

China
Electrotechnical
Society



Institute of
Electrical
Engineering,
CAS

ICOPPS 2024

The 51st International Conference on Plasma Science &
The 4th Asia-Pacific Conference on Plasma and Terahertz Science

ICOPPS & APCOPTS 2024



June 16-20, 2024



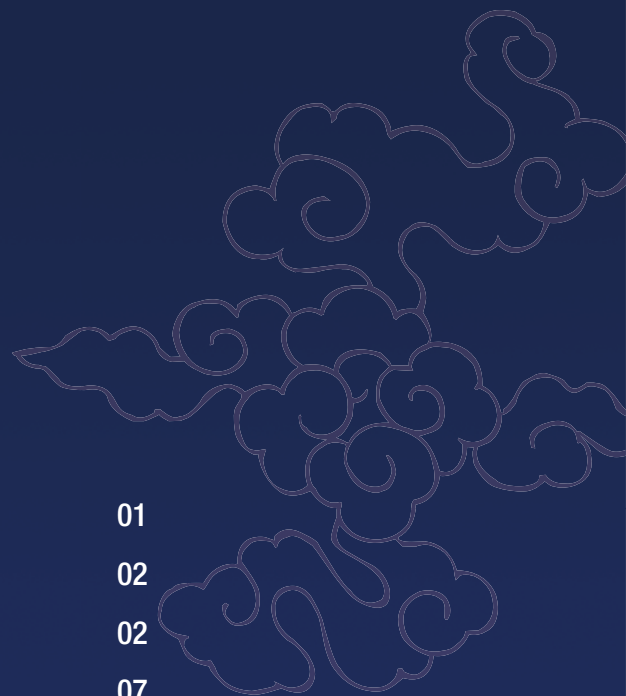
Beijing, China

PROGRAM

目录

Contents

1. Welcome Message	01
2. Conference Organization	02
3. Chairs & Committees	02
4. Program	07
Program at A Glance	07
Opening Ceremony	08
NPSS Chapters in China	08
Women in Engineering Event	09
Young Professionals Event	09
Featured Events, Award Ceremony & Banquet	10
Minicourse	11
Plenary Session Agenda	14
Parallel Oral Rooms	15
Plenary Sessions and Parallel Oral Sessions	16
Poster Sessions	93
5. Venue Floor Plan	146
6. Partners	148
7. Traffic Information	149
8. Contact Information	151



Welcome Message

The 51st International Conference on Plasma Science (ICOPS2024) and the 4th Asia-Pacific Conference on Plasma and Terahertz Science (APCOPTS) will be convened from June 16 to 20, 2024, at the Beijing International Convention Center. These conferences are co-organized by the IEEE Nuclear and Plasma Sciences Society (NPSS), the China Electrotechnical Society, and the Institute of Electrical Engineering of the Chinese Academy of Sciences.

The International Conference on Plasma Science (ICOPS) was inaugurated in 1974 by the Plasma Science and Applications Committee (PSAC) of the IEEE NPSS. It is an annual event that stands as the largest and most academically significant conference in the domain of plasma science, encompassing both traditional and pioneering research areas within the field. ICOPS2024 marks a historic occasion as it will be the first time the conference is hosted in China. Meanwhile, the Asia-Pacific Conference on Plasma and Terahertz Science (APCOPTS), with technical supports from IEEE NPSS, is dedicated to the interdisciplinary integration of plasma and terahertz sciences. Held biennially, APCOPTS serves as the Asia-Pacific counterpart to the ICOPS conference. The 4th APCOPTS will be held concurrently with ICOPS2024 in Beijing, including an opening ceremony, plenary sessions, parallel sessions, and minicourses.

The primary objective of these conferences is to establish a comprehensive and multilayered platform for international academic exchange among experts and scholars in plasma science and technology. This event will provide attendees with the opportunity to explore the latest developments in plasma science and technology, discuss future research trajectories, and contribute to superordinate strategic planning for the discipline's advancement. The conferences aim to enhance international and regional collaboration, promote knowledge exchange, and encourage talent development in the field. Researchers, academics, students from higher education institutions, and professionals from enterprises engaged in plasma research globally are cordially invited to participate. The presence and contributions of these distinguished attendees will undoubtedly elevate the success of the conferences and significantly propel the progress of plasma science.

We look forward to meeting you at ICOPS & APCOPTS 2024 in Beijing, China!



Conference Organization

Sponsors

IEEE Nuclear and Plasma Sciences Society
China Electrotechnical Society
Institute of Electrical Engineering, Chinese Academy of Sciences

Co-sponsors

Laboratory of Gas Discharge and Plasma,
Department of Electrical Engineering, Tsinghua University
School of Electrical and Electronic Engineering,
Huazhong University of Science and Technology
College of Electrical Engineering and Control Science, Nanjing Tech University
School of Electrical Engineering and Automation,
Hefei University of Technology
Institute of Applied Physics and Computational Mathematics, Beijing
National Key Laboratory of Intense Pulsed Radiation Simulation and Effect
National Key Lab of Aerospace Power System and Plasma Technology
National Key Laboratory of Space Microwave Technology
College of Materials Sciences and Opto-Electronic Technology,
University of Chinese Academy of Sciences
School of Astronautics, Beihang University
College of Electrical Engineering, Zhejiang University
School of Electrical Engineering and Automation, Harbin Institute of Technology
School of Electrical Engineering and Automation, Wuhan University

Supporting Affiliations

National Natural Science Foundation of China
Bureau of International Cooperation, Chinese Academy of Sciences
Beijing International Science and Technology Exchange Center
IEEE NPSS Beijing Chapter
IEEE NPSS Xi'an Chapter
IEEE NPSS Nanjing Chapter
IEEE NPSS Chengdu Chapter

Chairs & Committees

Organizers

GENERAL CHAIR



Tao Shao
Institute of Electrical Engineering, CAS
China

TECHNICAL PROGRAM CHAIRS



Kentaro Hara
Stanford University
USA



Chao Chang
Xi'an Jiaotong University
China

TREASURERS



Chunqi Jiang
Old Dominion University
USA



Cheng Zhang
Institute of Electrical Engineering, CAS
China

CONFERENCE MANAGEMENT



Lisa Boyd
IEEE
USA

MINICOURSE CHAIRS



Yangyang Fu
Tsinghua University
China



Peng Zhang
Michigan State University
USA

STUDENT TRAVEL GRANTS



Chunqi Jiang
Old Dominion University
USA



Weizong Wang
Beihang University
China

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The 4th Asia-Pacific Conference on Plasma and Terahertz Science
ICOPS & APCOPTS 2024

STUDENT PAPER AWARDS



Zhi Fang
Nanjing Tech University
China



Lin Wu
Singapore University of
Technology and Design
Singapore

YOUNG PROF. EVENT CHAIRS



Yifei Zhu
Xi'an Jiaotong University
China



Zilan Xiong
Huazhong University of Science and Technology
China

WOMEN IN ENGINEERING (WIE) EVENT CHAIRS



Seong Ling YAP
University of Malaya
Malaysia



Cui Meng
Zhejiang University
China

LOCAL ORGANIZING COMMITTEE CHAIRS



Yanan Dou
China Electrotechnical Society
China



Qianhong Zhou
Institute of Applied Physics
and Computational Mathematics
China



Shuai Zhang
Institute of Electrical Engineering,
CAS
China

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Kun Chang
China Electrotechnical Society
China



Pengchen He
Institute of Electrical Engineering, CAS
China

VISA CHAIR



Jingling Guan
China Electrotechnical Society
China

International Committee



Akira Mizuno
Toyohashi University of Technology
Japan



Kostya Ostrikov
Queensland University of Technology
Australia



Alla Safronova
University of Nevada
USA



Manfred Thumm
Karlsruhe Institute of Technology
Germany



Annemie Bogaerts
University of Antwerp
Belgium



Mounir Laroussi
Old Dominion University
USA



Edl Schamiloglu (Chair)
University of New Mexico
USA



Paolo Tosi
University of Trento
Italy



Georg Mueller
Karlsruhe Institute of Technology
Germany



Rajdeep Rawat
Nanyang Technological University
Singapore



Hulya Kirkici
University of South Alabama
USA



Steven Gitomer
IEEE Transactions on Plasma Science
USA



J. Gary Eden
University of Illinois at Urbana-Champaign
USA



Steven Gold
United States Naval Research Laboratory (retired)
USA



Jianjun Deng
China Academy of Engineering Physics
China



Weijiang Chen
State Grid Corporation of China
China



Jiangang Li
Heifei Institutes of Physical Science, CAS
China



Weidong Zhu
Saint Peter's University
USA



Joseph Yan
University of Liverpool
UK



Yifang Wang
Institute of High Energy Physics, CAS
China



John Verboncoeur
Michigan State University
USA



Y. Y. Tsui
University of Alberta
Canada



Jose Lopez
Seton Hall University
USA

The 51st International Conference on Plasma Science &
The 4th Asia-Pacific Conference on Plasma and Terahertz Science
ICOPS & APCOPTS 2024

Technical Area Committee

1 Basic Processes in Fully and Partially Ionized Plasmas



Allen L. Garner
Purdue University, *USA*



Hae June LEE
Pusan National University, *Korea*

2 Microwave Generation and Plasma Interactions



Sarita Prasad
University New Mexico, *USA*



Weihua Jiang
Nagaoka University, *Japan*

3 Charged Particle Beams and Sources



Yakov Krasik
Technion, *Israel*



Ricky Lay Kee ANG
Singapore University of
Technology and Design, *Singapore*

4 High Energy Density Plasmas and Applications



Paul Neumayer
GSI Helmholtzzentrum für
Schwerionenforschung, *Germany*



Yongtao Zhao
Xi'an Jiaotong University, *China*

5 Industrial, Commercial and Medical Plasma Applications



Anthony B. Murphy
CSIRO, *Australia*



Xinpei Lu
Huazhong University of Science
and Technology, *China*

6 Plasma Diagnostics



Sedina Tsikata
Georgia Institute of Technology, *USA*



Yikang Pu
Tsinghua University, *China*

7 Pulsed Power and Other Plasma Applications



Bucur Novac
Loughborough University, *UK*



Douyan Wang
Kumamoto University, *Japan*

8 Terahertz Sources, Radiation and Applications



Edl Schamiloglu
University New Mexico, *USA*



Yutong Li
Institute of Physics, CAS, *China*

Program at A Glance

16 June (SUN)	17 June (MON)	18 June (TUE)	19 June (WED)	20 June (THU)	21 June (FRI)
16 June, 9:00-20:00 Registration (Until 17-19 June 9:00-18:00)	09:00-09:20 Opening ceremony	08:30-09:30 Morning Plenary Sessions			08:30-12:20 Minicourse (Tsinghua University)
	09:20-10:20 Plenary Sessions	09:30-09:45 Coffee Break			
	10:20-10:30 Coffee Break	09:45-12:05 Oral Sessions			
	10:30-11:30 Plenary Sessions				
	11:30-12:00 NPSS Chapters in China	12:00-13:30 Lunch Break			
	13:30-14:30 Afternoon Plenary Sessions				14:00-18:40 Minicourse (Tsinghua University)
	14:30-16:50 Oral Sessions Coffee Break	14:30-15:30 Plenary Sessions	14:30-16:50 Oral Sessions Coffee Break		
		15:30 -16:50 Oral Sessions/ Coffee Break			
17:00-18:30 Poster Sessions					
18:00-20:30 Welcome Reception	19:00-20:30 Women in Engineering Event	19:00-21:00 Young Professionals Event	18:00-20:30 Featured Events & Awards & Banquet		

ICOPS & APCOPTS 2024

Opening Ceremony

ICOPS & APCOPTS 2024 Opening Ceremony Agenda AM 9:00-9:20, June 17, 2024 Site: Hall 2 (第二会议厅) Beijing International Convention Center, Beijing China	
Activities	Duration
Opening Ceremony Hosted by Dr. Tao Shao, Professor at the Institute of Electrical Engineering, Chinese Academy of Sciences, and General Chair of ICOPS & APCOPTS 2024	
Welcome Address	20 min

NPSS Chapters in China

ICOPS & APCOPTS 2024 IEEE NPSS Chapters Event in China Agenda AM 11:30-12:00, June 17, 2024 Site: Hall 2 (第二会议厅) Beijing International Convention Center, Beijing China		
Activities	Duration	
NPSS Chapters in China (30 min) Hosted by Dr. Steven Gold, Co-Chair, NPSS Chapters and Local Activities Committee, and Past Secretary, NPSS Plasma Science and Applications Committee (PSAC)		
1	Introduction of Dr. Steven Gold as Session Host by Prof. Tao Shao	2 min
2	Opening address by Prof. John Verboncoeur on behalf of IEEE-NPSS	8 min
3	Addressed on NPSS chapters and the history of NPSS chapters in China, by Dr. Steven Gold	6 min
4	Presentation of the plaques for Xi'an, Nanjing, Beijing, Chengdu Chapters by Steven Gold and John Verboncoeur, including photos and short statements by recipients	14 min

Women in Engineering Event

ICOPS & APCOPTS 2024 Women in Engineering Event Agenda PM 19:00-20:30, June 17, 2024 Site: Room 308 Beijing International Convention Center, Beijing China		
Activities		Duration
Women in Engineering Event (90 min) Hosted by Prof. Seong Ling YAP from University of Malaya and Prof. Cui Meng from Zhejiang University		
1	Welcoming address by session chairs	5 min
2	Invited talks I & II (Lei Han & Qi Chen) Topic: sharing career experiences in their academia-community engagement	20 min
3	Roundtable Forum: Interview Q&A (Chunqi Jiang, Zilan Xiong, Qiuyue Nie) Topic: challenges, strategies to success in academia, and other aspects of life	30 min
4	Open Discussion between attendees and speakers	30 min
5	Photo time	5 min

Young Professionals Event

ICOPS & APCOPTS 2024 Young Professionals Event Agenda PM 19:00-21:00, June 18, 2024 Site: Room 308 Beijing International Convention Center, Beijing China		
Activities		Duration
Young Professionals Event (120 min) Hosted by Dr. Yifei Zhu from Xi'an Jiaotong University and Dr. Zilan Xiong from Huazhong University of Science and Technology		
1	A brief introduction to the event, its objectives, and the speakers	10 min
2	Sharing career experiences in the academia community in different cultures	15-20 min
3	Topic discussion: challenges, and strategies for success in academia	15-20 min
4	Sharing insights into the commercial side of plasma science	15 min
5	Topic discussion: The skills required, the opportunities available, and how to transition from academia or government labs to industry	15 min
6	Time of Q&A between attendees and speakers	30 min
7	Discussion of communicating networking	10 min

ICOPS & APCOPTS 2024

Featured Events, Award Ceremony & Banquet

<p>ICOPS & APCOPTS 2024 Featured Events Traditional Chinese Culture Display PM 18:00-18:30, June 19, 2024 Award & Banquet Agenda PM 18:30-20:30, June 19, 2024 Site: Hall 2 (第二会议厅) Beijing International Convention Center, Beijing China</p>		
Activities		Duration
<p>Award Ceremony Hosted by Dr. Cheng Zhang, Professor at the Institute of Electrical Engineering, Chinese Academy of Sciences, and Treasurer of ICOPS & APCOPTS 2024</p>		
1	Opening address by Prof. Chunqi Jiang on behalf of IEEE-NPSS, invited by Dr. Cheng Zhang, and Prof. Jiang will then commence the award ceremony	3-5 min
2	Presentation of IEEE-NPSS Service Award to Dr. Steven Gold by Prof. Jiang, followed by an acceptance speech from Dr. Gold	3-5 min
3	Presentation of ICOPS2024 General Chair Commemorative Plaque to Prof. Tao Shao by Prof. Jiang, followed by an acceptance speech from Prof. Shao	3-5 min
4	Presentation of IEEE-NPSS Early Achievement Award to Dr. Yangyang Fu by Prof. Jiang, followed by an acceptance speech from Dr. Fu	3-5 min
5	Overview of the selection process for the Student Awards by Dr. Lin Wu (Student Awards Co-Chair), followed by the presentation of certificates to the award recipients by Prof. Chao Chang (Co-Technical Chair) and Prof. Zhi Fang (Student Awards Co-Chair)	3-5 min
6	Overview of the upcoming PPS 2025 conference by Prof. Georg Müller, General Chair of PPS2025	3-5 min

✧ The ICOPS & APCOPTS 2024 Student Paper Awards are funded by the journal *Plasma Science and Technology*.

Minicourse

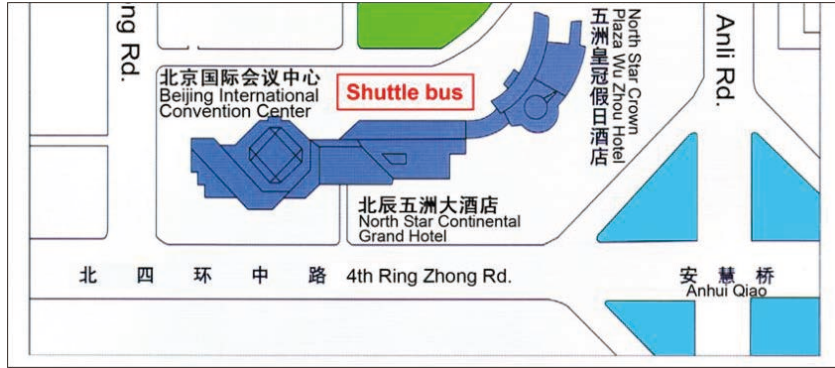
ICOPS & APCOPTS 2024 Minicourse Agenda June 20-21, 2024 Site: West Main Building 3-217, Tsinghua University, Beijing China		
Hosted by Dr. Yangyang Fu from Tsinghua University and Dr. Peng Zhang from Michigan State University		
PM 14:00 - 18:40, June 20, 2024		
Attention for bus transfer: <i>Shuttle bus will departure from North Star Continental Grand Hotel to Tsinghua University at 13:15 pm</i>		
Professor	Topic	Duration
Yangyang Fu & Peng Zhang	Opening welcome speech	10 min
Xinpei Lu (Huazhong University of Science and Technology, China)	Atmospheric Pressure Plasmas and Their Applications in Biomedical and Nitrogen Fixation	60 min
Break time		10 min
Yakov Krasik (Technion-Israel Institute of Technology, Israel)	Nanosecond Timescale Discharge in Pressurized Gas - Physics and Applications	60 min
Break time		10 min
Chunqi Jiang (Old Dominion University, USA)	Frontier Applications of Non-equilibrium Atmospheric Pressure Plasma Sources	60 min
Break time		10 min
Anthony B. Murphy (CSIRO, AU)	Fundamentals and Applications of Thermal Plasmas	60 min
Dinner in Tsinghua University		
Attention for bus transfer: <i>Shuttle bus will departure from Tsinghua University to North Star Continental Grand Hotel at 19:30 pm</i>		

ICOPS & APCOPTS 2024

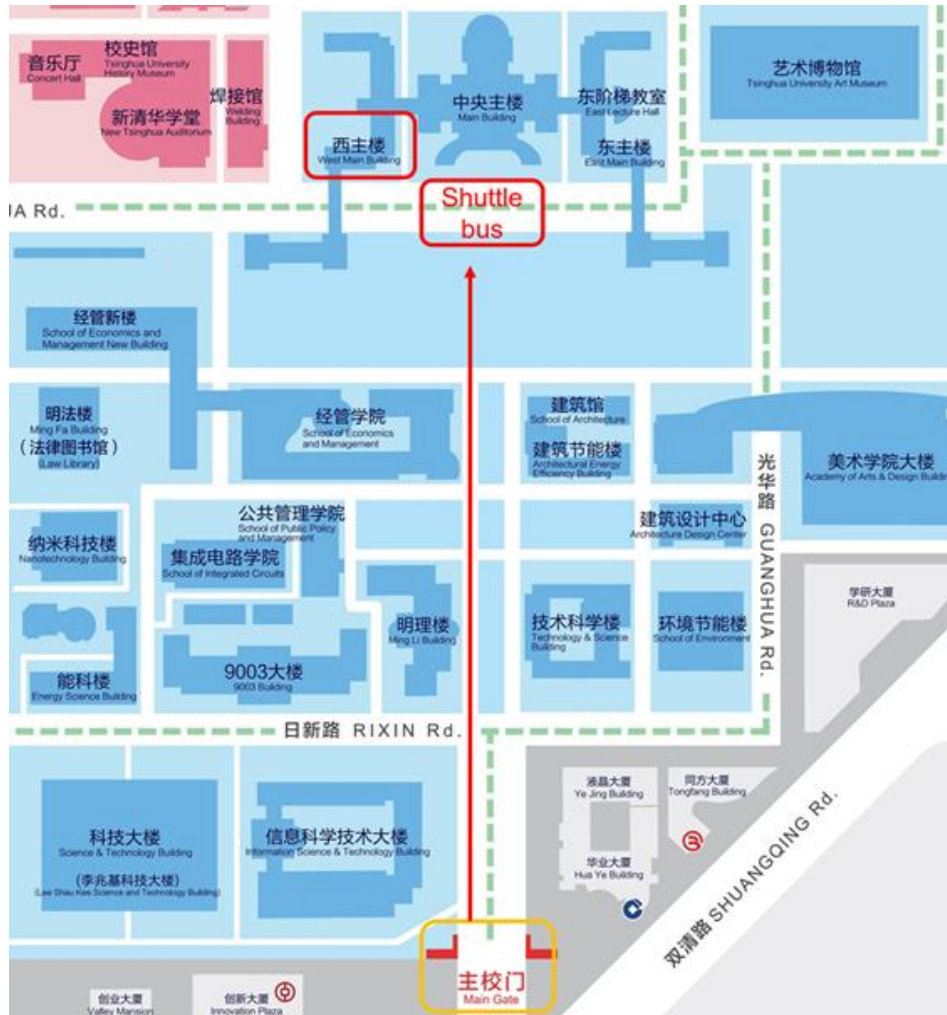
Minicourse

AM 8:30 – PM 12:20, June 21, 2024		
Attention for bus transfer: Shuttle bus will departure from North Star Continental Grand Hotel to Tsinghua University at 7:45 am		
Professor	Topic	Duration
Mark D. Johnston (Sandia National Laboratories, USA)	Low Temperature Plasmas and Discharges (Online)	60 min
Break time		10 min
Xiaogang Wang (Harbin Institute of Technology, China)	Recent Progresses in Experimental Space Plasma Physics	60 min
Break time		10 min
Jón Tómas Guðmundsson (University of Iceland, Iceland)	Physics and Technology of Magnetron Sputtering Discharges	60 min
Yangyang Fu & Peng Zhang	Summary and closing speech	10 min
Photograph		20 min
Lunch in Tsinghua University		
Attention for bus transfer: Shuttle bus will departure from Tsinghua University to North Star Continental Grand Hotel at 13:20 pm		

Location for shuttle bus in the North Star Continental Grand Hotel



Location for shuttle bus in the Tsinghua University



Plenary Session Agenda

June 17 9:20-11:30 am Room: Hall 2 (第二会议厅) Chair: Georg Mueller & Yuanhong Song			
Time	ID	Title	Presentation Name / Affiliation
9:20-10:20	1755	(PL1) Megawatt-class Gyrotron developments for today's plasma fusion experiments and future DEMO at Europe	John Jelonnek <i>Karlsruhe Institute of Technology, Germany</i>
10:30-11:30	1456	(PL2) Knowledge based plasma process development in technological low temperature plasmas	Julian Schulze <i>Ruhr-University Bochum, Germany</i>
June 17 13:30-14:30 pm Room: 307 Chair: Rajdeep Rawat			
13:30-14:30	1289	(PL3) Review of electron emission from metals to 2D materials	Ricky Lay Kee ANG <i>Singapore University of Technology and Design, Singapore</i>
June 18 8:30-9:30 am Room: 307 Chair: John Verboncoeur			
8:30-9:30	2316	(PL4) Recent progress of double cone ignition scheme of inertial confinement fusion	Jie Zhang <i>Chinese Academy of Sciences/Shanghai Jiao Tong University, China</i>
June 18 13:30-15:30 pm Room: 307 Chair: Anthony B. Murphy & Cheng Zhang			
13:30-14:30	1935	(PL5) Multiphase AC arc system for nanomaterials processing	Takayuki Watanabe <i>Kyushu University, Japan</i>
14:30-15:30	1480	(PL6) Pulsed nanosecond plasma on the service of advanced laser diagnostics	Svetlana Starikovskaia <i>Laboratory for Plasma Physics, LPP (CNRS, Ecole Polytechnique), France</i>

Plenary Session

June 19 8:30-9:30 am Room: 307 Chair: Guanjun Zhang			
8:30-9:30	1793	(PL7) Low temperature plasma science to advance human health and enable a sustainable future	Peter Bruggeman <i>University of Minnesota, United States</i>
June 19 13:30-14:30 pm Room: 307 Chair: Chunqi Jiang			
13:30-14:30	37	(PL8) THz sensing and influence on bio-matter	Chao Chang <i>Xi'an Jiaotong University & Peking University, China</i>
June 20 8:30-9:30 am Room: 307 Chair: Yakov Krasik			
8:30-9:30	2107	(PL9) Pulsed power source technology for plasma applications	Weihua Jiang <i>Nagaoka University of Technology, Japan</i>

◇ **Please pay attention:** The plenary session in Room 307 will concurrently live in other parallel oral rooms.

Parallel Oral Rooms

Schedule	305A	305B	303	305C	305D	307	305E	311A	311B	311C	308	302	310
June 17 MON 14:30-16:50	TA1	TA1	TA2	TA3	TA4	TA5	TA5	TA6	TA7	TA7	TA8	TA9	TA9
June 18 TUE 9:45-12:05	TA1	TA1	TA2	TA3	TA4	TA5	TA5	TA6	TA7	TA7	TA8	TA9	TA9
June 18 TUE 15:30-16:50	TA1	TA1	TA2	TA3	TA4	TA5	TA5	TA6	TA7	TA7	TA8	TA9	
June 19 WED 9:45-12:05	TA1	TA1	TA2	TA3/5	TA4	TA5	TA5	TA6	TA7	TA5	TA8	TA9	
June 19 WED 14:30-16:50	TA1	TA1	TA2	TA1	TA4/5	TA5	TA5	TA5/6	TA7	TA5	TA8	TA9	
June 20 THU 9:45-12:05	TA1	TA1	TA2	TA1/2	TA9	TA5	TA5	TA5	TA7	TA9	TA8	TA9	

TA1 Basic Processes in Fully and Partially Ionized Plasmas

TA2 Microwave Generation and Plasma Interactions

TA3 Charged Particle Beams and Sources

TA4 High Energy Density Plasmas and Applications

TA5 Industrial, Commercial & Medical Plasma Applications

TA6 Plasma Diagnostics

TA7 Pulsed Power and Other Plasma Applications

TA8 Terahertz Sources, Radiation and Applications

TA9 Special Sessions

Plenary Sessions and Parallel Oral Sessions

Plenary Session 1



Megawatt-Class Gyrotron Developments for Today's Plasma Fusion Experiments and Future DEMO at Europe

John Jelonnek

Head of the Institute for Pulsed Power and Microwave Technology (IHM)
Karlsruhe Institute of Technology (KIT), Germany

June 17 (MON) AM 9:20-10:20

Biography

Prof. John Jelonnek received the Dipl.-Ing. and Dr.-Ing. degrees in electrical engineering from Hamburg University of Technology (TUHH), Germany, in 1991 and 2000, respectively. At TUHH he developed rigorous self-consistent analyses for gyrotron oscillators with particular focus on rigorous time-domain simulation at mismatched conditions and injection locking. From 1997 to 2011, John Jelonnek was working in several different positions in industry. Since 2011, John Jelonnek heads the Institute for Pulsed Power and Microwave Technology (IHM) at Karlsruhe Institute of Technology (KIT), Germany. Related to microwave technology, the research of high-power microwave sources, with particular focus on megawatt-class gyrotrons, and the application of microwaves to energy efficient industrial processes using dielectric heating and microwave plasmas are in the focus. John Jelonnek is a Professor for high-power microwave technology at KIT.

Summary

More than nine billion people will live on Earth by 2050, at least one billion people more than today. As the population grows, so does the world's energy demand. Nuclear fusion is seen as a possible long-term option for a sustainable, non-carbon emitting global energy supply. In southern France, 35 nations are collaborating together to build ITER, the world's largest nuclear fusion experiment. China, a major driver in fusion technology, is amongst them. Several other publicly funded experiments are already operating or are under construction world-wide. In parallel, a number of privately financed start-ups are emerging around the world. All of those demand for powerful, flexible and efficient plasma heating methods. Electron Cyclotron Resonance Heating (ECRH) is a possible option. It allows for localized plasma heating and stabilization. Gyrotron oscillators (gyrotrons) are the only known sources which provide the necessary microwave power at Megawatt-levels and at the required frequencies ranging from below 100 GHz to above 200 GHz. In this presentation, the status and advances in gyrotron research and development, focusing on the developments at Europe, will be provided. It includes the advances in hollow-cavity gyrotrons for European plasma experiments, coaxial-cavity development for future DEMO, the multi-stage depressed collector concept and advanced frequency control of megawatt-class gyrotrons.

Plenary Session 2



Knowledge based Plasma Process Development in Technological Low Temperature Plasmas

Julian Schulze

Ruhr-University Bochum, Germany/Dalian University of Technology, China
June 17 (MON) AM 10:30-11:30

Biography

Prof. Julian Schulze obtained his PhD in plasma physics from Bochum University, Germany, in 2009. After a postdoctoral stay at the Wigner Research Center for Physics, Hungary, in 2010-2011 he became an Assistant Professor for Plasma Physics at West Virginia University, USA, in 2013. In 2016 he returned to the Ruhr-University Bochum, Germany, where he is now a professor for plasma technology in the Department of Electrical Engineering. He is also a Visiting Professor in the Physics Department of Dalian University of Technology, China, a member of the editorial board of Plasma Sources Science and Technology, and the previous Executive Committee Chair of the Gaseous Electronics Conference (GEC). His research interests are focused on high frequency technological plasmas, charged particle power absorption dynamics, Voltage Waveform Tailoring, plasma-surface interactions, and knowledge based plasma process development based on experiments, simulations, and modeling. Prof. Schulze has published more than 190 papers in international peer-reviewed journals and has co-authored more than 300 presentations at conferences in plasma science.

Summary

Technological low temperature plasmas are frequently used for a variety of applications of high societal relevance, e.g. semiconductor manufacturing, biomedical and environmental purposes. Based on a fundamental understanding of the charged particle dynamics in different plasma sources, i.e. capacitive, inductive, and dielectric barrier discharges, obtained by a synergistic combination of experiments and simulations, we present different process control concepts. Voltage Waveform Tailoring (VWT) is found to provide control of the sheath voltage waveforms as well as the space and time dependent bulk electric field. In this way VWT allows to control the electron as well as the ion power absorption dynamics and, thus, the electron and ion energy distribution functions so that distinct neutral species can be generated more energy efficiently in the plasma volume and distinct surface reactions can be induced. Via VWT electrons can be accelerated into high aspect ratio dielectric etch trenches to reduce positive wall charging inside such features. In low to intermediate pressure capacitive plasmas, the electrode material and topology are found to affect the electron power absorption dynamics via different surface coefficients for secondary electron emission and electron reflection as well as via localized RF hollow cathode effects. At atmospheric pressure such surface customization provides control of the streamer dynamics in dielectric barrier discharges. Based on this fundamental understanding, electrodes can be custom-designed to reduce the lateral discharge non-uniformity in large area plasma processing applications and to improve plasma induced gas conversion.

June 17, 2024 Monday

Plenary Session June 17 09:00-12:00 am Room: Hall 2 (第二会议厅)			
9:00-9:20	Opening Ceremony		
Time	ID	Title	Name / Affiliation
Chair: Georg Mueller & Yuanhong Song			
9:20-10:20	1755	(PL1) Megawatt-class Gyrotron developments for today's plasma fusion experiments and future DEMO at Europe	John Jelonnek <i>Karlsruhe Institute of Technology, Germany</i>

10:20-10:30	Coffee Break		
10:30-11:30	1456	(PL2) Knowledge based plasma process development in technological low temperature plasmas	Julian Schulze <i>Ruhr-University Bochum, Germany</i>
11:30-12:00	NPSS Chapters in China		
12:00-13:30	Lunch Break		

Plenary Session 3



Review of Electron Emission from Metals to 2D materials

Ricky Lay Kee ANG

Singapore University of Technology and Design, Singapore
June 17 (MON) PM 13:30-14:30

Biography

Prof. Lay Kee (Ricky) Ang received his PhD degrees from the University of Michigan, USA in 1996 and 1999, respectively. He is currently the Associate Provost (International Relations), Ng Teng Fong Chair Professor, and Professor of Science, Mathematics and Technology in the Singapore University of Technology and Design (SUTD). Before joining SUTD, he was a professor in the Division of Microelectronics, School of EEE, Nanyang Technological University, Singapore (2002-2011), and a LANL director postdoctoral fellow (1999-2001) in the Applied Physics division, Los Alamos National Laboratory (LANL). His current research interests are in the formulation of basic scaling laws of electron emission, charge transport, electrical contact, and light-matter interaction for applications in electronics, photonics and plasmas. For modeling, he is currently applying fractional calculus to analyze complicated and disordered systems. His research projects were/are funded by Singapore (MOE, ASTAR, SUTD) and USA (AFOSR and ONRG). He is a fellow of IEEE and fellow of IOP, IEEE Distinguished Lecturer and Top 2% Scientist in Applied Physics.

Summary

Electron emission from a cathode through an interface to vacuum or another medium is a fundamental process in beam, plasma, gas ionization, and electrical contact. Depending on the energy used to produce the electrons, it can be broadly characterized into 3 processes: thermionic emission TE (thermal energy), field emission FE (quantum tunneling), and photoemission PE (photon absorption or optical tunneling). At high current regime, the emission current density will become the space charge limited emission (SCLE). Basic models for these emissions (TE, PE, FE, SCLE) for metals or traditional materials have been widely studied: Richardson law, Fowler-Nordheim (FN) law, Fowler-Dubridge (FD), Keldysh model, and Child-Langmuir (CL) law. With the development of two-dimensional (2D) materials, these classical emission models will require new revision to account for various new operating conditions. The effects of roughness of cathode cannot be ignored especially for ultrathin cathode like 2D materials. In this talk, we will present some recent emission models to account for 2D materials and cathode roughness based on fractional calculus. New scaling laws will be reported different from the traditional models.

June 17, 2024 Monday

Plenary Session June 17 13:30-14:30 pm Room: 307			
Time	ID	Title	Name / Affiliation
Chair: Rajdeep Rawat			
13:30-14:30	1289	(PL3) Review of electron emission from metals to 2D materials	Ricky Lay Kee ANG <i>Singapore University of Technology and Design, Singapore</i>

TA 1 Basic Processes in Fully and Partially Ionized Plasmas June 17 14:30-16:50 pm Room: 305A			
Time	ID	Title	Name / Affiliation
June 17	Oral Session		
Chair: Shuqun Wu & Quanzhi Zhang			
14:30-14:55	415	(Invited) Atmospheric pressure uniform dielectric barrier discharge (DBD) in a wide air gap initiated from a narrow starting point	J. Liu¹ , X. Lu ¹ <i>¹ Huazhong University of Science and Technology, School of Electrical Engineering, Wuhan, China</i>
14:55-15:20	447	(Invited) The novel collisionless mechanism of a cathode plasma expansion at the initial stage of a vacuum breakdown	J. Yao ¹ , V. Kozhevnikov¹ , V. Igumnov ¹ , Z. Chu ¹ , C. Yuan ¹ , Z. Zhou ¹ <i>¹ Harbin Institute of Technology, School of Physics, Harbin, China</i>
15:20-15:35	129	Dynamics of relativistic particles in an ion-cyclotron trap in the presence of an external ultrashort laser pulse	N. S. Akintsov¹ , A. P. Nevecheria ² <i>¹ Nantong University, Research Center for Intelligent Information Technology, Nantong, China</i> <i>² Kuban State University, Department of Mathematical and Computer Methods, Krasnodar, Russian Federation</i>
15:35-15:50	451	Mechanism of mechanical material properties measurement in laser-induced breakdown spectroscopy through coupled thermoelastic modelling	Y. Zhou¹ , J. Wu ¹ , M. Shi ¹ , M. Chen ¹ , Y. Qiu ¹ , J. Li ¹ , H. Sun ¹ , X. Guo ¹ , X. Li ¹ , Y. Hang ¹ , C. Pei ² <i>¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China</i> <i>² Xi'an Jiaotong University, Shanxi Engineering Research Center of NDT and Structural Integrity Evaluation, State Key Laboratory for Strength and Vibration of Mechanical Structures, Xi'an, China</i>
15:50-16:05	456	The electro-hydrodynamic force evolution in cross-field pin to plate discharge with different voltage polarity	H. Guo¹ , Y. Zhu ¹ , Y. Zhou ¹ , Z. Chang ¹ <i>¹ Xi'an Jiaotong University, School of Electrical Engineering, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China</i>
16:05-16:20	481	Influence of electrode sputtering on damage properties of large-aperture optical components during in-situ cleaning by plasma	F. Wang¹ , P. Zhang ¹ , J. X. Liu ¹ , S. X. Xu ¹ , S. Q. Bai ¹ , H. L. Lu ¹ <i>¹ Harbin Institute of Technology, School of Mechatronics Engineering, Harbin, China</i>

16:20-16:35	511	Understanding the magnetized plasma filamentation in capacitively coupled radio frequency discharge: A PIC/MCC simulation	H.-D. Huang ¹ , J. Chen ¹ , Z.-B. Wang ¹ ¹ Sun Yat-sen University, Sino-French Institute of Nuclear Engineering and Technology, Zhuhai, China
16:35-16:50	705	Simulation of turbulent pinch of a dipole-confined plasma	B. Li ¹ , C. Jiang ¹ ¹ Beihang University, School of Physics, Beijing, China

TA 1 Basic Processes in Fully and Partially Ionized Plasmas

June 17 14:30-16:50 pm Room: 305B

Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: Yuantao Zhang & Hui Jiang			
14:30-14:55	1432	(Invited) Transport phenomena and energy dynamics in capacitively coupled plasmas	B. Zheng ¹ ¹ Beijing Institute of Technology, School of Physics, Beijing, China
14:55-15:20	1503	(Invited) Computational and theoretical modeling of a hollow cathode arc with an axial magnetic field	L. Xu ¹ , R.-P. Brinkmann ² , D. Eremin ² ¹ Soochow University, College of Physics Science and Technology, Suzhou, China ² Ruhr University Bochum, Chair of Theoretical Electrical Engineering, Department of Electrical Engineering and Information Science, Bochum, North Rhine-Westphalia, Germany
15:20-15:35	1128	Investigating the influence of applied magnetic field on the anode power deposition in magnetoplasmadynamic thruster	Z. Tang ^{1,2} , J. Zheng ¹ , H. Liu ¹ , Y. Du ^{1,2} , Y. Lu ¹ ¹ Institute Of Plasma Physics Chinese Academy Of Sciences, Hefei, China ² University of Science and Technology of China, Hefei, China
15:35-15:50	336	Drift-Diffusion models for RF-CCPs at intermediate pressure: estimating transport coefficients	S. Zhang ¹ , A. Alvarez Laguna ¹ , J.-P. Booth ¹ ¹ École polytechnique, Laboratoire de Physique des Plasmas, Palaiseau, France
15:50-16:05	1189	Quantitative insight into the influence of previous discharge on the subsequent discharge	Y. Li ¹ , Y. Wang ¹ , Y. Zhu ² , G. Zhang ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China ² Xi'an Jiaotong University, School of Mechanical Engineering, Xi'an, China
16:05-16:20	1212	Optimizing the design of neural networks for plasma modelling based on NAS-PINN: 1-D arc simulation as an example	Y. Wang ¹ , L. Zhong ¹ ¹ Southeast University, School of Electrical Engineering, Nanjing, China
16:20-16:35	1258		
16:35-16:50	1309	Study on microdischarge via a unified fluid model	Z. Wang ¹ , Z. Zhao ¹ , Y. Fu ¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, China

TA 2 Microwave Generation and Plasma Interactions June 17 14:30-17:00 pm Room: 303			
Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: Chaohai Du & Wenlong He			
14:30-14:55	304	(Invited) Generation of Superradiance Pulse Exceeding 100 GW Based on an Oversized Coaxial Cherenkov Generator with Profiled Slow Wave Structure and Coaxial Coupler	R. Xiao¹ , K. Chen ¹ , J. Wang ² , R. Cheng ² , J. Wang ^{1, 3} , Y. Shi ¹ ¹ Northwest Institute of Nuclear Technology, Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an, China ² University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China ³ Tsinghua University, Department of Engineering Physics, Beijing, China
14:55-15:20	1675		
15:20-15:45	147	(Invited) High power phase-steerable masers and coherent combining	J. Ju¹ , W. Zhang ¹ , F. Dang ¹ , F. Yang ¹ , Q. Zhang ¹ , X. Ge ¹ , J. He ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
15:45-16:00	2032	A cross-band frequency hopping RBWO with permanent magnetic package	D. Zhang¹ , Z. Jin ¹ , J. Zhang ¹ , F. Zhou ¹ , K. Yang ¹ , Y. Xiang ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
16:00-16:15	903	Revisiting the Luce diode in the context of recent research on multi-vircators with dielectric reflectors	G. Liziakin ¹ , O. Belozarov ¹ , J. Leopold ¹ , Y. Hadas ¹ , Y. Krasik¹ ¹ Technion - Israel Institute of Technology, Department of Physics, Haifa, Israel
16:15-16:30	2246	Simulation and experiment of an X-band high efficiency overmoded RBWO with permanent magnetic package	Z. Jin¹ , D. Zhang ¹ , J. Zhang ¹ , F. Zhou ¹ , K. Yang ¹ , X. Chen ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
16:30-16:45	2330	Frequency agility in the Cherenkov Oscillator Using Metamaterial	M. Liu¹ , C. Liu ¹ , W. Jiang ² , X. Liu ¹ ¹ Xi'an Jiaotong University, Xi'an, China ² Nagaoka University of Technology, Nagaoka, Japan
16:45-17:00	320	Mode Competitions in TM ₁₂ -mode Gyrotron Using Axis-encircling Beam	T.-F. Yang¹ , H.-Y. Yao ² , C.-C. Chang ¹ , C.-H. Du ³ , F. Chang ³ , T.-H. Chang ¹ ¹ National Tsing Hua University, Department of Physics, Hsinchu, Taiwan province ² National Chung Cheng University, Department of Physics, Chiayi, Taiwan province ³ Peking University, School of Electronics, Beijing, China

TA 3 Charged Particle Beams and Sources June 17 14:30-16:50 pm Room: 305C			
Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: Yinbing Zhu & Jian Chen			
14:30-14:55	250		
14:55-15:20	1677	(Invited) CRAFT advanced facility for neutral beam injection: design and first operations	J. Wei ¹ , L. Liang ¹ , Y. Xie ¹ , Y. Xie ¹ , Y. Xu ¹ , Y. Zhao ¹ , C. Hu ¹ ¹ Hefei Institutes of Physical Science Chinese Academy of Sciences, Institute of Plasma Physics, Hefei, China
15:20-15:35	2183		
15:35-15:50	646		
15:50-16:05	1097	Development of a Liquid-Fed Bismuth Lab6 Hollow Cathode for Hall Thrusters	D. Cai ¹ , P. Wang ² ¹ Shanghai Jiao Tong University, Department of Mechanical and Energy Engineering, Shanghai, China ² Shanghai Jiao Tong University, Department of Mechanical and Energy Engineering, Shanghai, China
16:05-16:20	1150		
16:20-16:35	1242		
16:35-16:50	1586	Design of shielding cover for half-size negative ion source of CRAFT NNBI test facility	Y. Yang ^{1,2} , J. Wei ¹ , Y. Gu ¹ , Y. Xie ¹ , C. Hu ^{1,2} ¹ Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei 230031, China ² University of Science and Technology of China, Hefei 230026, China

TA 4 High Energy Density Plasmas and Applications June 17 14:30-16:35 pm Room: 305D			
Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: Delong Xiao & Chao Zhang			
14:30-14:55	870	(Invited) Recent results of underwater electrical explosion of wires, foils and wire arrays	Y. E. Krasik ¹ , D. Maler ¹ , N. Asmedianov ¹ , R. Grikshtas ¹ , S. Efimov ¹ , G. Lizyakin ¹ , O. Belozero ¹ , A. Godinger ¹ , S. Bland ² , J. Struska ² , S. Theocharous ² , Y. Yao ² , K. Mughal ² , B. Lukis ³ , A. Rack ³ ¹ Technion - Israel Institute of Technology, Department of Physics, Haifa, Israel ² Imperial College, Plasma physics group, London, United Kingdom ³ European Synchrotron Radiation Facility, Grenoble, France
14:55-15:20	1028	(Invited) Frontier in Ion-beam and plasma interaction based on high power laser and accelerators	Y. Zhao ¹ ¹ Xi'an Jiaotong University, School of Physics, Xi'an, China

