Physical Science and Technology, Southwest Jiaotong University, Chengdu, China

3. Institute of Applied Physics and Computational Mathematics, Beijing, China

11:45 - 7A8 - Generation of Intense Pulsed X-ray and Repetitive Pulsed X-rays

Jianqiang Yuan¹, Weiping Xie¹, Lidong Geng¹, Hongwei Liu¹, Lingyun Wang¹, Hongtao Li¹, Xun Ma¹, Ping Jiang¹

1. Institute of Fluid Physics, China Academy of Engineering Physics

Session: 7B

2.3 Slow-Wave Devices

Thursday 10:00 Room: Seminole A/B

Session Chair: Nick Jordan

10:00 - 7B1 - Experimental Study of a Millimeter Wave Relativistic Backward Wave Oscillator

Ahmed Elfrgani¹, Firas Ayoub¹, Artem Kuskov, Dmitrii Andreev¹, Antonio De Alleluia¹, Braulio Martínez-Hernandez¹, Kevin Wang Huang¹, Stacie Hernandez¹, Edl Schamiloglu¹

1. University of New Mexico

10:15 - 7B2 - Multiple Beam Power Grid Tubes for High Frequency and High Power Operation

Lawrence Ives, Michael Read¹, David Marsden¹, Thuc Bui¹, Ricky Ho², Leroy Higgins², Bruce Henderson²

1. Calabazas Creek Research, Inc.

2. Communications & Power Industries, LLC

10:30 - 7B3 - A 1.3 GHz 100 kW Ultra-High Efficiency Klystron

Michael Read¹, Lawrence Ives, Jeff Neilson², Aaron Jensen³

1. Calabazas Creek Research, Inc.

2. SLAC National Accelerator Laboratory

3. Leidos Corporation

10:45 - 7B4 - COAXIAL-ALL-CAVITY-EXTRACTION ON THE HARMONIC RECIRCULATING PLANAR MAGNETRON

R. M. Gilgenbach¹, Geoffrey Greening¹, Christopher Swenson¹,

Nick Jordan¹, Brad Hoff², Drew Packard¹, Y. Y. Lau¹, Jason Hammond², Steven Exelby¹

1. University of Michigan

2. Air Force Research Laboratory

11:00 - 7B5 - Inclusion of Circuit Loss in an Exact Treatment of a Helix Traveling Wave Tube

Abhijit Jassem¹, Yue Ying Lau¹

1. University of Michigan

11:15 - 7B6 - MODELING STABILITY OF VACUUM ELECTRONIC DEVICES USING GENERALIZED IMPEDANCE MATRIX APPROACH

Igor Chernyavskiy¹, Alexander Vlasov¹, John Rodgers¹, Baruch Levush¹, Thomas, Jr. Antonsen²

1. Naval Research Laboratory

2. Leidos, Inc.

11:30 - 7B7 - An Electron Gun for a Sheet Beam with a 3 to 1 Aspect Ratio: Design and Optimization

Alex Burke¹, Aaron Jensen¹, John Petillo¹, John Pasour²

1. Leidos

2. US Naval Research Laboratory

11:45 - 7B8 - W-band 2D Periodic Lattice Oscillator

colin whyte¹, Amy MacLachlan², Craig W. Robertson¹, Adrian Cross¹,
Liang Zhang¹, Alan Phelps¹, Kevin Ronald¹
1. *University of Strathclyde*
2. *University of Strathclyde / Cockcroft Institute*

Session: 7C

4.4 High Energy Density Matter

Thursday 10:00 Room: Gold Coast III/IV

Session Chair: Sergey Pikuz

10:00 - 7C1 - (invited) A Study of Magnetized Jet Stability Using High Energy Density Plasmas

Hannah Hasson¹, Pierre Gourdain¹, Marissa Adams¹, Dave Hammer², Bruce Kusse², Roman Shapovalov¹, James Young¹, Matt Evans¹, John Greenly², Imani West-Abdallah¹

1. *University of Rochester*
2. *Cornell University*

10:30 - 7C2 - Thomson Scattering Measurements of Bow-shocks in Radiatively-cooled Magnetically Accelerated Plasma Flows

Simon Bott-Suzuki¹, Sam Cordaro¹, Tobias Oliver¹, William Potter², Jacob Banasek², Sophia Rocco², Bruce Kusse², Dave Hammer²

1. *University of California San Diego*
2. *Cornell University*

10:45 - 7C3 - An absorption spectroscopy platform to measure photoionization fronts in the laboratory

Heath LeFevre¹, William Gray¹, Joshua Davis¹, Paul Keiter², Carolyn Kuranz¹, R Paul Drake¹

1. *University of Michigan*
2. *Los Alamos National Laboratory*

11:00 - 7C4 - (invited) Nernst Thermomagnetic Waves in Magnetized High Energy Density Plasmas

Alexander Velikovich¹, John Giuliani², Steven Zalesak³

1. *Naval Research Laboratory*
2. *Plasma Physics Division, Naval Research Laboratory*
3. *Syntek Technologies*

11:30 - 7C5 - Electrical explosions of cylindrical wire arrays in different materials

David Yanuka¹, Savva Theocharous¹, Simon Bland¹, Ya.E. Krasik²

1. *Imperial College London*
2. *Technion*

11:45 - 7C6 - Exploring Properties of Warm Dense Matter Using Microsecond Timescale Pulse Power Drive

Robert Reinovsky¹, christopher rousculp¹, Sergey Garanin², Sergey Kuznetsov²

1. *Los Alamos National Laboratory*
2. *RFNC - VNIIEF*

Session: 7D

6.1 Nonequilibrium Plasma Applications II

Thursday 10:00 Room: Seminole C

Session Chair: James Walsh

10:00 - 7D1 - (invited) Nanosecond-pulsed corona discharge in liquid nitrogen and production of nitrogen polymers

Danil Dobrynin¹, Roman Rakhmanov¹, Alexander Fridman¹

1. *Drexel university*

10:30 - 7D2 - Investigation of Atmospheric Pressure Plasma Jet in Double Coaxial Dielectric Barrier Tubes Conjugated with

Microsecond Voltage Pulse

Duc Ba Nguyen¹, Md. Mokter Hossain², Van Toan Nguyen², Young Sun

Mok², Quang Hung Trinh³, Won Gyu Lee⁴

1. *Department of Chemical and Biological Engineering, Jeju National University*
2. *Jeju National University*
3. *Duy Tan University*
4. *Kangwon National University*

10:45 - 7D3 - A Comparison between Ag/ZSM5 and Cu/ZSM5 Catalysts Coupled with Plasma in Hydrocarbon Catalytic Reduction of NOx at Low-Temperatures

Van Toan Nguyen¹, Duc Ba Nguyen, Md. Mokter Hossain, Young Sun Mok

1. *Department of Chemical and Biological Engineering, Jeju National University*

11:00 - 7D4 - Nanosecond-pulsed oxygen DBD treatment of water and production of "plasma acid"

Ryan Robinson¹, Alexander Fridman¹, Danil Dobrynin¹

1. *Drexel University*

11:15 - 7D5 - Supported vanadium oxides modified by non-thermal plasma for nitrogen fixation

Rim Bitar¹, Moazameh Adhmi Sayad Mahaleh¹, Anton Nikiforov¹, Karen Leus¹, Pascal Van Der Voort¹, Rino Morent¹, Nathalie De Geyter¹

1. *Gent University*

11:30 - 7D6 - Study of plasma catalyst interactions by time resolved diffuse reflectance infrared Fourier transform spectroscopy

Shiqiang Zhang¹, Yudong Li¹, Andrew Knoll¹, Jinkai Jiang², Peter

Bruggeman², Gottlieb Oehrlein¹

1. *University of Maryland, College Park*
2. *University of Minnesota*

11:45 - 7D7 - Multispecies Nonequilibrium Plasma Fluid Simulation of an Ablating Arc Discharge in Atmospheric Pressure

Adnan Mansour¹, Kentaro Hara¹

1. *Texas A&M University*

Session: 7E

7.4 Linear Transformer Driver

Thursday 10:00 Room: Seminole D/E

Session Chair: Frederic Bayol

10:00 - 7E1 - (invited) The developments of Linear Transformer Drivers in Xi'an Jiaotong University

Jian Wu¹, Fengju Sun², Xingwen Li¹, Aici Qiu¹, Xiaofeng Jiang², Zhiguo

Wang², Hongyu Jiang², Huantong Shi¹, Li Chen¹, Penghui Li¹

1. *Xi'an Jiaotong University*
2. *Northwest Institute of Nuclear Technology*

10:30 - 7E2 - Experimental results from the the 1.2 MA, 2.2 m diameter linear transformer driver cavity at Sandia National Labs

Jon Douglass¹, Brian Hutsel¹, Josh Leckbee¹, Brian Stoltzfus¹, Matthew

Wisher¹, Mark Savage¹, William Stygar¹, Eric Breden¹, Jacob Calhoun¹,

Michael Cuneo¹, Owen Johns¹, Michael Jones¹, Diego Lucero¹, James

Moore¹, Matthew Sceiford¹, Mark Kiefer¹, Thomas Mulville¹, Robert

Hohlfelder¹

1. *Sandia National Laboratories*

10:45 - 7E3 - Low-Inductance Load Test of a New 300-kA, 150-ns Pulser for Fast X-Pinch Sources

Roman Shapovalov¹, Marissa Adams¹, Matt Evans¹, Hannah Hasson¹,

James Young¹, Imani West-Abdallah¹, Pierre Gourdain¹
1. *University of Rochester*

11:00 - 7E4 - Current adding strategies in compact linear transformer drivers

Pierre Gourdain¹, Marissa Adams¹, Matt Evans¹, Hannah Hasson¹, Roman Shapovalov¹, James Young¹, Imani West-Abdallah¹, Rick Spielman²
1. *University of Rochester*
2. *Idaho State University*

11:15 - 7E5 - New type of capacitor-switch assembly for LTD technology

Ivan Lavrinovich¹, Semen Vagaytsev¹, Aleksander Erfort¹, Dmitry Rybka¹, Denis Molchanov¹, Anton Artemov¹, Alexander Zhigalin¹, Aleksander Lensky¹
1. *Institute of High Current Electronics SB RAS, Tomsk, Russia*

11:30 - 7E6 - The Development of all-solid pulse generator based on multi-turn LTD

shoulong dong¹, Jianhao Ma, yilin wang, weirong zeng, Chenguo Yao
1. *Chongqing University*

11:45 - 7E7 - Construction of the BLUE Linear Transformer Driver (LTD) at University of Michigan

Brendan Sporer¹, Ryan McBride¹, Nick Jordan¹
1. *University of Michigan*

Session: 7F

8.1 Electromagnetic Launch

Thursday 10:00 Room: Space Coast I-III

Session Chair: Mark Crawford

10:00 - 7F1 - (invited) ASEL SAN Electromagnetic Launch Laboratory: First Shot

Mustafa Karagoz¹, Baran Yildirim, Emre Burak Yurdakul, Emre Durma, Ozgur Cavbozar, Ulas Gocmen, Evren Tan, Yasin Cevik, Anil Civil
1. *ASEL SAN*

10:30 - 7F2 - Numerical Analysis of the Magnetic Expansion Force on the Solenoid Coil in a Four-stage Induction Coilgun with Pulsed Power Supplies

Myung-Geun Song¹, Hui Min Kim¹, Yong Kyu Lee¹
1. *Launcher Systems R&D Center, Research Institute, Hanwha Defense Corporation*

10:45 - 7F3 - Investigations on the Energy Chain supporting a Naval Railgun

Stephan Hundertmark¹
1. *ISL*

11:00 - 7F4 - Magnetic Shielding Effectiveness of Layered Medium-Walled Structures

Tyler Buntin¹, Landon Collier¹, Colt James², James Dickens¹, John Mankowski¹, Andreas Neuber¹
1. *Texas Tech University*
2. *Raytheon*

11:15 - 7F5 - Factors Influencing the Efficiency of an Induction Coilgun

Ranashree Ram¹, Chiranjeev S. Sirola², M. Joy Thomas²
1. *IISc Bangalore*
2. *Indian Institute of Science Bangalore*

11:30 - 7F6 - Flyer Acceleration using Underwater Wire Explosions

Savva Theocharous¹, David Yanuka², Simon Bland¹, Luis Sebastian

Caballero Bendixsen

1. *Imperial College London*
2. *Technion - Israel Institute of Technology*

11:45 - 7F7 - Design and Electromagnetic Analysis of a Multi-Stage Induction Coilgun System for Heavy Projectile

Byeong-Soo Go¹, Dinh-Vuong Le¹, Myung-Geun Song², Minwon Park¹, In-Keun Yu¹
1. *Changwon National University*
2. *Hanwha Defense Corporation*

Thursday PM

Session: 8A

1.5 Dusty Plasmas and Strongly Coupled Plasmas

Thursday 13:30 Room: Gold Coast III/IV

Session Chair: Lorin Matthews

13:30 - 8A1 - (invited) Nonlinear Structures Under The Influence Of Polarization Force In Non-Maxwellian Dusty Plasma

Nareshpal Singh Saini¹
1. *Guru Nanak Dev University, Amritsar*

14:00 - 8A2 - Some properties of ion-acoustic and dust-acoustic instabilities in non-Maxwellian space plasmas

Warda Nasir¹, M N S Qureshi²
1. *Forman Christian College*
2. *GC University, Lahore*

14:15 - 8A3 - Field-Aligned Chains within the PK-4 Environment

Truell Hyde¹, Lorin Matthews¹, Peter Hartmann², Marlene Rosenberg³, Oleg Petrov⁴, Vladimir Nosenko⁵, Jie Kong¹, Ke Qiao¹, Eva Kostadinova¹, Jorge Carmona-Reyes¹
1. *CASPER - Baylor University*
2. *Wigner Research Centre for Physics, Budapest, Hungary*
3. *University of California at San Diego*
4. *Joint Institute for High Temperatures, Russian Academy of Sciences*
5. *DLR Institute of Materials Physics in Space*

14:30 - 8A4 - Plasma Kristall-4: Anomalous diffusion and vorticity in a multi-chain dusty plasma

Evdokiya Kostadinova¹, Joshua Padgett², Constanze Liaw³, Peter Hartmann⁴, Marlene Rosenberg⁵, Lorin Matthews¹, Truell Hyde¹
1. *Baylor University*
2. *Texas Tech University*
3. *University of Delaware*
4. *Hungarian academy of sciences*
5. *University of California at San Diego*

14:45 - 8A5 - The effect of variable dust size and charge on the propagation of rogue waves in magnetized solar wind dusty plasma

Atef Elbendary¹
1. *Assistant Professor at Egypt*

15:00 - 8A6 - Dust-ion acoustic travelling waves and chaos in a magneto-rotating dusty plasma

YASHIKA GHAI¹, Barjinder Kaur, N.S. Saini¹
1. *Guru Nanak Dev University*

15:15 - 8A7 - Dust Acoustic Kinetic Alfven Waves In The Presence Of superthermally Trapped Ions in polarized dusty plasma

KULDEEP SINGH¹, NIMARDEEP KAUR¹, N. S. SAINI²

1. *Guru Nanak Dev University, Amritsar, India-143005*

2. *Department of physics, Guru Nanak Dev University*

Session: 8B

2.5 Codes and Modeling and 2.8 THz Sources,
Radiation, and Applications

Thursday 13:30 Room: Seminole A/B

Session Chair: Ian Rittersdorf and Timothy Haugan

13:30 - 8B1 - Least-Square Weighted Residual Methods for Solution of Global Model Equations

Sergey Averkin¹, Tom Jenkins¹

1. *Tech-X Corporation*

13:45 - 8B2 - Low-Impedance S-Band MILO

Matthew Abide¹, Tyler Buntin¹, James Dickens¹, Andreas Neuber¹, Ravi Joshi¹, John Mankowski¹

1. *Texas Tech University*

14:00 - 8B3 - COMPUTER SIMULATION AND THE PHYSICS OF MIRAM CURVES

John Petillo¹, David Chernin¹, Y. Y. Lau², Serguei Ovtchinnikov¹, Aaron Jensen¹

1. *Leidos*

2. *University of Michigan, Ann Arbor, MI 48109, USA*

14:15 - 8B4 - A Model of Thermal-Field Current from Microscopic Structures

John Petillo¹, Kevin Jensen², Michael McDonald², Serguei Ovtchinnikov¹, Aaron Jensen¹

1. *Leidos*

2. *Naval Research Laboratory*

14:30 - 8B5 - Laser-Driven Semiconductor Switch for Generating Nanosecond Pulses from a Megawatt Gyrotron

Julian Picard¹, Samuel Schaub¹, Guy Rosenzweig¹, Jacob Stephens¹, Michael Shapiro¹, Richard Temkin¹

1. *Massachusetts Institute of Technology*

14:45 - 8B6 - THz Wakefield Source Powered by Nonrelativistic Electron Beam

Mitchell Schneider¹, Stanislav Baturin², Sergey Baryshev¹

1. *Department of Electrical and Computer Engineering, Michigan State University*

2. *PSD Enrico Fermi Institute, University of Chicago*

15:00 - 8B7 - THz Structures for MeV Electron Bunch Compression

Mohamed Othman¹, Emma Snively¹, Michael Kozina¹, Benjamin Ofori-Okai¹, Suji Park¹, Xiaozhe Shen¹, Stephen Weathersby¹, Charles Yoneda¹, Xijie Wang¹, Matthias Hoffmann¹, Renkai Li¹, Emilio Nanni¹

1. *SLAC National Accelerator Laboratory*

15:15 - 8B8 - A cold-cathode magnetron gun in plasma mode as driver for a THz generator

Sergiy Cherenshchykov, Sergiy Cherenshchykov

Session: 8C

4.3 Radiation Physics & X-ray Lasers and 4.5
Laser Produced Plasmas

Thursday 13:30 Room: Gold Coast I/II

Session Chair: Jennifer Elle

13:30 - 8C1 - (invited) NO PLIF flow visualization and time-resolved temperature distribution measurements in laser induced breakdown plumes

Dirk van den Bekerom¹, Elijah Jans¹, Igor Adamovich¹

1. *The Ohio State University*

14:00 - 8C2 - Physical Experiments on the HEAVEN-I KrF Laser Facility

ZHAO WANG¹

1. *China Institute of Atomic Energy*

14:15 - 8C3 - FEATURES OF LASER PRODUCED ANNULAR PLASMAS USING DIFFERENT TARGET MATERIALS AND AMBIENT CONDITIONS

Mario Favre¹, Fabián Velásquez¹, Diego Oportus¹, Heman Bhuyan¹, Felipe Veloso¹, Julio Valenzuela¹, Edmund Wyndham¹

1. *Instituto de Física, Pontificia Universidad Católica de Chile*

14:30 - 8C4 - (invited) High-brightness X-ray undulator radiation from ultra-short electron beams

David Bruhwiler¹, Boaz Nash², Oleg Chubar³, Nicholas Goldring¹, Paul Moeller¹, Maksim Rakitin³, Robert Nagler¹

1. *RadiaSoft LLC*

2. *European Synchrotron Radiation Facility*

3. *Brookhaven National Laboratory*

15:00 - 8C5 - TIME EVOLUTION OF HARD X-RAY CHARACTERISTIC EMISSION FROM TUNGSTEN PULSED-POWER PLASMAS

Alla Safronova¹, Victor Kantsyrev¹, Austin Stafford¹, Ishor Shrestha¹, Veronica Shlyaptseva¹, Ryan Childers¹, Christopher Butcher¹, Nicholas Quart², John Giuliani²

1. *University of Nevada, Reno*

2. *Naval Research Laboratory*

15:15 - 8C6 - The HED instrument at the European XFEL

Toma Toncian¹, Wolfgang Morgenroth², Alexander Pelka¹, Ian Thorpe³, Cornelius Strohm⁴, Andreas Berghäuser¹, Jan-Patrick Schwinkendorf³, Hanns-Peter Liermann⁴, Samuele Di Dio Cafiso¹, Dominik Möller¹, Sebastian Göde³, Thomas Preston³, Monika Toncian¹, Andreas Schmidt³, Zuzana Konopkova³, Thomas Feldmann³, Konstantin Sukharnikov³, Mikako Makita³, Motoaki Nakatsutsumi³, Ulf Zastra³, Carsten Baetz¹, Lennart Wollenweber³, Valerio Cerantola³, Mohamed Hassan¹, Karen Appel³, Hauke Höppner¹, Eike-Christian Martens³

1. *Helmholtz-Zentrum Dresden Rossendorf*

2. *Goethe-Universität Frankfurt*

3. *European XFEL GmbH*

4. *Deutsches Elektronen-Synchrotron DESY*

Session: 8D

5.5 Insulation and Dielectric Breakdown I

Thursday 13:30 Room: Seminole D/E

Session Chair: Jacob Stephens

13:30 - 8D1 - (invited) Breakdown characteristics of natural and synthetic ester liquids when containing varying levels of moisture

Chris Williamson¹, Igor Timoshkin¹, Scott MacGregor¹, Mark Wilson¹, Martin Given¹

1. *Strathclyde University*

14:00 - 8D2 - Charge Carrier Mobilities in Dielectric Liquids

Qingjiang Xue¹, Igor Timoshkin¹, Martin Given¹, Mark Wilson¹, Scott MacGregor¹

1. *University of Strathclyde*

14:15 - 8D3 - Investigation of Insulated Wire Breakdown Under

DC and Lightning Impulse Conditions

Landon Collier¹, William Brooks¹, David Barnett¹, James Dickens¹, John Mankowski¹, David Hattz², W. A. Harrison², Andreas Neuber¹

1. Texas Tech University
2. CNS Pantex

14:30 - 8D4 - INCEPTION VOLTAGE FOR ELECTRICAL DISCHARGES IN THE PRESENCE OF TRIPLE JUNCTIONS

Michael Kirkpatrick¹, Giacomo Galli², Emmanuel Odic¹, Philippe Dessante¹, Philippe Molinié¹, Hassen Hamrita³

1. GeePs — Group of electrical engineering - Paris, UMR CNRS 8507, CentraleSupélec, Univ. Paris-Sud, Université Paris-Saclay, Sorbonne Université
2. Centralesupelec
3. CEA, LIST, Sensors and Electronic Architectures Laboratory

14:45 - 8D5 - Investigation of electrical breakdown in high pressure (0.1 to 1 MPa) carbon dioxide and its mixtures under pulsed fields

Siddharth Kumar¹, Tom Huiskamp, Guus Pemen²

1. TU Eindhoven
2. Eindhoven University of Technology

15:00 - 8D6 - INFLUENCE OF THE CONCENTRATION ON SURFACE FLASHOVER OF THE EPOXY INSULATOR UNDER LIGHTENING IMPULSE VOLTAGE IN C4F7N-CO2 MIXTURES

Zhongbo Zheng¹, Weidong Ding¹, Zhichuang Li¹, Yishu Liu, Yue Li¹, Shuhan Liu¹, Lanxi Li¹, Yinan Zhu¹

1. Xi'an Jiaotong University

15:15 - 8D7 - Researches on spectrums and macroscopic forms of DC arc in a short air gap

Ruiyang Guan¹, Zhidong Jia¹

1. Graduate School at Shenzhen, Tsinghua University

Session: 8E

6.4 Environmental, Industrial, and Display Applications II

Thursday 13:30 Room: Seminole C

Session Chair: Lanlan Nie

13:30 - 8E1 - (invited) Plasma application for emission control

Dae Hoon Lee¹, KWAN TAE KIM, Young-Hoon Song¹, Sungkwon Jo¹, Hongjae Kang¹

1. Korea Institute of Machinery and Materials

14:00 - 8E2 - Disinfection and Sensitization of Ear Infection Related Bacterial Biofilms by Microplasma Jet Array

Sun Peter P.¹, Jungeun Won¹, Gabrielle Choo-Kang¹, Wenyuan Chen¹, Stephen A. Boppert¹, Thanh H.(Helen) Nguyen¹, J. Gary Eden¹

1. University of Illinois urbana Champaign

14:15 - 8E3 - Control of large electric spark through laser filamentation in air

Pierre WALCH¹, Benoit Mahieu¹, Leonid Arantchouk¹, André Mysyrowicz², Aurélien Houard¹

1. Laboratoire d'Optique Appliquée, ENSTA ParisTech, Ecole Polytechnique, CNRS, Institut Polytechnique de Paris, 91128 Palaiseau, France
2. André Mysyrowicz Consultants, 6 Rue Gabriel, 78000 Versailles, France

14:30 - 8E4 - NITRIC OXIDE SCAVENGING OF HYDROXYL RADICALS IN A NANOSECOND PULSED PLASMA DISCHARGE GAS-LIQUID REACTOR

Radha Krishna Murthy Bulusu¹, Robert Wandell¹, Rachel Gallan¹, Bruce Locke¹

1. Department of Chemical and Biomedical Engineering, Florida State University

14:45 - 8E5 - Optimizing Power Delivery using Impedance Matching Networks with Set-Point and Frequency Tuning for Pulsed Inductively Coupled Plasmas