15:20-15:35	1324	Atomic and nuclear processes in laser-accelerated intense ion beam interaction with dense plasmas	J. Ren ¹ ¹ Xi'an Jiaotong University, School of Physics, Shaanxi, Xi'an, China
15:35-15:50	2154	Terahertz diagnosis of fast-electron dynamics in ultraintense laser-solid interactions	G. Liao ¹ ¹ Institute of Physics, Chinese Academy of Sciences, Beijing, China
15:50-16:05	737	Axial optical Thomson scattering diagnoses the parameters of double-wire Z-pinch ablation plasma	W. Wang ¹ , J. Wu ¹ , Z. Jiang ¹ , Y. Zhao ¹ , Z. Wang ¹ , Y. Lu ¹ , H. Shi ¹ , X. Li ¹ , A. Qiu ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
16:05-16:20	1048	Radiation spectrum of Z-pinch broadband absorption spectrum source at a 50kA pulse power generator	L. Hong ¹ , H. Guan ¹ , H. Wang ¹ , X. Zou ¹ ¹ Tsinghua University, Beijing, China
16:20-16:35	1583	A Particle-in-Cell Simulation of Current Shear Effects on Plasma Instability in Cylindrical Magnetized Linear Plasma	H. Cheong ¹ , H. Lee ¹ ¹ Pusan National University, Department of Electrical Engineering, Pusan, Republic of Korea

TA 5 Industrial, Commercial and Medical Plasma Applications
June 17 14:30-17:05 pm Room: 307

Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: Qiuyue Nie & Wenting Sun			
14:30-14:55	270	(Invited) Plasma in-situ cleaning of large-aperture optical components in high-power laser facilities: theory, devices and applications	Y. Li ¹ , Q. Yuan ¹ , X. Liu ² , F. Wang ² , Q. Bai ² , P. Zhang ² , L. Lu ² , X. Miao ¹ , Y. Jiang ¹ , L. Sun ¹ , F. Wang ¹ , T. Wang ² , X. Xu ² , X. Yuan ¹ ¹ China Academy of Engineering Physics, Research Center of Laser Fusion, Mingyang, China ² Harbin Institute of Technology, School of Mechatronics Engineering, Harbin, China
14:55-15:20	928	(Invited) Precise Structural Control of Transition Metal Nitride Nano-Framework for Efficient Electrocatalysis via Surface-Field-Confined Plasma Engineering	B. Ouyang ^{1,2} , E. Kan ¹ , R. S. Rawat ² ¹ Nanjing university of science and technology, School of Physics, Nanjing, China ² Nanyang Technological University, NSSE, NIE, Singapore, Singapore
15:20-15:35	28	An Innovative approach for Blanching Fruits (fresh-cut apples) with Plasma Activated Water	R. Mishra ¹ , S. Pandey ² , M. Chhabra ^{3,1} , R. Prakash ^{2,1} ¹ Indian Institute of Technology, Jodhpur, Interdisciplinary Research Division-Smart Healthcare, Jodhpur, India ² Indian Institute of Technology, Jodhpur, Department of Physics, Jodhpur, India ³ Indian Institute of Technology, Jodhpur, Department of Bioscience and Bioengineering, Jodhpur, India
15:35-15:50	170	The applications of DBD and RF plasma on engineering high-performance electrocatalysts for water splitting	G.L. Chen ¹ ¹ Huzhou university, Department of Materials Engineering, Huzhou, China
15:50-16:05	357	Understanding non-equilibrium NO _x /O ₃ chemistry in Plasma-Assisted Nitrogen Fixation	G. Shuyan ¹ , W. Yuan ¹ , Z. Hao ¹ ¹ Peking University, College of Engineering, Beijing, China

16:05-16:20	416	Numerical investigation of discharge evolution and breakdown characteristics of ArF excimer lasers	X. Ma ¹ , L. Bai ¹ , Y. Zhu ¹ , X. Jiang ² , Y. Wu ¹ ¹ Xi'an Jiaotong University, National Key Lab of Aerospace Power System and Plasma Technology, Xi'an, China ² Beijing RSLaser Opto-Electronics Technology CO.,Ltd., Beijing, China
16:20-16:35	430	Highly porous vanadium and niobium oxide nanoparticle coatings prepared by plasma-based gas aggregation source	N. Khomiakova ¹ , M. Pavlovic ¹ , T. Kosutova ¹ , J. Hanus ¹ , A. Hankova ¹ , O. Kylian ¹ ¹ Charles University, Faculty of Mathematics and Physics, Prague, Czech Republic
16:35-16:50	439	An Exploratory Study on Discharge Transitions and Stability of Radio Frequency Atmospheric Pressure Plasma Jet	R. Tp ¹ , S. Kar ¹ ¹ Indian Institute of Technology Delhi, Department of Energy Science and Engineering, New Delhi, India
16:50-17:05	2230	Unlocking the Potential: Alkaline Plasma Activated Water's Journey from Formation to Fighting Cancer	B. Pang ¹ , Z. Liu ¹ ¹ Xi'an Jiaotong University, Shaanxi, Xi'an, China

TA 5 Industrial, Commercial and Medical Plasma Applications

June 17 14:30-17:05 pm Room: 305E

Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: Yifei Zhu & Xiaoyue Chen			
14:30-14:55	368	(Invited) Three-Dimensional Thermofluid Simulation for Ar-O ₂ Loop Induction Thermal Plasmas with Chemically Non-Equilibrium Effects	Y. Tanaka ¹ , T. Fuwa ¹ , H. Hara ¹ , Y. Nakano ¹ , T. Ishijima ¹ , T. Yukimoto ² , H. Kawaura ² ¹ Kanazawa University, Faculty of Electrical and Computer Engineering, Kanazawa, Japan ² CV Research Cooperation, Funabashi, Japan
14:55-15:20	395	(Invited) Modelling and experiment on microdischarges in metal vapour of Cadmium	M. Baeva ¹ , D. Uhrlandt ¹ , D. Bratek ² , C. Uber ² , B. Barbu ³ , F. Berger ³ ¹ Leibniz Institute for Plasma Science and Technology (INP), Greifswald, Germany ² Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany ³ Technische Universität Ilmenau, Ilmenau, Germany
15:20-15:35	452	Numerical simulation of electrode interior gas flow and heat transfer in a zvezda type three-phase AC arc heater	F. Zhou ¹ , J. Q. Song ² , R. X. Hao ² , H. Q. Chen ¹ , H. D. Ma ¹ , L. Z. Chen ¹ , D. B. Ou ¹ , X. Liu ¹ ¹ China Academy of Aerospace Aerodynamics, Beijing, China ² Beijing Jiaotong University, Beijing, China
15:35-15:50	582	Effect of H ₂ addition on the preparation of ZrO ₂ powder from zircon (ZrSiO ₄) using a plasma torch	C. Geng ¹ , P. Zhao ¹ ¹ Institute of Plasma Physics, HFIPS, Chinese Academy of Science, Hefei, China
15:50-16:05	802	Study on characteristics of inductively coupled plasma at atmospheric pressure and spheroidization of boron carbide powder	X. Jin ^{1,2} , P. Zhao ¹ , J. Li ¹ , L. Li ¹ , C. Liu ³ , C. Geng ¹ , Q. Lin ³ , L. Hu ¹ ¹ Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei, China ² University of Science and Technology of China, Hefei, China ³ Institute of Energy of Hefei Comprehensive National Science Center, Hefei, China

16:05-16:20	1055	Research on the characteristics of high-efficiency microwave-induced plasma jet based on optical processing	C. Wang ¹ , Z. Chen ¹ , Z. Zhan ¹ , W. Hang ^{2,3} , H. Deng ¹ ¹ Southern University of Science and Technology, Department of Mechanical and Energy Engineering, Shenzhen, China ² Zhejiang University of Technology, College of Mechanical Engineering, HangZhou, China ³ Ministry of Education and Zhejiang Province, Key Laboratory of Special Purpose Equipment and Advanced Processing Technology, HangZhou, China
16:20-16:35	1126	Modelling of the particle heating and coating formation in thermal plasma spraying	T. Zhu ¹ , M. Baeva ¹ , H. Testrich ¹ , R. Foest ¹ ¹ Leibniz Institute for Plasma Science and Technology (INP), Plasma modelling and data science, Greifswald, Mecklenburg-Western Pomerania, Germany
16:35-16:50	1527	Numerical simulation of arc characteristics and multi-layer deposition of Cu alloys fabricated by wire arc additive manufacturing	Z. Diao ¹ , F. Yang ¹ , H. Li ¹ , L. Chen ¹ , R. Wang ¹ , M. Rong ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, State Key Laboratory of Electrical Insulation and Power Equipment, Shaanxi, Xi'an, China
16:50-17:05	1704	Magnetic field formulation for thermal plasma arc modelling based on extended domain approach	B. Vasimalai Ravi ^{1,2} , J. Perambadur ³ , R. Kandasamy ⁴ , P. Shukla ⁵ , M. Kumar ² , A. Y. Klimenko ¹ , V. Rudolph ⁶ ¹ The University Of Queensland, School of Mechanical and Mining Engineering, Brisbane, Australia ² Indian Institute of Technology Delhi, Department of Mechanical Engineering, New Delhi, India ³ The University of Limoges, AXIS 2, IR CER, Limoges, France ⁴ Bharathiar University, Department of Physics, Coimbatore, India ⁵ Synergen Met Pvt. Ltd., Environmental Division, Brisbane, Australia ⁶ The University of Queensland, School of Chemical Engineering, Brisbane, Australia

TA 6 Plasma Diagnostics			
June 17 MON 14:30-16:50 pm Room: 311A			
Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: I. Stefanović & Lanlan Nie			
14:30-14:55	1566	(Invited) Time-resolved optical spectroscopy to track the CO ₂ dissociation in a nanosecond pulsed discharge	L.M. Martini ¹ , G. Dilecce ² , P. Tosi ¹ ¹ University of Trento, Department of Physics, Trento, Italy ² CNR, Institute for Plasma Science and Technology, Bari, Italy
14:55-15:20	354	(Invited) Reconsideration on thermocouple signal delay in the combined probe for Heliotron J edge plasma	H. Matsuura ¹ , S. X.N. Bui ¹ , L. Zang ¹ , L. Guan ² , S. Kado ³ ¹ Osaka Metropolitan University, Sakai, Japan ² Southwestern Institute of Physics, Chengdu, China ³ Kyoto University, Uji, Japan

15:20-15:35	2292	Simulation and Experimental Research of Plasma Generator for Dual RF-ICP-Enhanced CVD System	H. Zhang ¹ , Z. Yan ¹ , H. Pan ¹ , H. Zhang ¹ , Z. Song ¹ , G. Chen ¹ ¹ University of Chinese Academy of Sciences, College of Materials Science and Opto-Electronic Technology, Beijing 100049, China
15:35-15:50	2207	Research on Conductance of Air AC Arc in Medium Voltage Distribution Network	T. Zhou ¹ , Q. Yang ¹ ¹ Chongqing University, State Key Laboratory of Power Transmission Equipment Technology, School of Electrical Engineering, Chongqing, China
15:50-16:05	1198	Real-time Monitoring of Trace Erosion Products in Boron Nitride Ceramic Channels of Hall Thrusters Based on Emission Spectroscopy	B.-W. Zheng ¹ , X.-M. Zhu ¹ ¹ Harbin Institute of Technology, School of energy science and engineering, Harbin, China
16:05-16:20	189	Monitoring the concentration of trace molybdenum atom in ion source based on optical emission spectroscopy method	W. Xi ¹ , X. M. Zhu ¹ ¹ Harbin Institute of Technology, School of energy science and engineering, Harbin, China
16:20-16:35	1020	Vibrational excitation of N ₂ in the spark-and-glow phases of a long-pulse air discharge at atmospheric pressure	J.-J. Qiao ¹ , Q. Yang ¹ , Q. Xiong ¹ ¹ Chongqing University, Department of Electrical Engineering, Chongqing, China
16:35-16:50	1081	Measurement method and system of electric field of wire-plate electrode in corona state based on electric-field-induced second harmonic effect	Y. Zhang ^{1,2} , X. Chen ^{1,2} , H. Zhan ^{1,2} , P. Qin ^{1,2} , Q. Luo ^{1,2} , L. Lan ^{1,2} ¹ Wuhan University, School of Electrical Engineering and Automation, Wuhan, China ² Wuhan University, State Key Laboratory of Power Grid Environmental Protection, Wuhan, China

TA 7 Pulsed Power and Other Plasma Applications
June 17 14:30-17:05 pm Room: 311B

Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: A. Gurinovich & Guodong Meng			
14:30-14:55	411	(Invited) Combined laser self-induced and pulsed high voltage plasma shutter to generate multiple purpose ultra short laser pulses	T. Gasmi ¹ ¹ Saint Louis University-Madrid Campus, Division of Science & Engineering, Madrid, Spain
14:55-15:20	524	(Invited) Investigation of miniaturization of all-solid-state high-voltage pulse generators	J. Rao ¹ , J. Zhuang ¹ , J. Gong ^{2, 1} , K. Zhu ^{2, 1} ¹ Chinese Academy of Sciences, Suzhou Institute of Biomedical Engineering and Technology, Suzhou, China ² University of Science and Technology of China, School of Biomedical Engineering, Hefei, China
15:20-15:35	396	Vacuum surface flashover phenomenon under multi-pulse at MHz repetition	X. Deng ¹ , Z. Huang ² , J. Deng ^{1,2} ¹ Tsinghua University, Department of Engineering Physics, Beijing, China ² China Academy of Engineering Physics, Institute of Fluid Physics, Mianyang, China
15:35-15:50	1372	Ion beam-induced DC breakdown characteristics in vacuum	H. Liu ¹ , L. Zhang ¹ , W. Liu ¹ , Y. Liu ¹ , C. Qi ¹ , G. Zhang ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China
15:50-16:05	1427	Characteristics of liquid metal wire discharge in water	Z. Wang ¹ , E. Zhang ¹ , Z. Wang ¹ , J. Wang ¹ , G. Li ¹ ¹ Dalian University of Technology, School of Electrical Engineering, Dalian, China

16:05-16:20	1630	Influences of contact characteristics of composite fasteners on protection against lightning damage	Z. Jiang ¹ , Y. Chai ¹ , Y. Zhu ² , W. Xu ³ , J. Sun ¹ ¹ Xi'an Jiaotong University, State key laboratory of electrical insulation and power equipment, Xi'an, China ² Xi'an Jiaotong University, State key laboratory for manufacturing system engineering, Xi'an, China ³ Zhejiang Normal University, College of Engineering, Jinhua, China
16:20-16:35	2081	Multi-mode control of LLC converter for a wide input voltage range DC-DC power module	B. Wang ¹ , Y. Du ² , B. Li ¹ , Q. Huang ¹ , H. Yu ¹ , Y. Huang ¹ , D. Zhang ¹ ¹ Dalian University of Technology, College of electrical engineering, Dalian, China ² Beijing Huahang Institute of Radio Measurement, Beijing, China
16:35-16:50	2190	Laboratory observations on bidirectional leader development of floating conductor	P. Tian ¹ , N. Xiang ¹ , S. Huang ¹ , Z. Zheng ¹ , D. Li ² ¹ Hefei University of Technology, School of Electrical Engineering and Automation, Hefei, China ² North China Electric Power University, State Key Laboratory of Alternate Electrical Power System with Renewable Energy Sources, Beijing, China
16:50-17:05	2299	Research on the prediction method of breakdown voltage of vegetation flame plasma insulation gap under DC voltage	Z. Pu ^{1,2} , C. Liu ^{1,2} , P. Li ^{1,2} , T. Wu ^{1,2} , Y. Li ^{1,2} ¹ China Three Gorges University, College of Electrical Engineering & New Energy, Yichang, China ² Hubei Provincial Engineering Technology Research Center for Power Transmission Line, Yichang, China

TA 7 Pulsed Power and Other Plasma Applications
June 17 14:30-17:05 pm Room: 311C

Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: T. Gasmi & Ruoyu Han			
14:30-14:55	1766	(Invited) Application research of modular pulse power supply system in the space plasma environment research facility	J. Guan ¹ , X. Ma ² , C. Kang ² , S. Li ² , J. Zhao ² , W. Deng ² , M. Ding ² , B. Li ² , H. Li ² , P. Ee ¹ ¹ Harbin Institute of Technology, Laboratory for Space Environment and Physical Sciences, Harbin, China ² China Academy of Engineering Physics, Institute of Fluid Physics, Mianyang, China
14:55-15:20	1826	(Invited) Explosive pulsed power to drive vacuum tube	A. Gurinovich ¹ ¹ Belarusian State University, Institute for Nuclear Problems, Minsk, Belarus
15:20-15:35	1071	Relation between output rise time and efficiency of pulsed power generation circuit using saturable pulsed transformer	Y. Li ¹ , L. Zhuang ² , T. Sugai ¹ , W. Jiang ¹ ¹ Nagaoka University of Technology, Extreme Energy-Density Research Institute, Nagaoka, Japan ² Chinese Academy of Sciences (CAS), Suzhou Institute of Biomedical Engineering and Technology (SIBET), Suzhou, China
15:35-15:50	1226	A coaxial high-voltage pulse power supply with periodic slotted insulation structure	Z. Pan ¹ , X. Cheng ¹ , R. Chen ¹ , H. Zhang ¹ , R. Zhang ¹ , J. Yang ¹ , B. Qian ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China

ICOPS & APCOPTS 2024

15:50-16:05	1316	High isolation voltage auxiliary power supply method with RC resistor-capacitor network for all-solid-state Marx nanosecond pulse power supply	S. Jin ¹ , Z. Fang ¹ , Y. Zhao ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
16:05-16:20	1469	A study on the life prediction and structural optimization of pulse thyristors considering the aluminum melting mechanism	Y. S. Xiao ¹ , Y. Liu ¹ , X. L. Li ¹ , C. F. Lin ¹ , X. Y. Miu ¹ ¹ Huazhong University of Science and Technology, Wuhan, China
16:20-16:35	1530	Research on hybrid pulse power supply based on Marx-PFN distributed hybrid power topology	J. Ou ¹ , Y. Liu ¹ , L. Li ¹ , Y. Xu ¹ , F. Lin ¹ ¹ Huazhong University of Science and Technology, The School of Electrical and Electronic Engineering, Wuhan, China
16:35-16:50	1549	Design of a magnetic pulse compressor for high-pressure gas discharge	D. Zhang ¹ , Y. Zhou ² , R. Wang ¹ , Z. Wang ¹ , Z. Liu ¹ ¹ Dalian University of Technology, School of Electrical Engineering, Dalian, China ² Tianjin university of technology and education, Institute of automation and electrical engineering, Tianjin, China
16:50-17:05	1627	Investigation on a plasma-jet triggered gap switch for a multiple lightning current impulse generator	T. Lin ¹ , C. Wang ¹ , L. Yang ¹ ¹ Xi'an Jiaotong University, Xi'an, China

TA 8 Terahertz Sources, Radiation and Applications
June 17 14:30-16:50 pm Room: 308

Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: Manfred Thumm & Yindong Huang			
14:30-14:55	669	(Invited) Strong THz generation and application on high energy density golden plasma	D. W. Zhang , H. Z. Wu, X. Sun, Z. H. Lyu, Z. X. Zhao, J. M. Yuan ¹ National University Of Defense Technology, College of Science, Changsha, China
14:55-15:20	2340	(Invited) Unveiling intersubband polaritonic coupling within quantum-cascade metasurfaces	Y. Shen , A. D. Kim, M. Shahili, C. A. Curwen, S. Addamane, J. L. Reno, B. S. Williams ¹ University of California Los Angeles (UCLA), Department of Electrical and Computer Engineering, Los Angeles, California, United States of America ² California Institute of Technology, Jet Propulsion Laboratory, Pasadena, California, United States of America ³ Sandia National Laboratories, Center for Integrated Nanotechnologies, Albuquerque, New Mexico, United States of America
15:20-15:35	98	Proposal of the plasma photonic time crystal (PPTC) operating from petahertz to terahertz	Y. Huang ¹ National Innovation Institute of Defense Technology, Beijing, China
15:35-15:50	443	A Wide-Band 0.34 THz Backward Wave Oscillator Based on T-shaped Staggered Double-Vane Interaction Structure	J. Latif , Z. Wang, A. Jameel, B. Ali, M. K. Nadeem ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China

15:35-15:50	3004	Research on hypersonic vehicle terahertz communication and electromagnetic interference shielding technology	Wenchong Ouyang ^{1,3} , Zhengwei Wu^{2,3} , Quanming Lu¹ ¹ Deep Space Exploration Laboratory, School of Earth and Space Sciences, University of Science and Technology of China, Hefei, China ² School of Nuclear Science and Technology, University of Science and Technology of China, Hefei, China ³ Joint Laboratory of Plasma Application Technology, Institute of Advanced Technology, University of Science and Technology of China, Hefei, China
16:05-16:20	1592		
16:20-16:35	2224	The Design of the Sheet Electron Optical System for a 650-GHz TWT	P. Yin , J.C. Cai, J. Xu, L. Yue, H. Yin, Y. Xu, G. Zhao, W. Wang, Y. Wei ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China
16:35-16:50	683	Characterization of antioxidant concentration using terahertz time-domain spectroscopy (THz-TDS) in Ethylene-Vinyl-Acetate-Copolymer (EVA)	L. Gong¹ , Y. Qiu ¹ , H. Zhai ² , R. Dan ³ , Y. Dang ³ , Y. Hang ⁴ , F. Shi ⁴ , Y. Zhai ¹ , L. Hu ¹ , W. Liu ² , X. Li ² , Y. Li ¹ ¹ Xi'an Jiaotong University, Key Laboratory of Physical Electronics and Devices, Ministry of Education, Faculty of Electronic and Information Engineering, Xi'an, China ² Xi'an Jiaotong University, Department of Microelectronics, School of Electronic and Information Engineering, Key Laboratory of Micro-Nano Electronics and System Integration of Xi'an City, Xi'an, China ³ Xi'an Jiaotong University, School of Software Engineering, Xi'an, China ⁴ China Guangdong Nuclear Power, Suzhou Nuclear Power Research Institute, Suzhou, China

TA 9 Special Sessions: Sustainable Plasma Chemistry for a Net-zero Economy
 June 17 14:30-17:25 pm Room: 302

Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: Xin Tu & T. Nozaki			
14:30-14:55	1209	(Invited) The role of plasma technology in advancing nitrogen chemistry	J. Sun ¹ , R. Zhou¹ ¹ Xi'an Jiaotong University, Xi'an, China
14:55-15:20	1690	(Invited) Nonthermal plasma-assisted CO ₂ methanation at ambient temperature	W. Zhang ¹ , T. Mambu ¹ , D.-Y. Kim ¹ , T. Nozaki¹ ¹ Tokyo Institute of Technology, Dept Mechanical Engineering, Tokyo, Japan
15:20-15:45	1860	(Invited) Plasma as an enabling tool in the era of electrification; cases of applicatoin and prospects	D.H. Lee^{1,2} , H. Kang ^{1,2} , Y.-N. Kim ¹ , J. Choi ¹ , H. Song ¹ , H. Lee ¹ , J.W. Kim ¹ , M. Jung ¹ ¹ Korea Institute of Machinery and Materials, Department of Plasma Enginnering, Daejeon, Republic of Korea ² University of Science and Technology, Daejeon, Republic of Korea

15:45-16:10	1933	(Invited) Plasma Electrification for Decentralized Production of Fuels and Chemicals	X. Tu ¹ ¹ University of Liverpool, Department of Electrical Engineering & Electronics, Liverpool, United Kingdom
16:10-16:35	2007	(Invited) Industrialisation potential of plasma-catalytic nitrogen fixation and CO ₂ conversion	A. B. Murphy ¹ , Y. Yang ² , S. Ullah ² ¹ CSIRO, Manufacturing, Lindfield, Australia ² CSIRO, Energy, Clayton, Australia
16:35-17:00	2213	(Invited) Plasma conversion technology addressing CO ₂ conversion and the hydrogen cycle through ammonia	U. Fantz ¹ ¹ Max-Planck-Institut für Plasmaphysik, Garching, Bavaria, Germany
17:00-17:25	2276	(Invited) Study of a gliding arc discharge for sustainable nitrogen fixation into NO _x	F. Manaigo ^{1,2} , A. Bogaerts ² , R. Snyders ^{1,3} ¹ University of Mons, CHiPS, Mons, Belgium ² University of Antwerp, PLASMAN, Antwerp, Belgium ³ Materia Nova Research Center, Mons, Belgium

TA 9 Special Sessions: Scientific Machine Learning and its Applications to Plasma Science
June 17 14:30-17:30 pm Room: 310

Time	ID	Title	Name / Affiliation
June 17		Oral Session	
Chair: S. Kawaguchi & Linlin Zhong			
14:30-14:50	1767	(Invited) Efficient asymptotic preserving methods for multiscale kinetic transport equations	T. Xiong ¹ ¹ Xiamen University, School of Mathematical Sciences, Xiamen, China
14:50-15:10	1768	(Invited) Scientific Machine Learning Enables Digital Twins for Large-Scale Complex Systems	Q. Zhan ¹ ¹ Zhejiang University, ISEE, Hangzhou, China
15:10-15:30	1979	(Invited) Physics-informed Meta-instrument for eXperiments (PiMiX)	Z. Wang ¹ ¹ Los Alamos National Laboratory, Los Alamos, New Mexico, United States of America
15:30-15:50	1988	(Invited) DeePulse: An in-situ ML-assisted optimization framework of plasma sources for hydrodynamics control and energy conversion	Y. Zhu ¹ , H. Zong ¹ , Y. Wu ¹ , Y. Qiu ¹ , B. Yin ¹ , N. Zhao ¹ , Z. Zhu ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China
15:50-16:10	1995	(Invited) Structure-preserving learning for the kinetic physics in many-particle systems	T. Xiao ¹ ¹ Chinese Academy of Sciences, Institute of Mechanics, Beijing, China
16:10-16:30	2152	(Invited) Applications of physics-informed neural networks to elucidating electron swarm transport in plasmas	S. Kawaguchi ¹ , K. Takahashi ¹ , K. Satoh ¹ ¹ Muroran Institute of Technology, Muroran, Japan
16:30-16:50	2204	(Invited) Machine learning for plasma reaction kinetic data estimation	K. M. Lemishko ¹ , M. Hanicinec ² , S. Mohr ¹ , A. Nelson ¹ , J. Tennyson ² ¹ Quantemol Ltd, London, United Kingdom ² University College London, Department of Physics and Astronomy, London, United Kingdom
16:50-17:10	2275	(Invited) Machine Learning Molecular Dynamics Simulations: An Application of Machine Learning for Material Science	M. Okumura ¹ ¹ Japan Atomic Energy Agency, Center for Computational Science and e-Systems, Kashiwa, Japan
17:10-17:30	2310	(Invited) Data-driven model assisted efficient calculation on numerical simulation of low-temperature plasma	Y. Zhang ¹ , X. Wang ¹ ¹ Shandong University, 1. Department of Engineering Physics, Jinan, China

Plenary Session 4



Recent Progress of Double Cone Ignition Scheme of Inertial Confinement Fusion

Jie Zhang

Director of Tsung-Dao Lee Institute & Academician
Chinese Academy of Sciences & Shanghai Jiao Tong University, China
June 18 (TUE) AM 8:30-9:30

Biography

Prof. Jie Zhang works on high energy density physics and laser-plasma physics. He has made outstanding contributions to the development of saturated output of Soft X-ray lasers, new scheme of inertial confinement fusion (ICF) and ultrahigh spatiotemporal resolution MeV ultrashort pulsed electron diffraction and imaging. In 2015, he was awarded Edward Teller Medal, the most prestigious award in the field of ICF and high energy density physics in the world. In 2021, he was awarded Future Science Prize in Physical Sciences. He was elected Academician of the Chinese Academy of Sciences in 2003, member of the German National Academy of Sciences Leopoldina in 2007, Fellow of the Third World Academy of Sciences (TWAS) in 2008, Foreign Member of Royal Academy of Engineering (FREng) in 2011, the Foreign Associate of the National Academy of Sciences (NAS) in 2012. Professor Zhang was the President of Shanghai Jiao Tong University in the period of 2006-2017. He brought vitality, creativity and passion to the University. Under his leadership, Shanghai Jiao Tong University has made remarkable progress on its way to a world-class university. In the period of 2017-2018, he served as the Vice President of the Chinese Academy of Sciences. He has been the President of Chinese Physical Society since 2018. He is Director of Tsung-Dao Lee Institute.

Summary

In this talk, we present recent experimental progress on feasibility study of Double-Cone Ignition (DCI) scheme of inertial confinement fusion. A series of experiments to study the physics of the different steps of the DCI scheme have been conducted at Shenguang II-U laser facility. An optimized adiabatic compression in the conical implosion is performed by an optimized drive pulse from 8 laser beams. Corona-plasmas are carefully diagnosed and laser-plasma instabilities are found to be greatly mitigated by using large-angle irradiation with s-polarization. The angularly resolved measurements of scattered energies indicate that the total laser absorption by plasmas inside the cones can be over 90%. Sequence of shocks generated by the optimized drive pulse is carefully controlled to form an optimized adiabatic compression inside the cones. The density of the colliding plasmas from the two cones is measured to be about 46 g/cm³ and the velocity of the plasma jets from the cone-tips is about 200 km/s for a 12 kJ total laser energy on both cones. The colliding plasma temperature is increased to be 600 eV only with a 500 J ps heating laser pulse. The results validate the feasibility of the DCI scheme.

June 18, 2024 Tuesday

Plenary Session			
June 18 8:30-9:30 am Room: 307			
Time	ID	Title	Name / Affiliation
Chair: John Verboncoeur			
8:30-9:30	2316	(PL4) Recent progress of double cone ignition scheme of inertial confinement fusion	Jie Zhang <i>Chinese Academy of Sciences/Shanghai Jiao Tong University, China</i>
9:30-9:45	Coffee Break		

TA 1 Basic Processes in Fully and Partially Ionized Plasmas			
June 18 9:45 am-12:05 pm Room: 305A			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: N. E. Aktaev & Wenjun Ning			
9:45-10:10	475	(Invited) Streamer discharge instabilities under repetitive nanosecond pulses	Z. Zhao ¹ , Q. Gao ¹ , A. Sun ¹ , J. Li ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China
10:10-10:35	944	(Invited) Preferred frequency of Ion Acoustic Waves in a low temperature bounded plasma	C.-S. Yip ¹ , C.-Y. Jin ¹ , W. Zhang ¹ , D. Jiang ¹ ¹ Hefei Institutes of Physical Science, Chinese Academy of Sciences, Institute of Plasma Physics, Hefei, China
10:35-10:50	897	Atmospheric pressure air three-electrode dielectric barrier discharge characteristics	Z. Guo ¹ , Q. Liu ¹ , Y. Chen ¹ , M. You ¹ , J. Wang ¹ , S. Wu ¹ ¹ Nanjing University of Aeronautics and Astronautics, College of Automation Engineering, Nanjing, China
10:50-11:05	977	Research on the characteristics of positive polarity DC corona discharge under high-speed airflow	Q. Wu ¹ , Z. Wu ¹ , Z. Du ¹ , Y. Deng ¹ , Y. Wang ¹ , X. Wen ¹ ¹ Wuhan University, School of Electrical Engineering, Wuhan, China
11:05-11:20	1082	Research on the development characteristics of silicon needle discharge under positive voltage	Y. Wang ¹ , Y. Ge ¹ , X. Liu ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Shaanxi, Xi'an, China
11:20-11:35	1196		
11:35-11:50	1201	High enthalpy technology of segmented arc heater based on flow control	P. Wen ¹ , L.-Z. Chen ¹ , G.-M. Yang ¹ , R.-S. Yang ¹ , X.-X. Yan ¹ ¹ China Academy of Aerospace Aerodynamics, Aerodynamics institute, Beijing, China
11:50-12:05	1044	Decoupling vibrational and translational temperature for plasma-combustion chemistry system containing rich vibrational states	Y. Zhu ¹ , Y. Qiu ¹ , Y. Wu ¹ , Z. Qu ² ¹ Xi'an Jiaotong University, National Key Lab of Aerospace Power System and Plasma Technology, Xi'an, China ² Jilin University, Institute of Theoretical chemistry, College of Chemistry, Changchun, China

TA 1 Basic Processes in Fully and Partially Ionized Plasmas			
June 18 9:45 am-12:05 pm Room: 305B			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: M. Samizadeh Nikoo & Zheng Zhao			
9:45-10:10	1585	(Invited) Coupled Transmission Line, Lumped Circuit, and Particle-in-Cell/Monte Carlo Models: Application to Gas Discharge and Plasma Source Simulations	Y. Zhang ¹ , Z. Chen ² , J. Xu ¹ , S. Yu ² , Z. Chen ² , Z. Wang ² , H. Wang ³ , W. Jiang ² ¹ Wuhan University of Technology, Wuhan, China ² Huazhong University of Science and Technology, Wuhan, China ³ Anshan Normal University, Anshan, China
10:10-10:35	1870	(Invited) A review on the angular scattering models of binary collision in Monte Carlo modeling on plasma discharges	W. Yang ¹ ¹ Institute of Applied Physics and Computational Mathematics, Beijing, China

10:35-10:50	1479	Simulation benchmarks of the PIC-MCC codes XPDP1 and VSim for capacitively coupled plasma helium and argon discharges	G.-N. Wang ¹ , K. Aranganadin ¹ , H.-Y. Hsu ³ , J.P. Verboncoeur ⁴ , M.-C. Lin ¹ ¹ Hanyang University, Multidisciplinary Computational Laboratory, Department of Electrical and Biomedical Engineering, Seoul, Republic of Korea ² National Taipei University of Technology, Department of Mechanical Engineering, Taipei, Taiwan province ³ Michigan State University Michigan, Department of electrical and computer engineering, Michigan, Michigan, United States of America
10:50-11:05	1281	Energy storage principle and pulse power synthesis method based on twisted pair wire	J. Ma ¹ , L. Yu ¹ , C. Li ¹ , S. Wang ¹ , B. Hu ¹ , S. Dong ¹ , C. Yao ¹ ¹ Chongqing University, State Key Laboratory of Power Transmission and Transformation Equipment Technology, Chongqing, China
11:05-11:20	1661	Study on numerical simulation of thermal plasma and data-driven turbulence modeling	X. Chen ¹ , W. Xia ¹ ¹ University of Science and Technology of China, Department of Thermal Science and Energy Engineering, Hefei, China
11:20-11:35	1681	Recent Developments to the 3D FastPIC Simulator of BUMBLEBEE	X. Jin ^{1,2} , T. Huang ¹ , W. Cai ¹ , S. Guo ¹ , G. Lin ¹ , K. Liu ¹ , L. Huang ¹ , X. Wu ² , W. Du ² ¹ University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, Chengdu, China ² Chengdu Huangfeng Science and Technology Ltd, Chengdu, China
11:35-11:50	1691	Kinetic simulations of low pressure miniaturized RF inductively coupled plasma: an implicit electromagnetic PIC/MCC Model	H. Wen ¹ , Q.-Z. Zhang ¹ ¹ Dalian University of Technology, School of Physics, Dalian, China
11:50-12:05	2305	1-D Electromagnetic Particle-In-Cell Simulations on High Frequency Capacitively Coupled Plasma Discharges	K. Aranganadin ¹ , G.-N. Wang ¹ , H.-Y. Hsu ² , J. P. Verboncoeur ³ , M.-C. Lin ¹ ¹ Hanyang University, Multidisciplinary Computational Laboratory, Department of Electrical and Biomedical Engineering, Seoul, Republic of Korea ² National Taipei University of Technology, Department of Mechanical Engineering, Taipei, Taiwan province ³ Michigan State University, Department of Electrical and Computer Engineering, East Lansing, Michigan, United States of America

TA 2 Microwave Generation and Plasma Interactions			
June 18 9:45 am-12:05 pm Room: 303			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Renzhen Xiao & Yang Cao			
9:45-10:10	934	(Invited) Design and Development of a Fourth Harmonic Terahertz Gyrotron Based on Axis-Encircling Electron Beam	F. Zhang ¹ , C. Du ^{1,2} , J. Yang ¹ ¹ Peking University, School of Electronics, Beijing, China ² Peking University, Center for Carbon-based Electronics and State Key Laboratory of Advanced Optical Communication Systems and Networks, Beijing, China
10:10-10:35	1587		

10:35-10:50	526	Research on Frequency-Tunable Terahertz Harmonic Gyrotron	R. Tang ¹ , H. Xiao ¹ , X. Chen ¹ , Y. Huang ¹ , S. Zhang ¹ , X. Han ¹ ¹ Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, 430074, China
10:50-11:05	809	Development of a high harmonic gyrotron driven by an axis-encircling electron beam	C.-H. Du ¹ , F. Zhang ¹ , J.-J. Feng ¹ , X.-Y. Cao ¹ , S.-Q. Li ¹ ¹ Peking University, School of Electronics, Beijing, China
11:05-11:20	906	Research development on a long-pulse high-power 170GHz gyrotron in HCNSC	B. Liu ^{1,2} ¹ Institute of Energy, Hefei Comprehensive National Science Center, Research center for advanced wave source, Hefei, China ² ShenZhen University, Shenzhen, China
11:20-11:35	1091	The Effect of Velocity Spread on a Ka-band Large-orbit Gyro-TWT with Periodic Dielectric-loaded Structure	J. Yang ¹ , E. Wang ¹ , C. Lei ² , Q. Zhao ³ , Z. Lei ¹ ¹ Beijing Vacuum Electronics Research Institute, National Key Laboratory of Science and Technology on Vacuum Electronics, Beijing, China ² China People's Police University, Police Equipment Technical College, Langfang, China ³ Guilin University of Electronic Technology, School of Information and Communication, Guilin, China
11:35-11:50	1250	The Comparative Study of Gyro-TWT in Large-orbit and Small-orbit at Second Harmonic at Ka-band	Z. Lei ¹ , E. Wang ¹ , J. Yang ¹ , C. Lei ² , Q. Zhao ³ , X. Zeng ¹ , J. Feng ¹ ¹ Beijing Vacuum Electronics Research Institute, National Key Laboratory of Science and Technology on Vacuum Electronics, Beijing, China ² China People's Police University, Police Equipment Technical College, Langfang, China ³ Guilin University of Electronic Technology, School of Information and Communication, Guilin, China
11:50-12:05	1534	Design and Test of a Large-orbit Electron Gun	E. Wang ¹ , J. Feng ¹ , X. Liu ² , G. Liu ³ ¹ Beijing Vacuum Electronics Research Institute, National Key Laboratory of Science and Technology on Vacuum Electronics, Beijing, China ² University of Electronics Science and Technology of China, Chengdu, China ³ Enn energy research institute, Langfang, China

TA 3 Charged Particle Beams and Sources

June 18 9:45 am-12:10 pm Room: 305C

Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Efim Oks & Lin Wu			
9:45-10:10	1177	(Invited) Research on Pulsed High-Current Secondary Electron Emission Cathode	L. Wang ¹ , Y. Hao ¹ , Q. Liu ¹ , Y. Tang ¹ ¹ Southwest Jiaotong University (SWJTU), Chengdu, China
10:10-10:25	1711		
10:25-10:40	2022	Advanced Core Snubber Design	G. Li ¹ ¹ Institute of Plasma Physics, Chinese Academy of Sciences, Hefei 230031, China
10:40-10:55	2109		

10:55-11:10	2161	Research on discharge characteristics of radio frequency plasma neutralizer	J. Li ¹ , Z. Yang ¹ , W. Jiang ¹ , L. Wei¹ ¹ Harbin Institute of Technology, School of energy science and engineering, Harbin, China
11:10-11:25	2205	Influence of External Magnetic Field on Characteristics of Pinching Plasma Streams	Y. Volkova¹ , D. Solyakov ¹ , I. Garkusha ^{1,2} , V. Makhlai ¹ , M. Ladygina ^{1,3} , Y. Petrov ¹ , D. Yeliseyev ¹ , D. Grekov ^{1,2} , C. Albert ⁴ ¹ National Science Center, Institute of Plasma Physics, Kharkiv, Ukraine ² V.N. Karazin Kharkiv National University, Kharkiv, Ukraine ³ Institute of Plasma Physics and Laser Microfusion, Warsaw, Poland ⁴ Graz University of Technology, Graz, Austria
11:25-11:40	2298	Multi-dimension effect on space charge limited current	Y.B. Zhu¹ , C. Wang ¹ ¹ South China University of Technology, School of Microelectronic, Guangzhou, China
11:40-11:55	1474	On the Plasma Dynamics and Circuit Modeling of a Wire-Shorted Rod-Pinch Diode for Flash Radiography	P. Zhang¹ , H. Shi ¹ , D. Wang ¹ , M. Xu ¹ , Y. Wang ¹ , Z. Jiang ¹ , X. Li ¹ , J. Wu ¹ , A. Qiu ¹ ¹ Xi'an Jiaotong University, State key laboratory of electrical insulation and power equipment, Xi'an, China
11:55-12:10	191	Mixed modes pixels display technology: is there a room for physical plasma inside modern day display screens?	A. M. Hala¹ ¹ Gaseous electronics, LLC, CEO, Riyadh, Saudi Arabia

TA 4 High Energy Density Plasmas and Applications June 18 9:45 am-12:05 pm Room: 305D			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Yongtao Zhao & Guoqian Liao			
9:45-10:10	833	(Invited) High-efficiency wake excitation in meter-scale beam-ionized hydrogen plasmas at FACET-II	C. Zhang¹ , D. Storey ² , P. San Miguel Claveria ³ , M. Hogan ² , C. Joshi ¹ ¹ University of California Los Angeles, Los Angeles, California, United States of America ² SLAC National Accelerator Laboratory, Menlo Park, California, United States of America ³ LOA, ENSTA Paris, CNRS, Ecole Polytechnique, Institut Polytechnique de Paris, Palaiseau, France
10:10-10:35	1090	(Invited) Recent progresses of laser plasma based electron acceleration and radiation at Shanghai Jiao Tong university	M. Chen¹ ¹ Shanghai Jiao Tong University, School of Physics and Astronomy, Shanghai, China
10:35-10:50	2249	Optimization of Glow Discharge Cleaning for Enhanced Plasma Performance in ITER: A Study on Discharge Similarity and Electrode Configuration	S. Zhang^{1,2} , L. Ge ^{1,2} , Z. Duan ³ , X. Si ³ ¹ Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei 230031, China ² University of Science and Technology of China, Hefei 230026, China ³ Hefei Hangtai Electrophysics Co., Ltd, Hefei 230031, China

10:50-11:05	2348	Next-generation Laser Driver for High-gain Fusion Ignition: efficient, compact, and low-cost	X. Zhao ¹ ¹ Shanghai Institute of Laser Plasma, Shanghai, China
11:05-11:20	1708	Propagation and Guiding of Bessel Beams in Plasma Channels	H. Ye ¹ , L. Cao ² , C. Zhou ¹ ¹ ShenZhen Univercity, Shenzhen, China ² shenzhen technology university, Shenzhen, China
11:20-11:35	2087	Influence of the inner diameters of capillary on the output of neon-argon 69.8nm laser pumped by capillary discharge	B. An ¹ , Y. Zhao ¹ , D. Zhao ¹ , H. Cui ¹ , S. Miao ¹ ¹ Harbin Institute of Technology, School of Astronautics, Harbin, China ² National Key Laboratory of Science and Technology on Tunable Laser, Harbin Institute of Technology, China
11:35-11:50	680	Particle simulation study on the transport of laser-accelerated proton beams in high-density plasmas	W. W. Xu ¹ , Z. H. Hu ¹ , Y. T. Zhao ² , Y. N. Wang ¹ ¹ Dalian University of Technology, School of Physics, Dalian, China ² Xi'an Jiaotong University, School of Physics, Xi'an, China
11:50-12:05	978	A compact high-energy electron radiography system based on active plasma lenses	J.-J. Lan ¹ , Z.-H. Hu ¹ , Q.-T. Zhao ² , S.-C. Cao ² , R. Cheng ² , Y.-T. Zhao ³ , Z.-M. Zhang ² , Y.-N. Wang ¹ ¹ Dalian University of Technology, School of Physics, Dalian, China ² Chinese Academy of Sciences, Institute of Modern Physics, Lanzhou, China ³ Xi'an Jiaotong University, School of Physics, Xi'an, China