Chenhui Qu¹, Joel Brandon², Carl Smith², Steven C. Shannon, David Coumou³, Mark J. Kushner¹

1. University of Michigan
2. North Carolina State University
3. MKS Instruments

15:00 - 8E6 - Plasma Uniformity Control Technology of ICP Dry Etcher Equipment for Medium and Large Display

Hosik Yang, Honggoo Jeon, Sungjae Hong, Sinpyoung Kim, Ilho Noh

15:15 - 8E7 - Characteristics of nanosecond pulsed discharge type ozonizer with a tube to cylinder reactor

Hiroki Hidaka¹, Daichi Ikoma¹, Kanji Sasaki¹, Douyan Wang², Takao Namihira²

1. Graduate School of Science and Technology, Kumamoto University – Japan
2. Institute of Pulsed Power Science, Kumamoto University – Japan

Session: 8F

3.1 Plasma, Ion, and Electron Sources II

Thursday 13:30 Room: Space Coast I-III

Session Chair: John Harris

13:30 - 8F1 - Integrated Photonics for Low Transverse Emittance, Ultrafast Negative Electron Affinity GaAs Photoemitters

Rehan Kapadia¹, Louis Blankemeier¹, Fatemeh Rezaeifar¹

1. University of Southern California

13:45 - 8F2 - Coupled Optical and Electronic Simulation of Integrated Photonics based Hot-Electron Graphene Photoemitters using a 2-D Ensemble Monte Carlo Boltzmann Transport Equation Solver and a Finite-Difference Time-Domain Maxwell's Equation Solver

Ragib Ahsan¹, Fatemeh Rezaeifar¹, Rehan Kapadia¹

1. University of Southern California

14:00 - 8F3 - ELECTRON EMISSION FROM A METAL ELECTRODE SUBJECT TO A HIGH INTENSITY LASER IN THE PRESENCE OF DC ELECTRIC FIELDS

Sayeed Nafis Sami¹, Dong Guo¹, Ravi Joshi¹

1. Texas Tech University

14:15 - 8F4 - Fabrication and Characterization of Diamond Field Emitter Array Cathodes

Dongsung Kim¹, Heather Andrews¹, Bo Choi², Ryan Fleming¹, Evgenya Simakov¹

1. Los Alamos National Laboratory
2. Cheju Halla University

14:30 - 8F5 - (invited) Shaped Beams from Diamond Field-Emitter Array Cathodes

Heather Andrews¹, Dongsung Kim¹, Kimberley Nichols¹, Evgenya Simakov¹, Manoel Conde², Darrell Doran³, Gwanghui Ha, Wanming Liu³, John Power, Jiahang Shao⁴, Charles Whiteford³, Eric Wisniewski², Sergey Antipov⁵, Gongxiaohui Chen

1. Los Alamos National Laboratory
2. Argonne National Laboratory
3. ANL
4. Tsinghua University and Argonne National Laboratory

15:00 - 8F6 - FIELD EMISSION PROPERTIES OF VERTICAL AND LOOPED CARBON NANOTUBE FIBERS

Steven Fairchild¹, Jeongho Park¹, Peng Zhang², Taha Posos², Sergey Baryshev²

1. Air Force Research Laboratory
2. Michigan State University

15:15 - 8F7 - A STUDY ON ATTENUATION CHARACTERISTICS OF EXPLOSIVE EMISSION CATHODE PLASMA BASED ON ULTRA HIGH SPEED CAMERA TECHNOLOGY

tengfang wang¹, hua huang², xiao jin², zhenbang liu², yu bai², zhiwei dang², shumeng peng²

1. Key Laboratory of Nuclear Physics and Ion-beam Application (MOE), Fudan University, Shanghai 200433, China
2. Science and Technology on High Power Microwave Laboratory, Institute of Applied Electronics, CAEP.Mianyang 621900, China

Session: 4P

Poster - Charged Particle Beams and Accelerators and High Energy Density Plasmas and Applications

Thursday 16:00 Room: Universal Center

Session Chair: Alexander Velikovich

4P01 - Validation of a configurable ion source for testing spaceflight-based thermal plasma measurement instruments

Ellen Robertson¹, Gregory Earle¹, Jonathan Green¹

1. Virginia Tech

4P02 - Particle-in-cell modeling of the Saturn accelerator vacuum section

Ben Ulmen¹, Ken Struve¹

1. Sandia National Laboratories

4P03 - HOLLOW CATHODE RADIAL PLASMA SOURCE BASED ON CLOSED DRIFT ANODE LAYER THRUSTER

Vasilii Gushenets¹, Efim Oks², Alexey Bugaev¹

1. High Current Electronics Institute
2. Tomsk State University of Control Systems and Radioelectronics

4P04 - MONTE CARLO SIMULATION OF SECONDARY ELECTRON YIELD FROM A MICROPOROUS SURFACE

Asif Iqbal¹, J. Ludwick², S. Fairchild³, M. Cahay², D. Gortat⁴, M. Sparkes⁴, W. O'Neill⁴, Peng Zhang¹

1. Department of Electrical and Computer Engineering, Michigan State University, East Lansing, Michigan 48824-1226, USA
2. Spintronics and Vacuum Nanoelectronics Laboratory, University of Cincinnati, Cincinnati, OH 45221, USA
3. Materials and Manufacturing Directorate, Air Force Research Laboratory, Wright Patterson Air Force Base, OH 45433
4. Institute for Manufacturing, University of Cambridge, 17 Charles Babbage Road, Cambridge CB3 0FS, UK

4P05 - Features of the millisecond arc discharge generating emission plasma in the forevacuum plasma-cathode source of large-radius electron beam

Andrey Kazakov¹, Aleksander Medovnik¹, Efim Oks¹

1. Tomsk State University of Control Systems and Radioelectronics

4P06 - Plasma source with multi-aperture extraction system for generating a ribbon electron beam

Denis Zolotukhin¹, Aleksander Klimov², Alexey Zenin²

1. The George Washington University
2. Tomsk State University of Control Systems and Radioelectronics

4P07 - Monte-Carlo modelling of parallel electron transport in the Proto-MPEX linear plasma device

Juan Caneses¹, Donald Spong¹, Cornwall Lau¹, Theodore Biewer¹, Tim Bigelow¹, John Caughman¹, Rick Goulding¹, Nischal Kafle², Juergen Rapp¹

1. Oak Ridge National Laboratory
2. The University of Tennessee, Knoxville

4P08 - Studies on power transfer efficiency in the drivers of the SPIDER inductively coupled RF ion source

Mauro Recchia¹, Palak Jain², Elena Gaio¹, Alberto Maistrello¹, Gianluigi Seriani¹, Andrea Zamengo¹

1. Consorzio RFX
2. University of Padova and Consorzio RFX

4P09 - Experimental Investigation of Pseudospark Discharge Based Plasma Cathode Electron Source for the Generation and Propagation of High Density and Energetic Electron Beams

Varun¹, Mahesh Kumar², Udit Narayan Pal³

1. CSIR- CEERI, Pilani, India and AcSIR, Ghaziabad, India
2. Microwave Devices Area, CSIR- Central Electronics Engineering Research Institute (CEERI), Pilani, Rajasthan-333031, India
3. CSIR-Central Electronics Engineering Research Institute, Pilani, India

4P10 - Statistical Quantization and Optimization of Cold Atmospheric Pressure Plasma Source for Destroying Bacteria and Biofilms through Design of Experiments Method

Jim Browning¹, Adam Croteau²

1. Professor
2. Boise State

4P11 - Properties of the energy-controlled atmospheric pressure plasma driven by multi-step external ballast capacitors

Chang-Seung Ha¹, Yun Sik Jin¹, Seong-Tae Han¹, Chae-Hwa Shon¹, Dae-Jong Kim¹, Ho-Jun Lee²

1. Korea Electrotechnology Research Institute
2. Pusan National University

4P12 - Radio Frequency Plasma Generation without 50 Ohm Matching

Tim Ziemba, James Prager¹, Kenneth E. Miller²

1. Eagle Harbor Technologies, Inc.
2. Eagle Harbor Technologies, Inc

4P13 - CNT Field Emission Cathodes Evaluated for a Portable X-Ray Generator for Root Imaging

Enbo Yang¹, Scott Kovaleski¹, Jacob Williams¹

1. University of Missouri

4P14 - The increasing efficiency of Penning Ion Source

Sergey Korenev¹, Anton Korenev¹

1. Kore-ip, LLC

4P15 - Characteristics of Cathode Spots in Vacuum Arc Discharge with Hydrogenated Cathode

Pan Dong, Jie Li¹, Jidong Long¹

1. Institute of Fluid Physics

4P16 - INVESTIGATION OF A PULSED PINCH PLASMA FOR THE APPLICATION AS FAIR PLASMA STRIPPER

Marcus Iberler¹, Thilo Ackermann¹, Bernhard Bohlender¹, Konstantin Cistakov¹, Hock Christian¹, Alexander Müller-Münster¹, Xu Ge¹, Joachim Jacoby¹

1. Goethe University Frankfurt

4P17 - Electron Beam Studies and X-ray Spectroscopy of Dense Plasma Focus Experiments

Emil Petkov¹, Stuart Jackson¹, Andrey Beresnyak², Nicholas Quart¹, Arati Dasgupta¹, John Giuliani¹

1. Naval Research Laboratory

2. Consultant to NRL through RSI

4P18 - DETERMINATION OF THE PARTICLES INVOLVED IN ANODE INITIATED VACUUM BREAKDOWN USING A 1-MV, 50-NANOSECOND PULSE GENERATOR

Raymond Allen¹, David Hinshelwood¹, Stuart Jackson¹, Paul Ottinger², Jan Rittersdorf¹, Joseph Schumer¹

1. Naval Research Laboratory

2. Consultant to NRL through Syntek Technologies, Fairfax, VA 22031

4P19 - Effects of the electron beam parameters on hydrodynamic response of aluminum: measurements and simulations.

Béatrice Bicrel¹, Bruno Cassany¹, Alain Galtié¹, Jacques Gardelle¹, David Hébert¹, Nicolas Szalek¹

1. CEA

4P20 - PROPAGATION OF ELECTRON BEAMS IN GAS CELLS

Bruno Cassany¹, David Hébert¹, Jacques Gardelle¹, Patrick Modin¹, Nicolas Szalek¹, Kate Bell², Chris Moore², B Medina², Matt Bettencourt²

1. CEA

2. Sandia National Laboratories

4P21 - Propagation of an intense relativistic electron beam through plasma.

claude fourment¹, Thomas Lahens¹, Rémi Maisonnay², Fabien Dorchies³

1. CEA-CESTA, Le Barp, F-33116 France

2. CEA, DAM, GRAMAT, F-46500 Gramat, France

3. Université de Bordeaux-CNRS-CEA, CELIA, Talence F-33405 France

4P22 - Comparisons of a Quantum Photoemission Model with Three-step Model and Fowler-Dubridge Model

Yang Zhou¹, Peng Zhang¹

1. Michigan State University

4P23 - Design and Development of 1 MV Graded insulator Electron Beam Diode for KALI 30 GW System

Rakhee Menon¹, Senthil K¹, Romesh Chandra¹, Amitava Roy¹, Archana Sharma¹

1. BARC

4P24 - SATURN ACCELERATOR BREMS DIODE SINGLE CATHODE CURRENT SCALING

Nathan Joseph¹, Chris Grabowski¹, Ken Struve¹, Ben Ulmen¹, Andrew

Biller¹, Debrah Kirschner¹

1. Sandia National Laboratories

4P26 - Design and Testing of S-band RBWO for Gigawatt Level Output Microwave Power and CoBRA lens for directive Output

Romesh Chandra¹, Sandeep Singh¹, Amitava Roy¹, Rakhee Menon, Vishnu Sharma¹, Ankur Patel, Senthil Kalyanasundaram, Sabyasachi Mitra, Jayanta Mondal, Archana Sharma

1. Bhabha Atomic Research Centre

4P27 - EMPIRE simulation of the RKA diode into the gas cell

Brandon Medina¹, Chris Moore¹, Matt Bettencourt¹, Keith Cartwright¹, Troy Powell¹, Kate Bell¹, Timothy Pointon¹, Edward Phillips¹, Jacques Gardelle², David Hebert²

1. Sandia National Laboratories

2. CEA

4P28 - EFFECTS OF VACUUM IMPEDANCE CHANGES ON MITL FLOW USING 3D ELECTROMAGNETIC PIC SIMULATIONS

Troy Powell¹, Andrew Biller¹, Keith Cartwright¹, Timothy Pointon¹

1. Sandia National Laboratories

4P29 - PIC simulation of ion beam expansion in a drift cone

configuration for RFEA measurements.

Yao Du¹, Matthew Talley¹, Steven C. Shannon, Alok Ranjan², Peter Ventzek²

1. North Carolina State University

2. Tokyo Electron Limited

4P30 - Improvement of Heaven-I high power excimer laser facility for ICF study

Zhixing Gao¹, Jing Li¹, Zhao Wang¹

1. China Institute of atomic energy

4P31 - Auto-collimation and monitoring of KrF laser beam in the E-beam pumped high power excimer laser facility

Jing Li¹, Fengming Hu¹, Zhixing Gao¹, zhaowang¹

1. China Institute of atomic energy

4P32 - Parametric Study of a Cylindrical Inertial Electrostatic Confinement Fusion Device and its Application

Smruti Ranjan Mohanty¹, Neelanjan Buzarbaruah¹, Darpan Bhattacharjee¹, Donney Jigdung¹, Eiki Hotta²

1. Centre of Plasma Physics- Institute for Plasma Research

2. Tokyo Institute of Technology

4P33 - Development of high-voltage power supply system for upgrading ECH system of the KSTAR

Sunggu Kim¹, Sonjong Wang¹, jongwon Han¹, Mi Joung¹, Inhyuk Rhee¹, Jong gu Kwak¹

1. NFRI (Natal Fusion Research Institute)

4P34 - ECH/EBW Heating System Improvements for the Proto-MPEX Experiment at ORNL

Tim Bigelow¹, John Caughman¹, Rick Goulding¹, Mike Kaufman¹, Ted Biewer¹, Cornwall Lau¹, Jeff Bryan¹, Juan Caneses¹, Juergen Rapp¹

1. Oak Ridge National Laboratory

4P35 - Development of an electron-beam pumped, argon fluoride laser for inertial confinement fusion

Matthew Myers¹, Matthew Wolford¹, Andy Schmitt¹, Tzvetelina Petrova¹, George Petrov¹, John Giuliani¹, Malcom McGeoch², Stephen Obenschain¹

1. U.S. Naval Research Laboratory

2. Plex, LLC

4P36 - Effect of viscosity on propagation of MHD waves in astrophysical plasma

Alemayehu Cherkos¹

1. Addis Ababa University

4P37 - PLASMA FORMATION PECULIARITIES ON DENCE PLASMA FOCUS DEVICES

Anuar Zhukeshov¹, Assem Amrenova², Zhanaly Moldabekov³, Erlan Baltabay³

1. al-Farabi Kazakh national university

2. KazNU al-Farabi

3. Kazakh national university named after al-Farabi

4P38 - Hybrid fluid/kinetic modeling of dense plasma focus devices using USim and VSim

Christine Roark, Peter Stoltz¹, John W. Luginsland², Stuart Jackson³, Andrey Beresnyak³

1. Tech-X Corp.

2. Confluent Sciences

3. US Naval Research Laboratory

4P39 - The Design, Properties, Operation and Modeling of the STPX Plasma Device

R. Williams¹, J. Clark, M. Richardson, S. Evans, D. Ologunogba, A. Aghedo, J. Titus, C. Weatherford

1. Florida A. & M. University

4P40 - Elements of Three Dimensional Modeling of a Pulsed Fission Fusion Hybrid Z-Pinch Target for Advanced Propulsion

Jason Cassibry¹, Robert Adams², Nathan Schilling¹, Kevin Schillo¹, Bryan Winterling¹, Brian Taylor², Steve Howe³

1. University of Alabama in Huntsville
2. NASA Marshall Space Flight Center
3. Howe Industries

4P41 - Overview of the C-2W Formation Section Pulsed Power

Ian Allfrey¹, Andrey Korepanov¹, Yuanxu Song¹, Erik Trask¹, Travis Valentine¹, Will Waggoner¹, Evan Bomgardner¹, Mark Morehouse¹, Kurt Walters¹

1. TAE Technologies, Inc.

4P42 - Monoenergetic ion acceleration from shock waves during self-channeling of laser pulse

Amritpal Singh¹

1. Lyallpur Khalsa College Jalandhar

4P43 - High Intensity Source of XUV Radiation Based on Ferrite Surface Breakdown

Ivan Tilikin¹, Sergey Tzhai¹, Sergey Savinov¹, Tatiana Shelkovenko¹, Alexey Agafonov¹, Sergey Pikuz¹

1. P. N. Lebedev Physical Institute

4P44 - Analysis for the Generation of Extreme Ultraviolet (EUV)/Soft X-Ray Radiations based on Short Pulse Electron Beams

NAVIN KUMAR SHARMA¹, Varun², Udit Narayan Pal³, Y. Choyal¹

1. School of Physics, Devi Ahilya University, Indore-452001, India
2. CSIR- CEERI, Pilani, India and AcSIR, Ghaziabad, India
3. CSIR-Central Electronics Engineering Research Institute, Pilani, India

4P45 - Combustion of electrical underwater exploded aluminum wire

Sergey Efimov¹, Alexander Rososhek¹, Anatoly Goldman¹, Somesh V. Tewari¹, Yakov E. Krasik¹

1. Physics Department, Technion

4P46 - Fine Liquid-Metal Load for Repeatable Applications of Pulsed-power Discharge

Toru Sasaki¹, Ryota Mabe¹, Kazumasa Takahashi¹, Takashi Kikuchi¹

1. Nagaoka University of Technology

4P47 - Study of flat foil explosion at (0.1-5) GA/cm.sq current densities

Tatiana Shelkovenko¹, Sergey Pikuz¹, Ivan Tilikin¹, Egor Parkevich¹, Albert Mingaleev¹, William Potter², Levon Atoyan², David Hammer²

1. P. N. Lebedev Physical Institute
2. Cornell University

4P48 - Effect of energy deposition on structures of exploding Al wires in argon gas

Haoyu Liu¹, Junping Zhao, Qianlong Zhang, Qiaogen Zhang

1. Xi'an Jiaotong University

4P49 - Target machining using datum point tooling for Precision High Energy-Density Liner Implosion Experiment (PHLIX) magnetic implosion system

Franklin Fierro¹, christopher rouscul¹

1. Los Alamos National Laboratory

4P50 - Optimizing Micropinches Produced by Hybrid X-pinches for High Time Resolution X-ray Spectroscopy

Ahmed Elshafiey¹, Jeffrey Musk¹, Sergey Pikuz², Tatiana Shelkovenko², Dave Hammer¹

1. Cornell University
2. P. N. Lebedev Physical Institute

4P51 - Diagnostics to study electrothermal instabilities on MYKONOS

M.W. Hatch¹, T.J. Awe², E.P. Yu², K.C. Yates³, T.M. Hutchinson⁴, B.S. Bauer⁴, K. Tomlinson⁵, M. Gilmore¹

1. University of New Mexico
2. Sandia National Laboratories
3. Los Alamos National Laboratories
4. University of Nevada, Reno
5. General Atomics

4P52 - Experimental measurement of thermal and electrical conductivities in warm dense state generated by pulsed-power discharge for efficient energy conversion of fast ignition

Shingo Kusano¹, Kazumasa Takahashi¹, Toru Sasaki¹, Takashi Kikuchi¹

1. Nagaoka university of technology

4P53 - 2D Simulations of the ns-Laser Shock Peening

Vasily Pozdnyakov¹, Jens Oberrath¹

1. Institute of Product and Process Innovation, Leuphana University of Lueneburg, Germany

4P54 - Circuit Simulation with nonlinear magnetic core of a New Linear Transformer Driver Stage

Wei Zhenyu¹, Wang Yu¹

1. Xi'an Jiaotong University

4P55 - SIMULATIONS OF NOZZLE GAS FLOW AND GAS-PUFF Z-PINCH IMPLOSIONS WITH MAGNETIC FIELDS IN THE WEIZMANN Z-PINCH

Varun Tangri¹, John Giuliani², Guy Rosenzweig³, Tal Queller⁴, Yitzhak Maron⁴

1. Research Support Instruments
2. Plasma Physics Division, Naval Research Laboratory
3. Massachusetts Institute of Technology
4. Weizmann Institute of Science

4P56 - Study on Fault Conditions of a Single Stage of Fast Linear Transformer Drivers

Zhenyu Wei¹, Yu Wang¹, Xu He¹, Qi Shi¹, Qiangfeng Luo¹

1. Xi'an Jiaotong University

4P57 - ABLATION BEHAVIORS AND IMPLOSION DYNAMICS OF PRECONDITIONED TWO-WIRE Z-PINCH

Yihan Lu¹, Jian Wu¹, Huantong Shi¹, Daoyuan Zhang¹, Ziwei Chen¹, Xingwen Li¹, Shenli Jia¹, Aici Qiu¹

1. Xi'an Jiaotong University

4P58 - Understanding electrothermal instability growth by comparing z-pinches with engineered defects to 3D-MHD simulations

Thomas Awe¹, Edmund Yu¹, Trevor Hutchinson², Bruno Bauer², Kurt Tomlinson³, David Yager-Elorriaga¹, Maren Hatch⁴, Gabriel Shipley¹, Brian Hutsel¹

1. Sandia National Laboratories
2. University of Nevada, Reno
3. General Atomics
4. University of New Mexico

4P59 - Investigating the Electrothermal Instability in Pulsed Power Solid Liner Implosions Using Extended Magnetohydrodynamics

Robert Masti¹, Bhuvana Srinivasan¹, Jacob King², Peter Stoltz², David Hansen³, Eric Held³

1. Virginia Tech
2. Tech-X Corporation
3. Utah State University

4P60 - Millimeter-wave Radiometry and Coherent Thomson Scattering for Studies of Power Balance in COBRA

Thomas Schmidt¹, M.W. Hatch¹, M. Gilmore¹, E. Schamiloglu¹
1. *University of New Mexico*

4P61 - Magnetic Field Diffusion into Al-6061 Rod under Megaampere Current Drive

Seth Kreher¹, Bruno Bauer¹, Chris Rousculp², Trevor Hutchinson¹, Irv Lindemuth²

1. *University of Nevada, Reno*
2. *Los Alamos National Laboratory*

4P62 - Electrostatic gyrokinetic simulations of sheared Z-pinch

Vasily Geyko¹, Mikhail Dorf¹, Justin Angus¹

1. *Lawrence Livermore National Laboratory*

4P63 - Measurements of the Magnetic Rayleigh Taylor Instability in Centimeter-Scale Magnetized Plasma Bubbles

R. H. Dwyer¹, D. M. Fisher¹, M. Gilmore¹

1. *University of New Mexico*

4P64 - Zeeman Spectroscopy Studies in Ar Gas Puff Z-Pinches on 1-MA COBRA

Niansheng Qi¹, Jacob Banasek¹, Sophia Rocco¹, E. Sander Lavine¹, William Potter¹, John Greenly¹, Dave Hammer¹, Bruce Kusse¹

1. *Cornell University*

4P65 - X-ray Spectroscopy and Total Yield Measurements on a Microsecond X-Pinch

G.S. Jaar¹, R.K. Appartaim¹

1. *Florida A&M University*

4P66 - Initial Conditions & Plasma Evolution in the Hawk Dense Plasma Focus

Joseph Engelbrecht¹, Stuart Jackson¹, Bruce Weber¹, Joseph Schumer¹, Aliaksandr Mamonau², Daniel Klir³, Karel Rezac³, Jakub Cikhardt³

1. *U.S. Naval Research Laboratory*

2. *RSI*

3. *CTU*

4P67 - Extending Experimental and Diagnostics Capabilities on the 1-MA, 100-ns MAIZE Pulsed Power Facility

Akash Shah, Paul Campbell¹, Stephanie Miller¹, Jeff Woolstrum¹, Brendan Sporer¹, Nick Jordan¹, Ryan McBride¹

1. *University of Michigan*

4P68 - Faraday-Rotation fiber-based gauge for current measurement in pulse-power systems

Kobi Cohen¹, Yahel Horowitz¹, Gal Goldstein¹, Itay Gissis¹

1. *Rafael Advanced Defense Systems LTD.*

4P69 - Characterization of Neutron Production in Deuterium Z-pinch Experiments at Current of 3 MA

Jakub Cikhardt¹, Daniel Klir¹, Karel Rezac², Alexander V. Shishlov², Rustam K. Cherdizov², Balzhima Cikhardtova¹, Gennady N. Dudkin³, Vladimir A. Kokshenev², Kravarik Jozef¹, Pavel Kubes¹, Vojtech Munzar¹, Vladimir N. Padalko³, Nikolai A. Ratakhin², Karel Turek⁴, Valery A. Varlachev³

1. *Czech Technical University in Prague*

2. *Institute of High Current Electronics, SB RAS*

3. *National Research Tomsk Polytechnic University*

4. *Nuclear Physics Institute, Czech Academy of Sciences*

4P70 - Potential of dielectrics at electron beam irradiation in medium vacuum

Denis Zolotukhin¹, Victor Burdovitsin², Efim Oks²

1. *The George Washington University*

2. *Tomsk State University of Control Systems and Radioelectronics*

4P71 - Beam-plasma discharge for deposition of carbon-containing coatings inside dielectric cavity

Denis Zolotukhin¹, Yury Yushkov², Andrey Tyunkov², Efim Oks²

1. *The George Washington University*

2. *Tomsk State University of Control Systems and Radioelectronics*

4P72 - CORROSION RESISTANCE OF CARBON STEEL COATED WITH A SiOX-ORGANOSILICON LAYER

Rita de Cássia Cipriano Rangel¹, Elidiane Cipriano Rangel¹, Nilson Cruz¹

1. *Technological Plasma Laboratory, Paulista State University - UNESP, Science and Technology Faculty, Sorocaba, SP, Brazil*

4P73 - EFFECT OF ELECTRON BEAM IRRADIATION ON THE SURFACE FLASHOVER OF POLYMERIC MATERIALS IN VACUUM

Chengyan Ren¹, Duo Hu¹, Yangwei Li¹, Hao Sun¹, Tao Shao¹, Ping Yan¹

1. *Key Laboratory of Power Electronics and Electric Drive, Institute of Electrical Engineering, Chinese Academy of Sciences*

4P74 - Synthesis of water based Al2O3 nanofluids using laser induced plasma

Magesh Rajan¹

1. *South Dakota School of Mines and Technology*

4P75 - Laser-driven acceleration of titanium ions from ultrathin targets and the calibration of the ion beam diagnostic

Joseph Strehlow, Jun Li¹, Pierre Forestier-Colleoni², Christopher McGuffey², Tyler Daykin³, Edward McCary⁴, Mathieu Bailly-Grandvaux²,

Jonathan Peebles⁵, Guilhem Revet⁶, Shu Zhang², Todd Ditmire⁴, Michael Donovan⁴, Gilliss Dyer⁷, Julien Fuchs⁶, Erhard Gaul⁴, Joseph Gordon⁴, Andrew Higginson⁸, Gregory Kemp⁸, Mikael Martinez⁴, Harry McLean⁸, Michael Spinks⁴, Hiroshi Sawada³, F. Beg⁹

1. *Los Alamos National Laboratory*

2. *UCSD*

3. *UNR*

4. *UT Austin*

5. *LLE*

6. *LULI*

7. *SLAC*

8. *Lawrence Livermore National Laboratory*

9. *University of California, San Diego*

4P76 - Topanga: A Modern Code for E3 EMP Simulations

Bruce Cohen¹, Larson David¹, Mikhail Belyaev¹, Vincent Thomas²

1. *Lawrence Livermore National Laboratory*

2. *Los Alamos National Laboratory*

Friday AM

Session: 7Plenary

Plenary Fri - Bruce Cohen (2018 Charles K. Birdsall Award)

Friday 8:30 Room: Seminole Ballroom

Session Chair: David Wetz

Perspectives on Research in Computational Plasma Physics with Diverse Applications to Experiments

Bruce Cohen¹

1. Lawrence Livermore National Laboratory

Session: 9A

1.6 Plasma Chemistry

Friday 10:00 Room: Space Coast I-III

Session Chair: Jared Miles

10:00 - 9A1 - Reactivity Characterization Due to Ozone Generation by Low-Temperature Plasma Discharges at Engine Relevant Densities

Sayan Biswas¹, Isaac Ekoto¹, Riccardo Scarcelli²

1. Sandia National Laboratories

2. Argonne National Laboratory

10:15 - 9A2 - ATOMIC HYDROGEN GENERATION IN THE IONIZING PLASMA REGION AND EFFLUENT OF A HELIUM-WATER ATMOSPHERIC PRESSURE PLASMA JET BY TWO-PHOTON ABSORPTION LASER INDUCED FLUORESCENCE (TALIF)

Yuanfu Yue¹, VSSK Kondeti¹, Peter Bruggeman¹

1. University of Minnesota

10:30 - 9A3 - (invited) High-temperature uranium plasma chemistry

S. S. Harilal¹, E. Kautz¹, B. E. Bernacki¹, M C Phillips², P. Skrodzki³, M. Burger³, I. Jovanovic³

1. Pacific Northwest National laboratory

2. University of Arizona

3. University of Michigan

11:00 - 9A4 - Mapping of 2-D plasma-induced fluid flow using particle image velocimetry

Janis Lai¹, John Foster¹

1. University of Michigan

11:15 - 9A5 - (invited) The influence of microwave pulse length and repetition rate on laminar burning velocity in lean methane-air flames

Tomas Hurtig¹, Niklas Zettervall¹, Christer Fureby¹, Andreas Ehn², Elna Nilsson², Hanna Sundberg¹

1. Division of Defence & Security, Systems and Technology, FOI – Swedish Defence Research Agency

2. Combustion Physics, Lund University

11:45 - 9A6 - Species Dynamics in Ar/H Plasma Supporting Actinometry Diagnostics Correlation Experiments

Robert Terry¹

1. Independent Research Professional, LLC

Session: 9B

2.2 Fast-Wave Devices and 2.4 Vacuum Microelectronics and THz Devices

Friday 10:00 Room: Gold Coast I/II

Session Chair: Kimberley Nichols and Bruce Carlsten

10:00 - 9B1 - (invited) High-Power Testing of W-Band Accelerator Cavities

Mohamed Othman¹, Julian Picard², Samuel Schaub², Valery Dolgashev¹, Andrew Haase¹, Sudheer Jawla², Jeff Neilson¹, Bruno Spataro³, Sami Tantawi¹, Richard Temkin², Emilio Nanni¹

1. SLAC National Accelerator Laboratory

2. Massachusetts Institute of Technology

3. INFN-LNF

10:30 - 9B2 - Study of Electron Optics System for a 300 GHz Sheet Electron Beam Traveling-Wave Tube

Wonjin Choi¹, Ingeun Lee¹, Jinwoo Shin², EunMi Choi¹

1. Ulsan National Institute of Science and Technology

2. Agency for Defense Development

10:45 - 9B3 - (invited) EXPERIMENTAL CHARACTERIZATION OF A W-BAND PHOTONIC INTERACTION KLYSTRON

Jacob Stephens¹, Guy Rosenzweig¹, John Tucek², Mark Basten², Kenneth

Kreischer², Michael Shapiro¹, Richard Temkin¹

1. Massachusetts Institute of Technology

2. Northrop-Grumman Systems Corp.

11:15 - 9B4 - Development and testing of the 190 GHz dual mode OAM gyrotron with axial output

Ashwini Sawant¹, Ingeun Lee¹, Mun Seok Choe¹, EunMi Choi¹

1. Ulsan National Institute of Science and Technology (UNIST)

11:30 - 9B5 - Experimental Performance Evaluation of a 272 GHz Energy-Recirculating Folded Waveguide Traveling-Wave Tube Oscillator

Ingeun Lee¹, Wonjin Choi¹, Ashwini Sawant¹, Mun Seok Choe¹, Jinwoo

Shin², EunMi Choi¹

1. Ulsan National Institute of Science and Technology (UNIST)

2. ADD

Session: 9C

4.7 Plasma Material Interactions

Friday 10:00 Room: Gold Coast III/IV

Session Chair: John Foster

10:00 - 9C1 - (invited) Theory for Self-organized Patterns on Liquid Anodes

Paul Rumbach¹, David B. Go¹

1. University of Notre Dame

10:30 - 9C2 - OLMAT: A NEW FACILITY FOR THE STUDY OF MATERIALS EXPOSED TO PLASMA AND LASER INDUCED HIGH THERMAL LOADS AT THE LABORATORIO NACIONAL DE FUSION

Francisco Tabares¹, David Tafalla¹, Daniel Alegre¹, Eider Oyarzabal¹,

Macarena Liniers¹, Alfonso Soletto¹

1. CIEMAT

10:45 - 9C3 - Diagnostic of temporal and spatial evolution of nanosecond microwave-driven plasma

Chao Chang¹, Yindong Huang¹

1. Xi'an Jiaotong University

11:00 - 9C4 - Effect of Nano-Al₂O₃ Doping on Erosion Resistance of Tungsten-copper Electrode under 100 kA Pulsed Arc

shuai ren¹, Li Lee¹

1. Huazhong University of Science and Technology

11:15 - 9C5 - RF plasma based Nanostructurization of Tungsten for Plasma Facing Component Material Applications

Mayank Mishra¹, Rohit Medwal¹, J. Q. Pan², N. L. Wang², J. H. Xu², Paul Lee¹, Rajdeep Singh RAWAT¹, Joseph Vimal Vas¹

1. Natural Sciences and Science Education, National Institute of Education, Nanyang Technological University
2. Hwa Chong Institute

11:30 - 9C6 - POTOMAC: towards a realistic secondary and backscattered emission model for the multipactor

Adrien Plaçais¹, Mohamed Belhaj², Julien Hillairet¹, Jérôme Puech³

1. CEA Cadarache

2. ONERA

3. CNES

11:45 - 9C7 - CHARACTERIZATION OF PLASMA IN CONTACT WITH LIQUID STATE MATERIALS WITH USING OPTICAL EMISSION SPECTROSCOPY

YEONGWOO SON¹, Winfrey Leigh¹

1. Pennsylvania State University

Session: 9D

5.5 Insulation and Dielectric Breakdown II

Friday 10:00 Room: Seminole A/B

Session Chair: Guy Rosenzweig

10:00 - 9D1 - (invited) Vacuum Insulator Flashover of Ultra High Vacuum Compatible Insulators

Josh Leckbee¹, Sean Simpson¹, Derek Ziska¹, Bill Bui¹

1. Sandia National Laboratories

10:30 - 9D2 - Vacuum Outgassing Study of Candidate Materials for Next Generation Pulsed Power and Accelerators: Improving the Boundary Conditions for Molecular Flow Simulations

Sean Simpson¹, Ronald Goeke¹, Kenneth Coombes¹, Karen Dezetter¹, Owen Johns¹, Josh Leckbee¹, Dan Nielsen¹, Matthew Sceiford¹

1. Sandia National Laboratories

10:45 - 9D3 - ROLE OF TEMPERATURE IN ELECTRICAL BREAKDOWN AT TRIPLE JUNCTIONS

Giacomo Galli¹, Michael J. Kirkpatrick², Emmanuel Odic², Philippe Dessante², Philippe Molinié², Hassen Hamrita³

1. Centralesupelec

2. GeePs — Group of electrical engineering - Paris, UMR CNRS 8507, CentraleSupélec, Univ. Paris-Sud, Université Paris-Saclay, Sorbonne Université

3. CEA, LIST, Sensors and Electronic Architectures Laboratory

11:00 - 9D4 - Electron Losses in Super-insulated Magnetically Insulated Transmission Lines

Rick Spielman¹, Adam Sefkow

1. University of Rochester, Laboratory for Laser Energetics

11:15 - 9D5 - FUNDAMENTAL STUDY OF UNIPOLAR AND RF BREAKDOWN IN ATMOSPHERIC AIR

Ivan Aponte¹, Benedikt Esser¹, James Dickens¹, John Mankowski¹, Andreas Neuber¹

1. Texas Tech University

11:30 - 9D6 - High Field RF Breakdown of Pressurized SF₆

Melvin Powell, Zach Shaw, James Dickens¹, John Mankowski¹, Andreas Neuber¹

1. Texas Tech University

11:45 - 9D7 - Effect of Relative Humidity on the Flashover Strength of Solid Insulation

Ruairidh Macpherson¹, Mark Wilson¹, Igor Timoshkin¹, Scott MacGregor¹,

Martin Given¹

1. University of Strathclyde

Session: 9E

6.1 Nonequilibrium Plasma Applications III

Friday 10:00 Room: Seminole C

Session Chair: Abdel-Aleam Mohamed

10:00 - 9E1 - (invited) Microplasma Photonic Crystals Beyond Three-Dimensions

Wenyuan Chen¹, Peter P. Sun¹, Runyu Zhang¹, Paul V. Braun¹, J. Gary

Eden¹

1. University of Illinois Urbana Champaign

10:30 - 9E2 - Effect of Plasma Modified BN on AC Breakdown Strength of BN/Epoxy Resin Nanocomposites

Yan Mi¹, Jiayi Gou¹, Lu Gui¹, lulu Liu¹, Jiacheng Chen¹

1. Chongqing University

10:45 - 9E3 - The effect of applied voltage on the laminar-turbulent transition in atmospheric- pressure plasma jet

Abdel-Aleam Mohamed¹, Sahar Fadhalmawla¹, Jamal Almarashi¹

1. Taibah University

11:00 - 9E4 - Decomposition of 2,4-dichlorobenzonic acid in hydroponic nutrient solution using discharge inside bubble

Katsuyuki Takahashi¹, Rikuya Oikawa¹, Syuhei Kawamura¹, Koichi

Takaki¹, Naoya Satta¹, Takuya Fujio²

1. Iwate University

2. Iwate Agricultural Research Center

11:15 - 9E5 - Inception Voltage for Corona-like Discharges Generated with 100-ns High Voltage Pulses in Water Depending on Pulse Shape and Water Conductivity

Raphael Rataj¹, Hans Höft¹, Juergen F. Kolb¹

1. Leibniz Institute for Plasma Science and Technology (INP)

11:30 - 9E6 - EFFECT OF SUBSTRATES ON A NANOSECOND HELIUM PLASMA JET IMPINGING ON WATER, SALINE OR PIG SKIN

shutong song¹, Siqi Guo¹, Chunqi Jiang¹

1. Old Dominion University

11:45 - 9E7 - Dynamic Band-Pass and Band-Stop Filters Realized with Multidimensional Microplasma Photonic Crystals

Peter P. Sun¹, Wenyuan Chen¹, Zhang Runyu¹, Zhihu Liang², Paul V.

Braun¹, J. Gary Eden¹

1. University of Illinois at Urbana-Champaign

2. Xi'an Jiaotong University

Session: 9F

9.3 Pulsed Power Diagnostics

Friday 10:00 Room: Seminole D/E

Session Chair: George Laity

10:00 - 9F1 - (invited) Spatially and temporally resolved

measurements of load current delivery on the Z Pulsed Power Facility using the Z Line VISAR diagnostic

Clayton Myers¹, David Bliss¹, Peter Celliers², Phil Datte², David Erskine², Mark Hess¹, Michael Jones¹, Thomas Awe¹, Duane Fratantuono², James Hammer², Chris Jennings¹, Keith LeChien², Kumar Raman², Paul Springer²
1. Sandia National Laboratories
2. Lawrence Livermore National Laboratory

10:30 - 9F2 - Electro-Optical Measurement of Electric Fields for Pulsed Power Systems

Israel Owens¹, Chris Grabowski¹, Nathan Joseph¹, Sean Coffey¹, Benjamin Ulmen¹, Debrah Kirschner¹, Kirk Rainwater¹, Ken Struve¹
1. Sandia National Laboratories

10:45 - 9F3 - HIGH CURRENT SENSING THROUGH FARADAY ROTATION OF POLARIZED LIGHT OF VARYING WAVELENGTHS IN FIBERS III

Israel Owens¹, Sean Coffey¹, T. Chris Grabowski¹
1. Sandia National Labs

11:00 - 9F4 - Upgrade of the Spallation Neutron Source Injection and Extraction Kicker Pulse Verification Systems

Ben Morris¹, Doug Curry¹, Robert Saethre², Eric Breeding¹
1. ORNL
2. Oak Ridge National Lab

11:15 - 9F5 - CYGNUS SYSTEM TIMING

Eugene Ormond¹, Keith Hogge², Michael Garcia¹, Percy Amos², John Smith³, Martin Parrales¹, Michael Misch², Mohammed Mohammed², Hoai-Tam Truong²
1. Sandia National Laboratories
2. Mission Support and Test Services
3. Los Alamos National Laboratory

11:30 - 9F6 - CYGNUS PERFORMANCE ON SEVEN SUBCRITICAL EXPERIMENTS

John Smith¹, Michael Garcia², Eugene Ormond², Martin Parrales², Paul Flores³, Keith Hogge³, Steven Huber³, Michael Misch³, Jesus Perez³, Thomas Romero³, Hoai-Tam Truong³
1. Los Alamos National Laboratory
2. Sandia National Laboratories
3. Mission Support and Test Services

11:45 - 9F7 - Flash lamps current monitoring using optically insulated FPGA technology under harsh pulsed power environment

Jean Marie Larbaig¹, Robert Ruscassie¹, Baptiste Cadilhon², Jean Marc Dienot¹, Anca Petre¹
1. Univ Pau & Pays Adour/ E2s Uppa, SIAME EPHT
2. CEA

Friday PM

Session: 5P

Poster - Compact and Explosive Pulsed Power and Pulsed Power Systems

Friday 13:30 Room: Universal Center

Session Chair: Brett Huhman and Carlos Martins

5P01 - High Speed Imaging of Polymer Bonded Explosives under Mechanical Stresses

Ryan Lee¹, Austin Hewitt², Raimi Clark¹, Tyler Buntin¹, David Barnett¹,

James Dickens¹, W. A. Harrison³, E. Tucker⁴, Andreas Neuber¹, John Mankowski¹

1. Texas Tech University
2. Center for Pulsed Power and Power Electronics (P3E)
3. CNS Pantex
4. Mission Engineering Development Group

5P02 - Probability of PBX Detonation Due to Impact Forces and Surface Grit

Austin Hewitt¹, W. A. Harrison², E. Tucker³, Raimi Clark¹, Tyler Buntin¹, David Barnett¹, James Dickens¹, Andreas Neuber¹, John Mankowski¹, Ryan Lee¹
1. Texas Tech University
2. CNS Pantex
3. Mission Engineering Development Group

5P03 - Numerical investigation of the plasma load matching with the current sources based on explosive magnetic generator

Valentina Zavalova¹, Mikhail Shurupov¹, Andrey Mashtakov¹, Andrey Gusev¹, Alexander Kozlov¹, Nina Shurupova¹
1. Joint Institute for High Temperatures of the Russian Academy of Sciences

5P04 - An ultra-portable X-pinch driver for hard X-ray diagnostics

Simon Bland¹, Nikita Chaturvedi², Andreas Georgakis¹, Theodore Gheorghiu¹, Hannah Horton³, Philip Moloney¹, Sergei Pikuz⁴, Tania Shelkovenko⁴, Seophine Stanislaus¹, Savva Theocharous¹, Christopher Wilson¹
1. Imperial College London
2. First Light Fusion
3. Cambridge University
4. Cornell University

5P05 - High-Energy Electric Gun for Exploding Foil Initiators

M. A. Rhodes¹
1. Lawrence Livermore National Labs

5P06 - Study on the restrike characteristics of metal electrical explosion

YU Hong-Xin, RAN Han-Zheng, TAN Rong-Rong, ZHONG Hua

5P07 - Pulsed power supply for 2 kA, 5 MeV linear induction accelerator

Aleksandr Akimov¹, Petr Bak¹, Kirill Zhivankov¹, Michail Egorychev¹, Aleksey Panov¹, Aleksey Pachkov¹, Yaroslav Kulenko¹, Andrey Eliseev¹
1. BINP

5P08 - Advanced Circuit Modeling of the PHELIX Pulsed Power System

Lee Merrill¹, Joseph Bradley III¹, Christopher Rousculp¹, David Oro¹
1. Los Alamos National Laboratory

5P09 - TECHNICAL DEVELOPMENT AND FIRST RESULTS OF ISENTROPIC COMPRESSION EXPERIMENTS ON THE ICE-16 TEST FACILITY

Francis Lassalle¹, Frédéric Zucchini¹, Thierry Chanconie¹, Philippe Combes¹, David Sol¹, Régis Lample¹, Bernard Roques¹, Georges Gaillard¹
1. CEA Gramat

5P10 - A 30 kV and High Avalanche Bulk Gallium Arsenide Semiconductor Switch

Cheng Ma, Wei Shi¹, Hong Liu¹, Lei Hou¹
1. Xi'an University of Technology

5P11 - Design and experiment of a new type of environmentally friendly intelligent electromagnetic pulse welding system

Dan Chen, Xuyu Liu, Si Wu

5P12 - Cinco: A Compact High-Current Driver for High Energy

Density Physics

Rick Spielman¹, David Reisman², Travis Bejines¹

1. Idaho State University

2. Sandia National Laboratories

5P13 - OPTIMIZING COMPACT MARX GENERATOR NETWORKS FOR CHARGING CAPACITIVE LOADS: SEQUENTIAL TRIGGERING AND PRACTICAL CONSIDERATIONS

C. Jerald Buchenauer¹, J. Cameron Pouncey¹, Jane Lehr¹

1. Department of Electrical and Computer Engineering, University of New Mexico

5P14 - Performance Analysis of a Compact Pulse Forming Stage and a Microstrip Type Balun for High Power Electromagnetics Applications

Ozge Eren Demirgoz¹

1. Middle East Technical University

5P15 - Design of Modular High-Voltage Nanosecond Pulse Generator with Adjustable Rise/Fall Time Based on MMC Topologies

Yan Mi¹, Hui Wan¹, Lulu Liu¹, Jiayi Gou¹, Jiacheng Chen¹

1. Chongqing University

5P16 - The Optimization of High Voltage Nanosecond Pulse Generator with Auxiliary Trigger Circuit

Saikang Shen, Jiaqi Yan¹, Yanan Wang¹, Lanxi Li¹, Kaisheng Mei, Weidong Ding¹

1. Xi'an Jiaotong University

5P17 - Characterization of Compact Short Pulse Power Supply for Non-Thermal Plasma Discharge Applications

Ajeet Dhakar¹, S. K. Rai², V. K. Saini¹, S. K. Sharma⁴, Udit Narayan Pal¹

1. CSIR-Central Electronics Engineering Research Institute (CEERI), Pilani, Rajasthan-333031, India

2. B.K. Birla Institute of Engineering & Technology, Pilani-333031, Raj. India

4. Energetic & Electromagnetic Division, Bhabha Atomic Research Center, Visakhapatnam-530012, A.P. India

5P18 - New Design for Compact High Voltage Power Supply for Pulsed Power Applications

Howard Sanders¹

1. Sanders Pulsed Power LLC

5P19 - Ultra-High Voltage NanoDielectric Capacitor Development, and Testing for Compact Pulsed Power

Randy Curry¹, Luke Brown¹, Sarah Moulder¹, Samuel Dickerson¹, J.

Thomas Camp², Aaron Maddy¹

1. University of Missouri

3. Naval Surface Warfare Center, Dahlgren Division

5P20 - Hard X-ray and Proton Radiography of Underwater Electrical Wire Explosion

Alexander Müller-Münster¹, Marcus Iberler¹, Joachim Jacoby¹, Paul Neumayer², Dmitry Varentsov²

1. Goethe University Frankfurt

2. GSI Darmstadt

5P21 - All-solid-state bipolar high voltage nanosecond pulse adder with output parameters adjustable

Yonggang Wang¹, Yifan Huang¹, Min Jiang¹

1. Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences

5P22 - Compact, Mobile, Automated Pulser Designed for Ease of Use

Wayne Cox¹, Stephen Bayne²

1. Texas Tech University

2. Center for Pulsed Power and Power Electronics, Department of Electrical and Computer Engineering, Texas Tech University

5P24 - Indigenously developed pulsed power sources for nonequilibrium plasma applications

Suryakant Gupta¹, Keena Kalaria¹, Naresh Vaghela¹

1. Institute for plasma research

5P25 - Design of a Compact Magnetically Switched 200-kV, 4-kA, Pulse Forming Line Marx Generator

James Schrock¹, Susan Heidger², Brad Hoff, Jerald Parker³, Joshua

Gilbrech³, ROBERT RICHTER-SAND³, Paul LePell³

1. AFRL

2. U.S. Air Force Research Laboratory

3. Leidos, Inc.

5P26 - Repetitive Triboluminescence X-Ray Source by Peeling Tapes

Seizo Furuya¹

1. Saitama Institute of Technology

5P27 - Pulsed Power Discharge Under a Highly Capacitive Load

James Allen¹, Marcus Ashford², Jennifer Zirnheld², Kevin Burke³

1. Primary Contributor

2. Secondary Contributor

3. Faculty Advisor

5P28 - Sustaining High Power RF Signal Generation in a Positive Feedback Network

A N M Wasekul Azad¹, Faisal Khan¹

1. University of Missouri-Kansas City

5P29 - Triggered gas switches for use in capacitor-switch assemblies for LTD technology

Ivan Lavrinovich¹, Denis Molchanov¹, D. Rybka¹, Semen Vagaytsev¹,

Aleksander Erfort¹, Anton Artemov¹, Aleksander Lensky¹, Alexander

Zhigalin¹

1. Institute of High Current Electronics SB RAS, Tomsk, Russia

5P30 - Concept designs of a compact LTD generator with a pulse rise time of 100 ns.