TA 5 Industrial, Commercial and Medical Plasma Applications
June 18 9:45 am-12:05 pm Room: 307

Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: M. Baeva & Renwu Zhou			
9:45-10:10	1070	(Invited) Atmospheric-pressure direct-current discharge plasma and its applications	J. Tang ^{1,2} , B. Lei ^{1,2} , B. Xu ^{1,2} , J. Li ^{1,2} ¹ Xi'an Institute of Optics and Precision Mechanics of CAS, State Key Laboratory of Transient Optics and Photonics, Xi'an, China ² University of Chinese Academy of Sciences, Beijing, China
10:10-10:35	1260	(Invited) Plasma water based nitrogen fixation: production, regulation and application	D. Liu ¹ ¹ Huazhong Univeristy of Science and Technology, Wuhan, 430074, China
10:35-10:50	449	Numerical study on the homogeneity of free-burning atmospheric pressure plasma jet array via flow and electric modulation	S. Zheng ¹ , Q. Nie ² , X. Wang ¹ , C. Hou ¹ ¹ Harbin Institute of Technology, School of Physics, Harbin, China ² Harbin Institute of Technology, School of Electrical Engineering and Automation, Harbin, China
10:50-11:05	748	Advancements and Applications of Atmospheric Pressure Plasma for Enhancing Agricultural Productivity	R. Chalise ¹ , R. Khanal ¹ ¹ Tribhuvan University, Central Department of Physics/ Science and Technology, Kathmandu, Nepal

11:05-11:20	772	Atmospheric Cold Plasma Assisted Preparation of Cellulose-based Janus Membrane for Biomedical Application	T. Wang ¹ , J. Sheng ¹ , Z. H. Deng ¹ , L. P. Shi ¹ , S. L. Chen ² , Z. Q. Chen ² , S. X. Rao ¹ ¹ <i>Anhui University of Technology, School of Mechanical Engineering, Ma'anshan, China</i> ² <i>Anhui University of Technology, School of Electrical and Information Engineering, Ma'anshan, China</i>
11:20-11:35	792	Discharge characteristics under vortex airflow in plasma igniter	M. Tang ¹ , D. Zhou ² , J. Tang ² ¹ <i>Harbin University of Science and Technology, Harbin, China</i> ² <i>Harbin Institute of Technology, Harbin, China</i>
11:35-11:50	1105	Real-Time End Point Detection via Automated Dynamic Mode Decomposition	M.A. Sayyed ^{1,2} , T. Rothe ^{1,2} , J. Langer ² , M. Haase ² , H. Kuhn ^{1,2} ¹ <i>Technical University of Chemnitz, Micro and nano systems, Chemnitz, Saxony, Germany</i> ² <i>Fraunhofer ENAS, Chemnitz, Saxony, Germany</i>
11:50-12:05	1119	Effect of plasma jet treatment on the receding contact angle of contaminated silicone rubber surface	A. Hou ¹ , J. Duan ¹ , R. Zhang ¹ ¹ <i>Tsinghua University, Shenzhen International Graduate School, Shenzhen, China</i>

TA 5 Industrial, Commercial and Medical Plasma Applications
June 18 9:45 am-12:05 pm Room: 305E

Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Y. Tanaka & Yadi Liu			
9:45-10:10	860	(Invited) Design and verification of arc plasma igniter for solid fuel engines	Y. Guo ^{1,2} , P. Li ¹ , X. Wang ¹ , C. Chen ¹ , T. Lu ¹ , M. Hu ¹ , Z. Wu ^{1,2} ¹ <i>Beijing Institute of Technology, School of Aerospace Engineering, Beijing, China</i> ² <i>Beijing Institute of Technology, Chongqing Innovation Center, Chongqing, China</i>
10:10-10:35	1239	(Invited) NH/NH ₂ measurements in plasma-assisted ammonia swirling flames	W. Sun ¹ , H. Tang ¹ ¹ <i>Georgia Institute of Technology, Aerospace Engineering, Atlanta, Georgia, United States of America</i>
10:35-10:50	1512	Rotating gliding arc reactor for nitrogen fixation in tandem with electrochemical ammonia synthesis	C. Man ^{1,2} , C. Zhang ² , X. Pei ¹ , T. Shao ² ¹ <i>Wuhan University, School of Electrical Engineering and Automation, Wuhan, China</i> ² <i>Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China</i>
10:50-11:05	387	Towards Skin-Friction Drag Reduction in Turbulent Flows using Plasma DBD Actuators	E. S. Sugeng ¹ , T.L. Chng ¹ - ¹ <i>National University of Singapore, Department of Mechanical Engineering, College of Design and Engineering, Singapore, Singapore</i>
11:05-11:20	474	Numerical study of streamer, pressure wave, and vortex in nanosecond pulsed dielectric barrier discharges	J. Zhang ¹ , Y. Wang ¹ , D. Wang ¹ ¹ <i>Dalian University of Technology, School of Physics, Dalian, China</i>

ICOPS & APCOPTS 2024

11:20-11:35	529	Nonlinear Investigation on Carbon Dioxide Dielectric Barrier Discharge	L. Zhou ¹ , L. Wei ¹ , A. Ehn ² , J. Sun ² , Y. Ding ¹ ¹ Harbin Institute of Technology, School of energy science and engineering, Harbin, China ² Lund University, Department of Physics, Lund, Sweden
11:35-11:50	612	Impact of Water Content on the Combustion Characteristics of Coal Assisted by DBD Plasma with Central Electrode Structure	P. Li ¹ , X. Cheng ¹ , H. Song ¹ , S. Chen ⁴ , Z. Chen ⁴ ¹ Anhui University of Science and Technology, School of Electrical and Information Engineering, Huainan, China ² Anhui University of Technology, School of Electrical and Information Engineering, Ma'anshan, China
11:50-12:05	920	An electron transport model based on orbit theory in external discharge Hall thruster ExB field	K. Zhou ¹ , Y. Wang ¹ , L. Jin ¹ , L. Ren ¹ , W. Ding ¹ , A. Sun ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China

TA 6 Plasma Diagnostics June 18 9:45 am-12:05 pm Room: 311A			
Time	ID	Title	Name / Affiliation
June 18	Oral Session		
Chair: Bangdou Huang & L.M. Martini			
9:45-10:10	645	(Invited) Atomic Oxygen densities in MMWICP jet: TALIF vs. OES	I. Stefanović ¹ , H.-E. Porteanu ³ , N. Bibinov ¹ , M. Klute ² , R.-P. Brinkmann ² , P. Awakowicz ¹ ¹ Ruhr University Bochum, Chair of Applied Electrodynamic and Plasma Technology, Department of Electrical Engineering and Information Science, Bochum, North Rhine-Westphalia, Germany ² Ruhr University Bochum, Chair of Theoretical Electrical Engineering, Department of Electrical Engineering and Information Science, Bochum, North Rhine-Westphalia, Germany ³ Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik (FBH), Berlin, Berlin, Germany
10:10-10:35	983	(Invited) Non-intrusive laser diagnostics for electric field and space charge	B. Huang ¹ , C. Zhang ^{1, 2} , T. Shao ^{1, 2} ¹ Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China ² University of Chinese Academy of Sciences, Beijing, China
10:35-10:50	1596	Characterization of Picosecond Laser Electronic Excitation Tagging (PLEET) at Ultraviolet Wavelengths	H. Xiao ¹ , T.L. Chng ¹ ¹ National University of Singapore, Department of Mechanical Engineering, College of Design and Engineering, Singapore, Singapore
10:50-11:05	1280	Density estimation of OH-radicals from fluorescence decay behavior near the plasma-liquid interface by LIF spectroscopy	Q. Yang ¹ , J. J. Qiao ¹ , Q. Xiong ¹ ¹ Chongqing University, State Key Laboratory of Power Transmission Equipment Technology, School of Electrical Engineering, Chongqing University, Chongqing, China
11:05-11:20	1271	A novel optical emission spectrum method to determine the rate coefficients of the electron-impact processes in low-temperature plasma	X.-M. Zhu ¹ , L. Wang ¹ ¹ Harbin Institute of Technology, School of energy science and engineering, Harbin, China

11:20-11:35	779	A novel concept, "excited-state-system": applicable to determining the active-particle number density in nitrogen, oxygen and carbon tetrafluoride electron cyclotron resonance plasma	L. Wang ¹ , X.-M. Zhu ¹ ¹ Harbin Institute of Technology, School of energy science and engineering, Habin, China
11:35-11:50	561	Pulsed Gas Discharge Driven by Burst Pulse Using Solid-State Linear Transformer Driver	J. Yang ^{1,2} , X. Wang ³ , T. Shao ² , T. Sugai ³ , W. Jiang ³ ¹ University of South China, School of Nuclear Science and Technology, Hengyang, China ² Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China ³ Nagaoka University of Technology, Extreme Energy-Density Research Institute, Nagaoka, Japan
11:50-12:05	1022	Experimental and simulation investigation of a simplified In-Plasma Catalysis reactor powered by repetitive nanosecond pulses	M. Li ¹ , S. Chen ¹ , Y. Cui ² , K. Li ¹ , L. Liu ¹ , X. Chen ¹ , C. Zhuang ² , F. Wang ¹ ¹ Hunan University, College of Electrical and Information Engineering, Changsha, China ² Tsinghua University, Department of Electrical Engineering, Beijing, China

TA 7 Pulsed Power and Other Plasma Applications			
June 18 9:45 am-12:05 pm Room: 311B			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Liang Zhao & Chengyan Ren			
9:45-10:10	734	(Invited) Surface flashover across insulator in vacuum: from global modeling to mitigation approaches	G.-J. Zhang ¹ , G.-Y. Sun ¹ , X. Yang ¹ , B.-P. Song ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China
10:10-10:35	1684	(Invited) Research on the post-arc dielectric recovery of vacuum interrupter in DC circuit breaker	Z. Chen ¹ , Z. Wang ¹ , S. Yang ¹ , Y. Yin ¹ , Y. Wu ¹ , Y. Wu ¹ ¹ Xi'an Jiaotong University, the State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
10:35-10:50	835	Partial discharge decomposition characteristics of dry air insulated switchgear	T. Li ¹ , L. Yu ¹ , X. Cheng ¹ , G. Ge ¹ , S. Du ¹ ¹ Zhengzhou University, School of Electrical and Information Engineering, Zhengzhou, China
10:50-11:05	839	Key factor of cathode in vacuum breakdown conditioning	S. Li ¹ ¹ Nanjing University of Aeronautics and Astronautics (NUAA), Nanjing, China
11:05-11:20	941	Effect of surface roughness on surface flashover characteristics of cross-linked polystyrene in vacuum under repetitive frequency	X. Yang ¹ , Y. Sun ¹ , H. Zhang ¹ , L. Yan ¹ , J. Gao ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
11:20-11:35	999	Study on characteristics of SF ₆ gas decomposition products under high temperature arc plasma catalysis	J. Bao ¹ , Y. Wang ¹ , Q. Wu ¹ , C. Xu ¹ , Y. Deng ¹ , Y. Wang ¹ ¹ Wuhan University, School of Electrical Engineering and Automation, Wuhan, China
11:35-11:50	1136	Comparison of water droplet discharge behavior under surface-insulation and gap-insulation conditions	C. Zhang ¹ , Y. Wang ¹ , Y. Dong ¹ , Z. Wang ¹ ¹ China University of Geosciences Beijing, Beijing, China
11:50-12:05	1166	Effect of lightning EMP on silicon solar cells	X. Zhong ¹ , Z. Zheng ¹ , J. H. Zhang ¹ , Q. C. Fan ¹ , R. Wu ¹ , Q. Q. Sun ¹ , F. Wang ¹ ¹ Hunan University, College of Electrical and Information Engineering, Changsha, China

TA 7 Pulsed Power and Other Plasma Applications June 18 9:45 am-12:05 pm Room: 311C			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Douyan Wang & Jiachen Wang			
9:45-10:10	2079	(Invited) Development of compact pulsed power generator for keeping freshness of agricultural and marine products	K. Takaki ^{1,2} , K. Takahashi ¹ ¹ Iwate University, Faculty of Science and Engineering, Morioka, Japan ² Iwate University, Agri-Innovation Center, Morioka, Japan
10:10-10:35	2089	(Invited) MHz repetition-rate, high-power, sub-nanosecond pulsed-power generator based on the self-developed 4H-SiC DSRDs	J. Guo ¹ , L. Sun ¹ , Y. Zhang ¹ , D. Guo ¹ , Y. Zhou ^{1,2} , X. Tang ¹ , Y. Zhang ¹ , Q. Song ¹ ¹ Xidian University, School of Microelectronics, Xi'an, China ² Xidian University, Xidian-Wuhu Research Institute, Wuhu, China
10:35-10:50	1563	Miniaturized pulsed magnetic field generator for biomedical applications	Y. Lei ¹ , H. Yang ¹ , H. Luo ¹ , Q. Huang ¹ , S. Dong ¹ , C. Yao ¹ ¹ Chongqing University, National Key Laboratory of New Technology for Power Transmission and Transformation Equipment, Chongqing, China
10:50-11:05	1647	Application of a bipolar trigger system with nanosecond quasi-rectangular output pulse for jitter reduction of a 3-MV Marx generator	L. Cheng ^{1,2} , H. Wang ² , G. Wu ² , J. Hua ² , Z. Jia ² , K. Mei ² , W. Wu ² , Z. Zhang ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China ² Northwest Institute of Nuclear Technology, National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China
11:05-11:20	1648	Development of a current-source inverter for high-frequency welding of biological tissues	P. Xie ¹ , K. Liu ¹ , C. Zhu ¹ , C. Liu ¹ ¹ Fudan University, School of Information Science and Engineering, Shanghai, China
11:20-11:35	1812	Research on optimizing the controller configuration for high-power supply control system in nuclear fusion based on hybrid algorithm WOA-IAPSO	L. Zhang ^{1,2} , L. Jiang ¹ , G. Gao ¹ ¹ Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei, China ² University of Science and Technology of China, Hefei, China
11:35-11:50	1875	Research of a high-voltage pulse supply based on a racetrack Blumlein pulse forming line	R. Chen ¹ , Z. Pan ¹ , X. Cheng ¹ , H. Zhang ¹ , R. Zhang ¹ , J. Yang ¹ , B. Qian ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
11:50-12:05	1980	A spiker sustainer circuit based on series hybrid energy storage	X. Ren ¹ , L. Yan ¹ , J. Gao ¹ , H. Yang ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China

TA 8 Terahertz Sources, Radiation and Applications
June 18 9:45-11:50 am Room: 308

Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Olga Cherkasova & Yan Peng			
9:45-10:10	1367	(Invited) Terahertz ultrasensitive biosensor based on quasi-bound state in the continuum (QBIC)	B. Liu¹ , Y. Peng ¹ ¹ University of Shanghai for Science and Technology, Terahertz Technology Innovation Research Institute, Shanghai, China
10:10-10:35	1927	(Invited) Terahertz Waves Attenuate Telomerase Activity to Suppress Tumor Cell Growth	J. Yin ¹ , Z. Zhang ¹ , Z. Song¹ ¹ Innovation Laboratory of Terahertz Biophysics, Innovation Laboratory of Terahertz Biophysics, Beijing, China
10:35-10:50	45	Plasma metasurface combined with gold nanoparticles for sensing inflammatory factors	Z. Ma ^{1,2} , Y. Jiao^{1,2} , Q. Jia ¹ , R. Wang ² , Z. Zhang ² , X. Du ¹ ¹ Chinese PLA General Hospital, First Medical Center, Beijing, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
10:50-11:05	539	Terahertz Brain-computer Interface: From the Internet of Things to the Internet of People	Z. Qiao¹ , J. Shi ¹ , Y. Gao ¹ , Y. Lv ¹ , H. Sun ¹ ¹ Unicom (Shanghai) Industrial Internet Co.,Ltd, IoT OPENLAB, Shanghai, China
11:05-11:20	1365	Visualization and interpretation of origin identification of Panax notoginseng samples using neural networks	S. Wang¹ , H. Gu ¹ , Y. Peng ¹ ¹ University of Shanghai for Science and Technology, Terahertz Technology Innovation Research Institute, Shanghai, China
11:20-11:35	1828	Quasi-BIC Resonance in Terahertz Metasurface for Sensing Application	Y. Wang¹ , Z. Cui ¹ , X. Zhang ¹ , W. Chen ¹ ¹ Xi'an University of technology, Key Laboratory of Ultrafast Photoelectric Technology and Terahertz Science in Shaanxi, Xi'an, China
11:35-11:50	47	Terahertz to Mid-infrared Dielectric Properties of the Phospholipid Bilayer Based on Molecular Dynamics Simulation	Z. Zhang¹ , Z. Song ¹ ¹ National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China

TA 9 Special Sessions: EMP and EMC in Controlled Nuclear Fusion/ Pulsed Power Accelerators and Beams

June 18 9:45 -11:55 am Room: 302

Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Hao Wei & Cui Meng			
9:45-10:05	1925	(Invited) Electromagnetic pulse environment in controlled nuclear fusion	C. Meng¹ , M. Zhang ^{2,3} ¹ Zhejiang University, College of Electrical Engineering, Hangzhou, China ² Tsinghua University, Department of Engineering Physics, Beijing, China ³ Ministry of Education, Laboratory of Particle & Radiation Imaging, Beijing, China

ICOPS & APCOPTS 2024

10:05-10:15	924	Impact of rise time and pulse width of Electromagnetic Pulse on the Synergistic Effects of Transient Ionizing Radiation and Electromagnetic Pulse on Bipolar Junction Transistor	M. Zhong ^{1,3} , C. Meng ² , Y. Liu ^{1,3} ¹ Tsinghua University, Department of Engineering Physics, Beijing, China ² Zhejiang University, School of Electrical Engineering, Hangzhou, China ³ Ministry of Education, Key Laboratory of Particle & Radiation, Beijing, China
10:15-10:25	997	Numerical simulation of system generated electromagnetic pulse in hermetic package	H. Zhang ¹ , W. Wu ¹ , Q. Zhou ¹ , H. Zhou ¹ ¹ Institute of Applied Physics and Computational Mathematics, Beijing, China
10:25-10:45	921	(Invited) Recent advances in current transport experiments of a scaled stack-MITL-PHC system on a megampere-class LTD module	H. Wei ¹ , H. Wu ¹ , J. Wang ¹ , L. Wang ¹ , Y. Yang ¹ , M. Li ¹ , Y. Hong ² , C. Cheng ² , W. Shan ² , P. Li ¹ , F. Sun ¹ , A. Qiu ¹ ¹ National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Northwest Institute of Nuclear Technology, Xi'an, China ² Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
10:45-11:05	1385	(Invited) Particle-in-cell simulation on the influences of ion-source parameters on flow and expansion characteristics of deuterium-titanium ions	Y. Dong ¹ , Q. Zhou ¹ , W. Yang ¹ , Q. Sun ¹ , W. Yang ¹ , Z. Dong ¹ ¹ Institute of Applied Physics and Computational Mathematics, Beijing, China
11:05-11:15	490	Optimization Design of a 40 kV Photoconductive Semiconductor Switch under DC Voltage	J. Wang ¹ , Z. Wang ¹ , H. Wei ¹ , P. Li ¹ , Y. Yang ¹ ¹ Northwest Institute of Nuclear Technology, National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China
11:15-11:25	589	Impedance Control Method of the Cylindrical Virtual Cathode Reflex Triode Based on Multi-ring Cathode	M. Zhang ¹ , D. Lai ² , Q. Xu ² ¹ Tsinghua University, Department of Engineering Physics, Beijing, China ² Northwest Institute of Nuclear Technology, Xi'an, China
11:25-11:35	980	Experimental study of current loss characteristics of disc cone MITL-PHC based on 12-stage LTD module	Y. Hong ¹ , H. Wei ² , J. Wang ² , H. Wu ² , L. Wang ² , C. Cheng ¹ , M. Li ² , A. Qiu ^{1,2} ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China ² Northwest Institute of Nuclear Technology, National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China
11:35-11:45	2052	Image Recognition of Vacuum Arc Ignition Mode Based on Deep Learning	S. Liu ¹ , X. Bo ¹ , J. Chen ¹ , H. Chen ¹ , Z. Liu ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China
11:45-11:55	1633	Machine learning for modeling plasma and electromagnetic wave interaction	H. Fu ¹ ¹ Fudan University, School of Information Science and Technology, Shanghai, China

**TA 9 Special Sessions: Extreme Electromagnetic Engineering and its Biomedical Applications/
Fundamental Process in Lightning Discharge, Long Air-gap Discharge and Relevant Applications**

June 18 9:45-11:55 am Room: 310

Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Liang Yu & Mi Zhou			
9:45-10:05	1900	(Invited) Accurate magnetization modelling in multi-dimensional applications	Y. Wang ¹ ¹ Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing 100190, China
10:05-10:25	2121	(Invited) Plasma Immunotherapy for Biomedical Applications	D. Fu ¹ , Z. Chen ¹ ¹ Chinese Academy of Sciences, Shenzhen Institute of Advanced Technology, Shenzhen, China
10:25-10:35	2004	Experimental Study on Dynamic Changes of Tissue Impedance Spectrum Induced by High Voltage Pulsed Electric Fields	Y. Zhao ^{1,2} , L. Qi ² , Y. Liu ² , Z. Fang ² , D. Xu ^{1,3} ¹ Taizhou Campus, Zhejiang Cancer Hospital (Taizhou Cancer Hospital), Taizhou, China ² Nanjing Tech University, School of Electrical Engineering and Control Science, Nanjing, China ³ Taizhou Key Laboratory of Minimally Invasive Interventional Therapy & Artificial Intelligence, Taizhou, China
10:35-10:55	1855	(Invited) Recent Research Progresses at CMA Field Experiment Base on Lightning Sciences	W. Lyu ¹ , Y. Zhang ¹ , D. Zheng ¹ , S. Chen ² , Y. Zhang ^{1,3} ¹ Chinese Academy of Meteorological Sciences, State Key Laboratory of Severe Weather & CMA Key Laboratory of Lightning, Beijing, China ² China Meteorological Administration, Institute of Tropical and Marine Meteorology, Guangzhou, China ³ Fudan University, Institute of Atmospheric Sciences, Shanghai, China
10:55-11:15	2244	(Invited) Research Progress on Altitude Correction of Gap Discharge Characteristics in High Altitude Areas	Y. Ding ¹ , B. Yang ² , X. Ma ² , X. Yao ³ , Y. Su ³ ¹ Beijing Jiaotong University, School of Electrical Engineering, Beijing, China ² North China Electric Power University, Beijing, China ³ China Electric Power Research Institute, Department of High Voltage, Beijing, China
11:15-11:35	2333	(Invited) Characteristics of Dark Periods in Long Air Positive Sparks: A Review	X. Zhao ¹ , Y. Liu ² , B. Jin ¹ , Y. Du ¹ , J. He ² ¹ The Hong Kong Polytechnic University, Department of Building Energy and Environment Engineering, Hong Kong, China ² Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China
11:35-11:45	1626	Characteristics of Return Stroke Electromagnetic Waveforms in Zhangbei Wind Farms	W. Fan ¹ , L. Cai ¹ , R. Yan ¹ , M. Zhou ¹ , J. Cao ¹ , J. Wang ¹ , Y. Fan ¹ ¹ Wuhan University, School of Electrical Engineering and Automation, wuhan, China
11:45-11:55	1971	Flashover Channel in Lightning Strikes and the Subsequent Damage Caused to the Glazed Roofing Tiles of Ancient Buildings	J. Li ¹ ¹ Beijing Meteorological Service, Beijing, China

Plenary Session 5



Multiphase AC Arc System for Nanomaterials Processing

Takayuki Watanabe

Department of Chemical Engineering Kyushu University, Japan
June 18 (TUE) PM 13:30-14:30

Biography

Prof. Takayuki Watanabe was born in Yokohama, Japan, in 1961, received his Ph. D at Tokyo Institute of Technology in 1991. Since 2013, he has been Professor of the Kyushu University. Professor Watanabe is an expert in the area of plasma processing science. He is widely known for his work in the area of plasma modeling and applications. He has studied a wide range of applications of plasma technology including nanoparticle and nanotube syntheses, waste treatment, materials processing. From 2020 to 2023, he led the field of plasma chemistry in industry and academia in Japan as chairman of the JSPS 153 Committee on Plasma Science for Materials. He is the Board of Directors of International Plasma Chemistry Society, and he organized 25th International Symposium on Plasma Chemistry as the Chair in 2023.

Summary

The multiphase AC arc is one of the most attractive thermal plasmas because it has advantages such as high energy efficiency, large plasma volume, low gas velocity compared with the conventional thermal plasmas. Understanding the temperature characteristics is significantly necessary to apply the multiphase AC arc to the material synthesis efficiently. Fluctuated temperature field of the multiphase AC arc were successfully visualized by a high-speed camera with appropriate band-pass filter in this study. The transmission wavelengths of the band-pass filter were 675 nm and 795 nm for the Ar atomic line. The temperature was calculated from the ratio of two wavelength. Obtained results indicates that controlling pressure enables to make high temperature field suitable for required process such as evaporating and melting. Visualization of metallic vapor using emission from Li atom feed as raw materials for nanoparticle have recently been conducted. Three representative emissions from Li atom at 671, 610, and 460 nm were confirmed. In particular, absorption at 671 nm in thermal plasmas was experimentally confirmed. The purpose of this study is to establish the method to measure Li atom density using Li self-absorption.

Plenary Session 6



Pulsed Nanosecond Plasma on the Service of Advanced Laser Diagnostics

Svetlana Starikovskaia

Laboratory for Plasma Physics, LPP (CNRS, Ecole Polytechnique), France
June 18 (TUE) PM 14:30-15:30

Biography

Prof. Svetlana Starikovskaia received the Ph.D. in Plasma Physics from Moscow Institute of Physics and Technology (MIPT) in 1993, Dr.Sc. degree from Joint Institute of High Temperatures Russian Academy of Sciences in Moscow State University in 2000 and degree of Professor from MIPT in 2006. She is currently a CNRS Leading Scientific Researcher in Laboratory of Plasma Physics (LPP) at Ecole Polytechnique, Palaiseau, France. Her scientific interest involves molecular energy transfer studies, non-equilibrium plasma research, plasma-assisted combustion, plasma-living cells interaction, shock waves and chemical kinetics research, plasma conversion of CO₂. She was between the pioneers in the field of plasma-assisted ignition and combustion (PAI/PAC) and the author of the first review dedicated to PAI/PAC in 2006. On-going investigations involve the use of pulsed nanosecond discharges for plasma-assisted ignition of fuels at high pressure, plasma-assisted detonation; research related to development of pulsed discharges in a wide range of pressures (20 mbar-15 bar), wide range of specific deposited energy (0.001-10 eV/molecule); development of advanced laser diagnostics in short pulsed discharges.

Summary

The talk will review the work done by the group of kinetics of nanosecond discharges of Laboratory of Plasma Physics in the direction of studying of plasma parameters and optimizing plasma chemistry with the help of advanced laser diagnostics. Two methods will be targeted: electric field induced second harmonic (E-FISH) generation and two-photon absorption laser induced fluorescence. Nanosecond pulsed discharges at moderate pressures (tens-hundreds of mbars – 1 bar) with well-controlled electric field, current density, specific deposited energy (SED) will be used as a test bench for both techniques. It will be discussed how preliminary “shaping” of the discharge can help getting important data for plasmachemical applications (plasma-assisted combustion, plasma-assisted detonation, CO₂ valorization). Advantages and difficulties of E-FISH will be discussed. A novel approach to calibration of ratio of two-photon Xe/O cross-sections for two-photon absorption fluorescence (TALIF) of atomic oxygen on the basis of direct TALIF measurements of O-atoms density accompanied by detailed kinetic calculations in the discharge providing 100% oxygen dissociation at moderate pressures will be presented.

June 18, 2024 Tuesday

Plenary Session June 18 13:30-15:30 pm Room: 307			
Time	ID	Title	Name / Affiliation
Chair: Anthony B. Murphy & Cheng Zhang			
13:30-14:30	1935	(PL5) Multiphase AC arc system for nanomaterials processing	Takayuki Watanabe <i>Kyushu University, Japan</i>
14:30-15:30	1480	(PL6) Pulsed nanosecond plasma on the service of advanced laser diagnostics	Svetlana Starikovskaia <i>Laboratory for Plasma Physics, LPP (CNRS, Ecole Polytechnique), France</i>

TA 1 Basic Processes in Fully and Partially Ionized Plasmas June 18 15:30-16:50 pm Room: 305A			
Time	ID	Title	Name / Affiliation
June 18	Oral Session		
Chair: Yuan Li & A. Fruchtman			
15:30-15:55	1110	(Invited) Characterization of a constant-current DC powered gliding arc discharge in an atmospheric-pressure 2D reactor	Y. Tian ^{1,2} , P. Mathieu ¹ , A. Chatterjee ¹ , N. D. Geyster ² , R. Snyders ^{1,3} ¹ <i>Université de Mons, Department of Chemistry, Mons, Belgium</i> ² <i>Universiteit Gent, Department of Applied Physics, Ghent, Belgium</i> ³ <i>Materia Nova Research Center, Mons, Belgium</i>
15:55-16:20	1249	(Invited) Linear stability analysis of inviscid charge transport near a deformable plasma–liquid interface	W.H.R. Chan ¹ , Z. Feng ¹ , E. Klaseboer ¹ , H. Li ¹ ¹ <i>Institute of High Performance Computing (IHPC), Agency for Science, Technology and Research (A*STAR), Fluid Dynamics Department, Singapore, Singapore</i>
16:20-16:35	1376	Charge transportation characteristics of microsecond-pulsed annular surface dielectric barrier discharge	Y. Han ¹ , H. Jiang ¹ , J. Tang ¹ ¹ <i>Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing, China</i>
16:35-16:50	1398	Simulation of stochastic runaway electron transport during disruption mitigation	Y. Sun ¹ , D. Hu ¹ , B. Li ¹ , F. Wang ² , Y. Zhang ³ ¹ <i>Beihang University, School of Physics, Beijing, China</i> ² <i>Dalian University of Technology, School of Physics, Dalian, China</i> ³ <i>Southwestern Institute of Physics, Chengdu, China</i>

TA 1 Basic Processes in Fully and Partially Ionized Plasmas June 18 15:30-17:00 pm Room: 305B			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Hao Zhao			
15:30-15:55	2151	(Invited) Numerical modeling of the energy loss function of superthermal electrons in the ionosphere taking into account the features of the source function	N. E. Aktaev ¹ , C. Yuan ¹ , A. A. Kydryavtsev ¹ ¹ Harbin Institute of Technology, Department of Applied Physics, Harbin, China
15:55-16:20	2163	(Invited) Computer simulations for unraveling the molecular mechanisms of oligosaccharide oxidation by cold plasma treatment	M. Yusupov ^{1, 2} , Q.-Z. Zhang ³ , A. Bogaers ² ¹ Arifov Institute of Ion-Plasma and Laser Technologies, ASUz, Tashkent 100125, Uzbekistan ² University of Antwerp, Antwerp 2610, Belgium ³ Dalian University of Technology, Dalian 116024, China
16:20-16:45	2217	(Invited) Exploring Nitration Effects on Electroporation: Enhancing Cold Plasma Biomedicine	D. Abduvokhidov ^{1, 2} , M. Niyozaliev ^{3, 4} , Z. Chen ^{5, 6} , J. Razzokov ^{7, 8} ¹ Institute of Fundamental and Applied Research, National Research University TIAME, Tashkent 100000, Uzbekistan ² Institute of Material Sciences, Academy of Sciences of Uzbekistan, Tashkent 100084, Uzbekistan ³ National University of Uzbekistan, Department of Physics, Tashkent 100174, Uzbekistan ⁴ Tashkent International University of Education, Department of Information Technologies, Tashkent 100207, Uzbekistan ⁵ Institute of Biomedical and Health Engineering, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, Shenzhen 518055, China ⁶ Center for Advanced Therapy, National Innovation Center for Advanced Medical Devices, Shenzhen, China ⁷ New Uzbekistan University, R&D Center, Tashkent 100000, Uzbekistan ⁸ Tashkent State Technical University, Department of Biomedical Engineering, Tashkent 100095, Uzbekistan
16:45-17:00	2235		

TA 2 Microwave Generation and Plasma Interactions June 18 15:30-16:50 pm Room: 303			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: M. Vilkov & Zhaoyun Duan			
15:30-15:55	2286	(Invited) The development of a broadband terahertz Gyro-TWA with kW output power	W. He ^{1,2} , J. Gao ^{1,3} , B. Li ¹ , W. Yu ¹ , G. Shu ^{1,3} , H. Yin ^{1,4} ¹ Shenzhen University, College of Electronics and Information Engineering, Shenzhen, China ² Shenzhen University, Institute of Microelectronics, Shenzhen, China ³ Shenzhen University, State Key Laboratory of Radio Frequency Heterogeneous Integration, Shenzhen, China ⁴ Shenzhen University, Research Center of Terahertz Technologies, Shenzhen, China
15:55-16:20	1623	(Invited) Enhancement of Cherenkov radiation from the topology transition	J.-F. Zhu ¹ , Z.-W. Zhang ² , C.-H. Du ² , L. Wu ^{1,3} ¹ Singapore University of Technology and Design (SUTD), Science, Mathematics, and Technology (SMT), Singapore, Singapore ² Peking University, School of Electronics, Beijing, China ³ A*STAR (Agency for Science, Technology, and Research), Institute of High Performance Computing, Singapore, Singapore
16:20-16:35	22	Recent advances in vacuum breakdown mechanism of relativistic backward wave oscillator	N. Tan ¹ , P. Wu ² , J. Sun ² , W. Huang ² ¹ National University of Defense Technology, College of Science, Changsha, China ² Northwest Institute of Nuclear Technology, Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an, China
16:35-16:50	1816	A Ka-band Klystron-Type Coaxial Relativistic Cherenkov Generator with Phase-locking High Power Microwave Output	Y. Zhou ¹ , J. Ju ¹ , J. Zhang ¹ , W. Zhang ¹ , T. Wang ¹ , Y. Li ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China

TA 3 Charged Particle Beams and Sources June 18 15:30-16:50 pm Room: 305C			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: S. V. Filippov			
15:30-15:55	1297	(Invited) Unveiling Wave Behavior in Electron Beam Plasma Systems through Particle-in-Cell Simulations	Q. Cao ¹ , H. Sun ² , J. Chen ¹ , I. D. Kaganovich ³ , A. V. Khrabrov ³ , G. Sun ² , Z. Wang ¹ ¹ Sun Yat-sen University, Sino-French Institute of Nuclear Engineering and Technology, Zhuhai, China ² Ecole Polytechnique Fédérale de Lausanne, Swiss Plasma Center, Lausanne, Switzerland ³ Princeton Plasma Physics Laboratory, Princeton University, Princeton, New Jersey, United States of America

15:55-16:20	541	(Invited) Photonic Time Crystals Interacting with Free Electrons	L. Wu ¹ ¹ Singapore University of Technology and Design, Science, Mathematics, and Technology (SMT), Singapore, Singapore
16:20-16:35	604	Ionic state distribution and energy loss for low-energy alpha particles beam in gas discharge plasma	Y.-N. Zhang ¹ , B. He ² , R. Cheng ³ , X.-M. Zhou ¹ , J.-R. Ren ⁴ , Y.-T. Zhao ⁴ ¹ Xianyang Normal University, Xianyang, China ² Institute of Applied Physics and Computational Mathematics, Beijing, China ³ Institute of Modern Physics, Chinese Academy of Sciences, Lanzhou, China ⁴ Xi'an Jiaotong University, Xi'an, China
16:35-16:50	1284	Distinctive biological effects of different doses of 12C6+ ion beams on Arabidopsis	Y. Yin ¹ , H. Xu ¹ , R. Ma ¹ , D. Cui ¹ , Z. Jiao ¹ ¹ Zhengzhou University, Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, Zhengzhou, China

TA 4 High Energy Density Plasmas and Applications June 18 15:30-16:50 pm Room: 305D			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Jian Wu			
15:30-15:55	2136	(Invited) Laser-particle acceleration by exploiting nano-targets	W. Ma ¹ ¹ Peking University, School of Physics, Beijing, China
15:55-16:20	2349	(Invited) Pinch performance enhancement with tapered anode and gas doping	S.L. Yap ¹ , L.K. Lim ¹ , S. Lee ¹ , K.Y. Tsung ¹ , M.L.H. Omar ¹ , H.Y. Tan ¹ , H. P. Wante ¹ , C.H. Nee ² , S.S. Yap ³ ¹ Universiti Malaya, Plasma Technology Research Centre, Department of Physics, Faculty of Science, Universiti Malaya, Kuala Lumpur, Malaysia ² Multimedia University, Faculty of Engineering, Multimedia University, Cyberjaya, Malaysia ³ Xiamen University Malaysia, Department of Physics, Xiamen University Malaysia, Sepang, Malaysia
16:20-16:35	588	Laboratory observation of ion drift acceleration via reflection off laser-produced magnetized collisionless shocks	H. Tang ^{1,2} , A. Guo ² , G. Hu ² , Q. Lu ² , P. E-Peng ¹ ¹ Harbin Institute of Technology, Harbin, China ² University of Science and Technology of China, Hefei, China
16:35-16:50	976	Self-organization of laser-produced plasmas via kinetic instabilities	C. Zhang ¹ , C.-K. Huang ² , C. Joshi ¹ ¹ University of California Los Angeles, department of electrical and computer engineering, Los Angeles, California, United States of America ² Academia Sinica, Institute of Atomic and Molecular Sciences, Taipei, Taiwan province

TA 5 Industrial, Commercial and Medical Plasma Applications			
June 18 15:30-16:50 pm Room: 307			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chairs: Shuai Zhang & Shaojun Xu			
15:30-15:55	2242	(Invited) Radiative Transfer Calculation in Arc Plasmas Burning in Environmentally Friendly High Voltage Switchgear	S. Esmaili¹, J.D. Yan¹ ¹ University of Liverpool, Department of Electrical Engineering and Electronics, Liverpool, United Kingdom
15:55-16:20	1606	(Invited) Low-Frequency Dependence of Plasma Characteristics in Dual-Frequency Capacitively Coupled Plasma Sources	K. Zhao¹, Y. Zhou¹, F.-J. Zhou¹, Y.-N. Wang¹ ¹ Dalian University of Technology, School of Physics, Dalian, China
16:20-16:35	1124	Development and application of capacitively coupled plasma jet device for optical fabrication	J. Zhang¹, Z. Chen¹, H. Deng^{1,2} ¹ Southern University of Science and Technology, Department of Mechanical and Energy Engineering, Shenzhen, China ² Southern University of Science and Technology, Institute for Applied Optics and Precision Engineering, Shenzhen, China
16:35-16:50	1477	Impact of Cold Atmospheric Pressure Plasma Treatment on Wheat Flour: A Physicochemical and Functional Analysis	S. Jangra¹, R. Mishra², R. Prakash^{1,2} ¹ Indian Institute of Technology Jodhpur, Department of Physics, Jodhpur, India ² Indian Institute of Technology Jodhpur, Inter-Disciplinary Research Division-Smart Healthcare, Jodhpur, India

TA 5 Industrial, Commercial and Medical Plasma Applications			
June 18 15:30-17:05 pm Room: 305E			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Zhenbing Luo			
15:30-15:55	1919	(Invited) Ionic wind produced by volume corona discharges and surface dielectric barrier discharges – Application to airflow control, electroaerodynamic propulsion and plasma-assisted chemistry	E. Moreau¹, L. Alomari¹, T. Fridlender¹, S. Grosse¹, T. Orriere¹, N. Benard¹ ¹ Université de Poitiers, PPrime Institute - CNRS - ENSMA, Poitiers, France
15:55-16:20	2147	(Invited) Plasma Synthetic Jet and its hypersonic flow control applications	Y. Zhou¹, L. Wang¹, Z. Luo¹, W. Xie¹, X. Xie¹ ¹ National University of Defense Technology, Changsha, China
16:20-16:35	1571	A novel method for improving arc cooling in high-voltage gas circuit breakers	S.V. Rohani^{1,2}, J. Yan², J. Chou¹ ¹ National Tsing Hua University, Department of Computer Science, Hsinchu, Taiwan province ² University of Liverpool, Department of Electrical Engineering and Electronics, Liverpool, United Kingdom
16:35-16:50	1632	Regulation methods for the operation of ionic wind thruster	D. Zhou¹, J. Tang¹, M. Tang², L. Wei¹ ¹ Harbin Institute of Technology, Harbin, China ² Harbin University of Science and Technology, Harbin, China
16:50-17:05	1984	A comparison of the performance of μ CAT with a dual-anode structure under different working modes	M. Yu¹, Z. Zhang¹, M.R. Ali¹ ¹ Beijing Institute of Technology, School of Aerospace Engineering, Beijing, China

TA 6 Plasma Diagnostics June 18 15:30-16:55 pm Room: 311A			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Qing Xiong (Chongqing Uni.)			
15:30-15:55	2343	(Invited) Development and Application of Terahertz Laser Aided Plasma Diagnostic Technology in Fusion Plasma	H. Liu ¹ , H. Lian ¹ , S. Wang ¹ ¹ Institute of Plasma Physics, Chinese Academy of Sciences, Hefei, China
15:55-16:10	431	Enhanced Simulation Study of ITER Core X-Ray Crystal Spectroscopy	X. Jin ¹ , Z. Cheng ² , J. Zhang ¹ , W. Yan ¹ , Z. Chen ¹ , N. Pablant ³ , L. Gao ³ , D. Lu ⁴ , M. O'Mullane ⁵ , R. Tieulent ² , R. Barnsley ² ¹ State Key Laboratory of Advanced Electromagnetic Technology, International Joint Research Laboratory of Magnetic Confinement Fusion and Plasma Physics, School of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan, 430074, China ² ITER Organization, Route de Vinon-sur-Verdon, CS 90 046, 13067 St. Paul Lez Durance Cedex, France ³ Princeton Plasma Physics Laboratory, Princeton, New Jersey 08540, United States of America ⁴ Institute of Plasma Physics, HFIPS, Chinese Academy of Science, Hefei 230031, China ⁵ Department of Physics SUPA, University of Strathclyde, Glasgow, G4 ONG, United Kingdom
16:10-16:25	247	Development of the visible imaging technologies on the HL-2A and HL-3 tokamaks	L. Liu ¹ , Z. Chen ¹ , D. Yu ¹ , W. Chen ¹ , X. He ¹ , Y. Wei ¹ , S. Wang ¹ , L. Nie ¹ , Z. Shi ¹ ¹ Southwestern Institute of Physics, Chengdu, China
16:25-16:40	1518	Obtaining ion temperature and rotation velocity with X-ray crystal spectroscopy in EAST	H. Zhang ¹ , B. Lyu ^{1,2} , Z. Lin ^{1,2} , F. Wang ¹ , J. Fu ¹ ¹ Hefei Institutes of Physical Science, Chinese Academy of Sciences, Institute of Plasma Physics, Hefei, China ² University of Science and Technology of China, Hefei, China
16:40-16:55	1360	Pattern recognition of submarine cable discharge based on Heterodyne Interferometric ϕ -OTDR	H. Wang ¹ , L. Li ¹ , Y. Liao ² , H. Zhang ¹ , S. Yang ¹ , J. Xiao ¹ ¹ Hubei University of Technology, Hubei Engineering Research Center for Safety Monitoring of New Energy and Power Grid Equipment, Wuhan, China ² Zhuhai Power Supply Bureau of Guangdong Power Grid Co., Ltd, Zhuhai, China

TA 7 Pulsed Power and Other Plasma Applications June 18 15:30-16:50 pm Room: 311B			
Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: K. Takaki			
15:30-15:55	382	(Invited) The study of the breakdown threshold of a sub-gw, sub-ns high-power microwave pulse in gas	Y. Cao ¹ , V. Maksimov ¹ , A. Haim ¹ , A. Kostinsky ¹ , Y. Bliokh ¹ , J. Leopold ¹ , Y. Hadas ¹ , Y. Krasik ¹ ¹ Technion, Physics Department, Haifa, Israel