Ivan Lavrinovich¹, Denis Molchanov¹, D. Rybka¹, Semen Vagaytsev¹,

Aleksander Erfort¹, Anton Artemov¹, Aleksander Lensky¹, Alexander

Zhigalin¹

1. Institute of High Current Electronics SB RAS, Tomsk, Russia

5P31 - IMPROVEMENT OF THE SWITCHES RELIABILITY ON THE CEA 1MV LTD

Arnaud LOYEN¹, Stéphane LACOSTE¹, Francis LASSALLE¹, Bernard

ROQUES¹, Frederic ZUCCHINI¹, Sandra RITTER¹, Martial TOURY¹

1. CEA

5P33 - Linear Transformer Driver for HEDP experiments at UC San Diego

Nicholas Aybar¹, Fabio Conti¹, Julio Valenzuela, Jeffrey Narkis¹, Vladimir

Fadeev¹, Alejandro Baez¹, Reisman David, Farhat Beg¹

1. UC San Diego

5P34 - PULSE POWER SYSTEM

Peter Stone

5P35 - Design of a Pulsed Alternator to drive a Single Stage Induction Coilgun

Apurva Kulkarni¹, M. Joy Thomas¹, Ashish Sharma¹, Ranashree Ram²

1. Indian Institute of Science

2. IISc Bangalore

5P36 - Deceleration after acceleration of armature that passes through stator coil during coil gun injection

Yongkyu Lee, Huimin Kim, Myunggeun Song

5P37 - Experiments and Analysis of Down-slope Low-voltage Transition in C-type Solid Armature Railgun

Lixue Chen

5P38 - Utilization and Optimization of Superconducting Coil Parameters in Electromagnetic Launcher Systems

Hakan Polat¹, Doğa Ceylan², Ozan Keysan²

1. Middle East Technical University/ Electrical and Electronics En
2. Middle East Technical University

5P39 - Velocity In-bore Test Comparison Based on Magnetic Probe and Optical Probe in Electromagnetic Launch

Wang Zhenchun, Yuting Zhang¹, Bao Zhiyong, Dong Zonghao

1. Yanshan University

5P40 - Design and Analysis of the Electromagnetic Interceptor for the Anti-unmanned Aerial Vehicle

Chunyan Liang¹, Hongjun Xiang², Xichao Yuan, Qing-ao Lv²

1. Army Engineering University
2. Shijiazhuang Mechanical Engineering College

5P41 - Design of A Vehicular 200-kJ Pulsed Power System for Electrothermal-Chemical Launch Experiment

LIN XU, JUN ZHANG, HAO WANG, JIANNIAN DONG, HAO SUN

5P42 - The Development of Capacitive Nonlinear Transmission Lines and Their Performance Limits

Elizete Gonçalves Lopes Rangel¹, Jose Rossi², Joaquim Jose Barroso³,

Fernanda Sayuri Yamasaki², Leandro Carvalho Silva¹, Lucas Reis Raimundi², Lauro Silva Neto⁴, Edl Schamiloglu⁵

1. INPE
2. National Institute for Space Research
3. Aeronautics Institute of Technology
4. Federal University of São Paulo
5. University of New Mexico

5P43 - Dynamics of Melting Solenoids for Laser Experiments on the National Ignition Facility

Phil Arnold¹, Evan Carroll¹, Steve Hawkins¹, Glen James¹, Brad Pollock¹, Mark Rhodes¹, Jay Javedani¹, John Moody¹, Anthony Johnson, Bruno Le Galloudec¹

1. Lawrence Livermore National Laboratory

5P44 - Development of an RF circuit amplifier fed by a low power nonlinear transmission line

Lauro Paulo Silva Neto¹, Henrique Monteiro Moraes¹, Jose Rossi², Joaquim Barroso³, Elizete Rangel⁴, Arlindo Conceição¹

1. Federal University of São Paulo
2. National Institute for Space Research
3. Technological Institute of Aeronautics
4. National Institute for Space Research Brazil

5P45 - Implementation of Line Type High Voltage Nanosecond Rectangular Pulse Generator with Adjustable Pulse Widths for Liquid Discharge Applications

Amol Deshpande¹, Uttam Goswami², G Veda Prakash³, Raj Singh², Anitha V P²

1. Institute for Plasma Research, Gandhinagar, India.;Sardar Patel Institute of Technology, Mumbai, India.
2. Institute for Plasma Research, Gandhinagar, India.
3. Center for Energy Studies, Indian Institute of Technology, New Delhi, India

5P46 - Pulsed IOT Power system for Medical Applications

Francisco Cabaleiro Magallanes¹, Sylvain Candolfi, Andres Sanchez

1. A.D.A.M. Applications of Detectors and accelerators to Medicine
2. Ministere des affaires etrangeres et europeennes (FR)

5P47 - Modular, High-Frequency, High-Voltage Inductive Adders

Chris Bowman¹, Tim Ziemba, Kenneth E. Miller², James Prager¹, Nick Yang²

1. Eagle Harbor Technologies, Inc.
2. Eagle Harbor Technologies, Inc

5P48 - High Average Power Nanofarad-Scale Capacitor Charging on Sub-Microsecond Timescales

Tim Ziemba, James Prager¹, Kenneth E. Miller¹, Chris Bowman¹, Ilia Slobodov¹, Morgan Quinley¹

1. Eagle Harbor Technologies, Inc.

5P49 - Solid-State LTD Module Using SiC-MOSFETs

Yu Feng¹, Taichi Sugai¹, Akira Tokuchi¹, Weihua Jiang¹

1. Nagaokaut University of Technology

5P50 - A Means of Producing Precisely Delayed High Peak Power Optical Pulses with Low Jitter

Maxwell Fazekas¹, Scott D. Kovaleski

1. University of Missouri

5P51 - Present Status of the Chopper-type Marx Modulator Development at KEK

Hiroimitsu Nakajima¹, Mitsuo Akemoto¹, Masato Kawamura¹, Takuya

Natsui¹, Weihua Jiang², Taichi Sugai², Akira Tokuchi³, Yo Sawamura³

1. High Energy Accelerator Research Organization
2. Nagaoka University of Technology
3. Pulsed Power Japan Laboratory Ltd.

5P52 - Investigations on an optimized current pulse for pulsed flash lamps dedicated to high energy laser in repetitive mode.

Baptiste CADILHON¹, Robin VERGE², Antoine de Ferron³, Thierry REESS⁴, Laurent PECASTAING⁴, Gaël PAQUIGNON¹, Luc Voisin⁵

1. CEA CESTA
2. Univ Pau & Pays Adour/ E2S UPPA, SIAME Laboratory
3. Pau University
4. UNIV PAU & ADOUR, Laboratoire des Sciences de l'Ingénieur Appliquées à la Mécanique et au Génie Electrique, IPRA, EA4581, 64000, Pau, France
5. CEA

5P53 - Generation and propagation of nitrogen laser pulses of long (< 3 μs) duration in air

Mladen M. Kekez¹

1. High-Energy Frequency Tesla Inc.

5P54 - Power supplies for non-thermal atmospheric pressure plasma generation

Alexander Gutsol¹, Yuriy Mirochnik¹, Volodymyr Tymoshuk¹

1. LDS Technology Consultants, Inc.

5P55 - ESS Klystron Production Test Stand

Michael Kempkes¹, Marcel Gaudreau¹, Rebecca Simpson¹, Ian Roth¹, Noah Silverman¹

1. Diversified Technologies, Inc.

5P56 - A METHOD OF ENERGY RECOVERY SWITCHING FOR PULSED POWER USING SIC-MOSFET

Tomohiko Yamashita¹, Ryo Fujimoto¹, Toru Tagawa¹, Kunihiko Sakamoto, Takashi Sakugawa²

1. Kumamoto University
2. Institute of Pulsed Power Science, Kumamoto University

5P57 - All solid state ultra-fast turn-on time compact MARX generator

Alexander Gertsman¹, Zeev Rubinshtein¹, Moshe Hershkovitz¹

1. Rafael Advanced Defense Systems LTD

5P58 - Development of a compact nanosecond pulse generator

Ryuki Matsukawa¹, Takehiro Yamaguchi¹, Mikiya Matsuda², Douyan

Wang³, Namihira Takao³

1. Graduate School of Science and Technology, Kumamoto University, Japan
2. Faculty of Engineering, Kumamoto University, Japan
3. Institute of Pulsed Power Science, Kumamoto University, Japan

5P59 - Energy Density Optimization of Inductive Pulsed Power Supply Module

Zhen Li¹, Xinjie Yu¹, Peiqi Zhu¹, hao sun

1. Tsinghua University

5P60 - Study on the Collaborative Work of Multiple Meat Grinder with SECT Modules

Bei Li¹, Xinjie Yu¹, hao sun, Zhen Li¹

1. Tsinghua University

5P61 - Meat Grinder with ACC Circuit

Hao Sun¹, Xinjie Yu¹, Zhen Li¹

1. Tsinghua University

5P62 - Development of bipolar pulsed transmitter based on modular structure for mineral exploration

Jung Soo Bae¹, Jong Soo Kim², Hyoung Suk Kim², Chan Hun Yu², Kim Shin¹, Sung-Roc Jang³

1. University of Science & Technology
2. Korea Electrotechnology Research Institute
3. KERI

5P63 - Push-pull plasma power supply – combining techniques for increased stability

Piotr Krupski¹, Henryka Danuta Stryczewska², Grzegorz Komarzyniec¹

1. Lublin University of Technology, Faculty of Electrical Engineering and Computer Science
2. Lublin University of Technology, Poland

5P64 - Development of High Voltage Power Supply for The Upgrade KSTAR Helicon Current Drive System

Kwangho Jang¹, Sonjong Wang¹, Sunggug Kim¹, Jeehyun Kim¹, Hyunho Wi¹, Hyunyoung Lee¹, Wook Cho¹, Daejun Choi¹, Jonggu Kwak¹

1. NFRI (National Fusion Research Institute)

5P65 - The influence of the architecture of the power system on the operational parameters of the GlidArc plasma reactor

Henryka Danuta Stryczewska¹, Grzegorz Komarzyniec², Piotr Krupski²

1. Lublin University of Technology, Poland
2. Lublin University of Technology, Faculty of Electrical Engineering and Computer Science

5P66 - Reduction of the conducted disturbances generated by the ignition systems of GlidArc plasma reactors

Grzegorz Komarzyniec¹, Michał Aftyka¹, Henryka Danuta Stryczewska²

1. Lublin University of Technology, Faculty of Electrical Engineering and Computer Science
2. Lublin University of Technology, Poland

5P67 - Pulsed Power Modulator with Active Pull-Down Using Diode Reverse Recovery Time

Su-Mi Park¹, Seung-Ho Song¹, CHANGI CHO¹, Hong-Je Ryoo¹

1. Chung-Ang University

5P68 - Present Status of the Klystron Modulator for SuperKEKB Injector Linac

Mitsuo Akemoto¹, shigeki fukuda², Hiromitsu Honma¹, Masato Kawamura¹,

Takuya Natsui¹, Hiromitsu Nakajima¹, Tetsuo Shidara²

1. High Energy Accelerator Research Organization
2. KEK

5P69 - Design and Commissioning of a Medium Voltage Testbed**Deploying Transient Loads**

David Wetz¹, David Dodson¹, Brian McRee¹, Jacob Sanchez¹,

Alexander Johnston¹, John Heinzel²

1. University of Texas at Arlington
2. Naval Surface Warfare Center - Philadelphia Division

5P70 - Optimized Power and Energy Generation, Storage and Conditioning for Army Rotorcraft

Thomas Podlesak¹

1. U.S. Army C5ISR Center

5P71 - Pulsed Power Systems Developed for the Lockheed Martin Compact Fusion Reactor

Adam Steiner¹, Nicolo Montecalvo¹, Maxwell Bilodeau¹, Jordan Locano¹,

Thomas McGuire¹

1. Lockheed Martin Aeronautics

5P72 - Design and Performance of a 4 MV, 14 kJ Marx Generator

Jon Mayes¹, Jeremy Byman¹, Chris Hatfield¹, David Kohlenberg¹, Paul

Flores¹

1. Applied Physical Electronics L.C.

5P73 - Design and Performance of a High Repetition Rate Compact Marx Generator

Jon Mayes¹, Jeremy Byman¹, Chris Hatfield¹, Paul Flores¹

1. Applied Physical Electronics L.C.

Session: 10A**1.1 Basic Phenomena III**

Friday 15:30 Room: Seminole A/B

Session Chair: Peng Zhang

15:30 - 10A1 - (invited) A Theory of AC Contact Resistance

Foivos Antoulinakos¹, Yue Ying Lau¹

1. University of Michigan

16:00 - 10A2 - GENERALIZED SELF CONSISTENT MODEL FOR TUNNELING CURRENT IN DISSIMILAR METAL-INSULATOR-METAL JUNCTIONS

Sneha Banerjee¹, Peng Zhang¹

1. Michigan State University

16:15 - 10A3 - Simulations of transient multipactor suppression due to dielectric surface charging

Matthew Feldman¹, Aimee Hubble¹, Rostislav Spektor¹, Nicolas Rongione¹,

Preston Partridge¹

1. The Aerospace Corporation

16:30 - 10A4 - Advanced Multipactor Diagnostics and Tools

Aimee Hubble¹, Matthew Feldman¹, Preston Partridge¹, Nicolas Rongione¹,

Rostislav Spektor¹

1. The Aerospace Corporation

16:45 - 10A5 - Theoretical investigation of the magnetic asymmetry effect by using a lumped element model

Dennis Engel¹, Moritz Oberberg¹, Berger Birk¹, Laura Kroll¹, Julian

Schulze¹, Peter Awakowicz¹, Ralf Peter Brinkmann¹

1. Ruhr University Bochum

17:00 - 10A6 - Vlasov-Poisson simulation of current-carrying ion acoustic instability: nonlinear saturation and ion kinetics

Kentaro Hara¹, Cameron Treece¹

1. Texas A&M University

17:15 - 10A7 - Pulsed mechanical device generates plasma in

water via cavitation

Xin Tang¹, David Staack¹
1. Texas A&M University

Session: 10B

4.6 Fast Z Pinches III

Friday 15:30 Room: Seminole D/E

Session Chair: Bruno Bauer

15:30 - 10B1 - (invited) Staged Z-pinch Experiments and Simulations Using Different Gas Shells

H. U. Rahman¹, E. Ruskov, P. Ney¹, F. Conti², J. Narkis, J. Valenzuela, F. Beg², E. Covington³, E. Dutra³

1. Magneto-Inertial Fusion Technology Inc.
2. University of California, San Diego
3. University Of Nevada, Reno

16:00 - 10B2 - Development of a 750kJ Dense Plasma Focus for Radiation Test Applications

Michael Butcher¹, Manuel Alan¹, Matt Domonkos¹, Nick Myers¹, Joseph Ruscetti¹, Bruce Freeman², Dan Treibel¹

1. Verus Research
2. Integrated Applied Science

16:15 - 10B3 - Experimental observations of a high-pressure, 750-kJ dense plasma focus

Manuel Alan¹, Michael Butcher¹, Matthew Domonkos¹, Joseph Ruscetti¹, Nicholas Myers¹, Dan Treibel¹, Bruce Freeman²

1. Verus Research
2. Integrated Applied Science

16:30 - 10B4 - Detailed modeling of DPF on HAWK generator

Andrey Beresnyak¹, John Giuliani¹, Stuart Jackson¹, Steve Richardson¹, Alexander Velikovich¹

1. Naval Research Laboratory

16:45 - 10B5 - Laboratory Astrophysics - Cold Absorption

Itay Gissis¹, Ehud Behar¹, Fisher Amnon¹

1. Technion Inst. Of Technology Israel

17:00 - 10B6 - EFFECT OF THE PREPULSE CURRENT ON THE PRECONDITIONED ALUMINUM WIRE ARRAY Z-PINCH

Yihan Lu¹, Jian Wu¹, Huantong Shi¹, Daoyuan Zhang¹, Ziwei Chen¹, Xingwen Li¹, Shenli Jia¹, Aici Qiu¹

1. Xi'an Jiaotong University

17:15 - 10B7 - Plasma Formation and Ablation Dynamics of Metallic Liner

Daoyuan Zhang¹, Jian Wu¹, Yihan Lu¹, Huantong Shi¹, Xingwen Li¹, Shenli Jia¹, Aici Qiu¹

1. Xi'an Jiaotong University

Session: 10C

5.5 Insulation and Dielectric Breakdown III

Friday 15:30 Room: Seminole C

Session Chair: Jacob Stephens

15:30 - 10C1 - Characterizing breakdown voltage in micro-gaps with multiple field emitters at atmospheric pressure

Yangyang Fu¹, Janez Krek², Peng Zhang¹, John Verboncoeur¹, Guy Parsey³, Mark Kushner³

1. Michigan State University
2. Michigan State University, CMSE

3. University of Michigan

15:45 - 10C2 - Spatio-temporal dynamics of pulsed gas breakdown in microgaps

Guodong Meng¹, Qi Ying¹, Amanda Loveless², Feihong Wu¹, Kejing Wang¹, Yangyang Fu³, Garner Allen², Yonghong Cheng¹

1. Xi'an Jiaotong University
2. Purdue University
3. Michigan State University

16:00 - 10C3 - A pulse-sequence resolved study on evolution of streamer dynamics and discharge mode transition under repetitive frequency nanosecond pulses in high-pressure nitrogen

Zheng Zhao¹, Shuhan Liu¹, Yanan Wang¹, Jiangtao Li¹

1. Xi'an Jiaotong University

16:15 - 10C4 - Evolution of ns breakdown in gases: Dynamic streamer model in Air, N₂, CO₂, and SF₆

Ting Liu¹, Igor Timoshkin¹, Scott MacGregor, Martin Given¹, Mark Wilson¹, Tao Wang

1. University of Strathclyde

16:30 - 10C5 - Buried Conductor Detection in The Seabed

Jane Lehr¹, David Sanabria¹, Joong Kim²

1. University of New Mexico
2. Office of Naval Research

16:45 - 10C6 - Investigation of Sterolithographic Laser Additive Manufacturing Resins for Pulsed Power Applications

Robert Beattie-Rossberg¹, Salvador Portillo¹

1. University of New Mexico

17:00 - 10C7 - Flashover Studies in Pressurized Dry Air and Transformer Oil

Ian Bean, Colin Adams, Thomas Weber

17:15 - 10C8 - Study on Insulation Characteristics Evolution of Oil-impregnated Paperboard under Mechanical Stress

Yao Xiao¹, Yan-Jie Cui¹, Xi-Ning Li¹, Sheng-Chang Ji¹

1. School of Electrical Engineering, Xi'an Jiaotong University

Session: 10D

6.3 Plasma Thrusters

Friday 15:30 Room: Gold Coast I/II

Session Chair: Alex Shashurin

15:30 - 10D1 - The investigation of plume characteristics of a capillary discharge based pulsed plasma thruster

Wang Yanan, Ge Chongjian, Cheng Le, Ding Weidong, Geng Jinyue

15:45 - 10D2 - Measurements of the Characteristics of Plasma Plume Generated by Low Energy Surface Flashover

Yunping Zhang¹, Adam Patel¹, Alexey Shashurin¹

1. Purdue University

16:00 - 10D3 - (invited) Thrust-to-power ratio improvement of micro-cathode arc thruster by addition of the magnetoplasmadynamic stage

Denis Zolotukhin¹, Keir Daniels¹, Michael Keidar¹

1. The George Washington University

16:30 - 10D4 - Tripple langmuir Probe diagnostic for vacuum arc thrusters

Marina Kühn-Kauffeldt¹, Marvin Kühn¹, Vincent Andraud², Christophe Thibaut², Jochen Schein¹

1. Universität der Bundeswehr München

16:45 - 10D5 - Embedded miniature thrusters within carbon fiber reinforced structures

Dejan Nikic¹

1. *The Boeing Company*

17:00 - 10D6 - Modular design of a radial scaled Hall Thruster for different magnetic configurations

Alberto Olano Garcia¹, Haibin Tang¹, Junxue Ren¹, Guangchuan Zhang¹

1. *Beihang University*

17:15 - 10D7 - KINETIC MODELING OF ION THRUSTER PLUME PLASMA SURFACE INTERACTIONS

Nakul Nuwal¹, Deborah Levin²

1. *University of Illinois Urbana Champaign*

2. *Professor, AE, UIUC*

Session: 10E

7.2 High Current and High Power Pulsers II

Friday 15:30 Room: Gold Coast III/IV

Session Chair: Martial Toury

15:30 - 10E1 - (invited) SPLITS - RECONFIGURABLE 5.5 OHM SERIES PULSE FORMING LINES FOR MULTIPLE 300KV PULSE CREATION

Patrick Corcoran¹, David Spelts¹, Douglas Weidenheimer¹, Alannah Myers¹, Norman Link¹, Richard Stevens¹, Naresh Jaitly¹, Doug McGlathery¹, Gregory Dale², Mark Crawford², Juan Barraza²

1. *L3 Applied Technologies, Inc.*

2. *Los Alamos National Laboratory*

16:00 - 10E2 - Considerations for improvements to the 25 TW Saturn high-current driver

Mark Savage¹, Kevin Austin¹, Sean Coffey¹, Peter Jones¹, Nathan Joseph¹, Debra Kirschner¹, John Lott¹, Bryan Oliver¹, Rick Spielman², Ken Struve¹

1. *Sandia National Laboratories*

2. *Idaho State University*

16:15 - 10E3 - Technique to determine intense electron beam parameters and X-ray spectra from dose-rate measurements at different angles

Bruce Weber¹, Ian Rittersdorf¹, Timothy Renk², David Hinshelwood¹, Stephen Swanekamp¹

1. *Naval Research Laboratory*

2. *Sandia National Laboratories*

16:30 - 10E4 - M3: A New Pulsed Power Machine Dedicated to Inertial Confinement Fusion Experiments

Luis Sebastian Caballero Bendixsen¹, Thomas Clayson¹, Jamie Darling¹, Nicolas Hawker¹, Paul Holligan¹, James Parkin¹, Oli Hall¹, Simon Hall¹

1. *First Light Fusion*

16:45 - 10E5 - M3 Pulsed Power Generator Diagnostic Suite

Luis Sebastian Caballero Bendixsen¹, Thomas Clayson¹, Jamie Darling¹, Nicolas Hawker¹, Paul Holligan¹, James Parkin¹, Jonathan Skidmore¹

1. *First Light Fusion*

17:00 - 10E6 - All-solid-state bipolar high voltage nanosecond pulse adder with output parameters adjustable

Yonggang Wang, Yifan Huang, Min Jiang

17:15 - 10E7 - The Behavior of Pulsed Steel Wire Discharges

Maximilian Bigelmayer¹, Petrus Pieterse², Dirk Uhrlandt²

1. *Institut für Elektrische Energietechnik, Universität Rostock, Germany*

2. *Leibniz-Institut für Plasmaforschung und Technologie e.V., Greifswald,*

Author Index

Abdalla, Michael D.	4C1	Austin, K	3P85
Abdalla, Michael	2P33, 2P68	Austin, Kevin	10E2
Abide, Matthew	3D3, 8B2	Averkin, Sergey	8B1
Aboubakr, Hamada	3C5	Awakowicz, Peter	2B5, 6C3, 6C4, 10A5
Acharjee, Joy	3B5	Awe, Thomas	5C4, 4P58, 4P51, 9F1
ACHOUR, Yahia	5E7	Aybar, Nicholas	5P33
Ackermann, Thilo	4P16	Ayoub, Firas	1P81, 7B1
Acosta-Lech, Daisy	1P75	Azad, A N M Wasekul	5P28
Adamovich, Igor	8C1	Bader, Michael	2P62
Adams, Colin	10C7	Bae, Jung Soo	1E5, 5P62
Adams, Marissa	4D6, 7C1, 7E3, 7E4	Bae, Ki Beom	3P56
Adams, Robert	4P40	Baehitz, Carsten	8C6
Adams, Steve	2P31, 4E5	Baek, Sung-Hyun	2P50, 2P51
Adamson, Paul	1P56, 1P58, 1P63, 4B4, 4B5	Baez, Alejandro	5P33
Adhami Sayad Mahaleh, Moazameh	7D5	Baghel, Shubham	4E4
Adli, Erik	3A2	Bai, Yu	8F7
Adrian, Cross	2P14	Bailly-Grandvaux, Mathieu	4P75
Aftyka, Michal	5P66	Bak, Petr	5P07
Agafonov, Alexey	4P43	Baker, Jacob	3P85
Agarwal, Pulkit	3P06	Baky, Abdullah Hil	1P60
Aghedo, A.	4P39	Bales, Brian	3P53
Ahsan, Ragib	3F1, 8F2	Baltabay, Erlan	4P37
Akemoto, Mitsuo	5P51, 5P68	Bamford, Ruth	2P40
Akimov, Aleksandr	5P07	Banasek, Jacob	5C2, 6B1, 6B2, 7C2, 4P64
Akiyama, Masahiro	3P26, 3P27, 3P28	Bandyopadhyay, Mainak	1P07
Alan, Manuel	2P33, 2P68, 10B2, 10B3	Banerjee, Sneha	3F6, 10A2
Alan, Phelps	2P14	Barnes, Mike	1E1, 6D8
Albright, Brian	1P30	Barnett, David	2E5, 5F1, 6A6, 8D3, 5P01, 5P02
Alderman, David	2F6, 3P08, 3P42	Barraza, Juan	10E1
Alegre, Daniel	9C2	Barroso, Joaquim	4P42, 5P44
Alimohamadi, Masoud	1P01, 1P64	Bartkowski, Peter	2E3
Allen, James	1P25, 3P10, 5P27	Baryshev, Sergey	3F4, 8B6, 8F6
Allen, Raymond	4P18	Basten, Mark	9B3
Allfrey, Ian	4P41	Basu, B. N.	2P35
Almarashi, Jamal	3P14, 9E3	Batra, Jigyasa	6B5
Amnon, Fisher	10B5	Baturin, Stanislav	3F4, 8B6
Amos, Percy	9F5	Bauer, Bruno	4P51, 4P58, 4P61, 5C4
Ampleford, David	4D5	Bayne, Stephen	1F3, 1F6, 1P68, 6D3, 6D4, 5P22
Amrenova, Assem	4P37	Bean, Ian	10C7
Amy, MacLachlan	2P14	Beattie-Rossberg, Robert	10C6
Anashkina, Nataliya	6E3	Beckers, Frank	6F1
Anderson, Charlie	6D2	Beckwith, Kristian	1A2, 2P24, 6A4
ANDERSON, DEL	3D1	Beg, Farhat	4P74, 5P33, 10B1
Andola, Sanjay	6B5	Behar, Ehud	10B5
Andraud, Vincent	10D4	Behdad, Nader	3B6, 5B3
Andreev, Andrey	2P05, 5B5	Bejines, Travis	5P12
Andreev, Dmitrii	2P05, 2P28, 5B2, 5B5, 7B1	Belhaj, Mohamed	2A4, 9C6
Andrews, Heather	8F4, 8F5	Bell, Kate	4P20, 4P27
Ang, Lay Kee	1A1, 7A2	Bellow, Joseph	5E4
ANG, Yee Sin	1A1, 7A2	Belyaev, Mikhail	4P76
Angus, Justin	4P62	Benfield, Kate	3P66
Antipov, Sergey	8F5	Bennett, Nichelle	3P82
Antonsen, Thomas, Jr.	7B6	Bera, Anirban	1B7
Antoulinakis, Foivos	10A1	Berdine, Rena	2P30
Aponte, Ivan	9D5	Beresnyak, Andrey	4P17, 4P38, 10B4
Appartaim, R.K.	4P65	Berghäuser, Andreas	8C6
Appel, Karen	8C6	Bernacki, B. E.	2F1, 9A3
Aragon, Carlos	2F5, 3P82	Berning, Paul	2E3
Aranganadin, Kaviya	1P77, 1P80, 5F5, 6C6	Berntsen, Tiffany	3P66
Arantchouk, Leonid	8E3	Bettencourt, Matt	4P20, 4P27
Archuleta, Guillermo	2P56	Bettencourt, R	3P85
Arnold, Phil	5P43	Bhandari, Shesaraj	1P50
Arslanbekov, Robert	1A6	Bhattacharjee, Darpan	4P32
Artemov, Anton	7E5, 5P29, 5P30	Bhuiyan, Md. Abu Hashan	3P89
Arthur, Stephen	2P57	Bhuiyan, Shariful Islam	1P60
Asadian, Mahtab	1D7	Bhuiyan, Heman	5C6, 8C3
Aschikin, Alexander	3A1	Bi, Liangjie	2P18
Ashford, Marcus	3P10, 5P27	Bian, Kai	4E2
Atoyan, Levon	6B4, 4P47	Biase, Amelia	5D5
		Bibinov, Nikita	2B5, 6C3
		Bicrel, Béatrice	7A5, 4P19

Biedermann, Laura	1P13	Byman, Jeremy	4A5, 6F6, 5P72, 5P73
Biewer, Theodore	4P07, 4P34	Byvank, Tom	5C2, 6B4
Bigelmayr, Maximilian	10E7	Cabaleiro Magallanes, Francisco	5P46
Bigelow, Tim	4P07, 4P34	Caballero Bendixsen, Luis Sebastian	10E4, 7F6, 10E5
Bigi, Marco	1P79	Cabrerizo Pastor, David	2P45, 2P46
Bilbao, Argenis	1P68	Cadilhon, Baptiste	2P70, 5P52, 9F7
Biller, Andrew	1P37, 4P24, 4P28	Cahay, M.	4P04
Bilodeau, Maxwell	5P71	Cairns, Alan	2P40
Bingham, Robert	2P40	CAKIR, FIRAT	6A2
Biondo, Omar	3P49	Calhoun, Jacob	7E2
Bird, Robert	1P30	Camarillo, Ignacio	3C4
Birk, Berger	10A5	Camp, J. Thomas	5P19
Bischoff, Rainer	6F2	Campbell, Christopher	1P60
Biswas, Sayan	9A1	Campbell, Paul	5C3, 3P79, 3P84, 3P86, 6A3, 6B3, 4P67
Bitar, Rim	7D5	Candolfi, Sylvain	5P46
Blanco, Ricardo	3P02	Caneses, Juan	4P07, 4P34
Bland, Simon	5C1, 7C5, 7F6, 5P04	Cao, Yang	2P02, 6C1
Blankemeier, Louis	8F1	Carlsten, Bruce	2P21
Blasco, Michael	5E4	Carmona-Reyes, Jorge	8A3
Bliokh, Y. P.	2P02, 6C1	CARON, Michel	2B6
Bliss, David	3P82, 3P85, 9F1	Carroll, Evan	5P43
Bliss, Erlan	3P85	Carter, Campbell	4E5
Bohlen, Simon Gerd	3A1	Cartwright, Keith	1P37, 2P27, 4P27, 4P28
Bohlender, Bernhard	4P16	Carvalho Silva, Leandro	2P15, 2P17, 5P42
Bomgardner, Evan	4P41	Cary, John	1A4, 1P15
Booske, John	3B6, 5B3	Cary, John	1P31, 1P34, 4B1
Boppart, Stephen A.	8E2	Cassany, Bruno	7A5, 4P19, 4P20
Borchardt, John	2P11	Cassibry, Jason	4P40
Boteler, Lauren	5F6	Caughman, John	4P07, 4P34
Bott-Suzuki, Simon	6B4, 7C2	Cavbozar, Ozgur	7F1
Boudara, Fatima Zahra	2C1	Celeste, J.	3P85
Boutraa, Tahar	3P14	Celik Cogal, Gamze	1P26
Bowman, Chris	5P47, 5P48	Celliers, Peter	3P85, 9F1
Boya, Zhang	1P27	Cerantola, Valerio	8C6
Boyle, Gregory	3A1, 3A2	Cevik, Yasin	7F1
Bozduman, Ferhat	2P07	Ceylan, Doğa	5P38
Bradley III, Joseph	5P08	Chacon, Luis	1P30
Bradley, J T.	3D7	Chakraborty, Arun	1P07
Bradley, James W.	3P45	Chanconie, Thierry	2P06, 5P09
Brandon, Joel	8E5	Chandler, Gordon	4D5
Brasile, Jean-pierre	2C1	Chandra, Romesh	4P23, 4P26
Braun, Paul V.	9E1, 9E7	Chang, Chao	9C3
Brayfield, Russell	1P02, 1P21, 3F3	Chap, Andrew	1A4, 1P31, 3P09
Breden, Eric	7E2	Chaparro, Jordan	1P69, 5B2
Breeding, Eric	9F4	Chappell, James Anthony	3A2
Brenning, Nils	5A3	Chaturvedi, Nikita	5P04
Brinkmann, Ralf Peter	1P03, 2B5, 5A4, 6C3, 6C4, 10A5	Chauloux, Antoine	2P04, 2P06
Brooks, William	5F1, 6A6, 8D3	Chavez, Ian	2P65
Brown, Luke	5E2, 5P19	Chen, Chi	3P80
Browning, Jim	2P10, 3P66, 4P10	Chen, Dan	5P11
Bruemmer, Theresa Karoline	3A1	Chen, Gongxiaohui	8F5
Bruggeman, Peter	3C5, 4E3, 7D6, 9A2	Chen, Guangye	1P30
Bruhwieler, David	8C4	Chen, Jiacheng	9E2, 5P15
Bryan, Jeff	4P34	Chen, Jiaer	3A6
Buchenauser, C. Jerald	5P13	Chen, Jian	1P48
Bucher, Matthias	2P62	Chen, Joe	4F6, 5F7
Bugaev, Alexey	4P03	Chen, Li	7E1
Bui, Bill	9D1	Chen, Lixue	5P37
Bui, Thuc	1B3, 7B2	Chen, Shuo	3P78
Bulusu, Radha Krishna Murthy	8E4	Chen, Weijiang	4E2
Bunin, Igor	6E3	Chen, Wenyuan	8E2, 9E1, 9E7
Buntin, Tyler	2E5, 3D3, 7F4, 8B2, 5P01, 5P02	Chen, Xinhua	3C4
Burdovitsin, Victor	4P70	Chen, Yao	3P32
Burger, M.	9A3	Chen, Yeong-Jer	5B2
Burke, Alex	1B1, 1B5, 7B7	Chen, Yuxiu	5D2
Burke, Kevin	1P25, 3P10, 5P27	Chen, Zhitong	3P55
Burns, Christopher	1A6	Chen, Ziwei	4P57, 10B6
Butcher, Christopher	5C3, 8C5	Cheng, Le	3P24
Butcher, Michael	2P33, 2P68, 10B2, 10B3	Cheng, Yingda	6A1
Butler, Alexandre	5A3	Cheng, Yonghong	10C2
Buzarbaruah, Neelanjan	4P32	Cherdizov, Rustam K.	4P69

Cherenshchykov, Sergiy	5B7, 8B8	Craig, Robertson	2P14
Cherkos, Alemayehu	4P36	Crawford, Mark	10E1
Chernin, David	1B5, 8B3	Crawford, Travis	1D4
Chernyavskiy, Igor	7B6	Cronin, Stephen	5D6
Childers, Ryan	8C5	Crosley, Michael	3P85
CHO, CHANGI	5P67	Cross, Adrian	2P26, 2P40, 7B8
Cho, Chuhyun	3P62	Cross, Andrew	2B3
CHO, Guangsup	4C4, 3P15, 3P57	Crossette, Nathan	1P15
Cho, Hyun	3P15, 3P57	Croteau, Adam	3P66, 4P10
Cho, Wook	5P64	Cruz, Nilson C	3P34
Choe, Mun Seok	6C2, 9B4, 9B5	Cruz, Nilson	3P02, 4P72
Choi, Bo	8F4	CUI, Boyuan	3P43
Choi, Daejun	5P64	Cui, Dongjie	3P61
CHOI, Eun Ha	4C4	Cui, Yan-Jie	10C8
Choi, EunMi	6C2, 9B2, 9B4, 9B5	Culpepper, Jared	1C4
Choi, Hong Eun	6C2	Cuneo, Michael E.	3P73, 3P82, 7E2
Choi, Pyeung Hwi	2P50, 2P51	Curry, Doug	9F4
Choi, Wonjin	6C2, 9B2, 9B5	Curry, Randy	2C4, 5E2, 5P19
Chongjian, Ge	10D1	CUSTER, JONATHAN	3D1
Choo-Kang, Gabrielle	8E2	Cvejic, Marko	5A1
Choyal, Y.	4P44	Cvelbar, Uros	3P67
Christen, Reto	2P62	D'Arcy, Richard	3A1, 3A2
Christian, Hoek	4P16	Dadouch, Sarah	2A4
Christlieb, Andrew	1P39, 1P41, 2P29, 6A2	Dai, Hongyu	1C7
Chuan, Li	1P29	Dai, Uri	2P01
Chubar, Oleg	8C4	Dai, Zhensheng	4D1
Chubenko, Oksana	3F4	Dale, Gregory	2P30, 5F7, 10E1
Chung, Kyoung-Jae	3P76	Daneshvardehnavi, Saeed	6F7
Chung, Shen Shou Max	2P12, 2P34	Dang, Zhiwei	8F7
Chyhin, Vasyi	1P49, 1P59	Daniele, Pavarin	3P49
Cikhardt, Jakob	4D4, 4P66, 4P69	Daniels, Keir	10D3
Cikhardtova, Balzhima	4D4, 4P69	Darby, Flynn B.	2P37
Cippola, John	2P10	Darling, Jamie	10E4, 10E5
Cipriano Rangel, Elidiane	4P72	Darr, Adam	1P10, 3F2, 3F7, 3P50, 7A3
Cipriano Rangel, Rita de Cássia	4P72	Darr, Caleb	3F3
Cistakov, Konstantin	4P16	Darr, Catherine	1P21
Civil, Aml	7F1	Dasgupta, Arati	4P17
Clancy, T	3P85	Datte, Phil	3P85, 9F1
Clark, J.	4P39	Daughton, William	1P30
Clark, Raimi	2E5, 5P01, 5P02	David, Larson	4P76
Clark, Robert	4B3	David, Reisman	5P33
Clayson, Thomas	10E4, 10E5	Davis, Joshua	7C3
Clem, Paul	1P13	Davis, Victoria	2A5
Coffey, Sean	2P56, 9F2, 9F3, 9F2, 10E2	Daykin, Tyler	4P75
Cohen, Bruce	4P76, 7P1enary	De Alleluia, Antonio	1P24, 7B1
Cohen, Kobi	4P68	de Almeida, Larissa	3P02
Cohen, S	3P85	de Ferron, Antoine	3P37, 5P52
Cohick, Zane	2B2	De Geyter, Nathalie	1D7, 7D5
Coleman, D. Phillip	2P11	de Messieres, Michel	3P09
Collier, Landon	5F1, 6D5, 7F4, 8D3	Declercq, Heidi	1D7
Collins, Max	4A2	Del Rosario, Stephane	6F6
Combes, Philippe	5P09	Delash, Joe	3P90
Conceição, Arlindo	5P44	Demir, Şimşek	2P09
Conde, Manoel	8F5	Demirgoz, Ozge Eren	5P14
Conti, Fabio	5P33, 10B1	Demol, Gauthier	3P37
Converse, Elisha	1P76	Deshpande, Amol	5P45
Cook, Nathan	3A2	Dessante, Philippe	8D4, 9D3
COOKE, David	1P42, 2A5	Detwiler, David	1D5
Cooke, Simon	1B1, 1B6	DeWitt, Matthew	3C2
Cools, Pieter	1D7	Dezetter, Karen	9D2
Coombes, Kenneth	9D2	Dhakar, Ajeet	1P08, 5P17
Corbella, Carles	3P09	Dhanabal, Agni	1D5, 3P46
Corcoran, Patrick	10E1	DHAWAN, RAJAT	1P19, 1P20
Cordaro, Sam	6B4, 7C2	Di Dio Cafiso, Samuele	8C6
Cornell, Ken	3P66	Diaw, Abdourahmane	1A3
Corsini, Roberto	3A2	Diaz-Droguett, Donovan	5C6
Coumou, David	8E5	Dickens, James	1C4, 2E5, 3B1, 3B2, 3B3, 3B4, 3B5, 3D3, 4F1, 5E6, 5F1, 6A6, 6D2, 6D5, 7F4, 8B2, 8D3, 9D5, 9D6, 5P01, 5P02
Courtois, Laurent	2P70	Dickerson, Samuel	5E2, 5P19
Covington, E.	10B1	Diederichs, Severin	3A1
Cox, Wayne	5P22	Dienot, Jean Marc	9F7
Craig, Donaldson	2P14		

Dijcks, Siebe	4E7	Evelina, Loghin	3C3
Dimitry, Dylvov	3C3	Exelby, Steven	5B4, 7B4
Ding, Ning	6B6, 6B7	Fadeev, Vladimir	5P33
Ding, Weidong	2D2, 2D3, 2P48, 2P72, 2P75, 2P76, 3P24, 3P78, 6D7, 8D6, 5P16	Fadhalmawla, Sahar	3P14, 9E3
Ding, Weidong	2P74, 3P77	Fairbanks, Andrew	1P21, 2C2, 2C3, 3F3
Diot, Jean-Christophe	2P04, 2P06	Fairchild, S.	4P04, 8F6
Ditmire, Todd	4P75	Fan, Xing	4E2
Dobrynin, Danil	7D1, 7D4	FAN, Yuanfei	2D5
Dodson, David	1F5, 5P69	Farabolini, Wilfrid	3A2
Dolan, Daniel	2F5, 3P82, 5C4	Farmer, William	1P11
Dolgashv, Valery	9B1	Favre, Mario	5C6, 8C3
Domonkos, Matthew	10B2, 10B3	Fazekas, Maxwell	5P50
DONG, JIANNIAN	5P41	Fekete, Balazs	3A5
Dong, Pan	4C6	Feldman, Matthew	10A3, 10A4
Dong, Pan	4P15	Feldmann, Thomas	8C6
Dong, Shoulong	2P59, 6F5, 7E6	Feng, Xin	2P61, 2P64
Dong, Siyuan	2P79	Feng, Yu	5P49
Dong, Ye	7A7	Ferguson, Dale	2A5
Dong, Zhiwei	7A7	Ferriera, Antonio	2P55
Donkó, Zoltán	5A4	Fierro, Andrew	1A7, 1P12, 2P27, 3P82
Donovan, Michael	4P75	Fierro, F	3D7
Doran, Darrell	8F5	Fierro, Franklin	4P49
Dorchies, Fabien	4C2, 4P21	Firehammer, Jennifer	3C2
Dorf, Mikhail	4P62	Fisher, D. M.	4P63
Doron, R.	3P73	Fisher, Lisa E.	4C1
Doron, Ramy	5A1	Fleming, Ryan	8F4
Douglass, Jon	7E2	Fleming, Timothy	2P19
Drake, R Paul	7C3	Flores, Paul	6F6, 5P72, 5P73
Drouillard, Trevor	3P46	FLORES, PAUL	3P90, 9F6
Du, Jian	6E7	Foley, Timothy	2E1
Du, Yao	4P29	Fondriest, Steven	5D5
Dudkin, Gennady N.	4P69	Forbes, Jonathan	1F3, 1F6, 6D4
Dunwoody, J T	3D7	Forbes, Patrick	5B3
Dupont, Robert	5D5	Forestier-Colleoni, Pierre	4P75
Durna, Emre	7F1	Foster, Brian	3A1
Durot, Christopher	1P65, 3P74	Foster, John	1P65, 3F5, 2P36, 3P29, 3P74, 9A4
Durrer, Russell	7A1	Foster, Josh	5E5
Dutra, E.	10B1	Foulkes, Simon	2P08
Dwivedi, Harish Kumar	2P47	Fourment, Claude	4C2, 4P21
Dwivedi, Manish	1P18, 1P19	Francesco, Tampieri	3P49
Dwyer, R. H.	4P63	Frank, Klaus	6D6
Dyer, Gilliss	4P75	Franz, Thomas	2P62
Dyer, Jessica	1P06	Fratanduono, Duane	3P85, 9F1
Dyson, Anthony	3A2	Fredenburg, D A	3D7
Earle, Gregory	4P01	Freeman, Bruce	10B2, 10B3
Eden, J. Gary	8E2, 9E1, 9E7	Freeman, M S	3D7
Efimov, Sergey	5C1, 5C5, 4P45	Frew, Dirk	2P33, 2P68
Eghe, Tim	1D7	Fridman, Alexander	7D1, 7D4
Egorychev, Michail	5P07	Fridman, Boris	1P74, 2P58, 3P75
Eguchi, Kyohei	4E6	Frieders, Gene	3P85
Ehn, Andreas	9A5	Frolova, Valeria	2B4
Ekoto, Isaac	9A1	Fruchtman, Amnon	5A1
Elbendary, Atef	8A5	Frutschy, Kristopher	2B3
Elfrgani, Ahmed	1P81, 2P05, 2P18, 2P28, 5B5, 7B1	Fu, Wenjie	3P80
Elfsberg, Mattias	3P71	Fu, Yangyang	1A5, 4B2, 4F5, 10C1, 10C2
Eliasson, Bengt	2P40	Fuchs, Julien	4P75
Eliseev, Andrey	5P07	Fuelling, Stephan	5C4
Elshafey, Ahmed	4P50	Fujimoto, Ryo	5P56
Enderich, Dan	3B6	Fujio, Takuya	9E4
Engel, Dennis	10A5	Fujita, Ryo	4E6
Engelbrecht, Joseph	4P66	Fujiwara, Kyoko	3P88
Enomoto, Soichiro	3P54	fukuda, shigecki	5P68
Erfort, Aleksander	7E5, 5P29, 5P30	Fukuoka, Hideaki	3P40
Erskine, David	3P85, 9F1	Fureby, Christer	9A5
Esafov, Andrey	3P75	Furumoto, Yuji	3P58
Eser, Doğançan	2P09	Furusato, Tomohiro	3P19
Esser, Benedikt	3B1, 3B2, 3B4, 4F1, 9D5	Furuya, Seizo	5P26
Etchessahar, Bertrand	2B6	Futawaka, Mana	3P54
Evans, Matt	7C1, 7E3, 7E4	Gaillard, Georges	5P09
Evans, S.	4P39	Gaio, Elena	1P79, 4P08
		Galbraith, J.	3P85

Gall, Brady	5E4	Grabowski, Chris	2P56, 4P24, 9F2, 9F3
Gallan, Rachel	8E4	Gray, William	7C3
Galli, Giacomo	8D4, 9D3	Graziani, Frank	1P39
Galtié, Alain	7A5, 4P19	Green, Jonathan	4P01
Gangwar, Reetesh Kumar	4E4, 3P72	Greening, Geoffrey	5B4, 7B4
Gao, Lei	1C2	Greenly, John	6B2, 6B3, 6B4, 7C1, 4P64
Gao, Shengjie	2C3, 3F3	Grete, Philipp	1B4
Gao, Yuan	5D1, 5D3	Griego, J R	3D7
Gao, Zhixing	4P30, 4P31	Grimes, Josh	6D2
Garanin, Sergey	7C6	Groele, Joseph	3P29
Garcia, Michael	3P81, 3P90, 9F5, 9F6	Gromov, Artur	3P75
Gardelle, Jacques	7A5, 4P19, 4P20, 4P27	Grosjean, Dennis	5F3
Garland, Matthew James	3A1	Grossnickle, James	3P23
Garner, Allen	1D4, 1D5, 1P02, 1P04, 1P05, 1P09, 1P10, 1P16, 1P21, 2B3, 2C2, 2C3, 3C2, 3C3, 3C4, 3F2, 3F3, 3F7, 3P46, 3P50, 3P51, 3P52, 3P53, 7A3, 10C2	Guan, Ruiyang	8D7
Gasmi Cherifi, Taieb	3P47	Gudmundsson, Jon Tomas	1P47, 5A3
Gasparini, Ferdinando	1P79	Guegan, Baptiste	3P37
Gaudreau, Marcel	3D4, 4A4, 5P55	Gui, Lu	3P35, 9E2
Gaul, Erhard	4P75	Gundersen, Martin	1Plenary, 5D6
Ge, Chongjian	2D2, 2P72, 3P24, 3P77	Guo, Dong	8F3
Ge, Xin	3P35	Guo, Siqu	9E6
Ge, Xu	4P16	Guo, Wei	6A1
Geissel, Matthias	4D5	Gupta, Shivam	4E4, 3P72
Geng, Jinyue	3P24	Gupta, Suryakant	3E8, 5P24
Geng, Lidong	7A8	Gurovich, Viktor	5C5
Geng, Yixing	3A6	Gusev, Andrey	5P03
Genoni, Thomas	4B3	Gusev, Anton	6D8
Gensheimer, Paul	2P19	Gushenets, Vasilii	4P03
Georgakis, Andreas	5P04	Guthery, Pierson	2P29
Gerling, Mark	5E4	GUTHREY, PIERSON	1P41
Gertsman, Alexander	5P57	Gutierrez, Ethan	2P56
Geyko, Vasily	4P62	Gutierrez, Raul	4F6, 4F7
GHAJ, YASHIKA	1P14, 1P44, 8A6	Gutsol, Alexander	5P54
Ghandi, Reza	2P57	Ha, Chang-Seung	4P11
Gheorghiu, Theodore	5P04	Ha, Gwanghui	8F5
GHIMIRE, Bhagirath	4C4	Ha, HaChang-seung	3P62
Gianakon, Thomas	2E1	Haack, Jeffrey	1A2, 2P24
Giesselmann, Michael	6F7	Haase, Andrew	9B1
GIGNAC, RAYMOND	3D1	Hahn, Kelly	4D5
Gilbrech, Joshua	1E4, 5P25	Haiyang, Wang	1P28
Gilgenbach, Ronald M.	2P37, 4F3, 4F4, 5B4, 5C3, 7B4	Waiyang, Wang	6F3
Gilmore, M.	4F6, 4F7, 4P51, 4P60, 4P63	Hall, Bailey	5F3
Gissis, Itay	10B5	Hall, Benjamin	2B2
Gissis, Itay	4P68	Hall, Oli	10E4
Giuliani, John	1P56, 1P58, 1P63, 4B4, 4B5, 4P17, 5A1, 7C4, 8C5, 4P35, 4P55, 10B4	Hall, Simon	10E4
Given, Martin	1C6, 2P52, 2P77, 8D1, 8D2, 9D7, 10C4	Hamada, Yoshimasa	3P58
Given, Martin	1P22	Hamilton, Andrew	1P43
Glines, Forrest	1B4	Hamlin, Nathaniel	1P35
Go, Byeong-Soo	7F7	Hamlin, Scott	5E5
Go, David B.	9C1	Hammer, Dave	5C2, 6B1, 6B2, 6B3, 7C1, 7C2, 4P47, 4P50, 4P64
Goemen, Ulas	7F1	Hammer, James	1P11, 3P85, 9F1
Göde, Sebastian	8C6	Hammond, Jason	7B4
Goeke, Ronald	9D2	Hamrita, Hassen	8D4, 9D3
Goering, Spencer	3P66	Han-Zheng, RAN	5P06
Goforth, James	2E1	Han, jongwon	4P33
Goldberg, Lars	3A1	Han, Ruoyu	1C5, 3E1
Goldman, Anatoly	4P45	Han, Seong-Tae	3P62
Goldring, Nicholas	8C4	Han, Seong-Tae	4P11
Goldstein, Gal	4P68	Han, Taegyu	6C2
Gomez, Matthew	4D5, 3P82	Handong, Li	6A7
Gonçalves Lopes Rangel, Elizete	2P15, 2P17, 5P42	Hansen, David	4P59
Gonzales Caminal, Pau	3A1	Hansen, Stephanie	4D5
Gordon, Joseph	4P75	Hara, Kentaro	4C5, 7D7, 10A6
Gortat, D.	4P04	Harding, Eric	4D5
Goswami, Uttam	5P45	Harilal, S. S.	2F1, 9A3
Gou, Jiayi	9E2, 5P15	Harjes, Cameron	2P80
Goulding, Rick	4P07, 4P34	Harper, Ryan	3P66
Gourdain, Pierre	4D6, 7C1, 7E3, 7E4	Harrison, Anthony	5F1
Goyal, Sagar	3C5	Harrison, W. A.	2E5, 5F1, 6A6, 8D3, 5P01, 5P02
		Hartmann, Peter	6A5, 8A3, 8A4
		Harvey-Thompson, Adam	4D5
		Hasan, Rizbi	1P62