ICOPS & APCOPTS 2024

15:55-16:20	388	(Invited) Simulations on the direct-current argon breakdown process in the 10-300 kV range	B. Jin ^{1,5} , J. Chen ¹ , A. V. Khrabrov ² , Z. Wang ¹ , L. Xu ^{3,4} ¹ Sun Yat-sen University, Sino-French Institute of Nuclear Engineering and Technology, Zhuhai, China ² Princeton University, Princeton Plasma Physics Laboratory, Princeton, United States of America ³ Ruhr University, Department of Electrical Engineering and Information Science, Bochum, Germany ⁴ Soochow University, School of Physical Science and Technology, Suzhou, China ⁵ The Hong Kong Polytechnic University, Department of Building Environment and Energy Engineering, Kowloon, China, Hong Kong Special Administrative Region
16:20-16:35	1318	Influence of artificially injected bubble on pre-breakdown and subsequent cavity oscillation process of underwater pulsed spark discharge	T. Pan ¹ , Y. Sun ¹ ¹ Shandong University, Electrical Engineering, Jinan, China
16:35-16:50	1343	Research on DC interruption characteristics of different gas media	J. Fan ¹ , F. Jiang ¹ , B. Deng ¹ , W. Zhou ¹ , C. Niu ¹ , H. He ¹ ¹ Xi'an Jiaotong University, College of electrical engineering, Shaanxi, Xi'an, China

TA 7 Pulsed Power and Other Plasma Applications
June 18 15:30-17:05 pm Room: 311C

Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Zicheng Zhang			
15:30-15:55	1085	(Invited) Research on output characteristics of solid-state linear transformer driver in nanosecond plasma discharge	Y. Feng ¹ , C. Zhang ¹ , C. Zhang ^{1,2} , T. Shao ^{1,2} ¹ Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China ² University of Chinese Academy of Sciences, Beijing, China
15:55-16:20	1063	(Invited) Glow discharge using spiker-sustainer circuit consisting of PFN and SOS	Y. He ¹ , T. Ishiyama ¹ , K. Nagao ² , T. Sugai ¹ , W. Jiang ¹ ¹ Nagaoka University of Technology, Extreme Energy-Density Research Institute, Nagaoka, Japan ² Oyama College, National Institute of Technology, Oyama, Japan
16:20-16:35	2308	Evaluation of breakdown voltage in a pulsed power source	A. Gurinovich ¹ ¹ Belarusian State University, Institute for Nuclear Problems, Minsk, Belarus
16:35-16:50	2164	Optimum impedance profile of nonuniform transmission lines used for pulsed power accelerators	Q. Zhou ¹ ¹ The Hong Kong Polytechnic University, Hong Kong, China, Hong Kong Special Administrative Region
16:50-17:05	2078	Research on the impedance-matched Marx generator for pulsed power application	H. Zhang ¹ , Z. Zhang ¹ , H. Yang ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China

TA 8 Terahertz Sources, Radiation and Applications
June 18 15:30-16:40 pm Room: 308

Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Yaxin Zhang & Jianjun Ma			
15:30-15:55	20	(Invited) Impact of Atmospheric Conditions on Outdoor Terahertz Channel Propagation	J. Ma ¹ , D. M. Mittleman ² , J. F. Federici ³ ¹ Beijing Institute of Technology, School of Integrated Circuits and Electronics, Beijing, China ² Brown University, School of Engineering, Providence, Rhode Island, United States of America ³ New Jersey Institute of Technology, Department of Physics, Newark, New Jersey, United States of America
15:55-16:20	1328	(Invited) Intense terahertz wave generation from air plasma induced by femtosecond laser	L. Zhang ¹ ¹ Capital Normal University, Department of Physics, Beijing 100048, China
15:55-16:10	51	Ultra-Sensitive Terahertz Plasmonic Biometasensor Exploiting Quasi-Bound States in the Continuum	H. Ruan ¹ , Z. Zhang ¹ , X. Yang ¹ , J. Lou ¹ , R. Wang ¹ ¹ National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
16:10-16:25	945	Measurement and modeling on outdoor-to-indoor UAV terahertz channel	D. Li ¹ , W. Liu ¹ , M. Wei ¹ , J. Liu ¹ , G. Liu ^{1,2} , P. Li ¹ , H. Sun ^{1,2} , J. Ma ^{1,2} ¹ Beijing Institute of Technology, School of Integrated Circuits and Electronics, Beijing, China ² Beijing Institute of Technology, Tangshan Research Institute, Tangshan, China
16:25-16:40	97	Reconfigurable Structured Light-Driven Terahertz Emission and Modulation in Interdigitated Photoconductive Antennas	Y. Feng ¹ , R. Wang ¹ , M. Gao ² , Y. Ai ³ , J. Zhu ¹ , X. Yang ¹ , Z. Zhang ¹ ¹ National Innovation Institute of Defense, Innovation Laboratory of Terahertz Biophysics, Beijing, China ² National University of Defense Technology, Department of Physics, Changsha, China ³ National Innovation Institute of Defense, Beijing, China

TA 9 Special Sessions: Application of Plasma in the Preparation of Advanced Materials
June 18 15:30-17:20 pm Room: 302

Time	ID	Title	Name / Affiliation
June 18		Oral Session	
Chair: Peng Zhao & Xi Zhu			
15:30-15:50	106	(Invited) A Method for High-Rate Production of Nanoparticles by Introducing Additional Flanges Downstream of Modulated Induction Thermal Plasmas	R. Okano ¹ , P. Jingqian ¹ , R. Tanaka ¹ , Y. Tanaka ¹ , T. Ishijima ¹ , Y. Nakano ¹ , S. Sueyasu ² , S. Watanabe ² , K. Nakamura ² ¹ Kanazawa University, Faculty of Electrical and Computer Eng., Kanazawa, Japan ² Nisshin Seifun Group Inc, Research Center for Production and Technology, Fujimino, Japan

ICOPS & APCOPTS 2024

15:50-16:10	1192	(Invited) Application of DC and RF Plasmas in Processing Advanced Materials	P. Zhao ¹ , B. Wu ¹ , J. Li ¹ , L. Li ¹ , C. Geng ¹ , X. Gin ² , Y. Jiang ¹ , Q. Lin ³ , C. Liu ³ ¹ Institute of Plasma Physics, Chinese Academy of Sciences, Applied Plasma Physics Section, Hefei, China ² University of Science and Technology of China, Science Island section, Hefei, China ³ Institute of Energy of Hefei Comprehensive National Science Center, hefei, China
16:10-16:20	167	A Large-volume Atmospheric-pressure Microwave Plasma Torch for Continuous Batch Synthesis at High Temperatures	Z. Jie ¹ , X. Bai ¹ , W. Ma ¹ , G. Zhang ¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, China
16:20-16:30	409	Plasma-assisted synthesis of porous nanosheets for electrocatalytic CO ₂ reduction	L. Xiao ^{1,2} , K. K. Ostrikov ² , R. Zhou ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Centre for Plasma Biomedicine, School of Electrical Engineering, Xi'an, China ² Queensland University of Technology, School of Chemistry and Physics, QUT Centre for Materials Science, Brisbane, Australia
16:30-16:40	442	Study of functional gradient plasma modification of basin-type insulator surface	J. Jiang ¹ , J. Chu ¹ , J. Xu ¹ , P. Wei ¹ , F. Li ¹ , X. Zhu ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
16:40-16:50	1191	Synthesis of super-hydrophilic Ti/TiO ₂ film with mixed nano-/micro-meter scale heterostructures by dense metal plasma jet	J. Li ^{1,2} , S. Liu ² , Y. Wang ² , C. Li ¹ , J. Bai ^{1,2} , R. Han ^{2,3} , J. Miao ¹ ¹ Beijing Institute of Technology, School of Physics, Beijing, China ² Beijing Institute of Technology, School of Mechatronical Engineering, Beijing, China ³ Beijing Institute of Technology, State Key Laboratory of Explosion Science and Safety Protection, Beijing, China
16:50-17:00	1758	Production and characterization of CNT and CNW with T-CVD and HF-CVD and PECVD methods	L. Oksuz ^{1,5} , S. Cetebozan ^{2,5} , A. Oz ³ , A. Oksuz ⁴ ¹ Süleyman demirel universitesi, Physics, Isparta, Turkey ² Süleyman demirel universitesi, Chemical Eng, Isparta, Turkey ³ Mehmet Akif Universitesi, Engineering, Isparta, Turkey ⁴ Süleyman demirel universitesi, Chemistry, Isparta, Turkey ⁵ Plazmatek Inc, Company, Isparta, Turkey
17:00-17:10	1777	Application of Low-temperature Plasma in Insulation Surface Modification: Evaluation, Repair and Performance Improvement	X. Zhu ¹ , L. Wang ¹ , J. Chu ¹ , L. Dai ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
17:10-17:20	2171	Hot and dense intense transient plasma from dense plasma focus device as novel tool for materials' processing and synthesis	R. S. Rawat ¹ ¹ Nanyang Technological University, Natural Sciences and Science Education, National Institute of Education, Singapore, Singapore

Plenary Session 7



Low Temperature Plasma Science to Advance Human Health and Enable a Sustainable Future

Peter Bruggeman

Ernst Eckert Professor of Mechanical Engineering, Director of Graduate Studies
Department of Mechanical Engineering, University of Minnesota, Belgium

June 19 (WED) AM 8:30-9:30

Biography

Prof. Peter J. Bruggeman is the Ernst Eckert Professor and Director of Graduate Studies of Mechanical Engineering at the University of Minnesota. His research is focused on low temperature plasma science and engineering with applications in health and sustainability. He serves as the Director of the High Temperature and Plasma Laboratory consisting of 3 faculty and about 25 researchers and Associate Director of the Department of Energy Center on Plasma Interactions with Complex Interfaces consisting of 8 institutions. He also leads a MURI (Multidisciplinary University Research Initiative). His research has been recognized by several awards including the 2018 Peter Mark Memorial Award of the American Vacuum Society and the 2020 George W. Taylor Award for Distinguished Research of the College of Science and Engineering of the University of Minnesota and the University of Michigan Prize for Excellence in Plasma Science and Engineering. Prof. Bruggeman serves as an editorial board member of several journals, served on the committee charged by the National Academies with the Decadal Study of Plasma Science (Plasma 2020), and co-edited the 2017 and 2022 Plasma Roadmap giving directions for the future development of the field of low temperature plasma.

Summary

Low temperature plasmas can produce high reactivity at ambient temperatures and pressures. This unique capability enables several emerging applications including wound healing, water treatment, decontamination, and sustainable chemical processing. This presentation will provide an overview of the-state-of-the-art in the field of low temperature plasmas with a focus on the scientific advances in the understanding of interactions of atmospheric pressure plasmas with solids, liquids and living matter in the context of advancing human health and enabling a sustainable future. We will show several examples of the potential of plasma-enabled decontamination applications and their underpinning mechanisms. In addition, we will highlight the ability of low temperature plasma to contribute to a sustainable future in the context of water treatment and chemical conversion enabled by plasma-catalysis. We will report quantitative studies involving modeling and experiments that allow identifying mechanisms and rate limiting steps and provide insights critical for process development.

June 19, 2024 Wednesday

Plenary Session June 19 8:30-9:30 am Room: 307			
Time	ID	Title	Name / Affiliation
Chair: Guanjun Zhang			
8:30-9:30	1793	(PL7) Low temperature plasma science to advance human health and enable a sustainable future	Peter Bruggeman <i>University of Minnesota, United States</i>
9:30-9:45	Coffee Break		

TA 1 Basic Processes in Fully and Partially Ionized Plasmas June 19 9:45 am-12:05 pm Room: 305A			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Jinxing Zheng & Wenjin Zhang			
9:45-10:10	989	(Invited) Air Disinfection by Grating-like DBD Plasma	L. Zhang ¹ , K. Wu ¹ , K. Wang ¹ , H. Luo ¹ , Y. Fu ¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, China
10:10-10:35	2202	(Invited) Streamer dynamic evolution of three-electrode surface dielectric barrier discharge sustained by repetitive pulses	B. Peng ¹ , J. Li ² , N. Jiang ² , Z. Chen ¹ , Z. Lei ¹ , J. Song ¹ ¹ Taiyuan University of Technology, College of Electrical and Power Engineering, Taiyuan, China ² Dalian University of Technology, School of Electrical Engineering, Dalian, China
10:35-10:50	1410	Modeling and simulation of mixing process of multi-cathode spot vacuum arc jets under high current	X. Huang ¹ , J. Song ¹ , J. Li ² , S. Zhao ¹ , W. Ning ¹ , S. Jia ¹ ¹ Sichuan University, College of electrical engineering, Chengdu, China ² Civil Aviation Flight University of China, Institute of Electronic and Electrical Engineering, Guanghan, China
10:50-11:05	1461	Observation of parallel ion temperature increase with shorter Helical antenna length in a helicon source	C. Jin ^{1,2} , C.-S. Yip ¹ , W. Zhang ¹ , D. Jiang ¹ ¹ Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei 230031, China ² University of Science and Technology of China, Hefei 230031, China
11:05-11:20	1475	Characteristics of the discharge channels in dielectric barrier discharge with rotating high-voltage electrodes	J. Tang ¹ , H. Jiang ¹ , Y. Han ¹ , Z. Gong ¹ ¹ Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing, China
11:20-11:35	1513	Investigating the impact of soluble metal ions on the electrical properties of insulating oil: experiments and simulation modeling	K. Liang ¹ , F. Wang ¹ , L. Zhong ¹ , C. Hu ¹ , H. Yi ¹ ¹ Hunan University, College of Electrical and Information Engineering, Changsha, China
11:35-11:50	1565	The transition from ion to electron sheath near a plate in a magnetized plasma	Q. Liu ¹ , J. Ma ¹ , Y. Yang ¹ ¹ University of Science and Technology of China, Hefei, China
11:50-12:05	1042	New Understanding I-V Curve for Dark Discharge of Gas in Perspective of Self-feedback Model	L. Zhao ¹ , W. Shang ^{1,2} , B. Yu ¹ , Y. Wu ^{1,3} ¹ Key Laboratory of Advanced Science and Technology on High Power Microwave, Northwest Institute of Nuclear Technology, Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an, China ² Key Laboratory for Physical Electronics and Devices of the Ministry of Education, School of Electronic Science and Engineering, Faculty of Electronic and Information Engineering, Xi'an Jiaotong University, Xi'an, China ³ Department of Engineering Physics, Tsinghua University, Beijing, China

TA 1 Basic Processes in Fully and Partially Ionized Plasmas June 19 9:45 am-12:05 pm Room: 305B			
Time	ID	Title	Name / Affiliation
June 19	Oral Session		
Chair: Chengran Du & Chuanfei Dong			
9:45-10:10	497	(Invited) Characterization of Magnetic Flux Ropes in Space Plasmas	Q. Hu¹ , H. Hasegawa ² ¹ The University of Alabama in Huntsville, Space Science Department / Center for Space Plasma and Aeronomic Research, Huntsville, Alabama, United States of America ² Japan Aerospace Exploration Agency (JAXA), Institute of Space and Astronautical Science, Sagamihara, Japan
10:10-10:35	1915	(Invited) The Space Plasma Environment Research Facility and its new progress	P. Ee¹ ¹ Harbin Institute of Technology, Laboratory for Space Environment and Physical Sciences, Harbin, China
10:35-10:50	1059	Obliquely Propagating Nonlinear Electrostatic Waves with (r,q) Distributed Electrons in Multicomponent Space Plasmas	M.N. S. Qureshi¹ ¹ GC University, Department of Physics, Lahore, Pakistan
10:50-11:05	1570	Field Aligned Potentials Associated with Alfvénic Double Layers at Non-Maxwellian Temperature Scales in Multicomponent Space Plasmas	S. Khalid¹ , M.N.S. Qureshi ¹ ¹ G, Department of Physics, Lahore, Pakistan
11:05-11:20	1634	The Dynamical Behavior Of A Time Varying Low Order Nonlinear Physics Model Of the Earth's Magnetosphere	E. Spencer¹ , P. Adhya ¹ , P. Chowdhury ¹ ¹ University Of South Alabama, Electrical and Computer Engineering, Mobile, Alabama, United States of America
11:20-11:35	1641	Three-dimensional particle-in-cell simulations of magnetic reconnection with a finite x-line length	K. Huang¹ , Q. Lu ² , Y.-H. Liu ³ , S. Lu ² , R. Wang ² , P. Epeng ⁴ ¹ Harbin Institute of Technology, Department of Physics, Harbin, China ² University of Science and Technology of China, School of Earth and Space Sciences, Hefei, China ³ Dartmouth College, Department of Physics and Astronomy, Hanover, New Hampshire, United States of America ⁴ Harbin Institute of Technology, Laboratory for Space Environment and Physical Sciences, Harbin, China
11:35-11:50	213	A breakdown criterion for thermal field emission induced microgap discharges	C. Lin¹ , J. Chen ¹ , Y. Fu ¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, China
11:50-12:05	221	Identifying the mechanism of charge dissipation processes in electrostatic induced microdischarges	J. Chen¹ , Z. Zhao ¹ , C. Lin ¹ , Y. Fu ¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, China

TA 2 Microwave Generation and Plasma Interactions June 19 9:45 am-12:05 pm Room: 303			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: N. Ginzburg & Meiqin Liu			
9:45-10:10	2320	(Invited) Recent advances in metamaterial-based klystrons at microwaves	Z. Duan ¹ ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China
10:10-10:35	1851	(Invited) Research on Reducing Guiding Magnetic Field and Broadening Pulse Width of Ku-Band Transit-Time Oscillator	J. Ling ¹ , W. Xu ¹ , J. He ¹ , L. Wang ¹ , Z. Zhang ¹ , F. Zeng ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
10:35-10:50	1152	G-Band Dual Band Extended Interaction Klystron Based on TM ₁₁ and TM ₂₁ Modes	Z. Wang ^{1,2} , Z. Lu ^{1,2} , P. Gao ^{1,3} , J. Duan ² , Z. Wang ² , S. Wang ² , H. Gong ² , Y. Gong ² ¹ University of Electronic Science and Technology of China, Yangtze Delta Region Institute (Huzhou), Huzhou, China ² University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China ³ University of Electronic Science and Technology of China, School of Resources and Environmental Engineering, Chengdu, China
10:50-11:05	1489		
11:05-11:20	1601	Study of a 0.34 THz Low-Voltage Miniaturized Non-Periodic Folded-Waveguide Slow Wave Structure Traveling Wave Tube	Z. Wen ¹ , J. Ling ¹ , T. Xun ¹ , D. Zhang ¹ , J. Zhang ¹ ¹ National University of Defense Technology, Changsha, China
11:20-11:35	1624	Intense Free-Electron Radiation from Silicon-Based Bound-States In the Continuum	Z.-W. Zhang ¹ , C.-H. Du ¹ , J.-F. Zhu ² ¹ Peking University, School of Electronics, Beijing, China ² Singapore University of Technology and Design, Science, Mathematics, and Technology (SMT), Singapore, Singapore
11:35-11:50	1830	Recent Progress of the G-band TWT with Pencil Beam in BVERI	B. X. Wang ¹ , F. Yuan ¹ , S. B. Wen ¹ , D. X. Zhu ¹ , X. S. Ji ¹ , P. Pan ¹ ¹ Beijing Vacuum Electronics Research Institute, Beijing, China
11:50-12:05	1832	Simulation of A Backward-wave oscillator Operating at THz Band	W. Wang ^{1,2} , Z. Qu ¹ , Z. Zhang ^{1,2} ¹ Aerospace Information Research Institute, Chinese Academy of Sciences, Key Laboratory of Science and Technology on High Power Microwave Sources and Technologies, Beijing, China ² University of Chinese Academy of Sciences, School of Electronic, Electrical and Communication Engineering, Beijing, China

TA 3 Charged Particle Beams and Sources
TA 5 Industrial, Commercial and Medical Plasma Applications
 June 19 9:45 am-12:05 pm Room: 305C

Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Jie Pan & Yan Zhou			
9:45-10:10	531	(Invited) Water-Promoted Ethanol Production via CO ₂ Hydrogenation through Plasma Catalysis over Cu-based Catalyst	Z. Cui ¹ , Y. Zheng ¹ , Y. Hao ¹ ¹ South China University of Technology, School of Electrical Power, Guangzhou, China
10:10-10:35	587	(Invited) Arcing dynamics and instability under low and moderate air pressure for electrified transportation	W. Wei ¹ ¹ Southwest Jiaotong University (SWJTU), School of Electrical Engineering and Automation, Chengdu, China
10:35-10:50	418	Atomic Layer deposited ZnMgO multilayered coatings for TEEY and electrical conductivity optimization	M. Belhaj ³ , T. Proslie ² , M. Lafarie ¹ , S. Dadouch ³ ¹ Université Toulouse 3 Paul Sabatier, GEETS, Toulouse, France ² Commissariat à l'énergie atomique et aux énergies alternatives, DRF / Irfu, Gif-sur-Yvette, France ³ Office national d'études et de recherches aérospatiales, DPHY, Toulouse, France
10:50-11:05	1061		
11:05-11:20	1918	Plasma effects in the relativistic backward wave oscillator	Y. Cao ¹ , J. Sun ¹ , Z. Fan ¹ , P. Wu ¹ , Z. Song ¹ , M. Zhu ¹ , X. Bai ¹ ¹ Key Laboratory of Advance Science and Technology on High Power Microwave, Xi'an, China
11:20-11:35	2039	Thermal effect and anti-/de-icing characteristics of nanosecond pulse surface dielectric barrier discharge	Q. Wen ¹ , G. Yang ¹ , Y. Shi ¹ , Z. Zhang ¹ , Q. Hu ¹ , J. Hu ¹ , X. Jiang ¹ , Y. Li ¹ ¹ Xuefeng Mountain Energy Equipment Safety National Observation and Research Station, Chongqing University, Chongqing 400044, China, Chongqing, China
11:35-11:50	810	Effect of Alternating Electric Field on the Conformation and Function of Interleukin-6	X. Hu ¹ , R. Xing ¹ ¹ Chang'an University, School of Energy and Electrical Engineering, Xi'an, China
11:50-12:05	930	A sustainable route for CH ₃ OH synthesis via plasma-enabled CO ₂ hydrogenation: the effects of H ₂ O additive and packing materials	L. Dou ¹ , Y. Gao ¹ , Y. Xu ^{1,2} , C. Zhang ^{1,2} , T. Shao ^{1,2} ¹ Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Beijing, China ² University of Chinese Academy of Sciences, Beijing, China

TA 4 High Energy Density Plasmas and Applications June 19 9:45 am-12:05 pm Room: 305D			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Wenjun Ma & Min Chen			
9:45-10:10	640	(Invited) Recent advances of Z-pinch dynamic hohlraum driven fusion aimed at ignition	D. Xiao ¹ , X. Wang ¹ , G. Wang ¹ , C. Mao ¹ , S. Sun ¹ , C. Xue ¹ , N. Ding ¹ , X. Shu ¹ ¹ Institute of Applied Physics and Computational Mathematics, Beijing 100094, China
10:10-10:35	661	(Invited) Progress of divertor heat load control with plasma detachment in EAST tokamak	L. Wang ¹ ¹ Institute of Plasma Physics, HFIPS, Chinese Academy of Science, Hefei 230031, China
10:35-10:50	267	Innovative Neutron Source: Accelerating Multidisciplinary Applications and Advancing Boron Neutron Capture Therapy	M. Bakr ^{1,2} , H. Dominguez-Andrade ¹ , T. Scott ¹ ¹ University of Bristol, School of Physics, Bristol, United Kingdom ² Astral Neutrincs LTD, Technology, Bristol, United Kingdom
10:50-11:05	898	Transport and dynamic properties of dense plasma at WDM and ICF regimes	T. Ramazanov ^{1,2} , S. Kodanova ^{1,3} , M. Issanova ^{1,2} ¹ Al-Farabi Kazakh National University, IETP, Almaty, Kazakhstan ² Institute of Applied Sciences and Information Technology, Almaty, Kazakhstan ³ Kazakh Physical Society, Almaty, Kazakhstan
11:05-11:20	1109	Modeling of dust and impurity pellet in tokamaks	Z. Liu ¹ , Y. Feng ¹ ¹ Soochow University, Suzhou, China
11:20-11:35	1151	Gyrokinetic simulations for the collisional effects in burning plasma on the CFETR pedestal	J. Chen ¹ , J. Chen ¹ , Z. Wang ¹ ¹ Sun Yat-sen University, Sino-French Institute of Nuclear Engineering and Technology, Zhuhai, China
11:35-11:50	1726		
11:50-12:05	1760	Transport of Dispersed Tungsten Dust in the STOR-M Plasma	N. Nelson ¹ , R. Davies ¹ , L. Couedel ¹ , C. Xiao ¹ ¹ University of Saskatchewan, Physics and Engineering Physics, Saskatoon, Saskatchewan, Canada

TA 5 Industrial, Commercial and Medical Plasma Applications June 19 9:45 am-12:05 pm Room: 307			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Joo Yong Park & Nan Jiang			
9:45-10:10	132	(Invited) Rapid Conversion of Waste Polyethylene into Graphene Using Microwave Plasma: A Novel Plastic Waste Treatment Method	X. Bai ¹ , W. Ma ¹ , Z. Jie ¹ , G. Zhang ¹ , T.-Y. Wang ¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, China
10:10-10:35	426	(Invited) Determination of soil texture using laser-induced breakdown spectroscopy and partial least squares regression	Y. Huang ¹ , S. Mohajan ² , A. Bais ¹ , M. Dyck ² , A. E. Hussein ² ¹ University of Regina, Regina, Saskatchewan, Canada ² University of Alberta, Edmonton, Alberta, Canada

10:35-10:50	581		
10:50-11:05	610	Modeling of plasma path and analysis of fracture characteristics under rock-liquid combination	Y. Zhao ¹ , Y. Liu ¹ , H. Liao ¹ , T. Wang ¹ , F. Lin ¹ ¹ Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China
11:05-11:20	1257		
11:20-11:35	858	Degradation of PFOA by atmospheric pressure three-dimensional rotating gliding arc plasma	D. Tian ¹ , J. Cheng ¹ , M. Jia ¹ , R. Li ¹ , Z. Liu ¹ , Q. Chen ¹ ¹ Beijing Institute of Graphic Communication, Beijing, China
11:35-11:50	859	A plasma-catalytic system with oxide cathode for SF6 degradation	M. X. Yao ¹ ¹ Zhengzhou University, School of Electrical and Information Engineering, Zhengzhou, China
11:50-12:05	882	Segmentation processing of electron beam and laser processing images based on improved Mask R-CNN	B. Zhao ¹ , W. Tian ¹ , Y. Xiong ¹ , Z. Huang ¹ , T. Deng ¹ , G. Li ¹ ¹ South-Central Minzu University, Faculty of computer science, Wuhan, China

TA 5 Industrial, Commercial and Medical Plasma Applications
June 19 9:45 am-12:05 pm Room: 305E

Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Lanbo Di & Yuan Gao			
9:45-10:10	1603	(Invited) Experimental Study of Chemical Reaction in Water Spray Plasma Reactor	T. Sugai ¹ , S. Ueno ¹ , P. N. Thanh ¹ , W. Jiang ¹ ¹ Nagaoka University of Technology, Extreme Energy-Density Research Institute, Nagaoka, Japan
10:10-10:35	1658	(Invited) A comprehensive study of transition metal oxides synergistic with DBD plasma for diesel particulate matter oxidation: selection and optimization of iron-based catalysts	B. Ren ¹ , S. Yao ¹ ¹ Changzhou University, School of Safety Science and Engineering, Changzhou, China
10:35-10:50	1599	Improved Uniformity of Photoresist Ashing for a Half-Inch Wafer with Double U-shaped Antenna Structure using a Microwave-Excited Water Vapor Plasma	T. Ishijima ¹ , T. Aizawa ² , Y. Nakano ¹ , Y. Tanaka ¹ ¹ Kanazawa University, Division of Electrical, Information and Communication Engineering, Kanazawa, Japan ² Yonekura MFG Co. Ltd, Osaka, Japan
10:50-11:05	1719	Acid-Catalyzed Plasma Modification of Biochar for Selective CO ₂ /N ₂ Adsorption Study	N. Liu ¹ , L. Zhao ¹ , P. Z. Ye ¹ ¹ Zhejiang University of Technology, College of Environment, Hangzhou, China
11:05-11:20	1966	Plasma patch device for skin disease therapy	S. Lee ¹ , J. Choi ¹ , K.-H. Baek ¹ , S. Kim ² , S. Jung ¹ , J. Park ¹ , D.-G. Kim ¹ ¹ Korea Institute of Materials Science, Nano-bio convergence department, Changwon, Republic of Korea ² Kyungpook National University, Daegu, Republic of Korea
11:20-11:35	2043	Numerical simulation of hot plasma mixed reactor	S. Wang ¹ ¹ University of Science and Technology of China, School of Engineer Science, hefei, China

11:35-11:50	2054		
11:50-12:05	2144	Methane absorption ability improvement of MOF-801 atmospheric pressure plasma treatment	J.Y. Park ¹ , H. Lee ¹ , J. Kim ¹ , J. Kim ¹ , Y. Lee ¹ , S. Lee ¹ ¹ Korea Institute of Materials Science, Changwon, Republic of Korea

TA 5 Industrial, Commercial and Medical Plasma Applications
June 19 9:45 am-12:10 pm Room: 311C

Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Sirui Li & Xuekai Pei			
9:45-10:10	1718	(Invited) Model Catalysts Synthesized using Pulsed Laser Deposition for the Study of the Plasma-catalyst Interactions	S. Xu ¹ , L. Lv ¹ , X. Wu ¹ , L. Ding ¹ ¹ Hefei University of Technology, School of Electrical Engineering and Automation, Hefei 230026, China
10:10-10:25	1869	High efficiency NO _x synthesis and regulation using dielectric barrier discharge in the needle array packed bed reactor	Y. Li ¹ ¹ Dalian University of Technology, Key Laboratory of Materials Modification by Laser, Ion, and Electron Beams, Dalian, China
10:25-10:40	2162	Molecular beam mass spectrometry study of plasma activated methane dry reforming	H. Chen ¹ , Z. Li ¹ , B. Yang ¹ ¹ Tsinghua University, School of Energy and Power Engineering, Beijing, 100084, China
10:40-10:55	1772	Multiphase flows in atmospheric and low-pressure plasma spraying advanced coatings	S.-H. Liu ¹ , J. P. Trelles ² , A. Murphy ³ , C.-J. Li ¹ , C.-X. Li ¹ ¹ Xi'an Jiaotong University, School of Materials Science Technology, Xi'an, China ² University of Massachusetts, Lowell, China ³ CSIRO Manufacturing, Lindfield, Australia
10:55-11:10	1897	Synthesis of Tantalum Nitride Nanoparticles by Induction Thermal Plasma	K. Zhang ¹ , M. Hirose ¹ , Y. Wang ¹ , J. Matsuno ¹ , M. Tanaka ¹ , T. Watanabe ¹ ¹ Kyushu university, Department of Chemical Engineering, Fukuoka, Japan
11:10-11:25	1987	Study on double wedge shock interaction control in hypersonic flow based on plasma synthetic jet	W. Xie ¹ , Z. Luo ¹ , Z. Xu ¹ , Y. Zhou ¹ , Q. Liu ¹ , X. Jing ¹ ¹ National University of Defense Technology, College of Aerospace science and Engineering, Hunan, China
11:25-11:40	2267	Study on Bubble Pulsation and Jet Characteristics of Plasma Synthetic Jet Actuator for Ice Breaking	X.R. Jing ¹ , Z.B. Luo ¹ , Y. Zhou ¹ , P. Cheng ¹ , T.X. Gao ¹ , W. Xie ¹ ¹ National University of Defense Technology, College of Aerospace Science and Engineering, Changsha, China
11:40-11:55	2278	Design and development of 10cm Kaufman xenon ion thruster	J. Hu ¹ , H. Geng ¹ , D. Guo ¹ , Z. Gu ¹ , F. Yang ¹ , M. Sun ¹ , J. Chen ¹ , J. Li ¹ , R. Cheng ¹ ¹ Lanzhou Institute of Physics, Science and Technology on Vacuum Technology and Physics Laboratory, Lanzhou, China
11:55-12:10	2009	Research on mechanism of non-thermal plasma enabled bio-oil hydrodeoxygenation through reactive molecular dynamics simulation	Y. Liu ¹ , X. Wu ¹ , X. Wang ¹ ¹ Shandong University, School of Electrical Engineering, Jinan, China

TA 6 Plasma Diagnostics June 19 9:45 am-12:05 pm Room: 311A			
Time	ID	Title	Name / Affiliation
June 19	Oral Session		
Chair: Tat Loon Chng & Dezheng Yang			
9:45-10:10	973	(Invited) Microwave Cutoff Probe Diagnostics and Beyond	S. You¹ , S. Kim ¹ , D. Kim ² ¹ Chungnam National University, Department of Physics, Daejeon, Republic of Korea ² Korea Institute of Machinery and Materials, Daejeon, Republic of Korea
10:10-10:35	2131	(Invited) Non-resonant, seedless coherent Rayleigh-Brillouin scattering four-wave mixing laser diagnostics for low temperature plasmas.	A. Gerakis¹ ¹ Luxembourg Institute of Science & Technology, Materials Research & Technology, Belvaux, Luxembourg
10:35-10:50	346	Based on the theory of plasma electron spectroscopy to detect gas impurities.	C. Zhou¹ , C. Yuan ¹ , Z. Zhou ¹ , Q. Nie ¹ , A. Saifutdinov ¹ , A. Kudryavtsev ¹ ¹ Harbin Institute of Technology, Harbin, China
10:50-11:05	1653	Design of a small-size retarding potential analyzer and a practice of plasma beam energy diagnosis	X. Wu¹ , J. Qi ² , Y. Wang ^{3,4} , J. Ren ^{3,4} , Z. Zhang ² , G. Zhang ^{3,4} , H. Deng ¹ , W. Wang ^{3,4} , H. Tang ^{3,4} ¹ Beihang University, School of Energy and Power Engineering, Beijing, China ² Beihang University, School of Space and Environment, Beijing, China ³ Beihang University, School of Astronautics, Beijing, China ⁴ Ministry of Education, Key Laboratory of Spacecraft Design Optimization & Dynamic Simulation Technologies, Beijing, China
11:05-11:20	2250	Experiment study of electric field transient characteristics of DC corona	J. Bi ¹ , S. Yuan ¹ , Y. Xu¹ , F. Du ¹ , J. Jiang ¹ , Y. Gong ¹ ¹ China Electric Power Research Institute Haidian District, Beijing, China
11:20-11:35	1163	Review of Research on Plasma parameter Measurement Techniques for Space Electric Thrusters	Y. Zhang¹ , J. Wu ¹ , P. Zheng ¹ ¹ National University of Defense Technology, College of Aerospace science and Engineering, Changsha, China
11:35-11:50	1788	The azimuthal instabilities in the Planar Hall thruster discharge characterized by the ion saturation probes	W. Liu^{1,2} , W. Wang ^{1,3} , L. Chen ¹ , Y. Li ¹ , P. Li ¹ , G. Zhang ⁴ , H. Tang ⁴ ¹ Beihang University, Advanced Space Propulsion and Energy Laboratory (ASPEL), School of Astronautics, Beijing, China ² Beihang University, Shen Yuan Honors College, Beijing, China ³ Beihang University, Aircraft and Propulsion Laboratory, Ningbo Institute of Technology, Ningbo, China ⁴ Beihang University, School of Astronautics, Beijing, China
11:50-12:05	345	Numerical Simulation and Experimental Study of Plasma Parameters with Different Ammonia Concentrations in Low-Pressure Helium Glow Discharge	J. Zhang¹ , Z. Chu ¹ , Y. Chai ¹ , C. Zhou ¹ , C. Yuan ¹ , A. Saifutdinov ² ¹ Harbin Institute of Technology, School of Physics, Harbin, China ² Kazan National Research Technical University Named After A. N. Tupolev, Department of General Physics, Kazan, Russian Federation

TA 7 Pulsed Power and Other Plasma Applications June 19 9:45 -11:45 am Room: 311B			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Hengxin He & Xueying Li			
9:45-10:10	112	(Invited) Progress of Z pinch Research at Xi'an Jiaotong University	J. Wu ¹ , A. Qiu ¹ , F. Sun ¹ , X. Li ¹ ¹ Xi'an Jiaotong University, Xi'an, China
10:10-10:35	108		
10:35-11:00	352	(Invited) Diagnosis of gas temperature variation during positive leader inception at reduced air density	C. Liu ¹ , Y. Huang ¹ , S. Zhang ¹ , W. Zhang ¹ , S. Chen ¹ , H. He ¹ ¹ Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China
11:00-11:15	1742	Effect of the rates of voltage rise on the durations of primary dark periods in positive leader discharges	Z. Li ¹ , W. Chen ¹ , K. Bian ² , C. Li ³ , C. Peng ⁴ , M. Dai ¹ ¹ China Electric Power Research Institute, State Grid Corporation of China, State Key Laboratory of Environmental Protection for Power Grid, Wuhan, 430074, China ² State Grid Corporation of China, Beijing 100031, China ³ North China Electric Power University, School of Electrical and Electronic Engineering, Beijing 102206, China ⁴ Wuhan University, School of Electrical Engineering and Automation, Wuhan, China
11:15-11:30	1852	Generation of cavitation bubble in water under the action of repetitive pulse voltage	G. Peng ¹ , Q. Zhu ¹ , D. Peng ¹ , R. Zhang ¹ ¹ Tsinghua Shenzhen International Graduate School, Shenzhen, China
11:30-11:45	2185	One-dimensional fluid simulation of nanosecond pulse Ar-NH ₃ dielectric barrier discharge characteristics	N. Zhao ¹ , H. Tian ¹ , Z. Chang ² ¹ Xi'an University of Technology, School of Electrical Engineering, Shaanxi, Xi'an, China ² Xi'an Jiaotong University, School of Electrical Engineering, Shaanxi, Xi'an, China

TA 8 Terahertz Sources, Radiation and Applications June 19 9:45 am-12:05 pm Room: 308			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Yubing Gong & Xiaojun Wu			
9:45-10:10	1102	(Invited) Tolerance Investigation on a Helically Corrugated Interaction Circuit of a Gyro-TWA	M. S. Vöhringer ¹ , A. Marek ² , B. Ell ¹ , S. Illy ¹ , L. Feuerstein ¹ , G. Gantenbein ¹ , T. Ruess ¹ , C. Wu ¹ , M. Thumm ¹ , J. Jelonnek ¹ ¹ Karlsruhe Institute of Technology, Institute for Pulsed Power and Microwave Technology, Karlsruhe, Baden-Württemberg, Germany ² Fraunhofer, Institute for High Frequency Physics and Radar Techniques FHR, Wachtberg, North Rhine-Westphalia, Germany

10:10-10:35	2318		
10:35-10:50	1298	Study on terahertz radiation generated by two dimensional electron gas plasma oscillation	Q. Zijian ¹ , Y. Shengpeng ¹ , W. Shaomeng ¹ , Z. Ping ¹ , G. Yubin ¹ ¹ <i>University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, School of Electronic Science and Engineering, Chengdu, China</i>
10:50-11:05	1434	A High Compression Ratio Electron Gun For 1THz Traveling Wave Tube	L. Weng ¹ , Y. Zheng ¹ , Y. Zhang ¹ , J. Guo ¹ , Y. Gong ¹ ¹ <i>University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, School of Electronic Science and Engineering, Chengdu, China</i>
11:05-11:20	1797	Power combination of co-planar slow-wave structure for THz high power BWO applications	S. Tian ¹ , W. Liu ¹ , C. Zhao ¹ ¹ <i>Nanjing university of information science and technology, School of Electronic and Information Engineering, Nanjing, China</i>
11:20-11:35	2155	Piecewise sine waveguide slow wave structure and its application	L. Zhang ¹ , G. Ma ¹ , W. Le ¹ , R. Song ¹ , Y. Jiang ¹ , Q. Huang ¹ , H. Chen ¹ ¹ <i>China Academy of Engineering Physics, Institute of Applied Electronics, Mianyang, Germany</i>
11:35-11:50	2309	Demonstration of a G Band Fillet-trapezoidal Staggered Double-gate Traveling Wave Tube	Y. Jiang ¹ , W. Lei ¹ ¹ <i>IAE, CAEP, Mianyang, China</i>
11:50-12:05	105	Terahertz Wave Driven Potassium Channel Permeability Regulation	B. Zhou ^{1,2} , K. Wu ² , Z. Xiang ² ¹ <i>Tsinghua University, Department of Physics, Beijing, China</i> ² <i>National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China</i>

TA 9 Special Sessions: Electrical Breakdown and Discharge Plasma in Vacuum
June 19 9:45 am-12:05 pm Room: 302

Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Wanzhao Cui & Yujian Ding			
9:45-10:05	1957	(Invited) Design of a C-Band Planar Butler Matrix and Study of its Multipactor Effects	C. Liu ^{1,3} , Z. He ^{1,3} , J. Li ¹ , H. Bai ² , W. Cui ² ¹ <i>Sichuan University, School of Electronic and Information Engineering, Chengdu, China</i> ² <i>China Academy of Space Technology, Science and Technology on Space Microwave Laboratory, Xi'an, China</i> ³ <i>Yibin Industrial Technology Research Institute of Sichuan University, Yibin, China</i>
10:05-10:15	236	Model of multi-components vacuum arcs and its application in vacuum interrupters and vacuum ion sources	L. Wang ¹ , J. Chen ¹ , Z. Zhang ¹ , X. Wang ¹ , H. Wang ¹ , Y. Xie ¹ ¹ <i>Xi'an Jiaotong University, Department of Electrical Engineering, Xi'an, China</i>
10:15-10:25	549	Vacuum breakdown in nanogaps: Interactions between high electric field and metal materials	Y. Li ¹ , Y. Cheng ¹ , G. Meng ¹ ¹ <i>Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China</i>

ICOPS & APCOPTS 2024

10:25-10:35	847	Effect of desorbed gas on dielectric surface discharge in tangential and normal microwave electric fields in vacuum	P. Shu ¹ , P. Zhao ² ¹ Xi'an University of Technology, School of Sciences, Xi'an, China ² Xidian University, School of physics, Xi'an, China
10:35-10:45	923	Study on Transition from Electron Emission to Stochastic Vacuum Breakdowns	X. Zhang ¹ , Z. Wang ¹ , R. Li ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
10:45-10:55	1743	Electron Migration via Transversal Electrostatic Field for Suppressing Local-Regional Multipactor Breakdown	S. Lin ¹ , H. Zhong ¹ , C. Chen ¹ , Y. Li ¹ , M. Cao ¹ , P. Wong ² , P. Zhang ² , J. Verboncoeur ² ¹ Xi'an Jiaotong University, Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an, China ² Michigan State University, Department of Electrical and Computer Engineering, East Lansing, Michigan, United States of America
10:55-11:05	1752	Analysis of the Effect of Electron Beam Conditioning on the Electron Emission Yield of Metals: Application to multipacting discharge	M. Belhaj ¹ , S. Dadouch ¹ ¹ ONERA The French Aerospace Lab, DPHY, Toulouse, France
11:05-11:15	1714	Laser interferometric measurement of the plasma density of hypersonic plasma jets launched by a coaxial plasma gun	G. Li ¹ , Y. Sun ¹ , J. Gu ¹ , L. Wang ¹ , Y.C.F. Thio ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
11:15-11:25	1872	A plasma gun for forming and launching a high-density, high-velocity, supersonic magnetized plasmoid	Y.C.F. Thio ¹ , X. Zhang ¹ , Y. Zhu ¹ , L. Deng ¹ , X. Zheng ¹ , P. Du ¹ , Y. Jing ¹ , Y. Zhang ¹ , T. Xiong ¹ , W. Yuan ¹ , G. Li ¹ , D. Zhang ¹ , C. Hao ¹ , D. Yuan ¹ , M. Xu ¹ ¹ ShanghaiTech University, Centre for Ultimate Energy, Shanghai, China
11:25-11:35	2053	Central-cell injection of Compact Toroid in KMAX-FRC device	W. Qin ¹ , X. Sun ¹ ¹ University of Science and Technology of China, Department of Nuclear Science and Technology, Hefei, China
11:35-11:45	2220	Enhanced Performance of Plasma-Assisted Methane Dry Reforming via an Improved Bayesian Multi-objective Optimization Algorithm	Z. Jiao ¹ , Z. Fang ¹ , D. Dai ¹ ¹ South China University of Technology, School of Electric Power Engineering, Guangzhou, China
11:45-11:55	1989	Effect of Located Positions on Cables' Induced Voltage in Rocket-Triggered Lightning	D. Duan ^{1,2} , M. Zhou ^{1,2} , X. Zuo ^{1,2} , L. Cai ^{1,2} , J. Wang ^{1,2} , J. Cao ^{1,2} , Y. Fan ^{1,2} ¹ Wuhan University, School of Electrical Engineering and Automation, Wuhan, 430072, China ² Engineering Research Center of Ministry of Education for Lightning Protection and Grounding Technology, Wuhan, 430072, China
11:55-12:05	2331	Transient Overvoltage of an Operating Wind Turbine Generator Caused by Direct Lightning Strike of Rocket-Triggered Lightning Flashes	X. Wang ^{1,2} , M. Zhou ^{1,2} , X. Zuo ^{1,2} , L. Cai ^{1,2} , J. Cao ^{1,2} , J. Wang ^{1,2} , Y. Fan ^{1,2} ¹ Wuhan University, School of Electrical Engineering and Automation, Wuhan, China ² Engineering Research-Center of Ministry of Education for Lightning Protection and Grounding Technology, Wuhan, China

Plenary Session 8



THz Sensing and Influence on Bio-matter
Chao Chang

Xi'an Jiaotong University & Peking University, China
June 19 (WED) PM 13:30-14:30

Biography

Prof. Chao Chang, Distinguished Scholar of Natural Science Foundation of China, and Leading talents of China Ten thousand Plan. Recipient of China State Science Award (1st), Ho Leung Ho Lee Foundation Innovation Prize; IEEE NPSS Early Achievement Award; Recipient of Tan Kah Kee Young Scientist Award; Special Award of China Youth Science and Technology Award. He is Chair of China Terahertz Biology Society, General Chair of 2018 APCOPTS, TPC of 2020 47th ICOPS and 2024 51st ICOPS. IEEE Plasma Science Technology Executive Committee; Founding Chair of IEEE NPSS Xi'an Chapter; Senior Editor of IEEE Trans. Plasma Science. As the first and corresponding author, he published 100 SCI papers in the international major journals, including PNAS, Nature Comm., AM, JACS, PRL, ACS Nano, Sci. Bulletin, Nano Lett., and series of IEEE; authorized 25 patents.