Hassan, Mohamed	8C6	Hossain, Md. Mokter	7D2, 7D3
Hasson, Hannah	7C1, 7E3, 7E4	Hotta, Eiki	4P32
Hatch, M.W.	4P51, 4P58, 4P60	Hou, Lei	2P78, 5P10
Hatfield, Chris	4A5, 6F6, 5P72, 5P73	Hou, Yanpan	2C5
Hattz, David	5F1, 6A6, 8D3	Houard, Aurélien	8E3
Hauck, Cory	1A2	Houck, Timothy Lee	1P75
Hawker, Nicolas	10E4, 10E5	Hourdin, Laurent	2B6
Hawkey, Timothy	3D4	Howe, Steve	4P40
Hawkins, Steve	5P43	Hsu, Hua-Yi	1P77, 1P80, 2P38, 5F5, 6C6
Hayashi, Takuya	3P04	Hu, Duo	4P73
Hayden, Steven	1P76	Hu, Fengming	4P31
Haytural, Necati	2P07	Hu, Qin	1D3
He, Shuang	2P64, 3P83	Hua, ZHONG	5P06
He, Xiantu	4D1	Huang, Bangdou	5D1
He, Xu	4P56	Huang, Dongdong	2P43, 2P69, 3P83
Heagy, Stephen	2F3	Huang, Hua	8F7
Heath, LeFevre	3P84	Huang, Shengxin	4E2
Hebert, David	4P27	Huang, Shuo	5D7
Hébert, David	7A5, 4P19, 4P20	Huang, xian-bin	6B7
Heidger, Susan	1E4, 5P25	Huang, Xuan-De	1P80, 5F5
Heika, Michael	5E4	Huang, Yifan	5P21, 10E6
Heinrich, Wolfgang	2B5, 6C3, 6C4	Huang, Yin-Dong	2P41
Heinzel, John	1F5, 5P69	Huang, Yindong	9C3
Held, Ben	1B1	Huang, Zizhuo	2P32
Held, Eric	4P59	Hubble, Aimee	10A3, 10A4
Heller, Richard	3P08	Huber, Steven	3P90, 9F6
Henderson, Bruce	7B2	Hughes, Benjamin	2P56
Henke, Tim	6F6	Huiskamp, Tom	1P55, 2P44, 5E3, 6F1, 8D5
Henson, Alex	1P82	Hundertmark, Stephan	7F3
Hentschel, Thomas	6B2	Hurtig, Tomas	3P71, 9A5
Hernandez, Julio	2C3	Hutchinson, T.M.	4P51
Hernandez, Stacie	2P05, 2P28, 5B5, 7B1	Hutchinson, Trevor	5C4, 4P58, 4P61
Hershkovitz, Moshe	5P57	Hüther, Mathias	3A3
Herzog, Dennis	6F4	Hutsel, Brian	2F5, 5C4, 3P82, 7E2, 4P58
Hess, Mark	1P35, 2F5, 3P82, 3P85, 9F1	Hwang, Y. S.	3P76
Hewitt, Austin	2E5, 5P01, 5P02	Hyde, Truell	6A5, 8A3, 8A4
Hidaka, Hiroki	8E7	Hyodo, Ayumu	3P31
Higgins, Leroy	7B2	Iberler, Marcus	4P16, 5P20
Higginson, Andrew	4P75	Ichiki, Tatsuya	1P57
Hillairet, Julien	9C6	Iida, Shuhei	3P40
Hinojosa, Miguel	2P49	Ikenaga, Noriaki	3P38
Hinshelwood, David	1P58, 1P63, 4B4, 4B5, 4P18, 10E3	Ikoma, Daichi	8E7
Hitchcock, Sherry	1E6	Ilyenko, Kostyantyn	2P65
Hnilica, Jaroslav	3P45	IMBERT, Tony	3P37
Ho, Ricky	7B2	Iqbal, Asif	2P39, 4F2, 4P04
Hochberg, Martin	6F4	Ishijima, Tatsuo	5D4
Hoeben, Wilfred	1P55, 2P44	Ishikawa, Yuya	3P18
Hoff, Brad	1P76, 5B1, 5B4, 7B4, 5P25	Isner, Nancy	1P05, 3P52
Hoffer, Petr	1P46	Itakura, Katsunari	3P69
Hoffmann, Matthias	8B7	Ivanov, Alexey	3P75
Höft, Hans	3P05, 9E5	Ivanov, Vladimir	5C4
Hogge, Keith	3P81, 3P90, 9F5, 9F6	Ives, Lawrence	7B2, 7B3
Hohlfelder, Robert	7E2	Ives, R. Lawrence	1B3
Hojnik, Nataša	3P67	Iwao, Toru	3E6, 3E7, 3P18, 3P21
Hoki, Kazuya	3P68	Iwasaki, Asuki	1P57
Holen, Paul	1E6	Iwata, Soshi	3E6
Holifield, Laura	5D5	Izutani, Akira	3P58
Holligan, Paul	10E4, 10E5	Jaar, G.S.	4P65
Holma, Janne	1E1	Jackson, J.	3P85
Hong-Xin, YU	5P06	Jackson, Stuart	1P56, 1P58, 1P63, 4B4, 4B5, 4P17, 4P18, 4P38, 4P66, 10B4
Hong, Sung-Min	2P50, 2P51	Jacoby, Joachim	4P16, 5P20
Hong, Sungjae	8E6	Jain, Palak	4P08
Honma, Hiromitsu	5P68	Jain, Vishal	3P01
Hoogenboom, Richard	1D7	Jaiswar, Ashutosh	6B5
Hooker, Simon	3A2	Jaitly, Naresh	10E1
Hopkins, Matthew	1A7, 1P12, 2P27	James, Colt	7F4
Höppner, Hauke	8C6	James, Glen	5P43
Hornef, James	4E5	Jang, Jae-Hyung	2P50, 2P51
Horowitz, Yahel	4P68	Jang, Kwangho	5P64
Horton, Hannah	5P04	Jang, Sung-Roc	1E5, 5P62
Hosano, Hamid	3P17	Jans, Elijah	8C1

Jaritz, Michael	2P62	KAUSHIK, DEEPAK	6E5
Jashari, Luan	4A4	Kaushik, Trilok Chand	6B5
Jassem, Abhijit	7B5	Kautz, E.	2F1, 9A3
Javedani, Jalal	2E2	Kawamura, Masato	5P51, 5P68
Javedani, Jay	5P43	Kawamura, Shunsei	3P26, 3P27, 3P28
Jawla, Sudheer	9B1	Kawamura, Syuhei	9E4
Jayaganthan, R.	3E5	Kawamura, Yuta	3P31
Jenkins, Thomas	1A4, 1P15, 1P31, 8B1	Kazakov, Andrey	4P05
Jennings, Chris	2F5, 3P82, 3P85, 4D5, 9F1	Keidar, Michael	1D1, 3C1, 3P09, 10D3
Jensen, Aaron	1B1, 1B5, 1B3, 7B7, 8B3, 8B4	Keiter, Paul	7C3
Jensen, Kevin	1B1, 8B4	Kekez, Mladen M.	5P53
Jeon, Honggoo	8E6	Kemp, Gregory	3P79, 3P84, 4P75
Ji, Sheng-Chang	10C8	Kempkes, Michael	3D4, 4A4, 5P55
Jia, Shenli	4P57, 10B6, 10B7	Kennedy, Zeke	3P66
Jia, Zhidong	8D7	Kevin, Ronald	2P14
Jiang, Chunqi	2F6, 4E5, 3P08, 3P42, 9E6	Keysan, Ozan	5P38
Jiang, Hongyu	7E1	Khalenkow, Dmitry	1D7
Jiang, Jinkai	7D6	Khan, Faisal	5P28
Jiang, Ling	3P32	Khomenko, Andrei	6C5
Jiang, Min	5P21, 10E6	Khrabrov, Alexander	1P61
Jiang, Ping	7A8	Kief, Craig	1P76
Jiang, Weihua	3D6, 5B6, 5E1, 5P49, 5P51	KIEFER, MARK	3D1, 7E2
Jiang, Xiaofeng	7E1	Kikuchi, Takashi	3P88, 4P46, 4P52
JIANG, YAN	6A2	Kile, Robert	3P46
Jiang, Yilang	6C6	Kilian, Patrick	1P30
Jiao, Zhen	3P61	Kim, Alexander A.	5Plenary
Jiayu, Xiong	1P27	Kim, Dae-Jong	4P11
Jigdung, Donney	4P32	Kim, Daejong	3P62
Jin, Xiao	8F7	Kim, Dongsung	8F4, 8F5
Jin, Yun Sik	3P62, 4P11	Kim, Hui Min	7F2
Jindal, Ashish	1P12, 2P27	Kim, Huimin	5P36
Jinyue, Geng	10D1	Kim, Hyoung Suk	1E5, 5P62
Jo, Sungkwon	3P44, 8E1	Kim, Jeehyun	5P64
Johns, Owen	7E2, 9D2	Kim, Jin Seok	1P40
Johnson, Anthony	2E2	Kim, Jong Soo	5P62
Johnson, Anthony	5P43	Kim, Joong	10C5
Johnson, Drew	3P85	KIM, KWAN TAE	8E1
Johnson, Ryan	4F6	Kim, Kwan-Tae	3P44
Johnson, Ryan	4F7	Kim, Matthew	6D3
Johnston, Alexander	1F5, 5P69	Kim, Matthew	6D4
Johnston, Mark	1P24, 3P73, 3P82	Kim, Min-Seong	2P50, 2P51
Johnston, William	2A5	Kim, Se-Hoon	2P03
Jones, Michael	3P85, 7E2, 9F1	KIM, SICHAN	3P15
Jones, Peter	10E2	Kim, Sichan	3P57
Jones, Tanner	6B3	Kim, Sinpyoung	8E6
Jordan, Nicholas	2P37, 4F4, 5B4, 5C3, 3P86, 4P67, 6A3, 6B3, 7B3, 7E7	Kim, Sunggug	4P33, 5P64
Joseph, Nathan	2P56, 4P24, 9F2, 10E2	Kim, Won Seok	3P56
Joshi, Ravi	1D3, 3B2, 3B3, 3B5, 3C4, 3D3, 8B2, 8F3	Kim, Yeun Jung	1P40
Joung, Mi	4P33	Kim, Yong-Pyo	2P50, 2P51
Jovanovic, I.	9A3	Kim, Yun Jung	3P57
Jozef, Kravarik	4P69	Kim, Yun-Jung	3P15
Jung, Chan Mi	3P44	Kimura, Takuma	5D4
K, Senthil	4P23	King, Jacob	4P59
Kaffe, Nischal	4P07	Kirkpatrick, Michael	8D4, 9D3
Kaganovich, Igor	1P61	Kirschner, Debrah	4P24, 9F2, 10E2
Kalaria, Keena	3E8, 5P24	Kishek, Rami	3B7
Kalyanasundaram, Senthil	4P26	Kiss, Matyas	3A5
Kang, Hongjae	3P44, 8E1	Kiyan, Tsuyoshi	3P19, 3P20
Kang, Jun	3P32	Klein, Peter	3P45
Kanna, Tomokazu	3P04	Klein, Sallee	3P79, 3P84
Kantsyrev, Victor	5C3, 8C5	Klein, Tyler	5E6
Kapadia, Rehan	3F1, 8F1, 8F2	Kleinjan, David	2B1
Karagoz, Mustafa	7F1	Klimov, Aleksander	4P06
Kargarian, Ameneh	1P83	Klir, Daniel	4D4, 4P66, 4P69
Kargarian, Ameneh	3A7	Klute, Michael	2B5, 6C3, 6C4
Karpikov, Stanislav	3P75	Knapp, Patrick	4D5
Karstensen, Sven	3A1	Knetsch, Alexander	3A1
Kaufman, Mike	4P34	Knoll, Andrew	7D6
Kaur, Barjinder	8A6	Ko, Kwang-Cheol	2P03
Kaur, Nimardeep	2A2, 8A7	Ko, Wonyup	5D7
KAUR, RUPINDER	1P54	Kodama, Shintaro	3E3

Koen, D.	3P85	Lang, Sarah	1P09, 1P10
Koepke, Mark	2P40	Langellotti, Stephen V.	2P37, 4F4
Kohlenberg, David	4A5, 6F6, 5P72	LaLan, Nie	2D1
Kokshenev, Vladimir A.	4P69	LaPointe, Micah	6D5
Kolacek, Karel	1P46	Lara, Matthew	4A5, 3P87, 6F6
Kolb, Juergen	1D2, 2D4, 3P05, 9E5	Larbaig, Jean Marie	9F7
Kolobov, Vladimir	1A6	Larsen, Monty	3P90
Komai, Yuji	3P18	Łasica, Andrzej	5E7
Komarzyniec, Grzegorz	5P63, 5P65, 5P66	Lassalle, Benjamin	3D5
Kondeti, VSSK	9A2	Lassalle, Francis	5P09
Kong, Fei	3P16	LASSALLE, Francis	5P31
Kong, Jie	8A3	Lau, Cornwall	4P07, 4P34
Konishi, Daisuke	3P54	Lau, Y. Y.	2P37, 4F3, 4F4, 5B4, 7B4, 7B5, 8B3, 10A1
Kono, Susumu	3P60	Lavine, E. Sander	6B1, 6B2, 6B3, 4P64
Konopkova, Zuzana	8C6	LaVoie, Adrien	3P06
Korenev, Anton	4P14	Lavrinovich, Ivan	6E4, 7E5, 5P29, 5P30
Korenev, Sergey	4P14	Lawson, Kevin	1P69
Korepanov, Andrey	4P41	Le Galloudec, Bruno	5P43
Kossow, Michael	3P82	Le, Ari	1P30
Kostadinova, Eva	6A5, 8A3, 8A4	Le, Cheng	10D1
Kovach, Yao	3F5	Le, Dinh-Vuong	7F7
Kovaleski, Scott D.	1F1, 4P13, 5P50	LeChien, Keith	9F1
Kozina, Michael	8B7	Leckbee, Josh	3D1, 7E2, 9D1, 9D2
Kozlov, Alexander	5P03	Leddy, Jarrod	1P15, 4B1
Kramer, Thomas	1C3, 2P45, 2P46, 6D8	Lee, Chang-Jin	2P03
Krasik, Ya.E.	2P01, 2P02, 4P45, 5C1, 5C5, 6C1, 7C5	Lee, Dae Hoon	3P44, 8E1
Kravarik, Jozef	4D4	Lee, Hae June	1P40
Kreger, Jack	5B2	Lee, Ho-Jun	4P11
Kreher, Seth	5C4, 4P61	Lee, Hyunyong	5P64
Kreischer, Kenneth	9B3	Lee, Ingeun	6C2, 9B2, 9B4, 9B5
Krek, Janez	1A5, 4B2, 4F5, 10C1	Lee, Jae Koo	3P56
Krile, John	6D2	Lee, Jimo	3P56
Krishna, Yedhu	4E1	Lee, Kern	3P76
Kroll, Laura	10A5	Lee, Li	9C4
Kroupp, Eyal	5A1	Lee, Paul	9C5
Krüger, Dennis	1P03	Lee, Ryan	2E5, 5P01, 5P02
Krupski, Piotr	5P63, 5P65	Lee, Sung-Bae	2P51
Kruszelnicki, Juliusz	1D6	Lee, Sungbae	2P50
Kuang, Peng	3A1	Lee, Won Gyu	7D2
Kubes, Pavel	4D4, 4P69	Lee, Yong Kyu	7F2
Kuehn, Marvin	3P25	Lee, Yongkyu	5P36
Kühn-Kauffeldt, Marina	1P32, 10D4	LeFevre, Heath	3P79, 7C3
Kühn, Marvin	10D4	Lehr, Jane	2P33, 2P80, 4A3, 4C1, 5A2, 5E5, 5P13, 10C5
Kukhlevsky, Sergei	3A5	Leigh, Winfrey	9C7
Kulenko, Yaroslav	5P07	Lemmer, Kristina	2P31
Kulkarni, Apurva	5P35	Lensky, Aleksander	7E5, 5P29, 5P30
Kumar, Mahesh	2P47, 4P09	Leopold, John	2P01, 2P02, 6C1
Kumar, Ramkishore	3E5	LePell, Paul	5P25
Kumar, Siddharth	8D5	Leus, Karen	7D5
Kundrapu, Madhusudhan	3P09	Levin, Deborah	10D7
Kuranz, Carolyn	3P79, 3P84, 7C3	Levush, Baruch	7B6
Kusano, Shingo	4P52	Li, Bei	5P60
Kushner, Mark J.	1D6, 3P06, 5D7, 8E5, 10C1	LI, Cheng-rong	3P43
Kuskov, Artem	2P05, 2P28, 5B2, 7B1	Li, Chengcai	3A6
Kusse, Bruce	5C2, 6B2, 6B3, 6B4, 7C1, 7C2, 4P64	Li, Chengxiang	6E7
Kusuhashi, Yuki	3P54	Li, Chenjie	2P61
Kutz, Robert	2C4	Li, Chenwei	2P67
Kuwako, Masashi	3P68	Li, Chuan	3P13
Kuznetsov, Vladimir	3P75	Li, Dongyu	3A6
Kuznetsov, Sergey	7C6	LI, HEPING	1P48
Kwak, Jong gu	4P33	Li, Hongtao	7A8
Kwak, Jonggu	5P64	Li, Jian	1P67
Kwiatkowski, Roch	4D4	Li, Jiangtao	2P43, 2P53, 2P54, 2P61, 2P64, 3P83
LACOSTE, Stéphane	5P31	Li, Jiangtao	2P69, 10C3
Lahens, Thomas	4C2, 4P21	Li, Jiawei	3P13
Lai, Janis	9A4	Li, Jiayin	3P11
Laity, George	1A7, 2F5, 4D5, 3P82, 3P86	Li, Jiayin	3P63
Lamba, Ram Prakash	2P47, 6D6	Li, Jie	4C6, 4P15
Lample, Régis	5P09	Li, Jing	1P48
Lamppa, Derek	4D5, 3P03, 3P82	Li, Jing	4P30, 4P31
Lanagan, Michael	2B2	Li, Jiwei	4D1

Li, Jun	4P75	Liu, Yang	5A6, 5A7
Li, Lanxi	2D2, 2D3, 2P48, 2P74, 3P33, 3P77, 6D7, 8D6, 5P16	Liu, Yi	5A6, 5A7, 6E6
Li, Lee	1C7	Liu, Yishu	2P72, 2P75, 2P76, 8D6
Li, Li	2P67	Liu, Yuhao	2P61, 2P64
Li, Liuxia	6E2	Liu, Zehui	5D1
Li, Longjie	2P53, 2P54	Liu, Zhenbang	8F7
Li, Longjie	3P83	Liu, Zhi	3P13
Li, Mengzhen	2P63, 2P73	Liu, Zhigang	2P25
Li, Penghui	7E1	Liu, Zhongqi	5D5
Li, Qingyu	2P43	Liu, Zidian	2P79
Li, Renkai	8B7	Livshitz, Yuri	3P48
Li, Weihang	1P21	Lobanov, Konstantin	2P58
Li, Xi-Ning	10C8	Locano, Jordan	5P71
Li, Xi	3P08	Locke, Bruce	8E4
Li, Xi	4C6	Loghin, Evelina	1D4, 3P53
Li, Xiangqiang	7A7	Long, Jidong	4C6, 4P15
Li, Xiaodian	2P67	Lopez de Bertodano, Martin	3P51
Li, Xiaoyun	3P80	Lopez, Adrian	1P17, 2P36
LI, Xingwen	2D5, 2P67, 7E1, 4P57, 10B6, 10B7	Lott, John	2P56, 10E2
LI, Xuechen	4C3	Lou, Guofeng	3P12
Li, Yangwei	4P73	Loveless, Amanda	1P02, 1P04, 1P16, 1P21, 3F2, 3F3, 3P51, 7A3, 10C2
Li, Yudong	7D6	LOYEN, Arnaud	5P31
Li, Yue	2P72, 8D6	Lu, Haiyang	3A6
Li, Yue	2P75, 2P76	LU, Shijie	3P43
Li, Zhanlin	3P32	Lu, Xinpei	1P66, 2D1, 3P11
Li, Zhen	5P59, 5P60, 5P61	Lu, Xinpei	3P63, 3P11
Li, Zhichuang	2P72, 2P75, 8D6	Lu, Yihan	4P57, 10B6, 10B7
Li, Zhichuang	2P76	Lu, Yong	1P71
Liang, Chunyan	5P40	Lucero, Diego	7E2
Liang, Shibin	2P60	Ludeking, Larry	1B2
Liang, Zhang	2P14	Ludwick, J.	4P04
Liang, Zhihu	9E7	Ludwig, Kai	3A1
Liao, Qing	3A6	Luedtke, Scott	1P30
Liao, Zhigang	6E7	Luginsland, John W.	1P33, 2P13, 2P29, 3F6, 4P38, 5B1
Liaw, Constanze	8A4	Lundin, Daniel	5A3
Libov, Vladyslav	3A1	Luo, Haiyun	3C6, 3P64
Liermann, Hanns-Peter	8C6	Luo, Qiangfeng	4P56
Lin, Chen	3A6	Luo, Yi	7A4
Lin, Chia-Wei	1P80	Lusk, J.	3P85
Lin, Chia-Wei	5F5	Lv, Qing-ao	5P40
Lin, Chii-Ruey	1P80, 5F5	Lyubutin, Sergei	6D8
Lin, Chun-Yu	2P38	Ma, Cheng	2P78, 5P10
Lin, Fuchang	5A6, 6E6	Ma, Fangtian	3P12
Lin, Fuchang	5A7	MA, Guo-ming	3P43
Lin, Haofan	3P16	Ma, Jianhao	2P59, 6F5, 7E6
Lin, Li	1D1, 3C1	Ma, Runchu	1D6
Lin, Ming-Chieh	1P77, 1P80, 2P38, 5F5, 6C6	Ma, ruonan	3C7, 3P61
Lindemuth, Irvin	4P61, 5C4	Ma, Wenjun	3A6
Lindström, Carl A.	3A1, 3A2	Ma, Xun	7A8
Liniers, Macarena	9C2	Mabe, Ryota	4P46
Link, Matthew	1P39	MacGregor, Scott	1C6, 1P22, 2P52, 2P77, 8D1, 8D2, 9D7, 10C4
Link, Norman	10E1	Macheret, Sergey	6C5
Liu, Chang	5D2	MacInnes, Philip	2P40
Liu, FengWu	2D1	MacLachlan, Amy	7B8
Liu, Haoyu	4P48	Macpherson, Ruairidh	9D7
Liu, Hong	2P78, 5P10	Maddy, Aaron	5E2, 5P19
Liu, Hongmei	2P59, 6F5	Maeda, Yoshifumi	3E6, 3E7, 3P18, 3P21
Liu, Hongwei	7A8	Maestas, Sabrina	1P76
Liu, Lulu	3P35, 9E2, 5P15	Magarotto, Mirko	3P49
Liu, Meifei	1P67	Magnan, Jerome	2B6
Liu, Qiaojue	1P71	Magnotti, Gaetano	4E1
Liu, Qingxiang	7A7	Mahieu, Benoit	8E3
Liu, Shifei	2C5	Maisonny, Rémi	2B6, 4C2, 4P21
Liu, Shuhan	2P43, 2P61, 3P83, 8D6, 10C3	Maistrello, Alberto	1P79, 4P08
Liu, Siwei	5A6, 5A7, 6E6	Makita, Mikako	8C6
Liu, Ting	10C4	Malayter, Jacqueline	1P02
Liu, Wanming	8F5	Malayter, Jacqueline	3F3
Liu, Xian	5F2	Malik, Hitendra kumar	1P18, 1P19, 1P20
Liu, Xin	2P60, 5F2	Malik, Muhammad Arif	3P08
Liu, Xueyuan	5D2	Malik, Talal Ahmed	4F6
Liu, Xuyu	5P11	Mallon, Michael	1P32

Mammack, Stephen	4E5	Miles, Jared	2P31, 4E5
Mamonau, Aliaksandr	4P66	Miller, Adrian	1C4
Mandell, Myron	2A5	Miller, Kenneth E.	1P82, 3P46, 4P12, 5P47, 5P48
Manente, Marco	3P49	Miller, Seth	2P11
Mangan, Michael	4D5	Miller, Stephanie	5C3, 3P86, 6A3, 4P67
Mankowski, John	2E5, 3B1, 3B2, 3B3, 3B5, 3D3, 4F1, 5F1, 6A6, 6D5, 7F4, 8B2, 8D3, 9D5, 9D6, 5P01, 5P02	Minamitani, Yasushi	3P68, 3P69
Manolescu, Andrei	2P20	Minea, Tiberiu	5A3
Mansour, Adnan	7D7	Minemura, Naoya	3P68
Manuel, Mario	3P79, 3P84	Ming, Zhang	1P29
Mao, Chongyang	6B6	Mingaleev, Albert	4P47
Mariam, F G	3D7	Miranda, Milton	2C4
Mariscal, Derek	3P79	Mirmozafari, Mirhamed	3B6
Maron, Yitzhak	3P73, 4P55, 5A1	Mirochnik, Yuriy	5P54
Marotta, Ester	3P49	Mirzaee, Mahsa	4E3
Marques-Lopez, Jose-Luis	1P32	Misch, Michael	1P75, 3P81, 9F5, 9F6
Marsden, David	1B3, 7B2	Mishra, Mayank	1P23, 9C5
Martens, Eike-Christian	8C6	Mitchell, Stephen	3P90
Martinez de la Ossa, Alberto	3A1	Mitra, Sabyasachi	4P26
Martinez-Hernandez, Braulio	2P28, 7B1	Mittal, Lakshya	3C2, 3C4
Martinez, A	3P85	Miyake, Masato	3P58
Martinez, Christopher	1P72, 1P73	Modic, Martina	3P67
Martinez, Mikael	4P75	Modin, Patrick	4P20
Martins, Carlos	4A1, 4A2	Moeller, Paul	8C4
Mashtakov, Andrey	5P03	Moeny, William	6E1
Massey, W	3P85	Mohamed, Abdel-Aleam	3P14, 9E3
Masti, Robert	4P59	Mohammed, Mohammed	9F5
Masud, Md. Mehdi	3P89	Mohanty, Smruti Ranjan	4P32
Mathieu, JB	3P53	Mok, Young Sun	7D2
Matsuda, Mikiya	5P58	Molchanov, Denis	6E4, 7E5, 5P29, 5P30
Matsukawa, Ryuki	5P58	Moldabekov, Zhangaly	4P37
Matsumoto, Naoki	3P30	Moldgy, Ankit	3C5
Matthews, Lorin	6A5, 8A3, 8A4	Molina, Isidro	3P90
Mayes, Jon	4A5, 3P87, 6F6, 5P72, 5P73	Molinié, Philippe	8D4, 9D3
Maynard, Brad	4A3	Möller, Dominik	8C6
MAZARAKIS, MICHAEL	3D1	Moloney, Philip	5P04
McBride, Ryan	5C3, 3P79, 3P84, 3P86, 6A3, 6B3, 7E7, 4P67	Mondal, Jayanta	4P26
McCarville, Thomas	3P85	Monson, Todd	1P06
McCary, Edward	4P75	Montecalvo, Nicolo	5P71
McCullough, James	2A5	Moody, John	5P43
McDonald, Michael	8B4	Moon, Chanwoo	3P57
McDonald, Robert	3P85	Moore, Chris	1P12, 1P13, 2P27, 4P20, 4P27
McGeoch, Malcom	4P35	Moore, James	7E2
McGlathery, Doug	10E1	Moore, Tommy	4D5
McGuffey, Christopher	4P75	Moraes, Henrique Monteiro	5P44
McGuire, Thomas	5P71	Morehouse, Mark	4P41
Mckenzie, Bonnie	5C4	Morent, Rino	1D7, 7D5
McLean, Harry	3P85, 4P75	Morgenroth, Wolfgang	8C6
McQuage, Matthew	1P69	Morimoto, Kentaro	5D4
McRee, Brian	5P69	Morris, Ben	1E2, 9F4
Mease, Gary	2P55	Mostrom, Chris	4B3
Medina, Brandon	4P20, 4P27	Mounter, Sarah	5E2, 5P19
Medovnik, Aleksander	4P05	Moyer, Daniel	3P66
Medvedev, Maxim	1P74	Mu, Zhencheng	1P67
Medwal, Rohit	1P23, 9C5	Mueller, Georg	6F4
Meehan, Bernard	5E4	Müller-Münster, Alexander	4P16, 5P20
Meena, B. L.	1P08, 2P47, 6D6	Mulville, Thomas	7E2
Mehlhorn, Tom	6Plenary	Muñoz-Cordovez, Gonzalo	5C6
Mehrling, Timon	3A1	Munsat, Tobin	1P45
Mei, Kaisheng	3P78, 5P16	Munzar, Vojtech	4P69
Meisel, Martin	3A1, 3A2	Murillo, Michael	1A2, 1P39, 1P41, 2P24
Melean, Raul	3P79, 3P84	Musk, Jeffrey	4P50
Meledath, Joy Thomas	2E4	Mussenbrock, Thomas	5A4
Melnik, Paul	3P46	Myers, Alannah	10E1
Mendonca, José Tito	3A4	Myers, Clayton	4D5, 3P82, 3P85, 9F1
Meng, Guodong	10C2	Myers, Matthew	4P35
Meng, Yinghao	1C2	Myers, Nick	2P33, 10B2, 10B3
Menon, Rakhee	4P23, 4P26	Mysyrowicz, André	8E3
Merrill, Lee	5P08	N., Purushothaman	1B7
Mi, Yan	3P35, 9E2, 5P15	Nagao, Kazuki	5B6
Mikitchuk, Dmitry	5A1	Nagler, Robert	8C4
		Nakajima, Hiromitsu	5P51, 5P68

Nakatsutsumi, Motoaki	8C6	Oksuz, Lutfi	1P26, 2P07
Nakono, Akira	3P68	Olano Garcia, Alberto	10D6
Nam, Sang Ki	5D7	Olbinado, Margie	5C1
Namihira, Takao	1P57, 2F2, 3E2, 3E3, 4E6, 5A5, 3P30, 3P31, 3P40, 3P59, 8E7	Oliver, Bryan	10E2
Nanni, Emilio	8B7, 9B1	Oliver, Tobias	7C2
Narkis, J.	10B1	Ologunogba, D.	4P39
Narkis, Jeffrey	5P33	Onyenucheya, Barnard	1P25
Nash, Boaz	8C4	Oportus, Diego	8C3
Nasir, Warda	8A2	Ormond, Eugene	3P81, 3P90, 9F5, 9F6
Natal, Robert	2P56	Oro, D M	3D7
Natsui, Takuya	5P51, 5P68	Oro, David	5P08
Nayak, Gaurav	3C5	Orozco, Haylie	1P76
Neculaes, Vasile	1D4, 2B3, 3C3, 3P53	Osterhoff, Jens	3A1, 3A2
Negri, Cesar	6F7	Othman, Mohamed	8B7, 9B1
Neilson, Jeff	7B3, 9B1	Ottesen, Casey	1P76
Nelson, Eric	1B1	Ottinger, Paul	4B4, 4P18, 7A1
Nema, Sudhir kumar	3P01	Quart, Nicholas	8C5, 4P17
Nemoto, Yusuke	3E6	Ovtchinnikov, Serguei	1B1, 1B5, 8B3, 8B4
Neuber, Andreas	1C4, 2E5, 3B1, 3B2, 3B3, 3B4, 3B5, 3D3, 4F1, 5E6, 5F1, 6A6, 6D2, 6D5, 7F4, 8B2, 8D3, 9D5, 9D6, 5P01, 5P02	Owens, Israel	2P56, 9F2, 9F3
Neukirch, L P	3D7	Oxford, Julia	3P66
Neumayer, Paul	5P20	Oyadamari, Seiichi	3P58
Ney, P.	10B1	Oyarzabal, Eider	9C2
Nguyen, Duc Ba	7D2, 7D3	Pachkov, Aleksey	5P07
Nguyen, Hieu	3B3, 3B5	Packard, Drew	5B4, 7B4
Nguyen, Thanh H.(Helen)	8E2	Padalko, Vladimir N.	4P69
Nguyen, Van Toan	7D2, 7D3	Padgett, Joshua	8A4
Nichols, Alan	1B1	Paduch, Marian	4D4
Nichols, Kimberley	8F5	Pal, Udit Narayan	1P08, 2P26, 2P35, 2P47, 6D6, 4P09, 4P44, 5P17
Nicolas, Remi	2B6	Pan, J. Q.	9C5
Nie, LanLan	1P66	Pan, Yuan	6E6
Nie, Lanlan	3P63	Pandey, Arun	1P07
Nielsen, Dan	9D2	Pang, Lei	1P38
Nigam, Kushagra	3P01	Panov, Aleksey	5P07
Nijdam, Sander	4E7	Paquet, Sylvain	2C1
Nikic, Dejan	3P23, 10D5	PAQUIGNON, Gaël	5P52
Nikiforov, Anton	1D7, 7D5	Paradisi, Cristina	3P49
Nikita, Bibinov	6C4	Pareek, Nalini	1B7
Niknejadi, Pardis	3A1	Park, Bong Joo	3P15, 3P57
Nikolaev, Alexey	2B4	Park, Jeongho	8F6
Nilsson, Elna	9A5	Park, Minwon	7F7
Nishizawa, Shoya	3P21	Park, Su-Mi	5P67
Noel, Kelli	1E6	Park, Suji	8B7
Noh, Ilho	8E6	Park, Sungbin	3P76
Nosenko, Vladimir	8A3	Parker, Jerald	1E4, 5P25
Nourgostar, Sirous	3B6	Parkevich, Egor	4P47
Novac, Bucur	2P66, 6F1	Parkin, James	10E4, 10E5
Nunnally, William	4A5, 6F6	Parrales, Martin	3P81, 9F5, 9F6
Nusrat Islam, Khandakar	2P16	Parsey, Guy	10C1
Nuwal, Nakul	10D7	Parson, Jonathan	6D2
Nybeck, Charles	1F5	Partridge, Preston	10A3, 10A4
Nyholm, Sten	3P71	Pasini, Eric	2P70
Nystrom, William	1P30	Pasour, John	7B7
O'Brien, Heather	6D3, 6D4	Pastor, David Cabrerizo	1C3
O'Connor, Kevin	2C4	Patel, Adam	3P22, 10D2
O'Shea, Brian	1B4	Patel, Amit	1E3
O'Neill, W.	4P04	Patel, Ankur	4P26
Obenschain, Stephen	4P35	Patel, Sonal	5C4, 3P73, 3P82
Oberberg, Moritz	10A5	Patrakov, Vitaly	6D8
Oberrath, Jens	4P53	Patriotis, Marios	1P81
OBREGON, ROBERT	3D1	Patten, A R	3D7
Odic, Emmanuel	8D4, 9D3	Patton, James	1P42
Oehrlein, Gotlieb	7D6	Payne, Sheri	5C4
Offermann, Dustin	4B3	Pearson, Aric	2P55
Ofori-Okai, Benjamin	8B7	Pecastaing, Laurent	2C1
Ogunniyi, Aderinto	2P49, 6D3, 6D4	PECASTAING, Laurent	3P37, 5P52
Oikawa, Rikuya	9E4	Peebles, Jonathan	4P75
Oishi, Kazuki	3E3	Pei, Zhehao	4E2
Okada, Kiyotaka	3E3	Pekhotny, Andrey	3P75
Oks, Efim	2B4, 4P03, 4P05, 4P70, 4P71	Pelka, Alexander	8C6
		Pemen, Guus	1P55, 2P44, 6F1, 8D5
		Peng, Shuming	8F7

Pengyu, Wang	1P29	Queller, Tal	4P55
Perez, Jesus	9F6	Qui, Xiaoli	3B3
Peroulis, Dimitrios	6C7	Quinley, Morgan	5P48
Perry, Eric	6F6	Qureshi, M N S	2A3, 8A2
Pervez, Mohammad Rasel	5D4	Raadu, Michael A	5A3
Peter P., Sun	8E2	Rack, Alexander	5C1
Peterson, Kyle	2F5, 4D5	Rahman, H. U.	10B1
Pettilo, John	1B1, 1B5, 7B7, 8B3, 8B4	Rai, S. K.	5P17
Petkov, Emil	4P17	Rainwater, Kirk	9F2
Petre, Anca	9F7	Rajan, Magesh	1P62, 3P41, 3P70, 4P74
Petrenko, Evgeniy	3E4	Rakhmanov, Roman	7D1
Petrov, George	4P35	Rakitin, Maksim	8C4
Petrov, Oleg	8A3	Ram, Ranashree	7F5, 5P35
Petrova, Tzvetelina	1P56, 1P58, 1P63, 4B4, 4B5, 4P35	Raman, Kumar	3P85, 9F1
Pham, Van Thuan	5B6	Ramazanov, Roman	3P75
Phelps, Alan	2P40, 7B8	Randolph, R B	3D7
Phillips, Edward	4P27	Ranganathan, Rajagopalan	5D5
Phillips, M. C.	2F1, 9A3	Rangel, Elidiane	3P02, 3P34
Picard, Julian	8B5, 9B1	Rangel, Elizete	5P44
Pierce, Jeff	6D2	Ranjan, Alok	4P29
Pieterse, Petrus	10E7	Ranjan, Prem	3E5
Pikuz, Sergei	5P04	Rapp, Juergen	4P07, 4P34
Pikuz, Sergey	4P43, 4P47, 4P50	Rataj, Raphael	2D4, 3P05, 9E5
Pillars, Jamin	5C4	Ratakhin, Nikolai A.	4P69
Piskin, Tugba	1P05	Rathinam, Navanietha	3P41
Plaçais, Adrien	9C6	RAWAT, Rajdeep Singh	9C5
Plumlee, Don	3P66	Rawat, Rajdeep	1P23
Poder, Kristijan	3A1	Ray, Ashton	2P55
Podlesak, Thomas	5P70	Read, Michael	7B2, 7B3
Podpaly, Yuri	5E4	Reass, Daniel	5B2
Poggie, Jonathan	1P05	Reass, W A	3D7
Pointon, Timothy	1P37, 4P27, 4P28	Recchia, Mauro	1P79, 4P08
Polat, Hakan	5P38	REESS, Thierry	3P37, 5P52
Pollock, Brad	5P43	Reid, Remington	1P17
Polyakov, Dmitry	1P51, 1P52, 2P22	REID, Remington	1P42, 2P36
Poole, Toby	2P81	Reinovsky, Robert	3D7, 7C6
Porteanu, Horia-Eugen	2B5, 6C3, 6C4	Reis Raimundi, Lucas	2P17, 5P42
Portillo, Salvador	2P30, 2P65, 4F6, 4F7, 5F7, 10C6	Reisman, David	5P12
Porwitzky, Andrew	3P82	Ren, Chengyan	4P73
Posos, Taha	8F6	Ren, Jiarui	2P43, 3P83
Pothee, Jeremy	2P06	Ren, Junxue	10D6
Potter, William	5C2, 6B1, 6B2, 6B3, 6B4, 7C2, 4P47, 4P64	Ren, Shuai	1C7, 9C4
Pouncey, Jon	2P80, 4A3, 5E5, 5P13	Ren, Xiao-dong	6B7
Pourmussavi, Paul	3A1	Ren, Yijia	5A6, 5A7
Powell, Melvin	9D6	Renk, Timothy	1P37, 7A1, 10E3
Powell, Troy	1P37, 4P27, 4P28	Revet, Guilhem	4P75
Power, John	8F5	Rezac, Karel	4D4, 4P66, 4P69
Pozdnyakov, Vasily	4P53	Rezaeifar, Fatemeh	3F1, 8F1, 8F2
Prager, James	1P82, 3P46, 4P12, 5P47, 5P48	Rhee, Inhyuk	4P33
Prelas, Mark	2C4	Rhodes, Mark	5P05, 5P43
Preston, Thomas	8C6	Ribeiro, Rafael	3P02
Prock, Nichele	3P90	Richardson, M.	4P39
Pronko, Steven	6E1	Richardson, Roger	2E2
Protasio, Cleonilson	1P70	Richardson, Steve	1P56, 1P58, 1P63, 4B4, 4B5, 10B4
Proto, Andrea	1P47	RICHTER-SAND, ROBERT	1E4, 5P25
Protopopov, Igor	3E4	RITTER, Sandra	5P31
Provost, Mariah	3P66	Rittersdorf, Ian	4B4, 4P18, 10E3
Prudaev, Ilya	2P42	Rivaletto, Marc	2C1
Puech, Jérôme	9C6	Roark, Christine	2P13, 4P38
Punia, Sheetal	1P18, 1P20	Robertson, Craig W.	2P40, 7B8
Qi, Niansheng	4P64, 6B2	Robertson, Ellen	4P01
Qian, Baoling	2C5	Robinson, Allen	1A7, 3P82
Qian, Dun	2P25, 6E2	Robinson, Ryan	7D4
Qiao, Jimin	1P67	Rocco, Sophia	5C2, 6B1, 6B2, 7C2, 4P64
Qiao, Ke	8A3	Rochau, Greg	4D5
Qishen, Lv	1P27	Rodgers, John	7B6
Qiu, Aici	1P71, 7E1, 4P57, 10B6, 10B7	Rodriguez, Jose	6D3
Qiu, Gao	2P79	Rodriquez, Ricky	6D2
Qiu, Xiaoli	3B2, 3B5	Rodriquez, S	3P85
Qu, Chenhui	3P06, 8E5	Roeckemann, Jan-Hedrik	3A1, 3A2
Quast, Martin	3A1	Romero, Thomas	9F6

Ronald, Kevin	2P26, 2P40, 7B8	Sato, Hiromi	3P68
Rong-Rong, TAN	5P06	Sato, Mitsuhiro	3P17
Rong, Linyan	1P67	Satta, Naoya	9E4
Rongione, Nicolas	10A3, 10A4	Saunders, A	3D7
Roques, Bernard	5P09	Savage, Mark	7E2, 10E2
ROQUES, Bernard	5P31	Savinov, Sergey	4P43
Rose, David	4B3, 3P82	Sawada, Hiroshi	4P75
Rosenberg, Marlene	6A5, 8A3, 8A4	Sawamura, Yo	5P51
Rosenzweig, Guy	8B5, 4P55, 9B3	Sawant, Ashwini	6C2, 9B4, 9B5
Rosol, Rodolphe	2B6	Saxena, Alok Kumar	6B5
Rososhek, Alexander	5C1, 4P45	Scalo, Carlo	1P05
Rososhek, Sasha	5C5	Scarcelli, Riccardo	9A1
Rossetti, Leonardo	5A2	Sceiford, Matthew	7E2, 9D2
Rossi, Jose	2P15, 2P17, 5P42, 5P44	Schamiloglu, Edl	1P24, 1P81, 2P05, 2P15, 2P16, 2P17, 2P18, 2P28, 2P65, 4F6, 4F7, 4P60, 5B2, 5B5, 7B1, 5P42
Rossino, Luciana	3P02	Schaper, Lucas	3A1, 3A2
Rostov, Vladislav	2P02, 6C1	Schaub, Samuel	8B5, 9B1
Roth, Ian	3D4, 5P55	Schein, Jochen	1P32
Rousculp, Christopher	2E1, 3D7, 4P61, 5C4, 5P08, 7C6, 4P49	Schein, Jochen	3P25, 10D4
Rowland, Jeffrey	5C3	Schilling, Nathan	4P40
Roy, Amitava	4P23, 4P26	Schillo, Kevin	4P40
Rubinshtein, Zeev	5P57	Schmidt, Andreas	8C6
Ruddy, Joshua	1F5, 1P72, 1P73	Schmidt, Bernhard	3A1
Ruiz, Carlos	4D5	Schmidt, Thomas	4P60
Rukin, Sergei	6D8	Schmitt, Andy	4P35
Rumbach, Paul	9C1	Schneider, Mitchell	8B6
Runyu, Zhang	9E7	Schrock, Emily	2P11
Ruscassió, Robert	9F7	Schrock, James	1E4, 5P25
Ruscetti, Joseph	10B2, 10B3	Schroeder, Andreas	3F4
Ruskov, E.	10B1	Schroeder, Christi	5D6
Rutha Paw, Naw	5D4	Schroeder, Sarah	3A1
Rybka, D.	5P29, 5P30	Schroeder, William	5D6
Rybka, Dmitry	7E5	Schulze, Julian	5A4, 10A5
Ryoo, Hong-Je	5P67	Schumer, Joseph	1P56, 1P58, 1P63, 4B5, 4P18, 4P66
Ryu, Jiheon	2P50, 2P51	Schweickart, Dan	5F3
Ryu, Jong Hyeon	3P76	Schwinkendorf, Jan-Patrick	3A1, 8C6
Ryu, Sei-Hyung	6D4	Schwinn, Madison	5E2
Ryu, Terumasa	2F2, 5A5	Sefkow, Adam	9D4
Sack, Martin	6F4	Selvam, P.	3E5
Sadowski, Marek	4D4	Semnani, Abbas	1P04, 6C7
Saethre, Robert	1E2, 9F4	Senaj, Viliam	1C3, 2P45, 2P46, 6D8
Safronova, Alla	5C3, 8C5	Senior, Peter	2P66, 6F1
Sahay, Chittaranjan	2P81	Serebrov, Roman	3P75
Saini, N. S.	1P14, 1P44, 1P53, 1P54, 2A2, 8A1, 8A6, 8A7	Serianni, Gianluigi	4P08
Saini, V. K.	5P17	Sethi, Papihra	1P53
Saito, Koki	3P69	Seviour, Rebecca	2P08
Sakamoto, Kunihiro	5P56	Seyler, Charles	1P35, 6A3, 6B3
Sakiyama, Yukinori	3P06	Shafikhani, Azizollah	1P36
Sakudo, Noriyuki	3P38	Shah, Akash	4P67
Sakugawa, Takashi	3P04	Shalaeva, Anna	3P75
Sakugawa, Takashi	3P17, 5P56	Shannon, Steven C.	8E5, 4P29
Sakurai, Kazuya	5B6	Shao, Jiahang	8F5
Salcedo, Fernando	1F3, 1F6	Shao, Tao	4P73, 5D1, 5D3, 3P16
Saleem, Mubbshir	3P49	Shapiro, Michael	8B5, 9B3
Sami, Sayeed Nafis	8F3	Shaplov, Anatoliy	3A5
Sampayan, Kristin	6D1	Shapovalov, Roman	7C1, 7E3, 7E4
Sampayan, Stephen	6D1	Sharma, Archana	4P23
Sanabria, David	10C5	Sharma, Archana	4P26
Sanchania, Nimish	3P01	Sharma, Ashish	2E4, 5P35
Sanchez Gonzalez, Andres	5P46	SHARMA, NAVIN KUMAR	4P44
Sanchez, Jacob	1P72, 1P73, 5P69	Sharma, S. K.	5P17
Sanders, Howard	5P18	Sharma, Vishnu	4P26
Sanders, Jason	2F6, 3P42	Shashurin, Alexey	3P22, 10D2
Sandoval, Andrew	5B2	Shaw, Zach	9D6
Sanford, Dustin	6A5	Shaw, Zachary	3B4, 4F1
Sanghariyat, Adam	3P01	Shay, Andrew	2P56
Sani, Rajesh	3P41	Sheeran, Bridget	3A1
Santillanes, John	2P56	Shelkovenko, Tania	5P04
Sanuki, Yoshifumi	3P39	Shelkovenko, Tatiana	4P43, 4P47, 4P50
Sarathi, R.	3E5	Shen, Saikang	2D2, 2D3, 2P48, 2P74, 3P77, 3P78, 6D7, 5P16
Sasaki, Kanji	8E7	Shen, Xiaozhe	8B7
Sasaki, Toru	3P88, 4P46, 4P52		