Summary

The recent developments of THz biosensing low concentrated bio-liquid-matter, THz modulating bioeffect, and detecting neuron information are discussed in this talk. We developed a sensitive Terahertz (THz) refractive sensing, and fingerprint recognition based on surface waves (SWs) with a long-range transmission, strong confinement, and interface sensitivity. To realize calibration free for monitoring cancer, we exploit laser controlled THz metasurface, photoexcitation of silicon bridge enables two EIT modes shifting frequency and dividing spectra to eliminate errors. We found Terahertz wave enhances permeability of the voltage-gated ion channel by selectively resonant interaction with the functional groups of selectivity filter chains based on the vibrational spectrum of THz peak away from water absorption. We found 42.5 THz resonates with carboxyl group, alters the free energy of channel and promote ion transport, useful for therapeutic treatment for nerve diseases. We found THz-infrared light have nonthermal, long distance, and reversible modulatory effects on ion channel activity by patch-clamp record from mouse neocortical pyramidal cells. THz fires the action potential reversibly. What is the underlying mechanism? By molecular dynamic simulation, the spectra of ion channels K⁺ (potassium) and Na⁺ (sodium) have several peaks in THz-infrared region. THz inducing resonance vibration of carbonyl groups(C=O) at K⁺ selectivity filter increases channel permeability. Due to mismatched frequency for carboxyl group (COO⁻) vibration at Na⁺ channel filter, no obvious change in Na⁺ permeability would occur. We found THz light activates cortical neuron without exogeneous gene and trigger neuron signal firing, diagnosed by two photon imaging. THz modulates the brain behavior, and accelerates associative learning. Mices received THz targeting to the auditory cortex during listening task exhibit a ~50% faster learning speed than control mices.

June 19, 2024 Wednesday

Plenary Session			
June 19 13:30-14:30 pm Room: 307			
Time	ID	Title	Name / Affiliation
Chair: Chunqi Jiang			
13:30-14:30	37	(PL8) THz sensing and influence on bio-matter	Chao Chang <i>Xi'an Jiaotong University & Peking University, China</i>

TA 1 Basic Processes in Fully and Partially Ionized Plasmas June 19 14:30-16:50 pm Room: 305A			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Weizong Wang & Peng E			
14:30-14:55	195		
14:55-15:20	463	(Invited) Energy efficient F atom generation and control in CF ₄ capacitively coupled plasmas driven by tailored voltage waveforms	X.-K. Wang ^{1,2} , R. Masheyeva ³ , Y.-X. Liu ¹ , Y.-H. Song ¹ , P. Hartmann ³ , Z. Donkó ³ , J. Schulze ² ¹ Dalian University of Technology, Physics Department, Dalian, China ² Ruhr University Bochum, Department of Electrical Engineering and Information Science, Bochum, North Rhine-Westphalia, Germany ³ Wigner Research Centre for Physics, Institute for Solid State Physics and Optics, Budapest, Hungary
15:20-15:35	1804	Research on relationship between material transfer and high frequency characteristics of DC arc plasma	J. Li ¹ , Q. Xiong ¹ , J. Zhang ¹ , Y. Tang ¹ , Y. Zhuang ¹ , C. Yue ¹ , S. Ji ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
15:35-15:50	1857	Research on electro-thermal-optical characteristics of abnormal glowing contact of electrical lines	Y. Zhuang ¹ , Q. Xiong ¹ , J. Li ¹ , J. Zhang ¹ , Q. Zhang ¹ , C. Yue ¹ , S. Ji ¹ ¹ Xi'an Jiaotong University, StateKey Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
15:50-16:05	2140	Decomposition characteristics and mechanism of mineral transformer oil under arc and spark discharge	H. Wang ^{1,2} , R. Wu ^{1,2} , Z. Fan ¹ , Z. Wang ¹ , L. Dou ¹ , C. Zhang ¹ , T. Shao ¹ ¹ Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China ² Hubei University of Technology, School of Electrical and Electronic Engineering, Wuhan, China
16:05-16:20	76	Direct implicit and explicit energy-conserving particle-in-cell methods for modeling of capacitively coupled plasma devices	H. Sun ¹ , S. Banerjee ² , S. Sharma ^{3,4} , A. T. Powis ⁵ , A. V. Khrabrov ⁵ , D. Sydorenko ⁶ , J. Chen ⁷ , I. D. Kaganovich ⁵ ¹ EPFL, Swiss Plasma Center, Lausanne, Vaud, Switzerland ² Birla Institute of Technology and Science, Pilani, India ³ Institute for Plasma Research, Bhat, India ⁴ Homi Bhabha National Institute, Anushaktinagar, India ⁵ Princeton University, Princeton Plasma Physics Laboratory, Princeton, New Jersey, United States of America ⁶ University of Alberta, Edmonton, Alberta, Canada ⁷ Sino-French Institute of Nuclear Engineering and Technology, Sun Yat-sen University, Zhuhai, China
16:20-16:35	1145	Numerical investigation of streamer-to-filament transition in negative polarity high-pressure nanosecond surface dielectric barrier discharge	B. Zhang ^{1,2} , Y. Zhu ³ , S. M. Starikovskaia ⁴ ¹ Gongfang Tech Co, Ltd, Anhui, China ² Nanjing university of science and technology, School of Energy and Power Engineering, Nanjing, China ³ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China ⁴ Ecole Polytechnique, Laboratory of Plasma Physics (CNRS, Ecole Polytechnique, Univ. Paris-Sud, Observatoire de Paris, Sorbonne Université, l'Institut Polytechnique de Paris), Palaiseau, France

16:35-16:50	405	Numerical simulation of electrohydrodynamics and surface deformation of a plasma–liquid interface	Z. Feng¹ , E. Klaseboer ¹ , H. Li ¹ , W.H.R. Chan ¹ ¹ Agency for Science, Technology and Research (A*STAR), Institute of High Performance Computing (IHPC), Singapore, Singapore
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TA 1 Basic Processes in Fully and Partially Ionized Plasmas June 19 14:30-16:50 pm Room: 305B			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Yan Feng & Zhongling Zhang			
14:30-14:55	1141	(Invited) Experimental Demonstration of the Similarity Law for Low-pressure Capacitive Radio-frequency Discharge	D. Yang¹ , W. Zhang ¹ , Y. Liu ¹ , Y. Fu ¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, China
14:55-15:20	1923	(Invited) Nanoplasma Devices for the Next Generation of High-Power Terahertz Electronics	M. Samizadeh Nikoo¹ ¹ Nanyang Technological University, School of Electrical and Electronic Engineering, Singapore, Singapore
15:20-15:35	265	Applications of the continuum, kinetic simulation in industrial and fusion plasma-surface interactions	G. Sun¹ , A. Sun ² , G. Zhang ² ¹ Xi an Jiaotong University, Department of Electrical Engineering, Xi'an, China ² Xi an Jiaotong University, Department of Electrical Engineering, Xi'an, China
15:35-15:50	517		
15:50-16:05	623	On the connection between the self-sputter yield and deposition rate in high power impulse magnetron sputtering	J. T. Gudmundsson^{1,2} , K. Barynova ¹ , S. Suresh Babu ¹ , M. Rudolph ³ , J. Fischer ⁴ , M. A. Raadu ² , N. Brenning ² , D. Lundin ⁴ ¹ University of Iceland, Science Institute, Reykjavik, Iceland ² KTH Royal Institute of Technology, Division of Space and Plasma Physics, Stockholm, Sweden ³ Leibniz Institute of Surface Engineering (IOM), Leipzig, Saxony, Germany ⁴ Linköping University, Plasma and Coatings Physics Division, Linköping, Sweden
16:05-16:20	749	On working gas rarefaction in high power impulse magnetron sputtering	K. Barynova¹ , M. Rudolph ² , S. Suresh Babu ¹ , J. Fischer ³ , D. Lundin ³ , M. A. Raadu ⁴ , N. Brenning ⁴ , J. T. Gudmundsson ^{1,4} ¹ University of Iceland, Science Institute, Reykjavik, Iceland ² Leibniz Institute of Surface Engineering (IOM), Leipzig, Saxony, Germany ³ Linköping University, Plasma and Coatings Physics Division, Linköping, Sweden ⁴ KTH Royal Institute of Technology, Division of Space and Plasma Physics, Stockholm, Sweden
16:20-16:35	914	A large-scale filament-free planar plume generated by an argon plasma jet in a gas-confined barrier discharge geometry	M. Chen¹ , K. Wu ² , X. Li ¹ ¹ Hebei University, College of Physics Science and Technology, Baoding, China ² Department of Electrical Engineering, Tsinghua University, Beijing, China
16:35-16:50	925		

TA 1 Basic Processes in Fully and Partially Ionized Plasmas June 19 14:30-16:50 pm Room: 305C			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Qi Cheng & Ruixue Wang			
14:30-14:55	462	(Invited) On the influence of electrode surfaces on the plasma chemistry and striations in a capacitive chlorine discharge	J. T. Gudmundsson ^{1,2} , B. Mahdavi-pour ¹ ¹ University of Iceland, Science Institute, Reykjavik, Iceland ² KTH Royal Institute of Technology, Division of Space and Plasma Physics, Stockholm, Sweden
14:55-15:20	1154	(Invited) Catalyst-free one-step plasma reforming of CH ₄ and CO ₂ to higher value oxygenates under ambient conditions	Y. Wang ¹ , X. Tu ¹ ¹ University of Liverpool, Department of Electrical and Electronic Engineering, Liverpool, United Kingdom
15:20-15:35	433	Plasma enabled synthesis of high performance Pd-based catalysts for 4-NP reduction	X. Du ¹ , H. Li ¹ , Y. Hua ¹ , X. Zhang ¹ , L. Di ¹ ¹ Dalian University, Dalian, China
15:35-15:50	482	Kinetic roles of excited species in the oxidation of NSD plasma assisted n-pentane/air	N. Liu ¹ , Q. Chen ¹ , X. Jiang ² , J. Chen ¹ , L. Zhang ³ ¹ Beijing Jiaotong University, Beijing, China ² Wuhan university of technology, Wuhan, China ³ University of science and technology of china, Hefei, China
15:50-16:05	650	Machine learning assists in decoupling the effects of plasma-catalytic ammonia synthesis	X. Zeng ^{1,2} , S. Zhang ¹ , X. Hu ¹ , T. Shao ^{1,2} ¹ Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China ² University of Chinese Academy of Sciences, Beijing, China
16:05-16:20	1269	Study of the effect of a charged target on the surrounding plasma	M. Wang ¹ , P. Li ¹ , B. Wang ¹ , X. Chen ¹ , R. Han ¹ ¹ Beijing Institute of Technology, School of Mechatronical Engineering, Beijing, China
16:20-16:35	1332	Plasma-liquid interaction for CO ₂ and CO ₂ /CH ₄ conversion	T. Zhang ¹ , R. Zhou ^{1,2} , R. Zhou ^{1,2} , J. Hong ¹ , J. Knezevic ¹ , W. Xu ¹ , P. Cullen ¹ ¹ The University of Sydney, School of Chemical and Biomolecular Engineering, DARLINGTON, Australia ² Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China
16:35-16:50	1589	Elucidating Plasma-Precursor Interactions in Styrene Polymerization Using a Multi-Channel APPJ	M. Narimisa ¹ , T. Hahn ² , T. Winzer ² , J. Benedikt ² , H. Kersten ² , R. Morent ¹ , N. De Geyter ¹ ¹ Ghent University, Department of Applied Physics, Ghent, Belgium ² Kiel University, Department of Applied Physics, Kiel, Germany

TA 2 Microwave Generation and Plasma Interactions			
June 19 14:30-16:50 pm Room: 303			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: H.-E. Porteanu & Xue Zhang			
14:30-14:55	1291	(Invited) EMPPIC: A PIC Code for Nuclear Electromagnetic Pulse	J. Yao ¹ ¹ Institute of Applied Physics and Computational Mathematics, Beijing 100094, China
14:55-15:20	386	(Invited) 2D Particle-In-Cell Simulation on the Oblique Streaming Waves in Multipactor-Induced Plasma Discharge	B. Jin ^{1,2} , J. Chen ¹ , G. Sun ³ , Z. Wang ¹ , H. Sun ³ , X. Zhao ² , Y. Du ² ¹ Sun Yat-sen University, Sino-French Institute of Nuclear Engineering and Technology, Zhuhai, China ² The Hong Kong Polytechnic University, Department of Building Environment and Energy Engineering, Kowloon, China, Hong Kong Special Administrative Region ³ Ecole Polytechnique Fédérale de Lausanne, Swiss Plasma Center, Lausanne, Switzerland
15:20-15:35	1445	Optimization of a WR340 Waveguide to Coax Adapter with a Stepped Structure for Extremely High Transmission	K. Aranganadin ¹ , H.-Y. Hsu ² , M.-C. Lin ¹ ¹ Hanyang University, Multidisciplinary Computational Laboratory, Department of Electrical and Biomedical Engineering, Seoul, Republic of Korea ² National Taipei University of Technology, Department of Mechanical Engineering, Taipei, Taiwan province
15:35-15:50	1564	Simulation study on the effect of built-in objects in plasma discharge space on dielectric barrier discharge	H. Bao ^{1,2} ¹ SINOPEC Research Institute of Safety Engineering Co., Ltd., Qingdao, China ² State Key Laboratory of Chemical Safety, Qingdao, China
15:50-16:05	927	Comparative analysis of dielectric surface breakdown characteristics in Gaussian and sinusoidal microwave electric fields	P. Shu ¹ , P. Zhao ² ¹ Xi'an University of technology, School of Sciences, Xi'an, China ² Xidian University, School of Physics, Xi'an, China
16:05-16:20	1391	Multipacting effect and suppression methods in field-building process of accelerator rf cavity	Y. Dong ¹ , J. Pang ² ¹ Institute of Applied Physics and Computational Mathematics, Beijing, China ² University of Science and Technology of China, Hefei, China
16:20-16:35	1959	Efficient Algorithm for Charting Multipactor Susceptibility Curves of Microwave Devices	S. Lin ¹ , C. Chen ¹ , Y. Li ¹ , H. Wang ¹ , P. Wong ² , P. Zhang ² ¹ Xi'an Jiaotong University, Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an, China ² Michigan State University, East Lansing, Michigan, United States of America
16:35-16:50	1864	Theoretical Investigation of Reversed Cherenkov Radiation Amplifier with Dual Output Ports	C. Wang ¹ , D. Li ¹ , Z. Lyu ¹ , X. Zhang ¹ , S. Wang ¹ , H. Gong ¹ , Y. Gong ¹ , Z. Duan ¹ ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China

TA 4 High Energy Density Plasmas and Applications TA 5 Industrial, Commercial and Medical Plasma Applications June 19 14:30-17:10 pm Room: 305D			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: S. L. Yap & Jieru Ren			
14:30-14:55	371	(Invited) Current state and future of research on Inertial Fusion Energy in Europe	D. Batani ¹ ¹ University of Bordeaux, CELIA, Bordeaux, France
14:55-15:10	1639	Energy Balance Analysis of The Electrical Explosion of Copper Wires in Air and Water	C. Xue ¹ , C. Mao ¹ , G. Wang ¹ , X. Wang ¹ , D. Xiao ¹ ¹ Institute of Applied Physics and Computational Mathematics, Beijing, China
15:10-15:25	2241	Development of X-Pinch based X-ray imaging technique for diagnosis of transient processes	J. Li ¹ , Y. Yang ¹ , H. Liu ¹ , K. Deng ¹ , J. Yuan ¹ , W. Xie ¹ , Q. Wu ¹ ¹ China Academy of Engineering Physics, Institute of Fluid Physics, Mianyang, China
15:25-15:40	2313	The opacity research on 10MA Z-pinch facility	Q. Xu ¹ , D. Zhang ¹ , S. Zhang ¹ , S. Zhou ¹ , X. Ren ¹ , X. Huang ¹ ¹ China Academy of Engineering Physics, Institute of Fluid Physics, Mianyang, China
15:40-15:55	1588		
15:55-16:10	1483	Temporal gas temperature of atmospheric pressure air plasma driven by DC power supply	J. Li ¹ , F. Wu ² , L. Nie ² , X. Lu ² ¹ University of Antwerp, Department of Chemistry, Wilrijk, Belgium ² Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China
16:10-16:25	1493	Efficient and Clean Coal Gasification by Dielectric barrier discharge plasma	Y. Li ¹ , A. Wu ¹ ¹ Zhejiang University, Hangzhou, China
16:25-16:40	1009	Experimental study on carbon dioxide decomposition by atmospheric pressure dielectric barrier discharge with Titanium dioxide as dielectric barrier	C. Wang ^{1,2} , S.-R. Sun ¹ , X. Meng ² , H.-J. Huang ² , G.-Y. Jin ¹ , H.-X. Wang ^{1,3} ¹ Beihang University, School of Astronautics, Beijing, China ² Chinese Academy of Sciences, Institute of Mechanics, Beijing, China ³ Beihang University, Ningbo Institute of Technology, Ningbo, China
16:40-16:55	1243	Synergy for the plasma-based CO ₂ conversion with the Solid Oxide Electrolysis Cell	X. Chen ^{1,2} , A. Pikalev ^{2,4} , V. Guerra ⁴ , G.-J. Zhang ¹ , R. van de Sanden ^{2,3} ¹ Xi'an Jiaotong University, School of Electrical Engineering and Automation, Shaanxi, Xi'an, China ² Dutch Institute for Fundamental Energy Research, Plasma Solar Fuels Devices, Eindhoven, Netherlands ³ Eindhoven University of Technology, Department of Applied Physics, Eindhoven, Netherlands ⁴ Instituto Superior Técnico, Instituto de Plasmas e Fusão Nuclear, Lisboa, Portugal
16:55-17:10	1339	Characteristics of hydrogen produced by bipolar pulsed discharge in methanol solution	J. Liu ¹ , Y. Xin ¹ , B. Sun ¹ ¹ Dalian Maritime University, College of Environmental Science and Engineering, Dalian, China

TA 5 Industrial, Commercial and Medical Plasma Applications June 19 14:30-17:05 pm Room: 307			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Bo Ouyang & Haiyun Luo			
14:30-14:55	919	(Invited) Plasma Focus: Application in Carbon Capture Technology	K.S. Tan ¹ , R. S. Rawat ¹ ¹ Nanyang Technological University, Natural Science and Science Education, National Institute of Education, Singapore, Singapore
14:55-15:20	1133	(Invited) Capture of NH ₃ using air plasmas for N recycling: Impact factors and mechanisms	Z. Xiong ¹ , M. Li ¹ , M. Zhang ¹ , Z. Hou ¹ , Y. Dai ¹ ¹ Huazhong University of Science and Technology, Wuhan, China
15:20-15:35	1555	A circuit method for steepening the rising edge of square wave pulse	L. Zhao ¹ , S. Xiang ¹ , S. Dong ¹ , C. Yao ¹ , L. Yu ¹ ¹ Chongqing university, State Key Laboratory of Power Transmission Equipment Technology, School of Electrical Engineering, Chongqing University, Chongqing, China
15:35-15:50	1275	Research on Multi channel Plasma Synthetic Jet Device and Its Controllable Synchronous Trigger Circuit for Aircraft Deicing	B. Hu ¹ , Z. Li ¹ , Z. Zhong ¹ , Y. Wang ¹ , K. Mei ¹ , S. Wu ¹ ¹ Nanjing University of Aeronautics and Astronautics, Electrical Engineering/Automation Academy, Nanjing, China
15:50-16:05	1278	Enhancement of gas-liquid mass transfer characteristics in DBD reactor filled with porous foam ceramics	Y. Ping ¹ , J. Zhang ¹ , M. Zhu ¹ , C. Zhang ¹ ¹ Nanjing University of Aeronautics and Astronautics (NUAA), Department of Electrical Engineering, Nanjing, China
16:05-16:20	1347	Methanol synthesis in a temperature-controlled pulsed dielectric barrier discharge plasma reactor: Impact of electrode materials	R. K. Masumbuko ¹ , N. Kobayashi ¹ , A. Suami ¹ , Y. Itaya ¹ ¹ Gifu University, Department of Engineering, Gifu, Japan
16:20-16:35	1401	Regeneration of ground tire rubber (GTR) by pulsed discharge plasma in a fluidized-bed system	J. Li ¹ , N. Jiang ¹ , Y. Wang ¹ , G. Yu ¹ , J. Li ¹ ¹ Dalian University of Technology, School of Electrical Engineering, Dalian, China
16:35-16:50	1423	Simulation and experimental study on the degradation of the greenhouse gas SF ₆ by thermal plasma	Y. Ding ¹ , H. Sun ¹ , Y. Guo ¹ , Y. Wu ¹ ¹ Xi'an Jiaotong University, Xi'an Jiaotong University, Xi'an, China
16:50-17:05	2251	Study on simultaneous phenol degradation of wastewater by in-situ modification of Fe doped ZIF-8 by gas-liquid discharge plasma	J. Liang ¹ , K. Lu ¹ , D. Yang ¹ ¹ Dalian University of Technology, Key Lab of Materials Modification by Laser, Ion, and Electron Beams, Dalian 116024, China

TA 5 Industrial, Commercial and Medical Plasma Applications June 19 14:30-17:05 pm Room: 305E			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: F. Iza & Rusen Zhou			
14:30-14:55	2002	(Invited) Cold plasma jets combining with transient electric fields for synergistic cancer cell inactivation	C. Jiang ^{1,2} , E. A. Oshin ^{1,2} , Z. Minhas ¹ , Y. Jing ¹ , S. Guo ¹ ¹ Old Dominion University, Center for Bioelectronics, Norfolk, Virginia, United States of America ² Old Dominion University, Department of Electrical and Computer Engineering, Norfolk, Virginia, United States of America
14:55-15:20	1046	(Invited) Potential use of plasma-activated water as green fungicides for Fusarium graminearum inactivation in vitro and wheats	R. Ma ¹ , S. Ju ¹ , D. Cui ¹ , H. Xu ¹ ¹ Zhengzhou University, Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, School of Agricultural Sciences, Zhengzhou, China
15:20-15:35	575	Preparation of mof 808/Ag-based biochemical protection fiber membrane by plasma graft modification	P. Guo ¹ , R. Wang ¹ ¹ Beijing University of Chemical Technology, College of Mechanical and Electrical Engineering, Beijing, China
15:35-15:50	736	Microscopic Mechanistic Study of the Penetration Distributions for Plasma Reactive Oxygen and Nitrogen Species Based on Sialic Acid Targeting on the Cell Membrane Surface	Y. Cui ¹ , Y. Niu ¹ , T. Zhao ¹ , X. Wang ¹ , Y. Zhang ¹ ¹ Shandong University, School of Electrical Engineering, Jinan, China
15:50-16:05	896	Study on the Effect of Plasma Jets on Promoting Diabetic Wound Healing	L. Li ¹ , C. Yao ¹ ¹ Chongqing University, School of Electrical Engineering, Chongqing, China
16:05-16:20	913	Ultralong-lasting plasma activated water at room temperature: the potential in plant disease treatment	J.-N. Zhao ¹ , C.-F. Ran ¹ , X.-F. Zhou ¹ , K. Liu ¹ ¹ Chongqing University, School of Electrical Engineering, Chongqing, China
16:20-16:35	1548	Effects and Mechanisms of Promotion for Alfalfa (Medicago sativa L.) Seed Germination Induced by Contact Glow Discharge Plasma	Y. Xu ¹ , H. Long ¹ , W. Cao ¹ , W. Xu ¹ , H. Ma ² , W. Dong ² , L. Pu ¹ ¹ Gansu Agricultural University, College of Science, Lanzhou, China ² Gansu Agricultural University, College of Pratacultural Science, Lanzhou, China
16:35-16:50	1541	SBA-15 supported Co/Ni catalyst for non-thermal plasma assisted ammonia production	L. Liu ¹ , S. Chen ¹ , K. Li ¹ , M. Li ¹ , F. Wang ¹ ¹ Hunan University, College of Electrical and Information Engineering, Changsha, China
16:50-17:05	2306	Efficient and Chemical-Free Removal of Cobalt Ions from Water and Synthesis of Catalytic Cobalt Oxides by Dielectric Barrier Discharge Plasma	S. Wu ¹ ¹ University of Idaho, Chemical and Biological Engineering, Moscow, Idaho, United States of America

TA 5 Industrial, Commercial and Medical Plasma Applications
June 19 14:30-17:05 pm Room: 311C

Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: DaeHoon Lee & Danhua Mei			
14:30-14:55	246	(Invited) The role of OES in plasma-enabled energy conversion	S. Zhang¹ , T. Shao ¹ ¹ Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
14:55-15:20	331	(Invited) Kinetic understandings of plasma-assisted catalysis of ammonia synthesis	H. Zhao¹ ¹ Peking University, College of Engineering, Beijing, China
15:20-15:35	259	Efficient conversion of CO ₂ /H ₂ O to ethanol using Cu _x O/ZnO catalyst by atmospheric pressure glow discharge plasma	L. Xia¹ , M. Wu ¹ , Y. Cheng ¹ , G. Meng ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
15:35-15:50	614	Modification of Solid State Battery Interface by DBD Plasma	D. Zhang^{1,2} , F. Liang ^{1,2} ¹ Kunming University of Science and Technology, Faculty of Metallurgical and Energy Engineering, Kunming, China ² Kunming University of Science and Technology, National Engineering Research Center of Vacuum Metallurgy, Kunming, China
15:50-16:05	642	Modulation of Vacancies in Supported Catalysts by Plasma for Overall Water Splitting	W. He¹ , Q. Yang ¹ , Z. Zhang ¹ ¹ Chongqing University, State Key Laboratory of Power Transmission Equipment Technology, School of Electrical Engineering, Chongqing University, Chongqing, China
16:05-16:20	783	Characterisation of Energy Release from Explosions of Wire-Coupled Energetic Materials	H. Wang¹ , D. Wei ¹ , W. Jiao ¹ , Q. Lin ¹ , J. Yuan ¹ , Y. Ou ¹ , C. Wang ¹ , Y. Gan ¹ ¹ Xi'an Modern Chemistry Research Institute, Xi, China
16:20-16:35	883	Carbon fixation with liquid-phase plasma	L. Junchen¹ , Z. Xianhui ¹ ¹ Xiamen University, Xiamen, China
16:35-16:50	1607	Efficient plasma-catalysis coupling for CH ₄ and CO ₂ conversion in a dielectric barrier discharge	S. Liu¹ , L. Ren ¹ , D. Mei ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
16:50-17:05	1574	Simulation studies of plasma and electron density distribution in a MPCVD reactor under the excitation of pulsed microwaves	L. Zhao¹ , W. Li ¹ , Y. Chen ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China

TA 5 Industrial, Commercial and Medical Plasma Applications TA 6 Plasma Diagnostics June 19 14:30-17:05 pm Room: 311A			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Dawei Liu & A. Gerakis			
14:30-14:55	1734	(Invited) Nitrogen fixation via an underwater bubbles discharge: Plasma Characteristics and nitrogen fixation performance	L. Zhang ¹ , S. Zhao ¹ , S. Wang ¹ , Y. Li ¹ , Z. Fang ¹ ¹ Nanjing Tech University, Nanjing, China
14:55-15:20	789	(Invited) One-step synthesis of metal nanoparticle/carbon nanotube hybrids by thermal plasmas of electrical wire explosion	R. Han ^{1,2} , J. Li ^{2,3} , C. Li ³ , J. Bai ^{2,3} , Y. Yang ² , C. Li ² , J. Miao ³ ¹ Beijing Institute of Technology, State Key Laboratory of Explosion Science and Safety Protection, Beijing, China ² Beijing Institute of Technology, School of Mechatronical Engineering, Beijing, China ³ Beijing Institute of Technology, School of Physics, Beijing, China
15:20-15:35	148	Intermediate-Pressure O ₂ RFCCP: Different Power and pressure	S. Zhang ¹ , G. Curley ¹ , J.-P. Booth ¹ ¹ École polytechnique, Laboratoire de Physique des Plasmas (LPP), CNRS, Palaiseau, France
15:35-15:50	1317	Investigation of the arcing and decay processes of arc in SF ₆ and N ₂ gas by laser Thomson scattering	T. Liu ¹ , H. Sun ¹ , Y. Zhang ¹ , C. Niu ¹ , Y. Wu ¹ , Y. Lu ¹ , J. Xiao ¹ , Z. Luo ¹ , Z. Liu ¹ ¹ Xi'an Jiaotong University, Xi'an, China
15:50-16:05	214	Measuring the electric field produced by corona discharge in rod-plate air gaps by using E-FISH method	S. Chen ¹ , Y. Chen ¹ , Z. Liu ¹ , S. Xie ¹ , C. Liu ¹ , H. He ¹ ¹ Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China
16:05-16:20	962		
16:20-16:35	1983	The Electric field intensity and the electron density diagnostic of atmospheric pressure plasma jets (APPJ)	L. Nie ¹ , X. Li ¹ , X. Chen ¹ , X. Lu ¹ , Y. Li ¹ ¹ Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China
16:35-16:50	1679	Experimental study on the DC arc characteristics surrounded by underwater and air	Q. Ke ¹ , Y. Wu ¹ , H. He ¹ , Z. Jia ¹ , M. Rong ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
16:50-17:05	1506	Bioactive Anti-inflammatory Antibacterial Plasma-activated Hydrogel for Infected Wound Healing	X. Jing ¹ , H. Zhang ¹ , D. Liu ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Centre for Plasma Biomedicine, Xi'an, China

TA 7 Pulsed Power and Other Plasma Applications June 19 14:30-17:00 pm Room: 311B			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Xinbing Cheng & Qing Xiong (Xi'an Jiaotong Uni.)			
14:30-14:55	556	(Invited) Overview of megavolt-class pulsed switches and their time delay jitters	T. Wang¹ <i>¹ Beijing Institute of Astronautical Systems Engineering, National Key Lab of EMC and Protection, Beijing, China</i>
14:55-15:20	739	(Invited) Dynamic characteristics of coaxial magnetic switch based on different geometric structures under hundreds of nanoseconds	H. Zhang¹ , R. Chen ¹ , Y. Sun ¹ , R. Zhang ¹ , Z. Pan ¹ , X. Cheng ¹ , J. Gao ¹ <i>¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China</i>
15:20-15:45	2181	(Invited) PIC-MCC numerical simulation of volt-ampere characteristics for microcavity plasma transistor switches	X. Li^{1,2} , L. Chen ^{1,2} , T. Yu ^{1,2} , Y. Wang ^{1,2} , X. Zhang ^{1,2} <i>¹ Xi'an Jiaotong University, School of Electronic Science and Engineering, Xi'an, China</i> <i>² Xi'an Jiaotong University, Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an, China</i>
15:45-16:00	782	Study on repetitive-frequency gas switch triggered by photoconductive switch	B. Yu¹ <i>¹ Northwest Institute of Nuclear Technology, Key Laboratory of Science and Technology on High Power Microwave Sources and Technologies, Xi'an, China</i>
16:00-16:15	1203	Dynamic electro-thermal characteristics and damage analysis of pulsed thyristor	Y. Sun¹ , H. Zhang ¹ , R. Chen ¹ , D. Li ¹ , X. Cheng ¹ , J. Liu ¹ , J. Gao ¹ <i>¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China</i>
16:15-16:30	1510	Research on low breakdown jitter spherical graphite cast iron cathode based spark gas switch	W. Shang^{1,2} , J. Su ² , B. Zeng ² , R. Li ² , G. Wang ² , J. Cheng ^{1,2} , Y. Li ¹ , M. Gao ² , B. Yu ² <i>¹ Xi'an Jiaotong University, Xi'an, China</i> <i>² Northwest Institute of Nuclear Technology, Xi'an, China</i>
16:30-16:45	1693	A novel SiC-based light initiated multi-gate semiconductor switch with high turn on velocity	C. Luan¹ , H. Liu, H. Liu ¹ , J. Yuan ¹ , J. Yuan <i>¹ Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, China</i>
16:45-17:00	1765	Investigation of the channel pinch-off caused by the common-emitter inductance during the IGBT switching	D. Li¹ , J. Gao ¹ , Z. Zhang ¹ , J. He ¹ <i>¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China</i>

TA 8 Terahertz Sources, Radiation and Applications June 19 14:30-16:35 pm Room: 308			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Guangwei Hu/Jing Lou			
14:30-14:55	678	(Invited) Flexible terahertz metasurface absorbers empowered by bound states in the continuum	L. Cong ¹ ¹ Southern University of Science and Technology, Department of Electrical and Electronic Engineering, Shenzhen, China
14:55-15:20	970	(Invited) Mode coupling in metasurface for terahertz wave control	Y. Fan ¹ ¹ Northwestern Polytechnical University, Xi'an, China
15:20-15:35	46	Advancing Terahertz Sensing and Fingerprint Recognition through Metasurface-Excited Surface Waves	Z. Zhang ¹ , S. Zhang ² , Z. Zhang ³ , R. Wang ³ , J. Lou ³ ¹ Peking university, physics school, Beijing, China ² Tianjin university, Tianjin, China ³ Innovation Laboratory of Terahertz Biophysics, Beijing, China
15:35-15:50	65	Ultrafast tunable terahertz metasurface applied to biosensing of colorectal cells	Y. Jiao ^{1,2} , Q. Jia ^{1,2} , Z. Ma ^{1,2} , R. Wang ² , Z. Zhang ² , X. Du ¹ ¹ Chinese PLA General Hospital, Department of General Surgery, Beijing, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
15:50-16:05	240	Coherent wavefront manipulation in terahertz metasurfaces	R. Yang ¹ ¹ Tongji University, Institute of Precision Optical Engineering, School of Physics Science and Engineering, Shanghai, China
16:05-16:20	1814	Compact Metasurface Terahertz Spectrometer	W. Ji ¹ , W. Ji ¹ ¹ Delft Technology of Technology, Imaging Physics, Delft, Netherlands
16:20-16:35	1853	Exceptional Point Assisted Label-Free Biosensing Based on Ultrafast Optical Controlled Terahertz Metasurface	X. Zhao ¹ , J. Liang ¹ ¹ Air Force Engineering University, Air Defense and missile Defense Academy, Xi'an, China

TA 9 Special Sessions: Eco-friendly Gas Discharge and its Applications June 19 14:30-17:10 pm Room: 302			
Time	ID	Title	Name / Affiliation
June 19		Oral Session	
Chair: Yu Zheng & Geng Chen			
14:30-14:50	1986	(Invited) Physics-informed frameworks for low-temperature plasma simulation	L. Zhong ¹ ¹ Southeast University, School of Electrical Engineering, Nanjing, China
14:50-15:10	1833	(Invited) The impact of runaway electron beam on interface charging in eco-friendly gases	G. Chen ¹ , S. Wu ¹ , Y. Tu ¹ ¹ North China Electric Power University, Beijing 102206, China

15:10-15:30	2065	(Invited) Analysis of Breaking Characteristics of C4F7N/CO ₂ Mixture Gas in Circuit Breaker	X. L. Li ¹ , L. Liu ¹ , W. Wang ² , X. Lin ¹ , Z. X. Geng ¹ , D. Y. Guo ¹ ¹ Shenyang University of Technology, College of electrical engineering, Shenyang, China ² China Electric Power Research Institute, State Key Laboratory of Power Grid Environmental Protection, Beijing, China
15:30-15:50	2088	(Invited) Influence of Temperature on Power Frequency Breakdown Characteristics of C4F7N/CO ₂ /O ₂ Ternary Mixed Gas	Y. Zheng ¹ , Z. Tao ¹ , S. Ren ¹ , Y. Xiao ¹ , W. Zhou ¹ ¹ Wuhan university, school of electrical engineering and automation, Wuhan, China
15:50-16:00	1086	Prediction on Global Warming Potential Value of Gas Based on Chemical Bond Strength	Z. Yang ¹ , X. Wang ¹ , S. Yang ¹ , H. Wang ¹ , J. Xiao ¹ ¹ Hubei University of Technology, School of Electrical and Electronic Engineering, Wuhan, China
16:00-16:10	1494	Comparison between experimental and simulation of arc related parameters during current interruption of a circuit breaker between N ₂ and mixture of C4F7N and CO ₂	R. Cao ^{1,2} , G. Li ² , W. Gao ² , S. Yao ² , G. Liu ² , K. Zhang ¹ , J. Yan ¹ ¹ University of Liverpool, Department of Electrical and Electronic Engineering, Liverpool, United Kingdom ² Xi'an High Voltage Apparatus Research Institute Co., Ltd., Shaanxi, Xi'an, China
16:10-16:20	1533	Surface flashover characteristics of epoxy resin in ternary gas mixture C ₄ F ₇ N/CO ₂ /O ₂	D. Sun ¹ , Y. Hu ² , N. Tang ¹ , Z. Li ¹ , X. Li ¹ , Z. Liu ² , J. Wu ² , L. Zhong ² ¹ Electric Power Research Institute of Guangdong Power Grid Co., Ltd., China, Key Laboratory of Sulfur Hexafluoride of China Southern Power Grid Company Ltd., Guangzhou, China., Guangdong, China ² Hunan University, School of Electrical and Information Engineering, Changsha, China
16:20-16:30	1699	Insulation Properties of Mixed Gases with CF ₃ SO ₂ F plus C ₃ HF ₃ and Natural gases	D. Hao ¹ , Y. Zheng ¹ , S. Ren ¹ , Z. Xiang ¹ , W. Zhou ¹ ¹ Wuhan University, State Key Laboratory of Power Grid Environmental Protection, Wuhan, China
16:30-16:40	2070	Ionization and Attachment Characteristics of a Novel Ternary Gas Mixture to Replace SF ₆ gas	Y. Zheng ¹ , Z. Xiang ¹ , S. Ren ¹ , D. Hao ¹ , Y. Xiao ¹ , W. Zhou ¹ ¹ wuhan university, school of electrical engineering and automation, wuhan, China
16:40-16:50	2133	The effect of impulse voltage waveform on the breakdown voltage of C ₅ F ₁₀ O / CO ₂ gas mixture in non-uniform electric field	D. Su ¹ , F. Zeng ¹ , B. Xie ² , H. Zhong ¹ , J. Tang ¹ ¹ Wuhan University, State Key Laboratory of Power Grid Environmental Protection, School of Electrical Engineering and Automation, Wuhan, 430072, China ² China Southern Power Grid, Guangzhou Power Supply Bureau, Guangzhou, China
16:50-17:00	2283	First-principles investigation of ZnO-doped MoS ₂ for detecting characteristic air decomposition component in dry air switchgear	P. Li ^{1,2} , Y. Yuan ^{1,2} , R. Zhou ³ , L. Li ^{1,2} , Q.H. Liu ^{1,2} ¹ Hubei Provincial Engineering Technology Research Center for Power Transmission Line, Yichang, China ² China Three Gorges University, College of Electrical Engineering and New Energy, Yichang, China ³ State Grid Hubei Electric Power Co., Ltd. Enshi Power Supply Company, Enshi, China
17:00-17:10	1441	Operator learning method for fast evaluating arcquenching performance of SF ₆ replacements	H. Ren ¹ , L. Zhong ¹ ¹ Southeast University, School of Electrical Engineering, Nanjing, China

Plenary Session 9



Pulsed Power Source Technology for Plasma Applications

Weihua Jiang

Nagaoka University of Technology, Japan
June 20 (THU) AM 8:30-9:30

Biography

Prof. Weihua Jiang graduated from the National University of Defense Technology, Changsha, China, in 1982. He received the M.S. degree in plasma physics from the Institute of Atomic Energy, Beijing, China, in 1985 and Ph.D. degree in electrical engineering from the Nagaoka University of Technology, Nagaoka, Japan, in 1991. Since April 1991, he has been with Nagaoka University of Technology where he is now a full professor with the Department of Nuclear Technology and the Department of Electrical Engineering, and the Director of Extreme Energy-Density Research Institute. He has research and teaching experience with Texas Tech University, Lubbock, TX, USA, and Tsinghua University, Beijing. His current research interests include pulsed power technology, particle beam technology, and high-power microwave source technology.

Summary

Pulsed power has been widely used for plasma generation, especially in the process of high-voltage gas discharge. Atmospheric pressure discharge has been proved to be more active, and therefore more intriguing, compared with traditional low-pressure gas discharge. However, pulsed gas discharge under atmospheric pressure requires delicate pulsed-power source control due to its dynamic impedance behavior. On the other hand, compact, repetitive pulsed power generation technology based on solid-state switching devices has made profound progress in the last few decades. It has evolved from the technical schemes that enabled large-scale pulsed-power machines and has gradually established its unique approach to compact pulsed power generation which is characterized by repetitiveness, stability, reliability, and flexibility. This presentation is a review of the recent development in compact pulsed-power technology. It covers the technical issues of pulse power adding based on solid-state Marx circuits and solid-state LTD circuits. In these pulsed power circuits, digital control of the semiconductor switching devices enables not only complicated output pulse shaping, but also real-time feedback and intellectual source response. These progresses are bringing the compact pulsed-power technology to a new level, enabling more applications to plasma science.

June 20, 2024 Thursday

Plenary Session June 20 8:30-9:30 am Room: 307			
Time	ID	Title	Name / Affiliation
Chair: Yakov Krasik			
8:30-9:30	2107	(PL9) Pulsed power source technology for plasma applications	Weihua Jiang <i>Nagaoka University of Technology, Extreme Energy-Density Research Institute, Nagaoka, Japan</i>
9:30-9:45	Coffee Break		

TA 1 Basic Processes in Fully and Partially Ionized Plasmas

June 20 9:45 am-12:05 pm Room: 305A

Time	ID	Title	Name / Affiliation
June 20	Oral Session		
Chair: Yin Sun & Yaolin Wang			
9:45-10:10	606	(Invited) Plasma uniformity control in capacitive RF discharges through electrode customization	<p>L. Wang¹, P. Hartmann², Z. Donko², Y.-H. Song³, J. Schulze^{1,3}</p> <p>¹ Ruhr-University Bochum, Chair of Applied Electrodynamics and Plasma Technology, Department of Electrical Engineering and Information Science, Bochum, Germany</p> <p>² HUN-REN Wigner Research Centre for Physics, Institute for Solid State Physics and Optics, Budapest, Hungary</p> <p>³ Dalian University of Technology, Key Laboratory of Materials Modification by Laser, Ion, and Electron Beams (Ministry of Education), Dalian, China</p>
10:10-10:35	1308	(Invited) Study on similarity of microdischarge based on unified fluid model	<p>Z. Zhao¹, Z. Wang¹, Y. Fu¹</p> <p>¹ Tsinghua University, Department of Electrical Engineering, Beijing, China</p>
10:35-10:50	545	Development and hierarchical verification of a high-efficacy 3D PIC/MCC-DSMC code for simulating oscillations in magnetized plasma	<p>Y. Li¹, W. Liu¹, P. Li¹, W. Wang¹, G. Zhang¹, H. Tang¹</p> <p>¹ Beihang University, School of Astronautics, Beijing, China</p>
10:50-11:05	643	1D3V PIC/MCC simulation of instabilities and magnetic field-induced density transitions in capacitively coupled argon plasma	<p>J. Yao¹, B. Zheng¹, J. Ouyang¹</p> <p>¹ Beijing Institute of Technology, School of Physics, Beijing, China</p>
11:05-11:20	649	Data-Driven, Multi-Moment Fluid Modeling of Landau Damping Using Machine Learning	<p>C. Dong¹, H. Fu², L. Wang¹</p> <p>¹ Boston University, Boston, Massachusetts, United States of America</p> <p>² Fudan University, Shanghai, China</p>
11:20-11:35	1015	Numerical simulation study of the working process of the external discharge Hall thruster	<p>L. Jin¹, Y. Wang¹, K. Zhou¹, W. Ding¹, A. Sun¹</p> <p>¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi an, China</p>
11:35-11:50	1047	Electron dynamics and etching profile evolution in capacitive Ar/CHF ₃ discharges driven by sawtooth tailored voltage waveforms	<p>W. Dong¹, L. Q. Song¹, Y. F. Zhang¹, J. Schulze², Y. H. Song¹</p> <p>¹ Dalian University of Technology, Department of Physics, DaLian, China</p> <p>² Ruhr-University Bochum, Chair of Applied Electrodynamics and Plasma Technology, Department of Electrical Engineering and Information Science, Bochum, Germany</p>
11:50-12:05	1114	The axial uniformity of low-pressure capacitively coupled plasma discharges based on GPU	<p>H. He¹, Z. Li¹, R. Zhang¹</p> <p>¹ Tsinghua University, Shenzhen International Graduate School, Shenzhen, China</p>

TA 1 Basic Processes in Fully and Partially Ionized Plasmas			
June 20 9:45 am-12:15 pm Room: 305B			
Time	ID	Title	Name / Affiliation
June 20		Oral Session	
Chair: M. Samizadeh Nikoo & Junfeng Rao			
9:45-10:10	84	(Invited) Materials dynamics in dusty plasmas: from ultracold to ultrahot temperatures	Z. Wang ¹ , C. Feng ¹ , S.-H. Hong ² , C.-S. Wong ¹ , N. Yu ³ ¹ Los Alamos National Laboratory, Los Alamos, New Mexico, United States of America ² General Atomics, San Diego, California, United States of America ³ Columbia University, New York, New York, United States of America
10:10-10:35	261	(Invited) Discrimination of strongly and weakly coupled regimes in dusty plasmas	Y. Feng ¹ , D. Huang ¹ , S. Lu ¹ ¹ Soochow University, Suzhou, China
10:35-11:00	1720	(Invited) The interaction between dust grain and nanosecond surface dielectric barrier discharge (nSDBD)	Z. Zhang ¹ , Q. Nie ^{1,3} , Z. Zhang ³ , G. Wei ² , S. Zheng ² ¹ Harbin Institute of Technology, School of Electrical Engineering and Automation, Harbin, China ² Harbin Institute of Technology, School of Physics, Harbin, China ³ Harbin Institute of Technology, Laboratory for Space Environment and Physical Science, Harbin, China
11:00-11:15	601	Separation of Micron-Sized Dust Particles Using a Dusty Plasma Ratchet	M. Tian ¹ , T. Yao ¹ , Z. Cai ¹ , F. Liu ¹ , Y. He ^{1,2} ¹ Hebei University, College of Physics Science and Technology, Baoding, China ² Hebei University, Hebei Research Center of the Basic Discipline for Computational Physics, Baoding, China
11:15-11:30	603	Correlations between the particle reorganization and vibrational modes in a sheared quasi-two-dimensional binary complex plasma	C.-R. Du ¹ , Y. Miao ¹ , A. Ivlev ² , H. Loewen ³ ¹ Donghua University, College of Science, Shanghai, China ² Max-Planck-Institut fuer Extraterrestrische Physik, Garching, Germany ³ Heinrich-Heine-Universitaet Duesseldorf, Institut fuer Theoretische Physik II: Soft Matter, Duesseldorf, Germany
11:30-11:45	651	Precursor-free particle growth in a dusty plasma	Y. Zhao ¹ , J. Held ¹ , C. Hogan ¹ , U. Kortshagen ¹ ¹ University of Minnesota, Minneapolis, Minnesota, United States of America
11:45-12:00	1340	The effect of finite particle size on transport and dynamic properties of the two-dimensional systems	N. Bastykova ^{1,2} , S. Kodanova ^{2,1} , N. Djienbekov ^{1,2} , T. Ramazanov ^{2,1} ¹ Institute of Applied Sciences and Information Technology, Almaty, Kazakhstan ² Al-Farabi Kazakh National University, Institute for Experimental and Theoretical Physics, Almaty, Kazakhstan
12:00-12:15	1392		

TA 1 Basic Processes in Fully and Partially Ionized Plasmas TA 2 Microwave Generation and Plasma Interactions June 20 9:45 am-12:05 pm Room: 305C			
Time	ID	Title	Name / Affiliation
June 20		Oral Session	
Chair: J. T. Gudmundsson & Jie Zhuang			
9:45-10:10	1311	(Invited) Highly N-doped and crystalline hetero-carbon materials through solution plasma and its application	J. Niu ¹ , C. Chokradjaroen ¹ , Y. Liu ¹ , Z. Zhu ¹ , S. Chen ² , Y. Chen ² , N. Saito ¹ ¹ Nagoya University, Department of Chemical Engineering, Nagoya, Japan ² Nanjing Tech University, College of Chemical Engineering, Nanjing, China
10:10-10:35	2146	(Invited) Efficient conversion of CO ₂ into clean CO in atmospheric gliding arc plasmas	H. Zhang ¹ , Y. Long ¹ , K. Wang ¹ ¹ Zhejiang University, College of Energy Engineering, Hangzhou, China
10:35-10:50	1595		
10:50-11:05	1736	Optimization study of the chemical composition of plasma-activated water through plasma positioning	S. Pandey ¹ , R. Prakash ¹ ¹ IIT Jodhpur, Department of Physics, Jodhpur, India
11:05-11:20	1129	The corona loss characteristics of 8-bundle conductors in high-altitude regions	J. T. Liu ¹ ¹ North China Electric Power University, Department of Electrical Engineering, Baoding, China
11:20-11:35	1132	Study on transient electric shock near UHV AC transmission lines	K. Zhang ¹ ¹ North China Electric Power University, Department of Electrical Engineering, Baoding, China
11:35-11:50	2327	Design of a Ku-band phase-locked relativistic backward wave oscillator with low guiding magnetic field	Y. Li ¹ , J. Ju ¹ , T. Shu ¹ , W. Zhang ¹ , Y. Zhou ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
11:50-12:05	1753	Effective parameters of the silicon field emitter array	G. D. Demin ¹ , B. V. Lobanov ¹ , N. A. Djuzhev ¹ , A. G. Kolosko ² , E. O. Popov ² , S. V. Filippov ² ¹ National Research University of Electronic Technology (MIET), R&D Center, Zelenograd, Russian Federation ² Ioffe Institute, Saint Petersburg, Russian Federation

TA 2 Microwave Generation and Plasma Interactions			
June 20 9:45 am-12:05 pm Room: 303			
Time	ID	Title	Name / Affiliation
June 20		Oral Session	
Chair: Dian Zhang & Jianshen Yao & Wenxuan Shi			
9:45-10:10	384	(Invited) Exploring Nonlinear Phenomena: Ultra-High-Power, Ultra-Short Microwave Pulses Interacting with Gas and Plasma	Y. Cao ¹ , Y. Bliokh ¹ , J. Leopold ¹ , G. Leibovitch ¹ , Y. Hadas ¹ , V. Maksimov ¹ , A. Haim ¹ , Y. Krasik ¹ ¹ Technion, Physics Department, Haifa, Israel
10:10-10:35	611	(Invited) Time resolved investigations of the E-H transition in a microwave driven ICP source	H.-E. Porteanu ¹ , I. Stefanović ² , M. Klute ³ , P. Awakowicz ² , R.-P. Brinkmann ³ , W. Heinrich ¹ ¹ Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik (FBH), Microwaves, Berlin, Germany ² Ruhr University Bochum, Chair of Applied Electrodynamics and Plasma Technology, Department of Electrical Engineering and Information Science, Bochum, Germany ³ Ruhr University Bochum, Chair of Theoretical Electrical Engineering, Department of Electrical Engineering and Information Science, Bochum, Germany
10:35-10:50	181	Experimental Investigation of Electrical Characteristics in Microwave-Generated Atmospheric Pressure Plasma	S. Turdumamatov ^{1, 2} , A. Belda ¹ , H. Heuermann ¹ ¹ FH Aachen University of Applied Sciences, Institute for Microwave and Plasma Technology, Aachen, Germany ² University of Central Asia, School of Arts and Sciences, Bishkek, Kyrgyzstan
10:50-11:05	444		
11:05-11:20	448	Near-field cutoff phenomena in epsilon-near-zero subwavelength plasmas: physical insights and potential applications	P. Chen ¹ , Q. Nie ^{1, 2} , S. Lin ³ , L. Qian ⁴ , Z. Meng ¹ , X. Ai ¹ , G. Wei ⁴ , C. Yan ¹ ¹ Harbin Institute of Technology, School of Electrical Engineering and Automation, Harbin, China ² Harbin Institute of Technology, Laboratory for Space Environment and Physical Sciences, Harbin, China ³ Harbin Institute of Technology, School of Electronics and Information Engineering, Harbin, China ⁴ Harbin Institute of Technology, School of Physics, Harbin, China
11:20-11:35	857	Mechanism of interaction between pulsed electromagnetic standing waves and low-temperature plasma in low-pressure dielectric tubes	D. D. Zou ¹ , Z. L. Rao ¹ , C. M. Cui ¹ , P. Z. Hu ¹ , G. T. Xu ¹ ¹ East China Jiaotong University, School of Electrical Engineering and Automation, Nanchang, China
11:35-11:50	901	Research on a V-band relativistic transit-time oscillator with a focusing cathode under a low guiding magnetic field	L. Wang ¹ , Z. Chen ¹ , J. Ling ¹ , L. Song ¹ , J. He ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
11:50-12:05	2206	Numerical simulation of microwave gas discharge switch of S-band Microwave Pulse compressor with trigatron ignition	Z. Liu ¹ , V. S. Igumnov ¹ , V. Y. Kozhevnikov ¹ , C. Yuan ¹ ¹ Harbin institute of technology, School of physics, Harbin, China

TA 5 Industrial, Commercial and Medical Plasma Applications
June 20 9:45 am-12:05 pm Room: 307

Time	ID	Title	Name / Affiliation
June 20	Oral Session		
Chair: Zhengshi Chang & Hao Zhang (Zhejiang Uni.)			
9:45-10:10	1188	(Invited) Plasma catalytic CH ₄ reforming with CO ₂ over carbon-based catalysts	D. Mei ¹ , M. Sun ¹ , S. Liu ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
10:10-10:35	731		
10:35-10:50	1462	H ₂ /Ar plasma characteristics in a 2D gliding arc reactor	J. Choi ¹ , S. Choi ^{1,2} , D. H. Lee ^{1,2} ¹ Korea Institute of Machinery and Materials, Daejeon, Republic of Korea ² Korea National University of Science and Technology (UST), Daejeon, Republic of Korea
10:50-11:05	1476	Research on the synergistic catalytic conversion of CO ₂ using a gliding arc plasma coupled with a fluidized bed	D. Kong ¹ , X. Chen ¹ , W. Xia ¹ ¹ University of Science and Technology of China, Department of Thermal Science and Energy Engineering, Hefei, China
11:05-11:20	1496	Challenges and Opportunities in Cold Atmospheric Plasma Based (CAP) Based Fluorine Generation	R. Kar ^{1,2} , V. Bende ² , V. Sekar ¹ , R. Bhardwaj ¹ , M. Mascarenhas ¹ , A. Sharma ³ ¹ Laser & Plasma Technology Division, Bhabha Atomic Research Centre, Mumbai, India ² Homi Bhabha National Institute, Anushaktinagar, Mumbai, India ³ Beam Technology Development Group, Bhabha Atomic Research Centre, Mumbai, India
11:20-11:35	1569	Optimization and Investigation of Parameters for Underwater Fiber-Optic LIBS Systems	H. Sun ¹ , J. Wu ¹ , Y. Qiu ² , Y. Hang ³ , X. Li ¹ , C. Pei ⁴ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China ² Xi'an Jiaotong University, Faculty of Electronic and Information Engineering, Xi'an, China ³ Suzhou Nuclear Power Research Institute, Suzhou, China ⁴ Xi'an Jiaotong University, Shanxi Engineering Research Center of NDT and Structural Integrity Evaluation, Xi'an, China
11:35-11:50	1576	Rapid Microstructure Distribution Detection of Thermal Aging Nuclear Duplex Stainless Steel Using Laser-Induced Breakdown Spectroscopy	J. Li ¹ , J. Wu ¹ , Q. Wang ² , Y. Qiu ³ , C. Pei ⁴ , Y. Hang ⁵ , X. Li ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China ² China Huaneng Group Corporation Limited, Huaneng Nuclear Energy Technology Institute, Shanghai, China ³ Xi'an Jiaotong University, Faculty of Electronic and Information Engineering, Xi'an, China ⁴ Xi'an Jiaotong University, Shaanxi Engineering Research Center of NDT and Structural Integrity Evaluation, State Key Laboratory for Strength and Vibration of Mechanical Structures, Xi'an, China ⁵ Suzhou Nuclear Power Research Institute, Suzhou, China
11:50-12:05	1593		

TA 5 Industrial, Commercial and Medical Plasma Applications June 20 9:45 am-12:05 pm Room: 305E			
Time	ID	Title	Name / Affiliation
June 20		Oral Session	
Chair: Dingxin Liu & Ruonan Ma			
9:45-10:10	1594		
10:10-10:35	1944	(Invited) Recent Pulsed Power Application for Marine Industries	D. Wang ¹ , T. Namihira ¹ ¹ Kumamoto University, Institute of Industrial Nanomaterials, Kumamoto, Japan
10:35-10:50	1017	Multi-stages pulse modulation strategy for enhanced electroporation-mediated intracellular delivery	X. Tao ¹ , H. Liu ² , J. Qiu ¹ , K. Liu ¹ ¹ Fudan University, School of information science and technology, Shanghai, China ² Fuda, Academy for engineering & technology, Shanghai, China
10:50-11:05	1556	Numerical analysis of the electric field effect of a floating grounded DBD atmospheric pressure plasma interacting with the biological substrate	K. Chen ¹ , C. Yao ¹ ¹ Chongqing University, State Key Laboratory of Power Transmission Equipment Technology, School of Electrical Engineering, Chongqing University, Chongqing, China
11:05-11:20	1032	Study on the formation mechanism of OH and H ₂ O ₂ in liquid phase induced by atmospheric pressure He/He+O ₂ plasma jet	W. Xi ¹ , Y. Hu ¹ , Y. Lan ¹ , C. Cheng ¹ ¹ Institute of Plasma Physics, Chinese Academy of Sciences, Hefei, China
11:20-11:35	1335	Influence of high voltage pulses with different waveforms on protein extraction from spirulina powder	Z. Peng ¹ , L. Li ¹ , Y. Gao ¹ , F. Lin ¹ , H. Li ¹ ¹ State Key Laboratory of Advanced Electromagnetic Technology, International Joint Research Laboratory of Magnetic Confinement Fusion and Plasma Physics, School of Electrical and Electronic Engineering, Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, 430074, China
11:35-11:50	1351	Cold plasma based hydrogels enhance synergistic therapy for cancer treatment	Q. Fang ¹ , Z. Chen ¹ ¹ Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China
11:50-12:05	1455	Electrosurgical Generator for Driving Plasma Scalpel Using Fast Frequency Tracking Technology based on a Single-Ended Resonant Inverter	Duo Xing ¹ , D. Feng ¹ , D. Liu ¹ ¹ Dalian University of Technology, School of Electrical Engineering, DaLian, China

TA 9 Special Sessions: Disinfection and Sterilization Section June 20 9:45-11:50 am Room: 305D			
Time	ID	Title	Name / Affiliation
June 20		Oral Session	
Chair: Zhitong Chen & Liguang Dou			
9:45-10:10	1622	(Invited) Microbubble enhanced plasma activated oil preparation and their applications in sterilization	J. Niu ¹ , Y. Ming ¹ , S. Liu ¹ , C. Wang ¹ , X. Tan ¹ , X. Liu ¹ ¹ Dalian Minzu University, Liaoning key Lab of Plasma technology, School of Physics and Materials Engineering, Dalian, China
10:10-10:35	679	(Invited) Inactivation of microbes by plasma-activated nebulized mist and its application	L. Guo ¹ , P. Zhao ¹ , Y. Jia ¹ , Z. Wang ¹ , D. Liu ¹ ¹ Xi'an Jiaotong University, Center for plasma biomedicine, 'an, China
10:35-10:50	1472	Eradicating ESKAPE Bacteria with Non-equilibrium Atmospheric Cold Plasma: Mechanisms and Applications	R. Jangra ¹ , K. Ahlawat ¹ , R. Prakash ¹ ¹ Indian Institute of Technology Jodhpur, Jodhpur, India
10:50-11:05	2337	Application of Plasma Technology in In-Door Air Purification and Disinfection	H. Ran ^{1,2} , Y. Zhang ⁴ , Y. Liu ³ ¹ Suzhou BeiAng Smart Technology Co., Ltd, Chairman, Suzhou, China ² California institute of technology, PHD, Pasadena, California, United States of America ³ Suzhou BeiAng Smart Technology Co., Ltd, CTO, Suzhou, China ⁴ University of California Santa Cruz, PHD, Monterey Bay, California, United States of America
11:05-11:20	1645	Upscaling air plasma with arrayed floating electrodes for disinfection applications	K. Wu ¹ , L. Zhang ¹ , Y. Fu ¹ ¹ Tsinghua University, Beijing, China
11:20-11:35	940	On the deposition of dual-functional antimicrobial coatings with an aerosol-assisted atmospheric pressure plasma	L. Wang ¹ , Y. Onyshchenko ² , C. Leys ² , A. Nikiforov ² ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China ² Ghent University, Department of Applied Physics, Ghent, China
11:35-11:50	1018	In vitro inactivation of bacteria by a flexible thin-layer cold plasma source under bending deformation	Y.-H. Sun ¹ , Y.-Y. Liu ¹ , B. Zhang ¹ , M.-Y. Sun ¹ , H. Zhao ¹ , G.-J. Zhang ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China

TA 5 Industrial, Commercial and Medical Plasma Applications June 20 9:45-11:50 am Room: 311A			
Time	ID	Title	Name / Affiliation
June 20		Oral Session	
Chair: Zilan Xiong & Wenfu Wei			
9:45-10:10	2132	(Invited) Plasma treatment of seeds, from microgreens to trees – Moving beyond the lab	F. Iza ¹ ¹ Loughborough University, Wolfson School of Mechanical, Electrical and Manufacturing Engineering, Loughborough, United Kingdom

ICOPS & APCOPTS 2024

10:10-10:35	2303	(Invited) Cold Atmospheric Plasma Inhibits Vesicle Transport of Human Osteosarcoma Cells Visualized by Super-Resolution Fluorescence Microscopy	J. Zhuang ¹ , F. Shi ¹ , J. Guo ¹ , G. Liu ¹ ¹ Suzhou Institute of Biomedical Engineering & Technology, CAS, Suzhou, China
10:35-10:50	1911	Electrical characteristics and effects on melanoma cells of low-temperature plasma ablation technology	M. Sun ¹ , J. Liu ² , B. Zhang ¹ , G. Xu ³ , Y. Sun ¹ , K. Cao ⁴ , H. Li ⁴ , G. Zhang ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China ² Xi'an Jiaotong University, School of Public Health, Xi'an, China ³ Chang'an University, School of Energy and Electrical Engineering, Xi'an, China ⁴ The Second Affiliated Hospital of Xi'an Jiaotong University, Xi'an, China
10:50-11:05	1942	Development of A Potable Inert Plasma Jet and Its Discharge Characteristic Study	Y. Zhao ¹ , X. Zhang ¹ , K. Qiu ¹ , S. Jin ¹ , L. Zhang ¹ , Z. Fang ¹ ¹ Nanjing Tech University, School of Electrical Engineering and Control Science, Nanjing, China
11:05-11:20	1895	The Characteristic analysis of operation overvoltage and arcing of vacuum circuit breakers for high-speed trains	Y. Cao ¹ , S. Xiao ¹ , G. Wu ¹ , G. Gao ¹ , Y. Guo ¹ , X. Zhang ¹ , T. Zhu ¹ , J. Yan ¹ ¹ Southwest Jiaotong University, School of Electrical Engineering, Chengdu, China
11:20-11:35	2211	Study on the characteristics of luminescence and shock waves generated by underwater high-voltage pulse discharge	Q. Yao ^{1,2} , Y. Cheng ^{1,2} , X. Ma ^{1,2} , Z. Tu ^{1,2} , X. Zhang ^{1,2} ¹ Xi'an Jiaotong University, Key Laboratory of Physical Electronics and Devices of the Ministry of Education, Xi'an, China ² Xi'an Jiaotong University, School of Electronic Science and Engineering and Devices of the Ministry of Education, Xi'an, China
11:35-11:50	2228	Mechanisms behind the synergistic effects of nanosecond pulsed electric field and cold plasma jet for pancreatic cancer treatment	S. Guo ¹ , Z. Minhas ¹ , E. A. Oshin ² , S. M. Haque ^{3,4} , Y. Jing ¹ , L. Yang ^{3,4} , C. Jiang ^{1,2} ¹ Old Dominion University, Frank Reidy Research Center for Bioelectrics, Norfolk, Virginia, United States of America ² Old Dominion University, Department of Electrical & Computer Engineering, Norfolk, Virginia, United States of America ³ Eastern Virginia Medical School, Department of Microbiology and Molecular Cellular Biology, Norfolk, Virginia, United States of America ⁴ Eastern Virginia Medical School, Leroy T. Canoles Cancer Research Center, Norfolk, Virginia, United States of America

TA 9 Special Sessions: Dielectric and Energy Storage Applications
 June 20 9:45-11:50 am Room: 311C

Time	ID	Title	Name / Affiliation
June 20		Oral Session	
Chair: Chuansheng Zhang			
9:45-10:10	1723	(Invited) Research on energy storage performance of polycarbonate-based composite dielectric with oxygen-vacancy inorganic deposition layers	Y. Feng ^{1,2} , H. Yang ^{1,2} , D. Yue ^{1,2} ¹ Harbin University of Science and Technology, School of Electrical and Electronic Engineering, Harbin, China ² Harbin University of Science and Technology, The Key Laboratory of Engineering Dielectrics and Its Application, Harbin, China
10:10-10:35	1279	(Invited) Study on modified epoxy resin/AIN nanocomposites by dielectric barrier discharge with a rotating dielectric plate	N. Jiang ¹ , G. Yu ¹ , H. Sun ¹ , J. He ¹ , J. Li ¹ , F. Wang ¹ , J. Li ¹ ¹ Dalian University of Technology, School of Electrical Engineering, Dalian, China
10:35-10:50	1965	Impulse power compensation for fusion power supply based on cascaded lithium-ion capacitor energy storage	Y. Tian ^{1,2} , Y. Wu ^{1,2} , J. Lu ^{1,2} , J. Li ¹ , Y. Zhang ³ , H. Mao ¹ , C. Gu ^{1,4} , X. Li ⁵ , K. Liu ⁶ ¹ Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei, China ² University of Science and Technology of China, Hefei, China ³ Nanchang Institute of Technology, Nanchang, China ⁴ Anhui University, Hefei, China ⁵ Wanbei Coal-Electricity Group Co., Ltd, Suzhou, China ⁶ Bengbu Longzihu District Fire Rescue Brigade, Bengbu, China
10:50-11:05	2328	Surface Modification of Fluoro-silicone Acrylate Polymers by Pulse-modulated Microwave Air Plasma Jet	X. Chen ¹ , S. Chen ¹ , Z. Chen ¹ , C. Wang ¹ , X. Ren ¹ ¹ Anhui University of Technology, School of Electrical and Information Engineering, Ma'anshan, China
11:05-11:20	1536	Properties improvement of epoxy resin/h-BN composites by modified nano-filler based on plasma bubbles treatment	F. Li ^{1,2} , C. Zhang ¹ , T. Shao ^{1,2} ¹ Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Beijing, China ² University of Chinese Academy of Sciences, Beijing, China
11:20-11:35	2119	Study on insulation failure characteristics of all-film pulsed capacitors	Y. Huang ^{1,2} , L. Wang ² , L. Chen ² , J. Yuan ² , W. Xie ² , D. Zhang ¹ ¹ Dalian University of Technology, College of electrical engineering, Dalian, China ² China Academy of Engineering Physics, Institute of Fluid Physics, Mianyang, China
11:35-11:50	2317	Significantly improving energy storage performance of polymer films by excimer UV irradiation under different atmospheres	J. Dong ¹ , B. Huang ¹ , C. Zhang ^{1,2} , T. Shao ^{1,2} ¹ Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China ² University of Chinese Academy of Sciences, Beijing, China

TA 7 Pulsed Power and Other Plasma Applications June 20 9:45 am-12:05 pm Room: 311B			
Time	ID	Title	Name / Affiliation
June 20		Oral Session	
Chair: S. M. Korobeynikov & Junxiang Yang			
9:45-10:10	1602	(Invited) Recent high power microwave driver studies in NUDT	H. Yang ¹ , Z. Zhang ¹ , X. Cheng ¹ , J. Gao ¹ , T. Xun ¹ , S. Li ¹ , H. Zhang ¹ , R. Chen ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
10:10-10:35	1721	(Invited) Multi-scale simulation investigation to uniformity of discharge channels in underwater electrical wire explosion	Z. Liu ¹ , X. Wang ¹ , X. Zou ¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, 100084, China
10:35-10:50	165	Dynamic characteristics analysis of the compact torus injection system	Z. Zhao ^{1,2} , M. Qi ¹ , D. Kong ² , Y. Ye ² , M. Tan ² , X. Zhang ¹ ¹ Hefei University of Technology, School of Computer Science and Information Engineering, Hefei, China ² Hefei Comprehensive National Science Center, Institute of Energy, Hefei, China
10:50-11:05	289	A solid-state high voltage pulse power supply with three output voltages	X. B. Cheng ¹ , Z. L. Pan ¹ , R. Chen ¹ , R. J. Zhang ¹ , H. W. Zhang ¹ , J. H. Yang ¹ , B. L. Qian ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
11:05-11:20	440	Design and simulation of a simulated hail launcher based on pulsed power technology	W. X. Jia ¹ , Z. X. Li ¹ , G. Wan ¹ , S. H. Shi ¹ ¹ Nanjing University of Science and Technology, National Key Laboratory Physics of Transient, Nanjing, China
11:20-11:35	674	Power supply chain with series isolation structure applied in high-voltage tail-cut Marx generator	Y. Chen ¹ , C. Yao ¹ ¹ Chongqing University, School of Electrical Engineering, Chongqing, China
11:35-11:50	938	Accurate Measurement of Pulsed Current Based on Waveform Reconstruction	N. Yang ¹ , Y. Liu ^{1,2} , L. Li ^{1,2} , F. Lin ^{1,2} ¹ Huazhong University of Science and Technology, School of Electrical Engineering, Wuhan, China ² Huazhong University of Science and Technology, State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Wuhan, China
11:50-12:05	955	Compact solid state Marx generator based on MOSFET chopping circuit with short pulsed width (5 ns) and high frequency (100 kHz)	F. Wu ¹ , C. Yao ¹ ¹ Chongqing University, Chongqing, China

TA 8 Terahertz Sources, Radiation and Applications June 20 9:45 -11:55 am Room: 308			
Time	ID	Title	Name / Affiliation
June 20		Oral Session	
Chair: Yangmei Li & Shaomeng Wang			
9:45-10:10	16	(Invited) Terahertz enhances the current of Mammalian Voltage-Gated Calcium Channel	Y. Sun ^{1,2} , Z. Zhang ² , L. Guo ¹ , S. Wang ³ , Y. Yang ³ , Y. Gong ¹ ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China ³ Beihang University, School of Biological Science and Medical Engineering, Beijing, China
10:10-10:25	71	The control of ion transmembrane transport by terahertz electromagnetic field: a quantum model	Z. Xiang ¹ ¹ National Innovation Institute of Defense Technology, Beijing, China
10:25-10:40	42	Terahertz Photons Promote Neurite Elongation And Synaptic Protein Expression	Y. Zhong ^{1,2} , Z. Zhang ² , R. Jiang ² ¹ Tsinghua University, Department of Engineering Physics, Beijing, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
10:40-10:55	40	Experimental exploration of terahertz waves promoting DNA double helix denaturation	Y. Yuan ¹ , J. Lou ² , Z. Zhang ² ¹ Xidian University, Xi'an, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
10:55-11:10	2086	THz wave regulates molecular conformational transition	S. Gu ¹ , Z. Zhu ¹ , Y. Li ² ¹ University of Shanghai for Science and Technology, School of Optical-Electrical Computer Engineering, Shanghai 200093, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing 100071, China
11:10-11:25	11	Modulation and mechanism of depression-like behavior in mice by terahertz waves irradiation	P. Liu ¹ , J. Ma ¹ , Y. He ² , Z. Zhang ¹ , Z. Song ¹ ¹ Academy of Military Sciences, National Innovation Institute of Defense Technology, Beijing, China ² Peking University, School of Physics, Beijing, China
11:25-11:40	710	Implementing Fast Terahertz Imaging through Sparse Algorithm	N. Xu ¹ , Y. Liu ¹ , J. Gao ¹ , L. Zhong ¹ , W. Yang ² , Y. Li ² , Y. Lv ² ¹ Xi'an Jiaotong University, Institute of Electrical Engineering, Xi'an, China ² Beijing Institute of Smart Energy, Beijing, China
11:40-11:55	1006	FDTD-based internal moisture damp inspection for vehicle cable terminal in terahertz domain	J. Dan ¹ , S. Li ¹ , Y. Kang ¹ ¹ Lanzhou Jiaotong University, School of New Energy and Power Engineering, Lanzhou, China

TA 9 Special Sessions: Innovative Fusion Approaches June 20 9:45 am-12:25 pm Room: 302			
Time	ID	Title	Name / Affiliation
June 20		Oral Session	
Chair: Y.C. F. Thio & X. Sun			
9:45-10:10	2003	(Invited) Formation of plasma liners for PJMIF by the merging of circular rings of plasma jets	Y.C. F. Thio ¹ , J. Mu ¹ , M. Xu ¹ , F. Liu ¹ , W. Yuan ¹ , G. Li ¹ , C. Hao ¹ , C. Zhang ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
10:10-10:35	1902	(Invited) A third-generation coaxial plasma gun (STG1) for PJMIF application	Y.C. F. Thio ¹ , D. Zhang ¹ , Y. Liu ¹ , D. Yuan ¹ , X. Zhang ¹ , Y. Zhu ¹ , Y. Shen ¹ , G. Li ¹ , C. Hao ¹ , M. Jie ¹ , M. Xu ¹ , Q. Bo ¹ , Z. Liu ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
10:35-11:00	1680	(Invited) Doppler spectroscopic measurement of the translational and transverse expansion of a hypersonic plasma jet in PJMIF	C.J. Hao ¹ , M.R. Li ¹ , X.Y. Guo ¹ , Y.C. F. Thio ¹ , Y.R. Zhang ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
11:00-11:25	2082	(Invited) The status and research plans of KMAX-FRC as an innovative field reversed mirror	X. Sun ¹ , J. Ying ¹ , Z. Xu ¹ , Y. Li ¹ ¹ University of Science and Technology of China, School of Nuclear Science and Technology, Hefei, China
11:25-11:40	1535	Spectroscopic measurement of the electron temperature of a hypersonic plasma jet	M. Li ¹ , C. Hao ¹ , X. Guo ¹ , Y.C. F. Thio ¹ , Y. Zhang ¹ ¹ ShanghaiTech University, Centre for Ultimate Energy, Shanghai, China
11:40-11:55	1544	An experimental system (JMX) for investigating the dynamics of the merging of hypersonic plasma jets	W. Yuan ¹ , Y. Shen ¹ , C. Zhang ¹ , C. Wu ¹ , X. Zheng ¹ , X. Zhu ¹ , F. Y.C. Thio ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
11:55-12:10	1615	Development of a plasma gun for forming and launching a magnetized target plasma	X. Zhang ¹ , Y. Zhu ¹ , Q. Shu ¹ , L. Deng ¹ , X. Zheng ¹ , P. Du ¹ , Y. Zhang ¹ , T. Xiong ¹ , Y.C.F. Thio ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
12:10-12:25	2076	High Brightness and Density Plasma Source by Novel Capsule Theta Pinch	H. Zhang ¹ , T. Lan ¹ , W. Ding ¹ , Z. Bai ¹ , Z. Mao ¹ , J. Wu ¹ , K. Wang ¹ , X. Su ¹ , M. Wang ¹ , W. Mao ¹ , S. Zhang ¹ , Y. Zhou ¹ , Q. Dong ¹ , C. Chen ¹ , T. Wang ¹ , P. Lu ¹ , Y. Huang ¹ , J. Wu ¹ , Z. Wu ¹ , Z. Wei ¹ , X. Wen ¹ , H. Wang ¹ , C. Zhou ¹ , J. Xie ¹ , A. Liu ¹ , H. Li ¹ , W. Liu ¹ , G. Zhuang ¹ ¹ University of Science and Technology of China, Department of Plasma Physics and Fusion Engineering, Hefei, China

Poster Sessions

June 17 17:00-18:30 pm

Poster Sessions June 17 17:00-18:30 pm Room: The 3rd Floor Exhibition Area		
ID	Title	Name / Affiliation
TA 1 Basic Processes in Fully and Partially Ionized Plasmas		
1-321	Falling Liquid Droplets Discharge	J. Liu ¹ , X. Lu ¹ ¹ Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China
2-372	High pressure plasma of pure oxygen	W. Yan ^{1,2} , Z. M. Duan ^{1,3} , Z. B. Li ^{2,3} , X. L. Si ^{2,4} ¹ Hefei University of Technology, Department of Electrical Engineering, Hefei, China ² National Key Laboratory of Electromagnetic Information Control and Effects, Hefei, China ³ Aviation Science and Technology Key Laboratory of Strong Electromagnetic Environment Protection Technology, Hefei, China ⁴ Anhui province key laboratory of aircraft lightning protection, Hefei, China
3-379	Nonlocal electron heating behavior and mode transitions in medium frequency from 50 kHz to 5 MHz atmospheric pressure dielectric barrier discharge plasmas	Z. Zhao ¹ , Y. Yu ¹ , Q. Nie ^{1,2} , Z. Zhang ^{1,2} ¹ Harbin Institute of Technology, School of Electrical Engineering and Automation, Harbin, China ² Harbin Institute of Technology, Laboratory for Space Environment and Physical Sciences, Harbin, China
4-383	The discharge characteristics of a helium atmospheric pressure plasma jet interacting with solid and liquid targets	G.-M. Xu ^{1,2} , J.-X. Wang ¹ , M.-Y. Sun ² , C.-D. Duan ¹ , G.-J. Zhang ² ¹ Chang'an University, School of Energy and Electrical Engineering, Xi'an, China ² Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China
5-397	Measurement of the Reduced Electric Field Transitions During Nanosecond Pulsed Streamer Discharge in Coaxial Cylindrical Electrode	R. Sasamoto ¹ , Y. Hirakawa ² , A. Chinen ² , D. Wang ¹ , T. Namihira ¹ ¹ Kumamoto University, Institute of Industrial Nanomaterials, Kumamoto, Japan ² Kumamoto University, Graduate School of Science and Technology, Kumamoto, Japan
6-3009	The Unexpected Numerical Error Behavior Associated with Inaccurate Charge Density Computation Near Irregular-shaped Dirichlet Boundaries in Particle-In-Cell Simulations	Kai Zhang ¹ ¹ Hunan University of Arts and Science

ICOPS & APCOPTS 2024

7-532	Investigation of the transport properties of warm dense beryllium based on the density functional theory	M. Issanova ^{1,2} , T. Ramazanov ^{1,2} , S. Kodanova ^{1,2} , N. Djienbekov ^{1,2} ¹ <i>Al-Farabi Kazakh National University, Institute for Experimental and Theoretical Physics, Almaty, Kazakhstan</i> ² <i>Institute of Applied Sciences and Information Technology, Almaty, Kazakhstan</i>
8-671	Studies on kinetic characteristics of thermal emission-driven atmospheric microarc discharge	L. Sun ¹ , Z. Dai ¹ , M. Xu ¹ ¹ <i>Xi'an University of technology, Department of Applied Physics, Xi'an, China</i>
9-721	Turbulent particle pinch of nonneutral plasmas confined by a magnetic dipole	C. Jiang ¹ , B. Li ¹ ¹ <i>Beihang University, School of Physics, Beijing, China</i>
10-774	Study on Evolution Patterns of Power Frequency Arc Discharges in Transformer Oil	Z. Wang ^{1,2} , C. Zhang ^{1,2} , K. Wang ³ , Y. Zhao ³ , P. Li ³ , H. Wang ¹ , T. Shao ^{1,2} ¹ <i>Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Beijing, China</i> ² <i>University of Chinese Academy of Sciences, Beijing, China</i> ³ <i>China Electrical Power Research Institute, Beijing, China</i>
11-775	Numerical Studies on the Plasma-Induced Electric Field Distributions Under Different Electrode Configurations	M.-L. Zhang ¹ , Y.-T. Wang ¹ , L.-Y. Luo ¹ , X.-L. Sun ¹ , H.-P. Li ¹ , D.-J. Jiang ¹ , M.-S. Zhou ¹ ¹ <i>Tsinghua University, Department of Engineering Physics, Beijing, China</i>
12-820	Reflection of electrostatic ion-cyclotron waves in an inhomogeneous plasma	Y. Zhao ¹ , J. Ma ¹ , H. Sun ¹ , Q. Liu ¹ , W. Tao ¹ ¹ <i>University of Science and Technology of China, 1. Department of Engineering and Applied Physics, Hefei, China</i>
13-1101	On the Formation of Air Striated Discharge Plasma	H. Zhu ¹ , H. Dong ² ¹ <i>Shanxi University, College of Physics and Electronics Engineering, Taiyuan, China</i> ² <i>Shanxi University, Institute of Theoretical Physics, Taiyuan, China</i>
14-1301	Modeling and simulation of the influence of the metal particle on the characteristics of anode jets in vacuum arc	H. Sun ¹ , X. Huang ¹ , J. Li ² , H. Xu ¹ , Y. Yang ¹ , W. Ning ¹ , S. Jia ¹ ¹ <i>Sichuan University, College of electrical engineering, Chengdu, China</i> ² <i>Civil Aviation Flight University of China, Institute of Electronic and Electrical Engineering, Guanghan, China</i>
15-1371	Frequency response of electrostatic ion cyclotron wave excited via a grid	W. Tao ¹ , J.X. Ma ¹ , K.-Y. Yi ¹ ¹ <i>University of Science and Technology of China, Faculty of Physics, Hefei, China</i>
16-1554	The Voltage Effect on Mode Transitions of Atmospheric Pressure Dielectric Barrier Discharge in Argon Driven by Dual Medium Frequency	Y. Yilin ¹ ¹ <i>Harbin Institute of Technology, IEE, Harbin, China</i>
17-1567	Characteristics of Surface Charge Accumulation on Insulating Materials Considering Temperature Effects and the Microscopic Mechanism of Surface Flashover Induced by Accumulated Charges	K. Liang ¹ , F. Wang ¹ , L. Zhong ¹ , H. Yi ¹ ¹ <i>Hunan University, College of Electrical and Information Engineering, Changsha, China</i>
18-1665	Real-time observation of moving filaments in dielectric barrier discharge patterns	J. Li ¹ , C. Ma ¹ , J. Yao ¹ , F. He ¹ , J. Ouyang ¹ ¹ <i>Beijing Institute of Technology, Beijing, China</i>
19-1727	The study of plasma's transient effect in nanosecond pulse discharge	D. Chen ¹ , B. Huang ² , T. Shao ² , Y. Pu ¹ ¹ <i>Tsinghua University, Department of Engineering Physics, Beijing, China</i> ² <i>China Academy of Science, Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Beijing, China</i>

20-1972	Experiments on the streamer-filamentary transition using carbon nanomaterial electrodes	C. Ding ¹ , Y. Yerlanuly ^{2,3} , M. Gabdullin ^{3,4} , T. Ramazanov ^{2,3} , S. Starikovskaia ¹ ¹ <i>Ecole Polytechnique, Univ. Paris-Sud, Laboratory of Plasma Physics, Palaiseau, France</i> ² <i>Al-Farabi Kazakh National University, Almaty, Kazakhstan</i> ³ <i>Institute of Applied Science and Information Technologies, Almaty, Kazakhstan</i> ⁴ <i>Kazakh-British Technical University, Almaty, Kazakhstan</i>
21-2083	Nonlinear Behavior and Mechanisms of Dielectric Barrier Discharge at Atmospheric Pressure in the Time Domain	Y. Liu ¹ , X. Li ² , Z. Tan ¹ ¹ <i>Shandong University, School of Electrical Engineering, Jinan, China</i> ² <i>China Three Gorges Corporation, Institute of Science and Technology, Beijing, China</i>
22-2112	Impact of local field correction on dynamic characteristics of dense plasma	S. Kodanova ¹ , A. Kenzhebekova ¹ , M. Issanova ¹ , T. Ramazanov ¹ ¹ <i>Al Farabi Kazakh National University, Almaty, Kazakhstan</i>
23-2128	Investigation and Simulation of Atmospheric Pressure Microwave Cold Plasma Torch	Y. Li ^{1,2} , Y. Bai ² , R. Zhang ^{1,2} , Y. Shao ^{1,2} , W. Jin ^{1,2} , B. Yu ^{2,1} ¹ <i>Zhejiang University, Research Center for Analytical Instrumentation, Institute of Cyber-Systems and Control, College of Control Science and Engineering, Hangzhou, China</i> ² <i>Huzhou Institute of Zhejiang University, Research Center for Analytical Instruments and Intelligent Systems, Huzhou, China</i>
24-2169	Research on Surface Glow Plasma Generation Based on Microelectrode and Circuit Parameter Control	S. Xu ¹ , P. Niu ¹ , G. Bian ¹ , W. Liu ¹ ¹ <i>Beijing Jiaotong University, School of Electrical Engineering, Beijing, China</i>
25-2170	The research of jet plasma formation affected by the presence of lateral electrode	Y. Sun ¹ , S. Xu ¹ , W. Liu ¹ ¹ <i>Beijing Jiaotong University, School of Electrical Engineering, Beijing, China</i>
26-2274	Current-driven plasma turbulence	Y. Tian ¹ ¹ <i>The Chinese University of Hong Kong, Department of Physics, Hong Kong, China, Hong Kong Special Administrative Region</i>
27-2287	AC Breakdown Characteristics of Air in Non-Uniform Electric Fields at Different Pressures	Y. Zheng ^{1,2} , Y. Wang ² , Z. Liu ² , T. He ² ¹ <i>Tibet Yangbajing High Altitude Electrical Safety and Electromagnetic Environment National Observation and Research Station, Lhasa, China</i> ² <i>Fuzhou University, College of Electrical Engineering and Automation, Fuzhou, China</i>
28-2290	Study on the Properties of Multi-ion Magnetized Plasma Sheaths with Non-Maxwellian Electron Distribution	L. Chen ¹ , C. Tan ¹ , Z. Cui ¹ , P. Duan ¹ , J. Chen ¹ ¹ <i>Dalian Maritime University, College of Science, Dalian, China</i>
29-2217	Exploring Nitration Effects on Electroporation: Enhancing Cold Plasma Biomedicine	D. Abduvokhidov ^{1,2} , M. Niyozaliev ^{3,4} , Z. Chen ^{5,6} , J. Razzokov ^{7,8} ¹ <i>Institute of Fundamental and Applied Research, National Research University TIAME, Tashkent 100000, Uzbekistan</i> ² <i>Institute of Material Sciences, Academy of Sciences of Uzbekistan, Tashkent 100084, Uzbekistan</i> ³ <i>National University of Uzbekistan, Department of Physics, Tashkent 100174, Uzbekistan</i> ⁴ <i>Tashkent International University of Education, Department of Information Technologies, Tashkent 100207, Uzbekistan</i> ⁵ <i>Institute of Biomedical and Health Engineering, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, Shenzhen 518055, China</i> ⁶ <i>Center for Advanced Therapy, National Innovation Center for Advanced Medical Devices, Shenzhen, China</i> ⁷ <i>New Uzbekistan University, R&D Center, Tashkent 100000, Uzbekistan</i> ⁸ <i>Tashkent State Technical University, Department of Biomedical Engineering, Tashkent 100095, Uzbekistan</i>