Sherlock, Mark	1P39	Soletto, Alfonso	9C2
Sherman, Jonathan	3C1	Son, Byung-Koo	3P15, 3P57
Shi, Fukun	1D2	SON, YEONGWOO	9C7
Shi, Huantong	2D5, 7E1, 4P57, 10B6, 10B7	Sone, Hisanori	3P26, 3P27
Shi, Qi	4P56	Song, Baipeng	3P32
Shi, Wei	2P78, 5P10	Song, Myung-Geun	7F2, 7F7
Shidara, Tetsuo	5P68	Song, Myunggeun	5P36
Shigeishi, Mitsuhiro	3P30	Song, Seung-Ho	5P67
Shim, Seungbo	5D7	song, shutong	3P08, 3P42, 9E6
Shimomura, Naoyuki	3P39, 3P54, 3P58	Song, Young-Hoon	3P44, 8E1
Shin, Jinwoo	9B2, 9B5	Song, Yuanxu	4P41
Shin, Kim	1E5, 5P62	SORNSAKDANUPHAP, Jirapong	4C4
Shiple, Gabriel	4P58	Sotnikov, Vladimir	1P43, 2A1
Shishlov, Alexander V.	4P69	Sottovia, Livia	3P34
Shlyaptseva, Veronica	5C3, 8C5	Sparkes, M.	4P04
Shon, Chae-Hwa	4P11	Spataro, Bruno	9B1
Shon, Chaehwa	3P62	Speer, Ronnie	2P55
Shou, Yinren	3A6	Speirs, David	2P40
Shrestha, Ishor	5C3, 8C5	Spektor, Rostislav	10A3, 10A4
Shu, Xiaojian	6B6, 6B7	Spelts, David	10E1
Shukla, Prasoon	2P26, 2P35	Spencer, Decker	3P85
Shumlak, Uri	4Plenary, 5A1	Spencer, Edmund	1A6
Shumova, Valeria	1P51, 1P52, 2P22	Spielman, Rick	7E4, 9D4, 5P12, 10E2
Shurupov, Mikhail	5P03	Spinks, Michael	4P75
Shurupova, Nina	5P03	Spirkin, Anton	1P33, 2P13
Siddiqi, Moiz	3B7	Spong, Donald	4P07
Siemon, Richard	5C4	Sporer, Brendan	7E7, 4P67
Silva Neto, Lauro Paulo	5P42, 5P44	Springer, Paul	2P85, 9F1
Silverman, Noah	5P55	Srinivasan, Bhuvana	4P59
Silvestre De Ferron, Antoine	2C1	Srivastava, Rajesh	4E4, 3P72
Silvestre, Luke R.	4F1	Staack, David	1P60, 3P07, 10A7
Simakov, Evgenya	8F4, 8F5	Stafford, Austin	5C3, 8C5
Simeni Simeni, Marien	4E3	Stamate, Eugen	5D4
Simon, David	5B1, 5B4	Stambulchik, E.	3P73, 5A1
Simpson, Rebecca	4A4, 5P55	Stanek, Lucas J.	2P24
Simpson, Sean	9D1, 9D2	Stangenes, Magne	1E6
Sinars, Daniel	4D5	Stanier, Adam	1P30
Sinclair, Mark	7A6	Stanislaus, Seophine	5P04
Singh, Amritpal	4P42	Stantchev, George	1B1, 1B6
Singh, Kuldeep	1P54, 2A2, 8A7	Stark, David	1P30
Singh, Raj	5P45	Starzynski, Jacek	5E7
Singh, Ranbir	1F6	Stefanović, Ilija	2B5, 6C3, 6C4
Singh, Sandeep	4P26	Steiner, A. M.	5C3
Singh, Satbeer	1P82	Steiner, Adam	5P71
SINGLA, SUNIDHI	1P44	Stelmashuk, Vitaliy	1P46
Singleton, Dan	2F6, 5D6, 3P42	Stevens, Jacob	8B5, 9B3
Sirola, Chiranjeev S.	7F5	Steuer, Anna	1D2, 2D4
Sizyuk, Tatyana	1P05	Stevens, Richard	10E1
Sjobaek, Kyrre Ness	3A2	Stevens, Tyler	1P06
Skarda, Bill	3P90	Stiles, Ashley	1P42
Skidmore, Jonathan	10E5	Stobbs, Jessica	6F1
Skipper, Michael	2P33, 2P68	Stöckli, Andreas	2P62
Skipper, Michael	4C1	Stollberg, Christine	5A1
Skirtach, Andre G.	1D7	Stoltz, Peter	1P33, 2P13, 4P38, 4P59
Skrodzki, P.	9A3	Stoltzfus, Brian	7E2
Slobodov, Ilia	5P48	Stone, Peter	5P34
Slovikovsky, Boris	6D8	Straubing, Asher	2P31
Slutsker, Ya.	2P02	Štraus, Jaroslav	1P46
Slutz, Stephen	4D5	Strehlow, Joseph	4P75
Smajic, Jasmin	2P62	Strohm, Cornelius	8C6
Smart, Brent	2P56	Strubbe, David A.	3P89
Smith, Carl	8E5	Struve, Ken	5F4, 4P02, 4P24, 9F2, 10E2
Smith, Jenny	1P65, 3P74	Stryczewska, Henryka Danuta	5P63, 5P65, 5P66
Smith, John	3P81, 3P90, 9F5, 9F6	Stygar, William	7E2
Smith, Justin K.	4C1	SUANPOOT, PRADOONG	4C4
Smith, Samuel	2P05, 5B5	Subramanian, Sriram	5D6
Smith, Trevor Johannes	3P86	Suematsu, H.	3E5
Smithe, David	1P15, 4B1	Suenaga, Katsushi	3P31
Snively, Emma	8B7	Sugai, Taichi	3D6, 5B6, 5E1, 5P49, 5P51
Sol, David	5P09	Sugawara, Daiki	3P26
Solberg, Jerome	2E2	Sugihara, Koby	1P75

Sukharnikov, Konstantin	8C6	Titus, J.	4P39
Sun Mok, Young	7D3	Tokuchi, Akira	3D6, 3P88, 5P49, 5P51
Sun, Chuyu	2P71	Tokuchi, Akira	5E1
Sun, Fengju	7E1	Tominaga, Nobuaki	3P60
Sun, Hao	5D1, 4P73, 5P41	Tomita, Kentaro	4E6
Sun, Hao	5D3, 3P16, 4P73	Tomlinson, Kurt	2F5, 4P51, 4P58
sun, hao	5P59, 5P41, 5P60, 5P61	Toncian, Monika	8C6
Sun, Jwo-Shiun	1P80, 2P38, 5F5	Toncian, Toma	8C6
Sun, Peter P.	9E1, 9E7	Torfason, Kristinn	1P16, 2P20
Sun, Shun-kai	6B7	Torigoe, Yasuaki	3E2
Sun, Shunkai	6B6	Tortel, Stéphane	2P04, 2P06
Sun, Yi	2P43, 2P61	Toury, Martial	2B6, 5P31
Sundararajan, Raji	3C2, 3C4	Toyoda, Souhei	3P04
Sundberg, Hanna	3P71, 9A5	Trask, Erik	4P41
Suzan, Alfred	2P75, 2P76	Treece, Cameron	10A6
Suzuki, Daishi	3P19, 3P20	Treibel, Dan	10B2, 10B3
Suzuki, Yudai	3P59	Tremble, Christopher	2F6, 3P42
Swanekamp, Stephen	1P56, 1P58, 1P63, 4B4, 4B5, 10E3	Trieschmann, Jan	5A4
Swenson, Christopher	7B4	Trinh, Quang Hung	7D2
Szalek, Nicolas	7A5, 4P19, 4P20	Truong, Hoai-Tam	3P81, 9F5, 9F6
Szattmari, Sandor	3A5	Tsoi, Tsz	6D4
Tabares, Francisco	9C2	Tsutsuji, Daisuke	3P69
Taccetti, J. Martin	4A3	Tucek, John	9B3
Tafalla, David	9C2	Tucker, E.	2E5, 5P01, 5P02
Tagawa, Toru	5P56	Tunell, Keith	2P56
Takahashi, Katsuyuki	3P27, 9E4	TUNG, TRINH	3D1
Takahashi, Kazumasa	3P88, 4P46, 4P52	Turchi, P J	3D7
Takaki, Koichi	3P27, 9E4	Turek, Karel	4P69
Takao, Namihira	5P58	Tymoshuk, Volodymyr	5P54
Takatsu, Wataru	5B6	Tyunkov, Andrey	4P71
Takaura, Koki	3P17	Tzeferacos, Petros	4D6
Talley, Matthew	4P29	Tzhai, Sergey	4P43
Tallman, Tyler	2C3	Uddi, Mruthunjaya	5D5
Tamura, Fumihiro	3P88	Ueji, Tomohiro	3P59
Tan, Evren	7F1	Uesugi, Yoshihiko	5D4
Tanaka, Yasunori	5D4	Uhrlandt, Dirk	10E7
Tang, Feng	1P27	Ulmen, Ben	4P02, 4P24, 9F2
Tang, Haibin	10D6	Uto, Yoshihiro	3P54
Tang, Nian	2P67	Utsumi, Yuki	3P39
Tang, Ricky	3P03	Uygun Oksuz, Aysegul	1P26
Tang, Xiaoliang	2P79	Uygun, Emre	1P26
Tang, Xin	10A7	V P, Anitha	5P45
Tang, Z	3D7	Vadlamani, Anand	1D5
Tangri, Varun	4P55	Vagaytsev, Semen	7E5, 5P29, 5P30
Tantawi, Sami	9B1	Vaghela, Naresh	3E8, 5P24
Tanwani, Nisha	3P01	Valbuena, Michael	1E6
Tao, Zhanjing	6A1	Valentine, Travis	4P41
Tauscher, Gabriele	3A1	Valenzuela-Villaseca, Vicente	5C6
Tay, Charmine	1P23	Valenzuela, J.	10B1
Taylor, Brian	4P40	Valenzuela, Julio	5P33
Tchoupe-Nono, Cedrick	1F3	Valenzuela, Julio	8C3
Temkin, Richard	8B5, 9B1, 9B3	Valfells, Ágúst	1P16, 2P20
Teranishi, Kenji	3P39, 3P54, 3P58	van den Bekerom, Dirk	8C1
Terry, Robert	9A6	Van Der Voort, Pascal	7D5
Tetyana, Yatsenko	2P65	Van Ginhoven, Renee	1P06
Tewari, Somesh V.	4P45	Van Guyse, Joachim	1D7
Tewari, Somesh	5C5	van Heesch, Bert	2P44
Thavappiragsam, Mathialakan	2P29	Van Oorschot, Jeroen	5E3
Theisen, Eric	1F4	Vander Missen, Zach	1P04, 6C7
Theocharous, Savva	5C1, 7C5, 7F6, 5P04	Varentsov, Dmitry	5P20
Thibaut, Christophe	10D4	Varlachev, Valery A.	4P69
Thoma, Carsten	4B3	Varun	1P08, 2P26, 2P35, 4P09, 4P44
Thomas, M. Joy	6E5, 7F5, 5P35	Vas, Joseph Vimal	1P23, 9C5
Thomas, Richard	5F6	Vasilyak, Leonid	1P51, 1P52, 2P22
Thomas, Vincent	4P76	Vašina, Petr	3P45
Thorpe, Ian	8C6	Veda Prakash, G	5P45
Thumm, Manfred	2Plenary	Velásquez, Fabián	8C3
Tilikin, Ivan	4P43, 4P47	Velikovitch, Alexander	7C4, 10B4
Tilley, Gary	2P56	Veloso, Felipe	5C6, 8C3
Tillu, A. R.	2P47	Ventzek, Peter	4P29
Timoshkin, Igor	1C6, 1P22, 2P52, 2P77, 8D1, 8D2, 9D7, 10C4	Verboncoeur, John	1A5, 2P39, 4B2, 4F2, 4F3, 4F5, 10C1

VERGE, Robin	5P52	Webb, Tim	4D5, 3P82
Vergel de Dios, Gene	3P85	Weber, Bruce	4P66, 10E3
Verkholetov, Maksim	2P42	Weber, Thomas	10C7
Verma, Mohit Kumar	1P08, 6D6	Wei Gang, Dong	1P78
Vescovi, Milenko	5C6	Wei, Bin	2C6
Villarim, Andréa	1P70	Wei, Zhenyu	4P56
Virozub, A.	5C5	Weide, Klaus	4D6
Vizir, Alexey	2B4	Weidenheimer, Douglas	10E1
Vlasov, Alexander	7B6	Weidong, Ding	10D1
Vogman, Genia	1P11	Weis, Matthew	4D5
Voisin, Luc	5P52	Welch, Dale	4B3, 3P82
Voorhees, T J	3D7	Wellander, Niklas	3P71
Vunni, George	2E3	Wen, De-Qi	4F5
Waggoner, Will	4P41	Wen, Deqi	1A5, 2P39
Waisman, Eduardo	3P82	Werner, Greg	1A4, 1P31, 1P34
WALCH, Pierre	8E3	Wesch, Stephan	3A1
Waldron, John	1C1	West-Abdallah, Imani	7C1, 7E3, 7E4
Walker, Jessie	5E4	Wetz, David	1F5, 1P72, 1P73, 5P69
Walsh, James	3P67	Wheelock, Adrian	2A5
Walters, Kurt	4P41	White, Adam	2E2
Wan, Hui	5P15	White, Amanda	3P66
Wan, Maliang	1P67	Whiteford, Charles	8F5
Wandell, Robert	8E4	Whyte, Colin	2P14, 2P40, 7B8
Wang Huang, Kevin	7B1	Wi, Hyunho	5P64
Wang, Bo	1P67	Wilczek, Sebastian	5A4
Wang, Douyan	1P57, 3E2, 2F2, 3E3, 4E6, 5A5, 3P30, 3P31, 3P40, 3P59, 8E7, 5P58	WILKINS, FRANK	3D1
Wang, Guan-qiong	6B7	Williams, Jackson	3P79, 3P84
Wang, Guanqiong	6B6	Williams, Jacob	1F1, 4P13
Wang, Guilin	2C6	Williams, R.	4P39
Wang, Haiyang	2P71	Williamson, Chris	2P77, 8D1
Wang, Hao	3C6, 3P64	Wilson, Christopher	5P04
WANG, HAO	5P41	Wilson, Kieran	2P40
Wang, Jin	5F3	Wilson, Mark	1C6, 2P52, 2P77, 8D1, 8D2, 9D7, 10C4
Wang, Kejing	10C2	Wilson, Mark	1P22
Wang, Kungpeng	1P60, 3P07	Wing, Matthew	3A2
Wang, Lingyun	7A8	Winkler, Paul	3A1
Wang, N. L.	9C5	Winterling, Bryan	4P40
Wang, Pengjie	3A6	Wirz, Richard	3P55
Wang, Pengyu	3P13	Wisher, Matthew	7E2
Wang, Ruiqiang	5D5	Wisniewski, Eric	8F5
Wang, Shaoqiang	2P78	Wolfe, Douglas	2B2
Wang, Songjiong	4P33, 5P64	Wolff, Christina	1D2
Wang, Tao	1C6, 2P52, 10C4	Wolford, Matthew	4P35
wang, tengfang	8F7	Wollenweber, Lennart	8C6
Wang, Tingting	3P16	Won, Jungeun	8E2
Wang, Xianmin	6E7	Wong, J	3P85
Wang, Xiao-guang	6B7	Wong, Patrick	4F3
Wang, Xiaoguang	6B6	Woodyard, Matthew	2P66
Wang, Xiaoyu	6F5	Woolstrum, Jeff	3P86, 6A3, 6B3, 4P67
Wang, Xifeng	1P61	Worthington, Mike	2P10
Wang, Xijie	8B7	Wright, Kamau	1P84, 2P81
Wang, Xinxin	2F4, 3C6, 3D2, 2P25, 3P64, 6E2	Wu, Fan	3P11, 3P63
Wang, Xu	1P45	Wu, Feihong	10C2
Wang, Yanan	2D2, 2P74, 2P75, 2P76, 3P24, 3P77, 5P16, 10C3	Wu, Jian	2D5, 7E1, 4P57, 10B6, 10B7
Wang, Yifeng	2P61	Wu, Jiawei	1C5, 3E1
wang, yilin	7E6	Wu, Mingan	6E6
Wang, Yonggang	5P21, 10E6	Wu, Minjian	3A6
Wang, Yongsheng	2P53	Wu, Shuqun	5D2
Wang, Yu	1P71	Wu, Si	5P11
Wang, Yu	4P56	Wu, Wenzhou	2C3, 3F3
Wang, Zhao	4P30, 4P31, 8C2	WU, yuyi	3P43
Wang, Zhe	1P22	Wyndham, Edmund	5C6, 8C3
Wang, Zhiguo	7E1	Xiang, Hongjun	5P40
Watanabe, Ken	3P59	Xiao, De-long	6B7
Watrous, Jack	5B1	Xiao, Delong	6B6
Watt, Robert	2E1	Xiao, Yao	10C8
Watts, Hannah	2P31	Xie, Linshen	2P71
Weatherford, C.	4P39	Xie, Weiping	7A8
Weathersby, Stephen	8B7	Xie, Zhixin	1P67
Webb, John	1F4	Xingwen, Li	1P27
		Xinxin, Wang	6A7

Xiong, Liangli	6E6	Yue, Yuanfu	4E1, 9A2
Xu, Hangbo	3C7, 3P65	Yun, Gunsu	3P56
Xu, J. H.	9C5	Yurdabak Karaca, Gozde	1P26
XU, LIN	5P41	Yurdakul, Emre Burak	7F1
Xu, Qiang	6B7	Yushkov, Georgy	2B4
Xu, Wenjun	3C1	Yushkov, Yury	4P71
Xu, Xiaohan	3A6	Zalesak, Steven	7C4
Xu, Xinan	1P67	Zamengo, Andrea	1P79, 4P08
Xu, Yan	4D2	Zameroski, Nathan	6D2
Xu, Yao	2F4	Zarei, Arezou	1P01, 1P64
Xue, Chuang	6B6	Zarei, Arezou	1P36
Xue, Qingjiang	8D2	Zastrau, Ulf	8C6
Yager-Elorriaga, David	4D5, 5C3, 6A3, 4P58	Zavalova, Valentina	5P03
Yamaguchi, Hitoshi	2F2, 5A5	Zeng, Ming	3A1
Yamaguchi, Takehiro	5P58	zeng, weirong	7E6
Yamamoto, Yasuo	3P54	Zenin, Alexey	4P06
Yamasaki, Fernanda	2P15, 5P42	Zettervall, Niklas	9A5
Yamashita, Hirofumi	3E2	Zhang, Boya	2P67
Yamashita, Tomohiko	5P56	Zhang, Chaohai	5D2
Yan, Dayun	1D1, 3C1	Zhang, Cheng	2P60, 3P16, 5D1, 5D3, 5F2
Yan, Ji	4D3	Zhang, Daoyuan	4P57, 10B6, 10B7
Yan, Jiaqi	2D2, 2D3, 2P48, 2P76, 6D7, 5P16	Zhang, Guangchuan	10D6
Yan, Jiayin	2D2, 2P72, 2P74, 2P75, 3P33, 3P77	Zhang, Guanjun	3P32
Yan, Ping	4P73	Zhang, Jiande	2C5
Yan, Xueqing	3A6	ZHANG, JUN	5P41
Yan, Yang	3P80	Zhang, Liang	7B8
Yanan, Wang	10D1	ZHANG, Liangen	3P43
Yang, Enbo	1F1	Zhang, Linwen	4C6
Yang, Enbo	4P13	Zhang, Lisong	1P38
Yang, Hanwu	2C5	Zhang, Liyang	3C6, 3P64
Yang, Hosik	8E6	Zhang, Mengyao	3P32
Yang, Nick	5P47	Zhang, Ming	3P13
Yang, Sisi	5D6	Zhang, Peng	1A5, 3F6, 2P32, 2P39, 4F2, 4F3, 4F5, 7A4, 8F6, 4P04, 4P22, 10A2, 10C1
Yang, Tong	3A6	Zhang, Qianlong	4P48
YANG, YING	1P66	Zhang, Qiaogen	1P38, 4E2, 4P48
Yang, Yiwen	3D6	Zhang, Runyu	9E1
Yang, Yong	3P13	Zhang, Shiqiang	7D6
yang, zhen	4C6	Zhang, Shu	4P75
Yano, Masaaki	3P30	Zhang, Shuai	5D1, 5D3
Yanuka, David	5C1, 7C5, 7F6	Zhang, Tianbo	3P24
Yao, Chenguo	2P59, 2P60, 6F5, 7E6	Zhang, Wei	1F2
Yao, Yuan	1C6, 2P52	Zhang, Xinyun	2P43, 3P83
Yates, Kevin	4P51, 5C4	Zhang, Yang	6B6, 6B7
Yawata, Kosuke	3D6	Zhang, Yongmin	1P71
Ye, Mingtian	1P38	Zhang, Yunping	3P22, 10D2
Yeckel, Christopher	1E6	Zhang, Yuting	5P39
Yee, Benjamin	1A7	Zhang, Zicheng	2C5
Yen, Jing-Shyang	1P80, 2P38, 5F5, 6C6	Zhang, Zonghua	1P67
Yeo, LiHsia	1P45	Zhao, Junping	4P48
Yildirim, Baran	7F1	Zhao, Yanying	3A6
YIN, Guofeng	2D5	Zhao, Zheng	2P43, 2P54, 2P69, 3P83, 10C3
Yin, Lin	1P30	Zhe, Chen	6A7
YIN, Yu	3P43	Zhenchun, Wang	5P39
Yinan, Zhu	3P33	Zheng, Zhongbo	2P72, 8D6
Ying, Qi	10C2	Zhenwei, Ren	3E6
Yokoi, Aika	3P68	Zhenyu, Wei	4P54
Yoneda, Charles	8B7	Zhi, Liu	1P29
Young, Andrew	2E2, 2P55	Zhigalin, Alexander	7E5, 5P29, 5P30
Young, James	7C1, 7E3, 7E4	Zhivankov, Kirill	5P07
Yu, Chan Hun	1E5, 5P62	Zhiyong, Bao	5P39
Yu, E.P.	4P51	ZHONG, Hongtao	3P43
Yu, Edmund	5C4, 4P58	Zhongbo, Zheng	2D2, 2P74, 2P75, 2P76, 3P77
Yu, In-Keun	7F7	Zhou, Haijing	7A7
Yu, Kexun	3P13	Zhou, Kun	1C2
Yu, liang	2P59, 6F5	ZHOU, QUAN	3D2
Yu, Wang	4P54	Zhou, Shao-tong	6B7
Yu, Xinjie	5P59, 5P60, 5P61	Zhou, Wenzhong	1P67
Yuan, Jianqiang	7A8	Zhou, Yan	6E7
Yuan, Xichao	5P40	Zhou, Yang	4P22
Yudin, Artem	3E4	Zhou, Yongyan	2P67
Yue, Andong	2P10		

Zhu, Jungao	3A6	Zocher, Katja	2D4
Zhu, Kun	3A6	Zolotukhin, Denis	4P06, 4P70, 4P71, 10D3
Zhu, Peiqi	5P59	Zonghao, Dong	5P39
Zhu, Shaoping	4D1	Zou, Shiyang	4D1
Zhu, Xiaojun	2C2, 2C3	Zou, Wenkang	2C6
Zhu, Yinan	2D2, 8D6	Zou, Xiaobin	2P25
Zhu, Yupan	3P65	Zou, Xiaobing	2F4, 3D2, 6E2
Zhukeshov, Anuar	4P37	Zubair, Muhammad	1A1
Ziemba, Tim	1P82, 3P46, 4P12, 5P47, 5P48	Zuboraj, Muhammed	2P21
Zirnheld, Jennifer	1P25, 3P10, 5P27	Zucchini, Frédéric	3P31, 5P09
Ziska, Derek	9D1		