30-83	Numerical studies of atmospheric pressure glow discharge controlled by a dielectric barrier between two coaxial electrodes	H. Zhang¹ , Y. Sun ¹ ¹ <i>Shenyang Pharmaceutical University, Faculty of Medical Instrument, Shenyang, China</i>
31-301	2D inductively coupled plasma discharge at different frequencies under air background	Y. Xue¹ , F. Lei ^{1,2} ¹ <i>Shaanxi University of Science and Technology, School of Electrical and Control Engineering, Xi'an, China</i> ² <i>Xidian University, School of Aerospace Science and Technology, Xi'an, China</i>
32-361	On the conditions of applicability of commonly used modification of a fluid model for glow discharge	A. Kudryavtsev¹ , I. Rafatov ^{1,2} , C. Yuan ¹ ¹ <i>Harbin Institute of Technology, Harbin, China</i> ² <i>Middle East Technical University, Ankara, Turkey</i>
33-552	A numerical method for calculating electron collision frequency in air plasma	Y. Bai¹ , X. Ge ¹ , D. Liu ¹ ¹ <i>Xidian University, measurement and control communication/instrument science and technology, Xi an, China</i>
34-639	Numerical simulation of the effect of Faraday cage on the discharge characteristics of Inductively Coupled Plasma	Z. Zhang¹ , F. Lei ¹ , X. Wei ² , X. Han ² , Y. Xue ¹ , H. Wu ¹ , Z. Liu ³ ¹ <i>Shaanxi University of Science and Technology, xi'an, China</i> ² <i>National Defense Key Laboratory of Aeronautical Plasma Dynamics, Air Force Engineering University, xi'an, China</i> ³ <i>China Academy of Aerospace Science and Innovation, Beijing, China</i>
35-708	Simulation study on the effect of electrode gap on the characteristics of surface dielectric barrier discharge	Y. Liang¹ , H. Jiang¹ , Y. Han ¹ , J. Tang ¹ ¹ <i>Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing, China</i>
36-728	Numerical studies of interaction between cold atmospheric plasma and complex dielectric surface	H. Shang¹ , W. Ning ¹ , X. Huang ¹ , J. Ren ¹ , Z. Wang ¹ , L. Zhao ¹ , S. Jia ¹ ¹ <i>Sichuan University, College of electrical engineering, Chengdu, China</i>
37-752	Simulation Study of Two Dimensional Glow Plasma Discharge Tube	H. Wu¹ , F. Lei ¹ , X. Wei ² , X. Han ² , Y. Xue ¹ , Z. Zhang ¹ ¹ <i>Shaanxi University of Science & Technology, School of Electrical and Control Engineering, Xi an, China</i> ² <i>National Defense Key Laboratory of Plasma Dynamics (Air Force Engineering University), Faculty of Aerospace Engineering, Xi an, China</i>
38-795	Simulation study on the collision process between glow discharge plasma and cathode electrode surface	H. Zhang¹ , J. Zhao¹ , H. Ru ¹ , Y. Liu ¹ , Y. Liu ¹ , X. Sun ¹ , X. Sun ¹ , Z. Chen ¹ ¹ <i>Xi an Jiaotong University, School of Electrical Engineering, Xi an, China</i>
39-1008	Hybrid Modelling of Vacuum Arc in Current Zero	R. Li¹ , Z. Wang ¹ , L. Sun ¹ , Y. Geng ¹ , J. Wang ¹ ¹ <i>Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China</i>
40-1076	Simulation study of the fueling pellet trajectory with the new rocket-effect model based on HPI2 code	D. Li¹ , J. Sun ¹ , J. Zhang ² ¹ <i>Dalian University of Technology, Key Laboratory of Materials Modification by Laser, Ion, and Electron Beams (Ministry of Education), School of Physics, Dalian 116024, China</i> ² <i>University of Science and Technology of China, Department of Plasma Physics and Fusion Engineering, Hefei 230026, China</i>
41-1099	Numerical simulation study on geometric resonance phenomena of sawtooth oscillation period and configuration in tokamak.	P. Zhang¹ ¹ <i>Anhui University, Hefei, China</i>
42-1144	Numerical study of atmospheric-pressure pulsed helium plasma jets propagating into different environments	Y. Wang¹ , J. Zhang ¹ , D. Zhang ¹ ¹ <i>Dalian University of Technology, School of Physics, Dalian, China</i>

43-1149	An Improved Gyrokinetic Model Structure-Preserving Algorithm for Magnetic Confinement Plasmas	R. Zhang ¹ , Z. Wang ¹ , J. Xiao ² , F. Wang ¹ ¹ Dalian University of Technology, Key Laboratory of Materials Modification by Laser, Ion, and Electron Beams (Ministry of Education), School of Physics, Dalian 116024, China ² University of Science and Technology of China, Department of Plasma Physics and Fusion Engineering, Hefei 230026, China
44-1261	The effects of bias voltage waveforms on self-bias in radio frequency capacitively coupled plasmas The effects of bias voltage waveforms on self-bias in radio frequency capacitively coupled plasmas	D. Kim ¹ , G.U. Baek ¹ , H.J. Lee ¹ ¹ Pusan National University, Electrical Engineering, Busan, Republic of Korea
45-1315		
46-1433	A 3D EM-PIC Code for the Multipactor Simulation	W. Cai ¹ , X. Jin ¹ , T. Huang ¹ ¹ University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, Chengdu, China
47-1454	Electrostatic PIC Simulation of the Non-uniform Grid of Curved Conformal Cut-cell	L. Li ¹ , X. Jin ¹ , T. Huang ¹ , S. Guo ¹ ¹ University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, Chengdu, China
48-1478	Numerical Simulation of Influence of Initial Target Temperature on Laser Ablation Propulsion Efficiency	Y. Wang ¹ , M. Iwasa ² , K. Takahashi ² , T. Sasaki ^{1,2} , T. Kikuchi ^{2,3} ¹ Nagaoka University of Technology, Department of Science of Technology Innovation, Nagaoka, Japan ² Nagaoka University of Technology, Department of Electrical, Electronics, and Information Engineering, Nagaoka, Japan ³ Nagaoka University of Technology, Department of Nuclear Technology, Nagaoka, Japan
49-1552	Investigation of Heating Mode Transitions and Neutral Species Transport in Low-Pressure CF ₄ Plasma through a PIC-MCC and DSMC Approach	X. Li ¹ , H. Wen ² , Q. Zhang ² , Y. Wang ² ¹ Dalian University of Technology, School of Integrated Circuits, Dalian, China ² Dalian University of Technology, School of Physics, Dalian, China
50-1560	Simulation and Research of the Micro-discharge in Vacuum Electronic Devices	X. Li ¹ , X. Jin ¹ , T. Huang ¹ ¹ University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, Chengdu, China
51-1597	Effects of silicon vapor on thermophysical properties of argon-hydrogen/nitrogen-hydrogen plasmas	C. Zhu ¹ , C. Wang ¹ , X. Chen ¹ , W. Xia ¹ ¹ University of Science and Technology of China, Department of Thermal Science and Energy Engineering, Hefei, China
52-1692	Numerical studies on the standing wave effect in capacitively coupled very high-frequency plasmas	Y.-M. Cui ¹ , Q.-Z. Zhang ¹ ¹ Dalian University of Technology, Dalian, China
53-1817	Numerical Investigation of Ion Loss Characteristics in the Discharge Chamber of an Ion Thruster	S. Guo ¹ , X. Jin ¹ , T. Huang ¹ , L. Li ¹ ¹ University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, Chengdu, China
54-1973	Numerical simulation on the propagating pattern of a streamer interacted with a cloud of positive ions in atmospheric pressure plasma jet	X. Liu ¹ , M. Chen ¹ , J. Chen ¹ , P. Jia ¹ , J. Ran ¹ , X. Li ¹ ¹ Hebei University, College of Physics Science and Technology, Baoding, China
55-2099	Degradation mechanisms of antibiotics from hospital wastewater treated with cold atmospheric plasma: Insights from atomistic simulations	O. Rajabov ¹ , Y.-M. Cui ² , Q.-Z. Zhang ² , M. Yusupov ^{1,3} ¹ Arifov Institute of Ion-Plasma and Laser Technologies, Academy of Sciences of Uzbekistan, Tashkent 100125, Uzbekistan ² Dalian University of Technology, Dalian 116024, China ³ University of Antwerp, Antwerp 2610, Belgium

56-2214	A code using Matlab to calculation and design tokamak equilibrium configuration	J. Kuang ¹ , J. Yang ¹ ¹ Anhui University, Institute of Physical Science and Information Technology, Hefei, China
57-2232	Analysis of pulsation characteristics of water discharge under long pulse	Z. Zhao ¹ , X. Li ¹ , M. Lan ¹ , P. Zheng ¹ , W. Zheng ¹ , Y. Song ¹ ¹ Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing, China
58-2272	1D3V electrostatic implicit particle simulation method in spherical axisymmetric geometry	M. Song ¹ , Z. Liu ¹ , W. Yang ¹ , Y. Dong ¹ , Q. Sun ¹ , Q. Zhou ¹ ¹ Institute of Applied Physics and Computational Mathematics, Beijing 100094, China
TA 2 Microwave Generation and Plasma Interactions		
59-358	Effects of a Central Cathode to the Performance of Magnetron with Diffraction Output	S.S. M. Chung ¹ , S.-C. Tuan ² ¹ National Penghu University of Science and Technology, Department of Electrical Engineering, Magong, Taiwan ² Asia Eastern University of Science and Technology, Department of Communication Engineering, Banciao, Taiwan
60-407	Design of a Relativistic Magnetron with Permanent Magnets by Three-dimensional Particle-in-cell Simulation	S. Ham ¹ , K. Lee ¹ , J.S. Choi ¹ ¹ Agency for Defense Development, Daejeon, Republic of Korea
61-730	Asymmetric mode competition in an X-band dual-mode relativistic backward wave oscillator operating at low magnetic field	K. Chen ¹ , R. Xiao ¹ ¹ Northwest Institute of Nuclear Technology, Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an, China
62-1411	An Efficient Coaxial Superradiant Cherenkov Oscillator with Front-extraction Structure Operating at Low Magnetic Field	J. Wang ¹ , T. Li ^{1,2} , R. Cheng ¹ , P. Wu ³ , R. Xiao ³ ¹ University of Electronic Science and Technology of China, Chengdu, China ² Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Huzhou, China ³ Key Laboratory of Advanced Science and Technology on High Power Microwave, Northwest Institute of Nuclear Technology, Xi'an, China
63-1731	A C-band Sheet Beam Staggered Double Grating Extended Interaction Oscillator	B. Ali ¹ , Y. Gong ² , S. Wang ² , J. Latif ¹ , M.K. Nadeem ¹ , A.N. Sanjrani ³ , A. Jameel ¹ , Y. Dong ² ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China ² University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, School of Electronic Science and Engineering, Chengdu, China ³ University of Electronic Science and Technology of China, School of Mechanical and Electrical Engineering, Chengdu, China
64-2001	Study of the coaxial segment adopted at the end of the overmoded millimeter-wave Cherenkov generator	D. Wang ^{1,2} , S. Wang ¹ , Y. Teng ¹ , S. Li ¹ ¹ Key Laboratory of Advanced Science and Technology on High Power Microwave, Northwest Institute of Nuclear Technology, Xi'an, China ² National University of Defense Technology, Changsha, China
65-2031	A Transmission Metasurface for Generating Zero-order Bessel Beam in S-band	J. Mu ¹ , C. Lyu ¹ , J. Hui ¹ , R. Bao ¹ , X. Chi ¹ , C. Liu ¹ ¹ Xi'an Jiaotong University, Key Laboratory of Physical Electronics and Devices, Ministry of Education, Faculty of Electronic and Information Engineering, Xi'an Jiaotong University, Xi'an, China

66-2123	High Efficiency Dual-Mode Relativistic Backward Wave Oscillator Packaged with Permanent Magnet	T.-Z. Miao ¹ , Y.-C. Shi ¹ , R.-Z. Xiao ¹ , K. Chen ¹ , D.-Y. Wang ¹ , K.-W. Luo ¹ , C. Li ¹ ¹ Northwest Institute of Nuclear Technology, xian, China
67-2256	Design and experiment of an improved beam steering slot-waveguide antenna	Y. Yang ¹ ¹ National University of Defense Technology, Academy for engineering & technology, Changsha, China
TA 3 Charged Particle Beams and Sources		
68-188	Experimental simulation study of rarefied high-speed gas flow based on Fast Neutral Beam source (FNB source)	Y. Zhang ^{1,3} , C. Yang ² , H. Wang ² , Y. Dong ² , X. Yao ² , P. Ee ³ ¹ Harbin Institute of Technology, School of Electrical Engineering and Automation, Harbin, China ² Beijing Orient Institute of Measurement and Test, Beijing, China ³ Harbin Institute of Technology, Laboratory for Space Environment and Physical Sciences, Harbin, China
69-410		
70-1187		
71-1421	A Plasma Window Pressure Valve for Heavy Particle Beam Transmission to High Pressurized Target Areas	A. Michel ¹ , F. Ghaznavi ¹ , A. Ates ¹ , M. Iberler ¹ , J. Jacoby ¹ ¹ Goethe-Universität Frankfurt, Plasma Physics / Institute of Applied Physics / Physics, Frankfurt am Main, Hesse, Germany
72-1459	Copper Film Deposition via Atmospheric Pressure Argon Plasma Jet	W. Zhou ¹ , Y. Zhou ¹ , T. Li ¹ , F. Liu ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
73-1531	Effect of temperature on the electrochemical properties of plasma-prepared rGO/NiO composites.	Y. Zhou ¹ , X. X. Yang ¹ , W. J. Xu ¹ , F. Liu ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
74-2265	Terahertz Space-Charge Oscillation Induced by Hot Electrons between AC Biased electrodes	Z.C. Hu ¹ , J.K. Lan ¹ , Y.B. Zhu ¹ ¹ South China University of Technology, School of Microelectronics, Guangzhou, China
75-2268	Impact of Particle Collision Effects and Maxwellian Injection on the Performance of Vacuum Diodes	J.K. Lan ¹ , Z.C. Hu ¹ , Y.B. Zhu ¹ ¹ South China University of Technology, School of Microelectron, Guangzhou, China
TA 4 High Energy Density Plasmas and Applications		
76-1179	Simulation optimization of laser plasma wakefield acceleration with external injection	J. Zhong ¹ , J. Guan ¹ , L. Liu ¹ , Z. Dai ¹ , Z. Liu ¹ , J. Wang ¹ , Y. Nie ¹ ¹ Wuhan University, The Institute for Advanced Studies, Wuhan, 430074, China
77-226	Research on conformal waveguide slot array antenna with choke structure	Y. Liao ¹ ¹ Institute of Applied Electronics, CAEP, Institute of Applied Electronics, Mingyang, China
78-1013	Measurement Method for High-Energy Gamma Radiation Based on Copper Activation	M.-Z. Yang ¹ ¹ Xi'an Jiaotong University, School of Physics, Xi'an, China

79-1276	A 252-Element Radial Line Helical Subarray with High Aperture Efficiency and High Power-Handling Capacity	T. Ni¹, B. Wang¹ , M. Wang ¹ , P. Wu ¹ , X. Wang ¹ , Q. Liu ¹ ¹ <i>southwest jiaotong university, school of physical science and technology, Chengdu, China</i>
80-1717	Three-dimensional nanoscale bunching formation of relativistic electron beam in plasma wakefield	X. Wang¹ , H. Peng ¹ , T. Huang ¹ , L. Cao ¹ ¹ <i>shenzhen technology university, shenzhen, China</i>
81-2334	Efficient generation of intense spatial and spatiotemporal vortex harmonics using plasma mirrors	Y. Wu^{1,2} ¹ <i>Shanghai Jiao Tong University, Tsung-Dao Lee Institute, Shanghai, China</i> ² <i>University of California Los Angeles, Electrical and Computer Engineering Department, Los Angeles, California, United States of America</i>
82-2335	Efficient generation and amplification of intense vortex and vector laser pulses via strongly coupled stimulated Brillouin scattering in plasmas	Y. Wu^{1,2} ¹ <i>Shanghai Jiao Tong University, Tsung-Dao Lee Institute, Shanghai, China</i> ² <i>University of California Los Angeles, Electrical and Computer Engineering Department, Los Angeles, California, United States of America</i>
TA 5 Industrial, Commercial and Medical Plasma Applications		
83-233	Application of plasma-catalysis synergistic utilization for methane decomposition into hydrogen	Y. Miao^{1,2} , Y. Gao ^{1,2} , Y. Chen ¹ ¹ <i>East China University of Science and Technology, School of Resources and Environmental Engineering, Shanghai, China</i> ² <i>Engineering Research Center of Resource Utilization of Carbon-containing Waste with Carbon Neutrality, Ministry of Education, Shanghai, China</i>
84-375	Nanosecond pulsed atmospheric pressure plasma jet and its application in liquids treatment	S. Shen¹ , W. Ning ¹ , S. Jia ¹ ¹ <i>Sichuan University, College of electrical engineering, Chengdu, China</i>
85-577	Impact of Water Content on the Combustion Characteristics of Coal Assisted by DBD Plasma with Central Electrode Structure	P. Li ¹ , Y. X. Cheng¹ , Y. H. Song ¹ , L. S. Chen ² , Q. Z. Chen ^{1,2} ¹ <i>Anhui University of Science and Technology, School of Electrical and Information Engineering, Huainan, China</i> ² <i>Anhui University of Technology, School of Electrical and Information Engineering, Ma'anshan, China</i>
86-608	Study on Discharge Characteristics of Nonequilibrium Plasma and Parameter Optimization for Gold Grating Cleaning	X. Liu¹ , Q. Bai ¹ , T. Wang ¹ , X. Xu ¹ , F. Wang ¹ , Y. Li ² ¹ <i>Harbin Institute of technology, School of Mechatronics Engineering, Harbin, China</i> ² <i>China Academy of Engineering Physics, Research Center of Laser Fusion, Mianyang, China</i>
87-763	Numerical simulation of the interaction characteristics between atmospheric pressure plasma jet and tilted dielectric surface	H. Zhao¹ , L. Wang ¹ , J. Liu ¹ ¹ <i>Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China</i>
88-831	A composite enhanced fog water collection method combining plasma and asymmetric wetting microstructure	D. Li¹ , C. Li ¹ ¹ <i>Huazhong University of Science and Technology, State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Wuhan, China</i>
89-911	Research on the characteristics of cathode spots and plasmas in vacuum arc with long gap distance	L. Liu¹ , S. Liu ¹ , Z. Yuan ¹ , L. Chen ¹ , L. Li ¹ , Y. Pan ¹ ¹ <i>Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China</i>

90-266	A Compact Relativistic Traveling Wave Oscillator with a Permanent Magnet	D. Yang ¹ , C. Chen ¹ , W. Tan ¹ , X. Li ¹ , L. Huang ¹ , Y. Shi ¹ , Y. Teng ¹ , J. Sun ¹ ¹ Northwest Institute of Nuclear Technology, Xi'an, China
91-1170	PLASMA EVOLUTION OF GAS BREAKDOWN IN A METAL-INSULATOR-METAL GAP	W. Zhong ¹ , Y. Shi ¹ , A. Xu ¹ ¹ China Academy of Engineering Physics, Institute of Electrical Engineering, Mianyang, China
92-1182	Deposition of CrxOy film on the inner surface of slender tube to improve the corrosion resistance under atmospheric pressure	S. Xue ¹ , R. Wang ¹ ¹ Beijing University of Chemical Technology, College of Mechanical and Electrical Engineering, Beijing, China
93-1205	Experimental Study on Degradation of SF6 Exhaust Gas by TiO2@SiO2 Filled Dielectric Barrier Discharge	Y. Li ¹ , K. Wan ¹ , Z. Yang ¹ , H. Tan ¹ , L. Yu ¹ , X. Zhang ¹ ¹ Hubei University of Technology, Hubei Engineering Research Center for Safety Monitoring of New Energy and Power Grid Equipment, Wuhan, China
94-1217	Removal and Surface Effects of Atmospheric Pressure Plasma Jet on Organic Pollutants in Gratings	X. Xu ¹ , Q. Bai ¹ , X. Liu ¹ , T. Wang ¹ , F. Wang ¹ , Y. Li ² ¹ Harbin Institute of Technology, School of Mechatronics Engineering, Harbin, China ² China Academy of Engineering Physics, Research Center of Laser Fusion, Mianyang, China
95-1306	High-performance electromagnetic absorption achieved with pouch-like reduced graphene oxide material through radio frequency plasma treatment	X. LEI ¹ , H. Cheng ¹ , W. Zhang ¹ ¹ Nanjing University of science and technology, School of Chemistry and Chemical Engineering, Nanjing, China
96-1654	Experimental and Numerical Studies on the Ionic Wind Generation in Dielectric Barrier Discharges and Corona Discharge	B. Yin ¹ , Y. Zhu ² , Y. Wu ¹ ¹ Xi'an Jiaotong University, Department of Mechanical Engineering, Xi'an, China ² Xi'an Jiaotong University, Department of Electrical Engineering, Xi'an, China
97-1666	A flexible temperature and humidity sensor based on plasma modified graphene oxide	W. Xia ^{1,2} , J. Wu ^{1,2} , B. He ^{1,2} , G. Xu ^{1,2} , Y. Xing ^{1,2} ¹ Hebei University of Technology, School of Electrical Engineering, Tianjin, China ² Hebei University of Technology, State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Tianjin, China
98-1910	One-step Direct Ammonia Synthesis by Pulse-modulated Microwave Plasma at Atmospheric Pressure	W. Wang ¹ ¹ Dalian University of Technology, School of Physics, Dalian, China
99-1998	Modeling plasma mode transitions from glow mode to hollow in a supersonic expansion plasma with second anode	Y. Gu ^{1,2} , N. Suas-David ² , H. Wang ¹ , J. Bouwman ² , L. Harold ² , Y. Li ¹ ¹ Xi'an Jiaotong University, Key Laboratory for Physical Electronics and Devices of the Ministry of Education, School of Electronic Science and Engineering, Xi'an, China ² Leiden University, Leiden, Netherlands
100-2165	Impact of Cold Atmospheric Pressure Plasma Treatment on Wheat Flour: A Physicochemical and Functional Analysis	S. Jangra ¹ , R. Mishra ² , R. Prakash ^{1,2} ¹ Indian Institute of Technology Jodhpur, Department of Physics, Jodhpur, India ² Indian Institute of Technology, Jodhpur, Interdisciplinary Research Division-Smart Healthcare, Jodhpur, India
101-2174	Plasma-Engraved IrOx@Ni(OH)2 porous nanosheet with ultralow Ir loading as an efficient and durable catalyst for hydrogen evolution reaction	X. Ma ¹ , J. Huang ¹ , J. Zhang ¹ , X. Liu ¹ , Y. He ¹ , L. Huang ¹ , Y. Xin ¹ ¹ Soochow University, school of physical science and technology, Soochow, China
102-2184	Microplasma transistor gate modulation and switching characteristics triggered by pulse voltage	L. Chen ^{1,2} , X. Li ^{1,2} , Y. Wang ^{1,2} , X. Zhang ^{1,2} ¹ Xi'an Jiaotong University, School of Electronic Science and Engineering, Xi'an, China ² Xi'an Jiaotong University, Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an, China

103-2248	Streamer, glow, arc and spark mode of atmospheric pressure pin-pin discharge	H. Yuan ¹ , Y. Li ¹ , J. Zhang ¹ , D.-Z. Yang ¹ ¹ <i>Dalian University of Technology, Key Laboratory of Materials Modification by Laser, Ion and Electron Beams (Ministry of Education), Dalian 116024, China</i>
104-2255	Plasma Enhanced Chemical Vapor Deposition Treatment Improves the Surface Flashover Performance of Epoxy Resin	Y. Mi ¹ , C. Liu ¹ , Y. Chen ¹ , Y. Peng ¹ , L. Deng ¹ ¹ <i>Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing, China</i>
105-2282	Characterization of flow-induced turbulence in a cold micro-plasma jet	D. Behmani ¹ , S. Bhattacharjee ¹ ¹ <i>Indian Institute of Technology, Kanpur, Department of Physics, Kanpur, India</i>
106-420	Enhancing Diagnostic Accuracy in Plasma Applications: Overcoming Data Imbalance and Uncertainty with Advanced Machine Learning Techniques	N.S. Ali ^{2,1} , H.Z. Huang ^{2,1} , B. Ali ³ , M.U. Bashir ¹ , S.A. Shah ⁴ ¹ <i>University of Electronic Science and Technology of China, School of Mechanical and Electrical Engineering,, Chengdu, China</i> ² <i>University of Electronic Science and Technology of China, Center for System Reliability and Safety, Chengdu, China</i> ³ <i>University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China</i> ⁴ <i>MUET SZAB campus Khairpur Mir's, Sindh, Pakistan, Department of Mechanical Engineering, Khairpur Mir's, Pakistan</i>
107-492	Density Measurement of Lithium Vapor of Nanoparticles Precursors in Multiphase AC Arc with Consideration of Lithium Self-Absorption	A. Ichini ¹ , R. Sogo ¹ , M. Tanaka ^{1,2} , T. Watanabe ^{1,2} , T. Okuma ^{2,3} , H. Nagai ³ , H. Maruyama ³ ¹ <i>Kyushu university, Department of Chemical Engineering, Fukuoka, Japan</i> ² <i>Kyushu university, Center Plasma Nano-interface Engineering, Fukuoka, Japan</i> ³ <i>Panasonic group, Osaka, Japan</i>
108-841	Fluctuation Analysis of Multiphase AC Arc for Large Area Processing by Planar Thermal Plasma Jet	Y. Sogo ¹ , R. Takenaka ¹ , M. Tanaka ¹ , T. Watanabe ¹ , M. Shigeta ² ¹ <i>Kyushu university, Department of Chemical Engineering, Fukuoka, Japan</i> ² <i>Tohoku university, Department of Mechanical and Aerospace Engineering, Miyagi, Japan</i>
109-864	Synthesis of Tungsten-Tantalum Alloy Nanoparticles by Induction Thermal Plasma	M. Hirose ¹ , K. Yamashita ¹ , J. Matsuno ¹ , M. Tanaka ¹ , T. Watanabe ¹ ¹ <i>Kyushu university, Department of Chemical Engineering, Fukuoka, Japan</i>
110-1095		
111-1118	Experimental Study of the Discharge Characteristics of a Stepped-Nozzle Arc Plasma Torch	K. Li ¹ , C. Wang ^{1,2} , W. Xia ¹ ¹ <i>University of Science and Technology of China, Department of Thermal Science and Energy Engineering, Hefei 230026, China</i> ² <i>Hefei Carbon Art Technology Co., Ltd, Hefei 230031, China</i>
112-1161	Synthesis of transition metal nitride nanoparticles by DC arc based on the nitridation mechanism	H. Nogami ¹ , M. Hirose ¹ , Y. Takemoto ¹ , J. Matsuno ¹ , M. Tanaka ¹ , T. Watanabe ¹ ¹ <i>Kyushu university, Department of Chemical Engineering, Fukuoka, Japan</i>
113-1240	Numerical simulation and experimental study on the influence of RF frequency on characteristics in inductively coupled plasma	X. Jin ^{1,2} , P. Zhao ¹ , J. Li ¹ , L. Li ¹ , C. Liu ³ , C. Geng ¹ , Q. Lin ³ , L. Hu ¹ ¹ <i>Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei, China</i> ² <i>University of Science and Technology of China, Hefei, China</i> ³ <i>Institute of Energy of Hefei Comprehensive National Science Center, Hefei, China</i>

114-1520	Research on the Structure Effect Relationship Model of Gas Insulation Strength Based on Reverse Taylor and Molecular Electrostatic Potential Parameters	T. You ¹ , W. Zhou ¹ , H. Li ¹ ¹ Wuhan University, School of Electrical Engineering and Automation, Wuhan, China
115-1526	Preparation of high thermal conductivity epoxy resin/boron nitride composite thin films using low-temperature plasma.	W. C. Yu ¹ , C. X. Fei ¹ , Z. Wu ¹ , Y. Zhu ¹ , F. Liu ¹ , J. L. Huang ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
116-2346	Modeling the evaporation of composite Si/Ge/C electrodes in a microarc in problems of nanostructure synthesis	A. I. Saifutdinov ¹ ¹ Kazan National Research Technical University named after A. N. Tupolev, Kazan, Russian Federation
TA 6 Plasma Diagnostics		
117-224	Estimation of low-temperature plasma density by the oes method in a beam-plasma discharge	I. Sokolov ^{1,2} , B. Chektybaev ¹ , T. Tulenbergenov ^{1,2} , S. Zhunisbek ¹ ¹ Institute of Atomic Energy NNC RK, laboratory of tests fusion materials, Kurchatov, Kazakhstan ² Shakarim University, Faculty of Engineering and Technology, Semey, Kazakhstan
118-467		
119-480		
120-584	High Precision Microwave Diagnosis of Plasma Based on Reflection and Transmission Combination	C. Zhao ¹ , J. Gao ¹ , X. Li ¹ , Y. Liu ¹ ¹ Xidian University, School of Aerospace Science and Technology, Xi'an, China
121-702	Characteristics of atmospheric pressure pulse-modulated AC argon plasma jet under fixed discharge power: effect of voltage, frequency, and duty cycle	X.-F. Zhou ¹ , H.-T. Xia ¹ , H.-F. Xiang ¹ , K. Liu ¹ ¹ Chongqing University, School of Electrical Engineering, Chongqing, China
122-765	A diagnosing method for the output of a magnetron through pulse measurement	K. Kim ¹ , J. Kim ¹ , J. Choi ¹ ¹ Agency for Defense Development, Microwaves, Daejeon, Republic of Korea
123-908	Portable x-pinch driver development for dense plasma measurements	Y. Yao ¹ , J. Struska ¹ , S. Bland ¹ ¹ Imperial College, Plasma Physics Department, London, United Kingdom
124-1106	The motional Stark effect polarimeter in the HL-3 tokamak	W. J. Chen ¹ , X. X. He ¹ , Y. L. Wei ¹ ¹ Southwestern Institute of Physics, Chengdu, China
125-1538	Polarization interferometer system based on terahertz solid state source on KTX experiment	X. K. Wang ¹ , W. Z. Mao ¹ , J. L. Xie ¹ , T. Lan ¹ , H. Li ¹ , A. D. Liu ¹ , C. Zhou ¹ , G. Zhuang ¹ , W. X. Ding ¹ , W. D. Liu ¹ ¹ University of Science and Technology of China, School of Nuclear Science and Technology, Hefei, China
126-1551	Corona discharge detection using fluorescent fiber inside various insulating gases and selection of key indicators for fault severity diagnosis	H. Cheng ¹ , Z. Fang ¹ ¹ Nanjing Tech University, Nanjing, China
127-1553	Study on transient electrical behavior for low-pressure discharge of coaxial resonator	Y. Peng ¹ , J. Xu ¹ , M. Zeng ¹ , Y. He ¹ ¹ Xi'an Jiaotong University, Shaanxi, Xi'an, China
128-1575	Refraction Study in Microwave Transmission Diagnostics of Electron Density Distribution	Q. Wei ¹ , Y. Liu ¹ , C. Zhao ¹ , J. Gao ¹ , C. Sun ¹ ¹ Xidian University, Key Laboratory of Information and Structure Efficiency in Extreme Environment, the Ministry of Education of China, and the School of Aerospace Science and Technology, Shaanxi, Xi'an, China

129-1815	Research on eliminating overlapping effect of X-ray detection in runaway electron energy distribution function diagnosis	S. Zhao ^{1,2} , B. Huang ¹ , C. Zhang ¹ , T. Shao ¹ ¹ Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China ² University of Chinese Academy of Sciences, Beijing, China
130-2194	Influence of ambient relative humidity and filth degree on electric field distribution of zero resistance insulators	X. Xia ¹ ¹ China Three Gorges University, Yichang, China
131-2198	Study on Infrared Imaging Characteristics of Insulator Strings Containing a Zero-Value Insulator Based on Experiment	W. Peng ¹ , G. Lu ² , Y. Feng ² , C. Fang ¹ , T. Xue ¹ , Y. Chen ³ , W. Shen ¹ ¹ China Three Gorges University, College of Electrical Engineering and New Energy, Yichang, China ² State Grid Corporation of China, State Grid Hainan Electric Power Company, Hainan, China ³ State Grid Corporation of China, State Grid Qinghai Electric Power Company Electric Power Research Institute, Xining, China
132-2238	Optical-Electrical characteristics of CF ₃ SO ₂ F/N ₂ mixed gas under AC corona discharge	J. Duan ¹ , H. Yuan ² , S. Lu ¹ , Z. Qiu ¹ , G. Zhang ¹ , D. Han ¹ ¹ Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China ² North University of China, School of Electrical and Control Engineering, Taiyuan, China
TA 7 Pulsed Power and Other Plasma Applications		
133-276	Experimental investigation on the diameter of positive streamer stem in long air gap discharges under low air pressure conditions	S. Zhang ¹ , C. Liu ¹ , Y. Huang ¹ , W. Zhang ¹ , S. Xie ¹ , H. He ¹ ¹ Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China
134-297	Preliminary investigation on the optical emission spectrum characteristics of positive leaders in long air gaps	W. Zhang ¹ , Y. Chen ¹ , Y. Huang ¹ , S. Zhang ¹ , H. He ¹ ¹ Huazhong University of Science and Technology, School of Electrical Engineering, Wuhan, China
135-306	Simulation of SF ₆ /N ₂ gas mixture superheat and molecular dynamics study	C. Luo ¹ , W. Yang ^{2,3} , X. Huang ¹ , Z. He ^{2,3} , C. Li ¹ , Y. Luo ^{2,3} , C. Chen ¹ , R. Zhuo ^{2,3} , J. Tan ¹ ¹ Nanning Power Supply Bureau, Guangxi Power Grid Co., Ltd, Nanning, China ² CSG Electric Power Research Institute Co., Ltd, Guangzhou, China ³ United Laboratory of Advanced Electrical Materials and Equipment Support Technology, CSG, Guangzhou, China
136-322	Optical emission spectrum-based estimation of electric field within the ionization layer of positive glow corona Optical emission spectrum-based estimation of electric field within the ionization layer of positive glow corona	Y. Chen ¹ , W. Zhang ¹ , S. Chen ¹ , S. Zhang ¹ , S. Xie ¹ , H. He ¹ ¹ Huazhong University of Science and Technology, School of Electrical Engineering, Wuhan, China
137-377	Flashover evolution characteristics of GFRP under nanosecond pulses in SF ₆	C. Sun ^{1,2} , K. Mei ² , L. Xie ² , H. Wang ² , S. Ji ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China ² Northwest Institute of Nuclear Technology, Xi'an, China

138-770	Molecular mechanism in aging of BOPP films induced under electro-thermal coupling field	<p>C. Zhang¹, H. Huang¹, H. Sun^{1,2}, Z. Xing³, T. Shao^{1,2}</p> <p>¹ Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Beijing, China</p> <p>² University of Chinese Academy of Sciences, Beijing, China</p> <p>³ State Grid Smart Grid Research Institute co., Ltd., State Key Laboratory of Advanced Power Transmission Technology, Beijing, China</p>
139-851	Theoretical Design and Simulation of Electromagnetic Coil for Pulsed Power Generator	<p>M. Gao¹, J. Su¹, X. Qiu^{1,2}, R. Li¹, H. Zhang¹, W. Shang^{1,2}, S. Shao¹, L. Zhao¹, Y. Wu^{3,1}</p> <p>¹ Northwest Institute of Nuclear Technology, Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an, China</p> <p>² Xi'an Jiaotong University, Key Laboratory of Physical Electronics and Devices, Ministry of Education, Faculty of Electronic and Information Engineering, Xi'an, China</p> <p>³ Tsinghua University, Department of Engineering Physics, Beijing, China</p>
140-1041	Effect of high frequency voltages on the trap distribution parameters of Nomex paper	<p>X. Li¹</p> <p>¹ Lanzhou University of Technology, College of Electrical and Information Engineering, Lanzhou, China</p>
141-1218	The effects of field-enhancement factor on the nanosecond pulsed breakdown of nitrogen spark switch at atmospheric pressure with 3D PIC-MCC model	<p>Y. Wang¹, J. Li¹, C. Li¹, Y. Gong¹, Q. Li¹, Q. Huang¹, F. Wu¹, S. Li¹, H. Shi¹</p> <p>¹ Xi'an Jiaotong University, State Key Laboratory of Electric Insulation and Power Equipment, Shaanxi, Xi'an, China</p>
142-1233	Research on degradation of organic wastewater by pulse discharge plasma combined with permanent magnets	<p>Z. Li¹, T. Kiyan¹</p> <p>¹ Kindai University, Graduate School of Humanity-Oriented Science and Engineering, Iizuka, Japan</p>
143-1319	Discharge Characteristics of Conductor-plane Air Gap Under Vegetation Fire	<p>S. Zhou¹, D. Huang¹, H. Wang¹, T. Peng¹, Z. Rao², E. Zhou²</p> <p>¹ Wuhan University, School of Electrical Engineering and Automation, wuhan, China</p> <p>² Guangdong Power Grid Co., Ltd., Electric Power Research Institute, Guangzhou, China</p>
144-1322	Analysis of the development process of typical rod-plane gap streamer-leader system in high altitude area	<p>P. Wang¹, W. Ma¹, J. Geng¹, H. Zhang¹, Y. Liu¹</p> <p>¹ North China Electric Power University, Baoding, China</p>
145-1409	Numerical simulation of transient pressure characteristics of arc discharge in water	<p>E. Zhang¹, Z. Wang¹, Z. Wang¹, J. Wang¹, G. Li¹</p> <p>¹ Dalian University of Technology, School of Electrical Engineering, Dalian, China</p>
146-1413	Development characteristics of plasma channel for rock breaking by pulsed discharge	<p>H. Liao¹, Y. Liu¹, L. Li¹, Y. Zhao¹, T. Wang¹, F. Lin¹</p> <p>¹ Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, 430074, China</p>
147-1539	Research on the Surface Flashover Characteristics of Ceramic with Irregular Base in Electron Guns	<p>D. Zhang^{2,3}, Z. Guo^{2,3}, Z. Jia^{2,3}, K. Cao¹, B. Song¹, G. Zhang¹</p> <p>¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China</p> <p>² Research Institute of Physics and Chemistry Engineering of Nuclear Industry, National Key Laboratory of Particle Transport and Separation Technology, Tianjin, China</p> <p>³ Research Institute of Physics and Chemistry Engineering of Nuclear Industry, Tianjin, China</p>
148-1542	Streamer discharge characteristics of large-sized shield ball with burr defects at different altitudes	<p>J. Geng¹, H. Zhang¹, P. Wang¹, W. Ma¹, Y. Cheng¹, G. Lin¹, T. Li¹, Y. Liu¹</p> <p>¹ North China Electric Power University, Baoding, China</p>

149-1559	Study on Flashover Characteristics of Multilayer-Film Compacted Insulator Subjected to Pulse Voltage	W. Yan ¹ , J. Su ¹ , R. Li ¹ , X. Qiu ^{1,2} ¹ Northwest Institute of Nuclear Technology, Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an, China ² Xi'an Jiaotong University, Key Laboratory of Physical Electronics and Devices, Ministry of Education, Xi'an, China
150-1612	The influence of humidity on surface charge accumulation under negative discharge: a numerical study	Y. Luo ¹ , C. Zhang ¹ , W. Yuan ¹ , B. Huang ¹ , T. Shao ¹ ¹ Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
151-1696	Secondary electron yield of Si-Al ₂ O ₃ double layer with first principle combined Monte Carlo method	J. Zhang ¹ , Y. Niu ¹ , R. Zhang ¹ , J. Zhang ¹ ¹ Xi'an University of technology, School of Electrical Engineering, Xi'an, China
152-1705	Research on modeling and simulation of arc characteristics with very large length-diameter ratio	L. Zhao ¹ , Y. Yang ¹ , X. Huang ¹ , S. Zhao ¹ , J. Song ¹ , S. Jia ¹ ¹ Sichuan University, Electrical Engineering/Automation Academy, Chendu, China
153-1715	The Analysis of the Impact Factors on the Interaction Mechanism between Lightning Arc and CFRP Structure with Fastener Under Lightning Strike Conditions	Y. Guo ¹ , J. Sun ¹ , Y. Wu ¹ , X. Ai ² , X. Yao ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China ² Beijing Hua Tian, Mechanical-Electrical Institute CO., Ltd., Beijing, China
154-1838	Analysis of the influence of voltage reverse peak on the life of all-film pulsed capacitor	Y. Huang ^{1,2} , L. Wang ² , L. Chen ² , R. Wang ^{1,2} , M. He ³ , J. Yuan ² , W. Xie ² , Q. Huang ¹ , D. Zhang ¹ ¹ DaLian University of Technology, college of Electrical Engineering, DaLian, China ² Chinese Academy of Engineering Physics, Institute of Fluid Physics, Mianyang, China ³ Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China
155-1854	Surge protective device failure caused by triggered lightning continuing current and M component	S. D. Chen ¹ , X. Yan ¹ , L. W. Chen ¹ , G. Yang ¹ ¹ The Institute of Tropical and Marine Meteorology, China Meteorological Administration, Guangzhou, China
156-1891	Plasma-electrified Repair of Silicone Rubber Insulation for High Voltage Electric Power Equipment	C. Ren ^{1,2} , Y. Chen ^{1,2} , H. Wang ^{1,2} , X. Cao ¹ , S. Chen ^{1,2} , X. Zeng ^{1,2} ¹ Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China ² University of Chinese Academy of Sciences, Beijing, China
157-1982	Improving flashover strength by constructing microporous structure	L. Luo ¹ , M. Li ¹ , J. Li ¹ , X. Xu ¹ , J. Ren ¹ , M. Zhu ¹ ¹ China University of Petroleum (East China), College of New Energy, Qingdao, China
158-2100	The breakdown Characteristics of 500kV AC Capacitor Towers	X. Yao ¹ , Y. Su ¹ , B. Yang ¹ , X. Ma ¹ ¹ China Electric Power Research Institute, Beijing, Germany
159-2102	Research on Low Frequency Voltage discharge Characteristics of Typical Air Gap	X. Yao ¹ , Y. Su ¹ , B. Yang ¹ , X. Ma ¹ , Y. Lin ¹ , D. Liu ¹ , M. Hu ¹ ¹ China Electric Power Research Institute, Beijing, China
160-2215	Experimental Study on Insulation Characteristics of Insulated Wires-Rod Gaps	Z. Zheng ¹ , S. Huang ¹ , N. Xiang ¹ , P. Tian ¹ , D. Li ⁵ ¹ Hefei University of Technology, School of Electrical Engineering and Automation, Hefei 230009, China ² North China Electric Power University, State Key Laboratory of Alternate Electrical Power System with Renewable Energy Sources, Beijing 102206, China
161-2227	Dynamic surface charge on polymers under power-frequency voltage and the effect of fluorocarbon plasma surface modification on surface charge	W. Guo ¹ , B. Zhang ¹ , W. Han ¹ , G. Zhang ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Shaanxi, Xi'an, China

TA 8 Terahertz Sources, Radiation and Applications		
162-43	Detection of two pathogenic bacteria using THz plasma metasurface based on dipole coupling	Z. Ma ^{1,2} , Y. Jiao ^{1,2} , Q. Jia ¹ , Z. Zhang ² , R. Wang ² , X. Du ¹ ¹ First Medical Center, Chinese PLA General Hospital, Beijing, China ² Innovation Laboratory of Terahertz Biophysics, National Innovation Institute of Defense Technology, Beijing, China
163-69	Terahertz waves enhance telomerase activity and prolong cellular telomere length.	J. Yin ¹ , Z. Zhang ¹ , Z. Song ¹ ¹ Innovation Laboratory of Terahertz Biophysics, National Innovation Institute of Defense Technology, Beijing, China
164-653	The Synaptic Transmission of Primary Hippocampal Neurons was Enhanced after Terahertz Waves Exposure	L. Song ¹ , Z. He ¹ , J. Pan ¹ , J. Dong ¹ , H. Wang ¹ , J. Zhang ¹ , B. Yao ¹ , X. Xu ¹ , H. Wang ¹ , L. Zhao ¹ , R. Peng ¹ ¹ Beijing Institute of Radiation Medicine, Beijing, China
165-1882	Molecular Dynamics Study on Terahertz Electroporation of Skin Stratum Corneum Lipid Bilayer for Drug Delivery	Z. Tang ² , X. Liu ¹ , J. Qu ¹ , Y. Sun ¹ ¹ Shenzhen University, College of Physics and Optoelectronics Engineering, Shenzhen, China ² Shenzhen University, School of Medicine, Shenzhen, China
166-2197	An All-Dielectric Metasurface Sensor Based on Bound States In the Continuum	W. Chen ¹ , Y. Wang ¹ , X. Zhang ¹ , Z. Cui ¹ ¹ Xi'an University of technology, Key Laboratory of Ultrafast Photoelectric Technology and Terahertz Science in Shaanxi, Xi'an, China
167-7	Study of an W-band Extended Interaction Amplifier Using Interlaced Staggered Resonant Cavities	B. Quan ¹ , J. Xiao ¹ , Y. Yang ¹ , S. Wang ¹ , Y. Gong ¹ ¹ University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronic, Chengdu, China
168-230	Research into high-efficiency G-band folded waveguide travelling wave tubes based on phase velocity jump technology	J. Xiao ¹ , B. Quan ¹ , S. Wang ¹ , Y. Gong ¹ ¹ University of Electronic Science and Technology of China, Chengdu, China
169-434	A Novel Method of Field Analysis for Staggered Double Vane Structure	H. Tian ¹ , N. Shi ¹ , P. Pan ¹ , J. Cai ¹ , Y. Gong ² ¹ Beijing Vacuum Electronics Research Institute, National Key Laboratory of Science and Technology on Vacuum Electronics, Beijing, China ² University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, Chengdu, China
170-605	Design and preliminary experimental results of a Quasi-Optical Mode Converter embedded in a gyrotron for ECRH	Q. Huang ¹ , L. Hu ¹ , D. Sun ¹ , P. Hu ¹ , T. Zhuo ¹ , Y. Jiang ¹ , G. Ma ¹ , X. Jin ¹ ¹ China Academy of Engineering Physics, Institute of Applied Electronics, Mianyang, China
171-629	The study of lateral radiation of metal surface plasmon polaritons excited by free electrons.	Y. Dong ¹ , P. Zhang ¹ , S. Yang ¹ , Y. Zhen ¹ , S. Wang ¹ , Y. Gong ¹ ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China
172-1056	Research into high-efficiency G-band folded waveguide travelling wave tubes based on phase velocity jump technology	J. Xiao ¹ , B. Quan ¹ , S. Wang ¹ , Y. Gong ¹ ¹ University of Electronic Science and Technology of China, Chengdu, China
173-1111	Dual-Beam Sheet Beam Electron Gun for 0.22 THz Traveling Wave Tubes	X. Gui ¹ , Z. Lu ^{1,2} , P. Gao ³ , J. Duan ¹ , Z. Chang ¹ , Z. Zheng ¹ , H. Gong ¹ , Y. Gong ¹ ¹ University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, School of Electronic Science and Engineering, Chengdu, China ² Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Huzhou, China

		³ University of Electronic Science and Technology of China, School of Resources and Environmental Engineering, Chengdu, China
174-1186	design of a G-Band klystron based on kladistron principle	Z. Zheng ^{1,2} , Z. Lu ^{1,2} , P. Gao ^{1,3} , J. Duan ² , X. Gui ² , Z. Chang ² , H. Gong ² , Y. Gong ² ¹ University of Electronic Science and Technology of China, Yangtze Delta Region Institute(Huzhou), Huzhou, China ² University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China ³ University of Electronic Science and Technology of China, School of Resources and Environmental Engineering, Chengdu, China
175-1377	A novel hybrid dispersion slow-wave circuit for 0.2THz travelingwave tube	Z. Chang ^{1,2} , Z. Lu ^{1,2} , P. Gao ^{1,3} , X. Gui ² , J. Duan ² , Z. Zheng ² , S. Wang ² , H. Gong ² , Y. Gong ² ¹ Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Huzhou Key Laboratory of Terahertz Integrated Circuits and Systems, Yangtze Delta Region Institute (Huzhou), Huzhou, China ² University of Electronics Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China ³ University of Electronic Science and Technology of China, School of Resources and Environmental Engineering, Chengdu, China
176-1444	Design of a PCM Focusing Structure for a 220 GHz Sheet Beam Traveling Wave Tube	H. Pan ¹ , G. Shu ¹ , X. Xie ¹ , S. Ma ¹ , S. Liu ¹ , J. Tang ¹ , M. Li ¹ ¹ ShenZhen University, State Key Laboratory of Radio Frequency Heterogeneous Integration (Shenzhen University), College of Electronics and Information Engineering, Institute of Microelectronic of Shenzhen University, Shenzhen, China
177-1502	Investigation of Low Loss and Broadband Window for 0.34THz Traveling Wave Tube	L. Zhang ¹ , C. D. Gao ¹ , N. Y. Li ¹ , X. K. Ma ¹ , J. Cai ¹ , J. J. Feng ¹ ¹ Beijing Vacuum Electronics Research Institute, National Key Laboratory of Science and Technology on Vacuum Electronics, Beijing, China
178-1511	Theoretical Analysis of Multigap Cavity	N. Shi ¹ , H. Tian ¹ , P. Pan ¹ , J. Cai ¹ , S. Wang ² , Y. Gong ² ¹ Beijing Vacuum Electronics Research Institute, National Key Laboratory of Science and Technology on Vacuum Electronics, Beijing, China ² University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, Chengdu, China
179-1514	A novel hybrid dispersion slow-wave circuit for 0.2THz traveling wave tube	Z. Chang ^{1,2} , Z. Lu ^{1,2} , P. Gao ^{1,3} , J. Duan ² , X. Gui ² , Z. Zheng ² , S. Wang ² , H. Gong ² , Y. Gong ² ¹ Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Yangtze Delta Region Institute(Huzhou), Huzhou, China ² University of Electronic Science and Technology of China, School of Eletronic Science and Engineering, Chengdu, China ³ University of Electronic Science and Technology of China, School of Resources and Environmental Engineering, Chengdu, China
180-1840	A Sheet Beam Coupling Cavity Slow-Wave Circuit for the High-Power Terahertz TWT	C. Zhang ¹ ¹ Beijing Vacuum Electrics Research Institute, Beijing, China
181-1901	Design of an Electron Gun and a PPM System for G-Band TWTs	X. Yang ¹ , Z. G. Guo ¹ , X. Y. Wang ¹ , S. L. Wan ¹ , H. R. Gong ¹ ¹ University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics School of Electronic Science and Engineering, Chengdu, China

182-2115	Analysis of the vacuum microcavity preparation process for terahertz field emission transistors using the phase field method	Y. Huang^{1,2} , W. He ^{1,2} , Z. Ke ^{1,2} ¹ Shenzhen University, College of Electronics and Information Engineering, Shenzhen, China ² Shenzhen University, The State Key Laboratory of Radio Frequency Heterogeneous Integration, Shenzhen, China
TA 9 Special Sessions: Innovative Fusion Approaches		
183-522	Nitrogen fixation using a dc discharge plasma operated in an aqueous solution	Q. Chen¹ , M. Zhang ¹ ¹ Xiamen University, Institute of Electromagnetics and Acoustics, Fujian Provincial Key Laboratory of Plasma and Magnetic Resonance, Key Laboratory of Electromagnetic Wave Science and Detection Technology Detection Technology, Xiamen, China
184-572	Efficient hydrogen extraction from ammonia using AC rotating gliding arc plasma	J.W. Kim¹ , H. Kang ¹ , J. Choi ¹ , D.H. Lee ¹ ¹ Korea Institute of Machinery and Materials, Daejeon, Republic of Korea
185-888	Study on the Distribution Characteristics of CO in CO ₂ Dielectric Barrier Pulse Discharge at 1kPa	Q. Fu¹ , Z. Ye ¹ , J. Luo ¹ , T. We ¹ , Z. Chang ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China
186-1238	Pinpointing energy transfer mechanisms in the quenching process of microwave air plasma – Effect on NO production	Q. Shen¹ , A. Pikalev ^{1,2} , J. Gans ¹ , R. V.D. Sanden ^{1,3} ¹ Dutch Institute for Fundamental Energy Research, Eindhoven, Netherlands ² Universidade de Lisboa, Lisboa, Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico, Lisbon, Portugal ³ Eindhoven University of Technology, Eindhoven Institute of Renewable Energy Systems, Eindhoven, Netherlands
187-1676	Experimental study of greenhouse gas dynamics and plasma chemistry based on microwave resonators	P. Zhao¹ , J. Xu ² , Y. He ² , Z. Gu ¹ ¹ Xi'an Jiaotong University, School of Human Settlements and Civil Engineering, Xi'an, China ² Xi'an Jiaotong University, School of Microelectronics, Xi'an, China
188-1724	High Efficient Ammonia Dissociation in an AC Ferroelectric, Packed-Bed, Nonthermal Plasma Reactor	X. Wu¹ , L. Lv ¹ , L. Ding ¹ , S. Xu¹ ¹ Hefei University of Technology, School of Electrical Engineering and Automation, Hefei 230026, China
189-1745	Solar-Powered High-Voltage Plasma Synthesis of Nitrophosphate Fertilizer: A Sustainable Industrial Approach for Developing Countries	A. Prasad¹ , P. W. Samarasekera¹ ¹ University of Kelaniya, Center for Advanced Materials and Smart Manufacturing, Kelaniya, Sri Lanka
190-1939	Plasma-Engineered Negative Surface-Mediated Catalysts for Direct Seawater-based Batteries and Electrolysis	O.L. H. Li¹ ¹ Pusan National University, School of Materials Science and Engineering, Busan, Republic of Korea
191-2120	Plasma-Sorbent Systems for Carbon Capture and Utilization: Sorbent Materials and Multi-Reactor Operation Scheme	S. Li¹ , H. van den Bogaard ¹ , S. Eichkorn ¹ , F. Gallucci ¹ ¹ Eindhoven University of Technology, Eindhoven, Netherlands
192-123	Experimental study on AC insulation characteristics of hexafluoro-2-butyne/N ₂ mixture	S. Ren^{1,2} , D. Hao ^{1,2} , W. Zhou ^{1,2} , Y. Zheng ^{1,2} , W. Liu ³ ¹ State Key Laboratory of Power Grid Environmental Protection, Wuhan, China ² Wuhan University, Wuhan, China ³ Electric Power Research Institute Anhui Electric power Co., Ltd., Hefei, China
193-781	A Domain-Adaptive Partial Discharge Detection Method for C ₄ F ₇ N/CO ₂ Gas Mixture Equipment	Z. Li¹ , Y. Zang ¹ , Z. Li ¹ , Z. Hu ² , Y. Xu ¹ , X. Jiang ¹ ¹ Shanghai Jiao Tong University, College of electrical engineering, Shanghai, China ² State Grid Shanghai municipal Electric Power Company, Shanghai, China

194-946	The effect of oxygen content on the power frequency breakdown and partial discharge characteristics of HFO-1336mzz (E)/CO ₂ gas mixtures.	D. Sun ¹ , D. Wang ^{2,3} , N. Tang ¹ , C. Gao ^{2,3} , Z. Li ¹ , F. Zhou ^{2,3} , X. Li ¹ , Y. Wang ² ¹ Electric Power Research Institute of Guangdong Power Grid Co., Ltd., China, Guangzhou, China ² CSG Electric Power Research Institute CO.,LTD, Guangzhou, China ³ United Laboratory of Advanced Electrical Materials and Equipment Support Technology, CSG, Guangzhou, China
195-1210	Study on the stability of gas insulating medium by laser scattering based on Tyndall effect	J. Wang ¹ , L. Wang ² , X. Lu ² , X. Pei ¹ ¹ Wuhan University, Wuhan, 430074, China ² Huazhong University of Science and Technology, Wuhan, 430074, China
196-1362	Molecular dynamics simulation of thermal decomposition characteristics of C ₄ F ₇ N/CO ₂ /O ₂ gas mixture	F. Ye ¹ , A. Zhan ¹ , Y. Chu ¹ , S. Tian ¹ , X. Zhang ¹ ¹ Hubei University of Technology, Hubei Engineering Research Center for Safety Monitoring of New Energy and Grid Equipment of Hubei University of Technology, Wuhan, China
197-1383	Ni doped WS ₂ as Gas-Sensor Material for C ₄ F ₇ N: A first-principles study	L. Li ¹ , D. Wang ^{2,3} , M. Zhang ¹ , H. Jin ^{2,3} , N. Tang ¹ , J. Xiong ^{2,3} ¹ Electric Power Research Institute of Guangdong Power Grid Co., Ltd., GuangDong, China ² CSG Electric Power Research Institute CO.,LTD, GuangDong, China ³ United Laboratory of Advanced Electrical Materials and Equipment Support Technology, CSG, GuangDong, China
198-1759	Carbon Emission Control of Exhaust Gases by Microwave Plasma Method	L. Oksuz ^{1,7} , S. Cetebozan ⁶ , A. Oz ³ , U. Tekir ⁴ , A. Turan ² , E. Uresin ² , A. Oksuz ⁵ ¹ Suleyman demirel university, Physics, isparta, Turkey ² TUBİTAK, MAM, Gebze, Turkey ³ Mehmet Akif Universitesi, Engineering, Burdur, Turkey ⁴ Dokuz Eylul Universitesi, Engineering, Bergama, Turkey ⁵ Süleyman demirel universitesi, Chemistry, Isparta, Turkey ⁶ Süleyman demirel universitesi, Dept of Chemical Engineering, Isparta, Turkey ⁷ plazmatek, Company, isparta, Turkey
199-3007	Control of the ion-to-atom ratio in the short-pulse HiPIMS process	V. Igumnov ^{1,2} , V.O. Oskirko ³ , A.N. Zakharov ³ , V. Kozhevnikov ³ , A.A. Solovyev ³ , Jiupeng Zhao ¹ , Shuliang Dou ¹ ¹ Harbin Institute of Technology, Harbin 150001, China ² Heilongjiang Provincial Innovation Research Center for Plasma Physics and Application Technology (International Cooperation), Harbin 150001, China ³ Institute of High Current Electronics, Tomsk, 634055, Russia
200-2126	Experiment on the vacuum breakdown of hard anodized aluminum electrode under pulsed voltage of tens of nanoseconds	W. Shan ¹ , H. Wei ² , J. Wang ² , Y. Yang ² , H. Wu ² , M. Li ² , A. Qiu ^{1,2} ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xian, China ² Northwest Institute of Nuclear Technology, National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xian, China
201-3008	Preparation the High Mechanical Performance of f-MoS ₂ /PI Film for Enhanced Electrical Insulation	Xian Cheng ^{1,2} , Chenxi Wang ^{1,2,*} , Shuo Chen ^{1,2} , Leyuan Zhang ^{1,2} , Zihao Liu ^{1,2} and Wenhao Zhang ^{1,2} ¹ School of Electrical and Information Engineering, Zhengzhou University, Zhengzhou 450001, China; ² He'nan Engineering Research Center of Power Transmission and Distribution Equipment and Electrical Insulation, Zhengzhou 450001, China

202-3010	Investigation on Surface Modification of Polyimide for Wind Turbine Inter-Turn Insulation Using Plasma Treatment to Enhance Corona Aging Resistance	Shuo Chen ¹ , Xian Cheng ¹ Zihao Liu ¹ ¹ School of Electrical and Information Engineering, Zhengzhou University, Zhengzhou 450001, China
203-1529	Development of a triple-path, low-inductance, 0.5 MA, low-inductance, low-voltage spark gap switch	W. Yuan ¹ , Y. Shen ¹ , Y.C. F. Thio ¹ , G. Li ¹ , C. Wu ¹ , C. Hao ¹ , C. Zhang ¹ , Y. Zhou ¹ , F. Liang ¹ ¹ Shanghai Technology University, Center for Ultimate Energy, Shanghai, China
204-1650	Formulation of the numerical algorithm for the code SPMHD	Y.C.F. Thio ¹ , Z.H. Liu ¹ , S.B. Qi ¹ , J. Mu ¹ , J. Huang ¹ , Z. Li ¹ ¹ Shanghai Technology University, Center for Ultimate Energy, Shanghai, China
205-1678	Neutron transport simulations for a Plasma-Jet-Driven Magneto-Inertial Fusion Reactor	Z. Cui ¹ , Y. Zhu ¹ , C. Zhang ¹ , Y. Liu ¹ , Y.C.F. Thio ¹ ¹ Shanghai Technology University, Center for Ultimate Energy, Shanghai, China

June 18 17:00-18:30 pm

Poster Sessions		
June 18 17:00-18:30 pm Room: The 3rd Floor Exhibition Area		
ID	Title	Name / Affiliation
TA 1 Basic Processes in Fully and Partially Ionized Plasmas		
1-837	Research on the sub-microsecond electrical wire explosion process in water	Y. Xu ¹ , Y. Liu ¹ , T. Wang ¹ , F. Lin ¹ , S. Huang ¹ ¹ Huazhong University of Science and Technology, 2. Key Laboratory of Advanced Science and Technology on High Power Microwave, Wuhan, 430074, China
2-964	Effects of disturbances on low orbit ionospheric electric field satellite measurements	M. Djebli ¹ , S. Makhlof ¹ ¹ Faculty of Physics, USTHB, Theoretical Physics, Algiers, Algeria
3-1327		
4-1735	Initial experiments on magnetic reconnection on the Space Plasma Environment Research Facility	W. Ling ¹ , H. Tang ² , K. Huang ² , J. Guan ¹ , J. Yang ³ , J. Xie ⁴ , P. Ee ¹ ¹ Harbin Institute of Technology, Laboratory for Space Environment and Physical Sciences, Harbin, China ² Harbin Institute of Technology, School of Physics, Harbin, China ³ Guizhou University, College of Big Data and Information Engineering, Guizhou, China ⁴ Harbin Institute of Technology, School of energy science and engineering, Harbin, China
5-73	Traveling waves in ultra-cold atomic gases	M. Djebli ^{1,2} , A. Bouziane ¹ ¹ National Higher School of Mathematics, Scientific and Technology Hub of Sidi Abdellah, P.O. Box 75, Algiers, Algeria ² Faculty of Physics, USTHB, Bab-ezzouar, Algiers, Algeria
6-290	The surface and volume charge effect in nanosecond pulsed discharge: modeling investigation	C. Ren ^{1,2} , B. Huang ¹ , C. Zhang ^{1,3} , B. Qi ² , T. Shao ^{1,3} ¹ Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China ² North China Electric Power University, Beijing, China ³ University of Chinese Academy of Sciences, Beijing, China

7-350	Numerical study on the effect of electric field distribution on plasma discharge in ferromagnetic-enhanced inductively coupled plasma	Q. Lou ¹ , Z. Wang ¹ , S. Yang ¹ , Z. Xie ¹ , Y. Gong ¹ ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China
8-370	On the possibility of creating an inverse EDF in a spatially inhomogeneous plasma of two-chamber discharges	A. Kudryavtsev ¹ , E. Bogdanov ¹ , C. Yuan ¹ ¹ Harbin Institute of Technology, Harbin, China
9-400	Simulation Study of Negative Direct Current Corona Discharge with Micro-Nano Scale Carbon Nanotube Electrodes	M. Sun ¹ , J. Xiang ² ¹ Shanghai Maritime University, School of Science, Shanghai, China ² Shanghai Maritime University, Logistics Engineering College, Shanghai, China
10-626	Diagnosis of electron excitation temperature and electron density of high-frequency inductively coupled plasma generator	Y. Niu ¹ , W. Bao ¹ , D. Liu ¹ , X. Li ¹ , Y. Liu ¹ ¹ Xiidian University, School of Aerospace Science and Technology, Xi'an, China
11-1254	Surface DBD as de-icing systems – Influence of streamers in the temperature rise of the dielectric wall	E. Moreau ¹ , S. Grosse ¹ , N. Benard ¹ ¹ Université de Poitiers, Poitiers, France
12-1331	Study on the interaction of pulsed micro-hollow cathode discharge plasma jet with target	C. Ma ¹ , J. Li ¹ , Z. Duan ² , F. He ¹ , J. Ouyang ¹ ¹ Beijing Institute of Technology, School of Physics, Beijing, China ² Honor Device Co. Ltd, Beijing, China
13-1619	Investigation of similarity laws for capacitively coupled radio frequency plasma under varied gas pressure conditions	W. Zhang ¹ , D. Yang ¹ , Y. Fu ¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, China
14-1685	Comparative analysis of numerical simulation of helium plasma jet with suspended electrode at atmospheric pressure	R. Liang ¹ ¹ Chongqing University, Chongqing, China, Chongqing, China
TA 2 Microwave Generation and Plasma Interactions		
15-698	Study of 220GHz high-order mode input coupler	T. Mao ¹ , D. Liu ¹ ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China
16-1333	Experimental study of high-power millimetre wave drilling technology	E. Wang ¹ , J. Feng ¹ , X. Liu ² , G. Liu ³ ¹ Beijing Vacuum Electronics Research Institute, National Key Laboratory of Science and Technology on Vacuum Electronics, Beijing, China ² University of Electronics Science and Technology of China, Chengdu, China ³ Enn energy research institute, Langfang, China
17-1336	High broadband and high resistance state voltage divider based on coaxial transmission lines	W. Xu ¹ , S. Dong ¹ , L. Yu ¹ , C. Yao ¹ , S. Wang ¹ ¹ Chongqing University, Chongqing, China
18-1550	Optimized design and experimental study of a large-orbital electronic optical system	C. Lei ² , E. Wang ¹ , D. Gao ¹ , Q. Zhao ³ , J. Feng ¹ , S. Li ² , J. Yang ¹ ¹ Beijing Vacuum Electronics Research Institute, National Key Laboratory of Science and Technology on Vacuum Electronics, Beijing, China ² China People's Police University, Police Equipment Technical College, Langfang, China ³ Guilin University of Electronic Technology, School of Information and Communication, Guilin, China
19-136	Tunable Isolator Based on One-way Surface Magnetoplasmons	T. Jiang ¹ , D. Liang ¹ , Y. Zhang ² ¹ Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Huzhou Key Laboratory of Terahertz Integrated Circuits and System, Huzhou, China ² University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Sichuan, China

20-178	Development of 170 GHz Gyrotron for Nuclear Fusion in BVERI	Z. Yichi¹ , Z. Xu ¹ , L. Kun ¹ , G. Dongshuo ¹ , W. Shihao ¹ , H. Wenteng ¹ , L. Boyang ¹ <i>¹ Beijing Vacuum Electronics Research Institute, National Key Laboratory of Science and Technology on Vacuum Electronic, Beijing, China</i>
21-186	study of helical groove waveguide slow wave structure for W-band traveling wave tube	J. Duan^{1,2} , Z. Lu ^{1,2} , P. Gao ^{1,3} , Z. Wang ² , Y. Zheng ² , Z. Wang ² , S. Wang ² , H. Gong ² , Y. Gong ² <i>¹ University of Electronic Science and Technology of China, Yangtze Delta Region Institute (Huzhou), Huzhou, China</i> <i>² University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China</i> <i>³ University of Electronic Science and Technology of China, School of Resources and Environmental Engineering, Chengdu, China</i>
22-269	Compact coupling technologies for the metamaterial based backward wave oscillators	M. Chen ¹ , X. Tang¹ , Y. Zang ¹ , X. Li ¹ <i>¹ Southwest Jiaotong University (SWJTU), School of Physical Science and Technology, Chengdu, China</i>
23-1397	Design of Microstrip Line Adaptor for W-band Microstrip Meander Line Slow Wave Structure Based on BP-GA Neural Network	X. Li¹ , X. Zhao ¹ , C. Shen ¹ , Y. Zhuang ¹ , Z. Chen ¹ , N. Bai¹ <i>¹ Southeast University, School of Electronic Science and Engineering, Nanjing, China</i>
24-1436	A Wide Bandwidth Microstrip Meander Line Slow Wave Structure with Multilayer Metamaterial Absorber	Z. Tang¹ , Y. Xie ¹ , X. Zhang ² , H. Cheng ² , C. Sheng ¹ , N. Bai¹ <i>¹ Southeast University, School of Electronic Science and Engineering, Nanjing, China</i> <i>² Nanjing Sanle Group Co. Ltd, Nanjing, China</i>
25-1861	PIC Simulation and Preliminary Experiment on a G-band Sheet Beam Traveling-Wave Tube	Z. Lyu¹ , S. Jiang ² , D. Jin ³ , J. Dong ¹ , X. Chen ¹ , T. Tang ¹ , Z. Lu ¹ , Z. Wang ¹ , H. Gong ¹ , Y. Gong ¹ , C. Zhang ⁴ , P. Pan ⁴ , J. Feng ⁴ , Z. Duan ¹ <i>¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu 611731, China</i> <i>² JiangXi University of Science and Technology, School of Electrical Engineering and Automation, Ganzhou 341000, China</i> <i>³ Nanjing Sanle Microwave Technology Development Co., Ltd., Nanjing 211800, China</i> <i>⁴ Beijing Vacuum Electronics Research Institute, Beijing 100015, China</i>
26-1863	Experimental Investigation of a Q-Band Helix Traveling-Wave Tube with Four-Stage Depressed Collector	J. Dong¹ , C. Wang ¹ , X. Chen ¹ , S. Wang ¹ , H. Gong ¹ , Y. Gong ¹ , Z. Duan ¹ <i>¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China</i>
27--1930	A 220 GHz Wideband TWT with Output Power over 20 W and Bandwidth over 20 GHz	Y. Feng^{1,2} , B. Song ² , Y. Li ² , P. Pan ² , J. Feng ² , Y. Gong ¹ <i>¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu 610031, China</i> <i>² Beijing Vacuum Electronics Research Institute, National Key Laboratory on Vacuum Electronics, Beijing 100015, China</i>
28-1931	A Novel Slow-wave Structure for Terahertz Traveling-wave Tube	Y. Feng^{1,2} , Y. Zhou ² , S. Xian ² , P. Pan ² , J. Feng ² , Y. Gong ¹ <i>¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu 610031, China</i> <i>² Beijing Vacuum Electronics Research Institute, National Key Laboratory on Vacuum Electronics, Beijing 100015, China</i>
29-2182	Research on beam collection technology in magnetic field uniformity zone of over-mode Cerenkov generator	S. Wang¹ <i>¹ Northwest Institute of Nuclear Technology, Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an, China</i>

30-1381	Investigation of Velocity Spread of Magnetron Injection Gun for Terahertz Gyrotron	Y. Han ¹ , J. Feng ¹ ¹ National Key Laboratory of Science and Technology on Vacuum Electronics, Beijing Vacuum Electronics Research Institute, Beijing, China
31-1754		
32-2130	A vacuum-sealed repetitively pulsed high-power microwave system	Y. Ao ¹ , F. Zhang ¹ , D. Yang ¹ , Y. Teng ¹ , C. Chen ¹ , L. Huang ¹ ¹ Northwest Institute of Nuclear Technology, Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an 710024, China
TA 3 Charged Particle Beams and Sources		
33-118	The mechanism of grid current dynamic characteristics for microwave discharge ion thruster under the regulation of feedback control system applied in high precision space missions	X. Niu ¹ , H. Liu ¹ , D. Yu ¹ ¹ Harbin Institute of Technology, School of energy science and engineering, Harbin, China
34-119	The influence of operating parameters on the dynamic characteristics of minimized electron cyclotron resonance ion thruster for space gravitational wave detection	X. Niu ¹ , H. Liu ¹ , B. X. Zhang ¹ , D. R. Yu ¹ ¹ Harbin Institute of Technology, School of energy science and engineering, Harbin, China
35-232		
36-436		
37-450		
38-542	Analysis of cesium distribution for negative ion sources: SID diagnosis and Monte-Carlo simulation	F. Xue ¹ , C. Zuo ¹ , D. Li ¹ , D. Chen ¹ ¹ Huazhong University of Science and Technology, State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Wuhan, China
39-554	Analysis of flow field characteristics of high-power high-frequency induction coupled plasma jet	X. Ge ¹ , B. Wu ¹ , Y. Liu ¹ , D. Liu ¹ ¹ Xidian University, School of Aerospace Science and Technology, Xi'an, China
40-1014	Discharge characteristics of Anode Layer Hall ion source with floating potential Magnetic Poles	J. Nie ¹ , F. Yang ¹ , Q. Chen ¹ ¹ Southwestern Institute of Physics, 1. Department of Engineering and Applied Physics, Chengdu, China
41-1075	Experimental study on thermal deposition of permanent magnet helicon plasma source	Y. Xia ^{1,2} , X. Yang ¹ , L. Chang ³ , H. Zhou ¹ , D. Jing ^{1,2} , H.-S. Zhou ^{1,2} , G.-N. Luo ^{1,2} ¹ Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei, China ² University of Science and Technology of China, Hefei, China ³ State Key Laboratory of Power Transmission Equipment and System Security and New Technology, Chongqing University, Chongqing, China
42-1127	Simulation Study of High-brightness Electron Beam Injector for External Injection of Laser Plasma Wakefield Acceleration	L. Liu ¹ , Z. Dai ¹ , J. Guan ¹ , J. Zhong ¹ , Z. Liu ¹ , J. Wang ¹ , Y. Nie ¹ ¹ Wuhan University, The Institute for Advanced Studies, Wuhan, 430074, China
43-1156		

44-1252	Study on the influence of sliding arc plasma exciter structure on plasma performance	Y. Ning¹ ¹ <i>Space Engineering University, Beijing, China</i>
45-1253	Machine learning methods for computing discrete image charge effects of a nanowire electron emitter.	Y. Zhou¹ , K. Torfason ¹ , C. Pantis ² , A. Manolescu ¹ , Á. Valfells ¹ ¹ <i>Reykjavik University, Department of Engineering, Reykjavik, Iceland</i> ² <i>Horia Hulubei National Institute for Physics and Nuclear Engineering, Magurele, Romania</i>
46-1313	Theoretical Investigation of the Preglow Effect in Microwave Ion Source	W. Wu¹ , H. Zhang ¹ , H. Zhou ¹ , Q. Zhou ¹ , Q. Sun ¹ , Y. Dong ¹ , W. Yang ¹ ¹ <i>Institute of Applied Physics and Computational Mathematics, Beijing, China</i>
47-1387	The wide spectral range characteristics and dynamic evolution of laser-produced tin plasmas	Y. Gao¹ , C. Dong ¹ , M. Su ¹ ¹ <i>Northwest Normal University, Key Laboratory of Atomic and Molecular Physics & Functional Material of Gansu Province, College of Physics and Electronic Engineering, Lanzhou, China</i>
48-1976	Experimental study on multi-dimensional Child-Langmuir law with vacuum arc plasma extraction	X. Wan¹ , P. Gan ¹ , Y. Wang ¹ , M. Li ¹ ¹ <i>China Academy of Engineering Physics, Institute of Electronic Engineering, Mianyang, China</i>
49-2114		
50-184		
51-2273	The generating mechanism analysis of the 'wheel-rail' arc for high-speed trains with influence factor	S. Xiao¹ , T. Zhu¹ , G. Wu ¹ , Y. Guo ¹ , X. Zhang ¹ , J. Yu ¹ , P. Li ¹ ¹ <i>Southwest Jiaotong University (SWJTU), School of Electrical Engineering, Chengdu, China</i>
52-2293	Analysis of reflux characteristics of high-speed train over insulated joint and rolling arc suppression measures	S. Xiao¹ , J. Yan¹ , G. Wu ¹ , Y. Guo ¹ , X. Zhang ¹ , P. Li ¹ , J. Yu ¹ ¹ <i>Southwest Jiaotong University (SWJTU), School of Electrical Engineering, Chengdu, China</i>
TA 4 High Energy Density Plasmas and Applications		
53-468	Microsecond and sub-microsecond timescale compact pulse high-current generators for studies of high energy density matter	S. Efimov¹ , D. Maler ¹ , S. Gleizer ¹ , E. Flyat ¹ , J. Leopold ¹ , Y. Krasik ¹ ¹ <i>Technion, Physics Department, Haifa, Israel</i>
54-816	Development of a time-resolved X-pinch plasma parameter diagnostics based on the FLYCHK code	Y. Choi¹ , K.-J. Chung ¹ ¹ <i>Seoul National University, Seoul, Republic of Korea</i>
55-1499	Preliminary experimental study on bubbles from underwater electrical wire explosion	S. Zhou¹ ¹ <i>China Academy of Engineering Physics, Institute of Fluid Physics, Mianyang, China</i>
56-1993	Abnormal magnetic field topology in the beam-plasma instability driven by ion dynamics	Y. Liu¹ , Z. Hu ¹ , Y. Wang ¹ ¹ <i>Dalian University of Technology, School of Physics, Dalian, China</i>
57-183	Capillary Z-pinchs with low currents and voltages for soft X-ray Ar ⁺⁸ laser excitation	B. Fekete¹ , M. Kiss ¹ , A. A. Shapolov ² , S. Szatmary ³ , S. V. Kuhlevszkij¹ ¹ <i>University of Pecs, Department of Physics, Pecs, Hungary</i> ² <i>Institute of Experimental Medicine, Laboratory of 3D functional network and dendritic imaging, Budapest, Hungary</i> ³ <i>University of Szeged, Department of Experimental Physics, Szeged, Hungary</i>

58-399	Investigation on the scaling of magneto-Rayleigh-Taylor instability for single shell Z-pinches	X. Wang ¹ , D. Xiao ¹ ¹ Institute of Applied Physics and Computational Mathematics, Beijing, China
59-408	Numerical investigation on the coupling of Z-pinch dynamic hohlraum and double shell capsule	G. Wang ¹ , D. Xiao ¹ , X. Han ¹ , C. Mao ¹ , X. Wang ¹ , P. Song ¹ , L. Li ¹ , H. Zhang ¹ ¹ Institute of Applied Physics and Computational Mathematics, Beijing, China
60-620	Development and Investigation of an Active Plasma Lens to Focus a Proton Beam for LIGHT at FAIR	M. U. Dehmer ¹ , J. Jacoby ¹ , M. Iberler ¹ ¹ Goethe-Universität Frankfurt, Plasma Physics / Institute of Applied Physics / Physics, Frankfurt am Main, Hesse, Germany
61-1545	Preliminary study on current disruption induced by magneto-Rayleigh-Taylor instability in Z-pinch plasmas	Y. Lu ^{1,2} , D. Xiao ² , J. Wu ¹ , X. Wang ² ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China ² Institute of Applied Physics and Computational Mathematics, Beijing, China
62-1611	Investigation on the Evolution of Electrothermal Instability in Electrically Exploding Aluminum Wires	Z. Li ¹ , K. Wang ¹ , J. Feng ¹ , Y. Zhang ¹ , S. Zhang ¹ ¹ Hebei University of Technology, State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Tianjin, China
63-1640	Effects of finite resistivity on magneto-Rayleigh-Taylor instability in Z-pinch plasmas	L. Huang ^{1,2} , D. Xiao ² ¹ Graduate School of China Academy of Engineering Physics, Beijing, China ² Institute of Applied Physics and Computational Mathematics, Beijing, China
64-1643	Experimental Investigations on the Effect of Increasing Negative Radial Electric Field on Energy Deposition of Wire Electrical Explosion in Vacuum	G. Fu ¹ , Z. Shi ¹ , Z. Cao ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
TA 5 Industrial, Commercial and Medical Plasma Applications		
65-735	Experimental study on hypersonic shock wave/boundary layer interaction controlled by 30-channel array surface arc discharge	D. Zhang ¹ , H. Liang ¹ , H. Yang ¹ ¹ Air Force Engineering University, National Key Lab of Aerospace Power System and Plasma Technology, Xi'an, China
66-880	Research on plasma flow control of tandem double wind turbine airfoil	L. Geng ¹ , Y. Kang ¹ , X. Pu ¹ , S. Li ¹ ¹ Lanzhou Jiaotong University, School of New Energy and Power Engineering, Lanzhou, China This work was funded by the National Natural Science Foundation of China (Grant Nos. 52067014), and the Tianyou Youth Talent Lift Program of Lanzhou Jiaotong University.
67-1024	Influence of different parameters on the performance of a slit plasma synthetic jet actuator	S. Liu ¹ , H. Liang ¹ ¹ Air Force Engineering University, National Key Lab of Aerospace Power System and Plasma Technology, Xi'an, China
68-1034	Characterization of plume evolution in a magnetically focused capillary-discharge based pulsed plasma thruster	L. Jin ¹ , Y. Wang ¹ , K. Zhou ¹ , W. Ding ¹ , A. Sun ¹ ¹ Xi'an Jiaotong University, 2. Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an, China
69-1067	Design and characterization of a corona-based micro-blowing plasma actuator for turbulent skin-friction drag reduction	H. Liu ¹ , H. Liang ^{1,2} , Z. Su ¹ , H. Zong ² , B. Wei ¹ , Z. Fang ² ¹ Air Force Engineering University, National Key Lab of Aerospace Power System and Plasma Technology, Xi'an, China ² Xi'an Jiaotong University, Xi'an, China

70-1113	Modeling and Simulation on the Ionization Process of the Coaxial Pulsed Plasma Thruster	Y. Bei¹ , Z. Wu ¹ , Z. Cheng ¹ , T. Huang ¹ ¹ <i>Beijing Institute of Technology, school of aerospace engineering, Beijing, China</i>
71-1194	Numerical Simulation of Magnetic Plasma Temperature Field Based on Magnetohydrodynamics	Z. Han¹ , X. Zhang ¹ , Z. Yang ¹ , G. Wang ² , C. Zhou ² , C. Kong ¹ ¹ <i>Xi'an Jiaotong University, Institute of Physics, Xi an, China</i> ² <i>Beijing Institute of Control Engineering, Bijing, China</i>
72-1323	A Momentum-Enhanced Ablation Model for Nozzle Ablation in High Voltage Gas Circuit Breakers	Z. Luo¹ , H. Sun ¹ , Z. Liu ¹ , X. Zhang ¹ , L. Zhou ¹ , T. Liu ¹ , Y. Zhang ¹ , Y. Wu ¹ ¹ <i>Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China</i>
73-1484	Study of coaxial pulsed plasma thruster with graphite propellant	M. K. Dosbolayev¹ , Z. B. Igibayev¹ , T. S. Ramazanov ¹ ¹ <i>Al-Farabi Kazakh National University, Research Institute of Experimental and Theoretical Physics, Almaty, Kazakhstan</i>
74-1652	Study on generation and acceleration characteristics of metal ion plasma by vacuum pulse discharge	J. X. Tao¹ , Y. G. Min ¹ , L. W. Zheng¹ ¹ <i>Beijing Jiaotong University, College of Electrical Engineering, Beijing, China</i>
75-1669	Nonequilibrium radiation-flow coupling simulation for the high-temperature plasma during atmosphere reentry	D. Yaowen¹ , S. Surong ¹ , M. Xian ² , H. Heji ² , G. Jinyue ² , Y. Cong ² , C. Xuan ³ , W. Haixing ¹ ¹ <i>Beihang University, Beijing, China</i> ² <i>Chinese Academy of Sciences, Beijing, China</i> ³ <i>China Academy of Launch Vehicle Technology, Beijing, China</i>
76-1683	Nonequilibrium radiation-flow coupling simulation for the high-temperature plasma during atmosphere reentry	Y. Du¹ , S. Sun ¹ , X. Meng ² , H. Huang ² , J. Geng ² , C. Yan ² , X. Chen ³ , H. Wang ¹ ¹ <i>Beihang University, Beijing, China</i> ² <i>Chinese Academy of Sciences, Beijing, China</i> ³ <i>China Academy of Launch Vehicle Technology, Beijing, China</i>
77-1922	Experimental investigation of slit s-shaped inlet aerodynamic performance enhancement by plasma pneumatic actuation	Y. F. Zhang¹ , H. Liang ¹ , M. S. Liu ¹ ¹ <i>Air Force Engineering University, National Key Lab of Aerospace Power System and Plasma Technology, Xi'an, China</i>
78-2135	Experimental study of supersonic double-incident shock wave/boundary layer interaction controlled by plasma actuation	X. Kong¹ , H. Liang ¹ , H. Yang ¹ ¹ <i>Air Force Engineering University, National Key Lab of Aerospace Power System and Plasma Technology, Xi an, China</i>
79-2300	Research on Methods for Suppressing Low-Frequency Oscillations in the Hall Thruster Discharge Channel	P. Duan¹ , J. Chen ¹ , Z. Kan ¹ , L. Chen ¹ , C. Tan ¹ ¹ <i>Dalian Maritime University, School of Science, Dalian, China</i>
80-127	Plasma Controlled Substrate Integrated Waveguide Slotted Antenna	S.S.M. Chung¹ , S.-C. Tuan ² ¹ <i>National Penghu University of Science and Technology, Department of Electrical Engineering, Penghu County, Taiwan</i> ² <i>Asia Eastern University of Science and Technology, Department of Communication Engineering, New Taipei City, Taiwan</i>
81-133	Flocculation Synergism NTP Purification of Emulsified Oil-bearing Wastewater	J. Rong¹ ¹ <i>Anhui University of Science and Technology, School of Chemical and Blasting Engineering, Anhui, China</i>
82-175	Experimental study of focused shock-wave initiated by underwater air-bubble-guided spark discharges	C. Wang¹ ¹ <i>Shandong University, School of Electrical Engineering, Jinan, China</i>
83-308	Investigation of gatifloxacin degradation by gas-liquid discharge plasma coupled with g-C3N5	Z. Wang¹ , S. Wang ¹ , Z. Fang ¹ ¹ <i>Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China</i>
84-310	One-step thermal-plasma synthesis of sulphur and nitrogen dual-doped graphene with improved microwave-absorption efficiency	Z. Yu¹ , C. Zhu ¹ , W. Xia ¹ , C. Wang ¹ ¹ <i>University of Science and Technology of China, Department of Thermal Science and Energy Engineering, Hefei, China</i>

85-355	Enhancement of hydrophilicity and biodegradability in low-density polyethylene by atmospheric cold plasma treatment	M.J. Lee¹ , H.G. Lee ¹ , S.Y. Song ¹ , E.J. Suh ¹ , E.B. Choi ¹ , W.D. Seo ¹ ¹ National Institute of Crop Science, Crop Foundation Division, Wanju-gun, Republic of Korea
86-427	Adaptive Learning with Logistic Regression for soil classification with LIBS	Y. Huang¹ , A. Bais ¹ , S. Mohajan ² , A. E. Hussein ² ¹ University of Regina, Regina, Saskatchewan, Canada ² University of Alberta, Edmonton, Alberta, Canada
87-458	Hydrogen and Carbon Solid Production via Methane Pyrolysis Using Rotating Gliding Arc Plasma Reactor	H. Song¹ , Z. Ali ¹ , D.-H. Lee ¹ ¹ Korea Institute of Machinery and Materials, Department of Plasma Engineering, Daejeon, Republic of Korea
88-499	Design of a Multi-Stage Microwave Plasma Device for Enhanced Material Processing and Synthesis	W. Ma¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, China
89-504	Aluminum anode modified with diamond-like carbon by helicon wave plasma treatment for high-areal-density dual-ion batteries	C. Wang¹ , C. Jin ² , S. Jiang ² , P. Ee ² ¹ Harbin Institute of Technology, School of Physics, Harbin, China ² Harbin Institute of Technology, Laboratory for Space Environment and Physical Sciences, Harbin, China
90-657	Non-thermal plasma coupled with Mn/HZSM-5 catalysts for highly efficient removal of cooking fumes	T. Chang¹ , X. He ¹ , Q. Shang ¹ ¹ Shaanxi University of Science and Technology, School of Environmental Science and Engineering, Xi'an, China
91-956	Discharge evolution, instabilities, and applications of pseudospark switches	J. Yan¹ , S. Shen ² , W. Ding ³ ¹ University of Bristol, School of Electrical, Electronic and Mechanical Engineering, Bristol, China ² Sichuan University, College of Electrical Engineering, Chengdu, China ³ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
92-994	Generation of plasma by water surface discharge at atmospheric pressure and analysis of its characteristics	L. Guan¹ , T. Nakano ¹ , R. Asada ¹ , H. Matsuwura ¹ ¹ Osaka Metropolitan University, Graduate School of Engineering, Sakai, Japan
93-1035	Quantification of Material Composition in Nuclear Power Plants Using Single-Point-Calibration-Free Laser-induced Breakdown Spectroscopy	B. Lu¹ , Y. Qiu ¹ , L. Gong ¹ , Y. Zhan ² , J. Wu ³ , C. Pei ⁴ , Y. Hang ⁵ , Y. Li ¹ , X. Li ³ ¹ Xi'an Jiaotong University, Key Laboratory of Physical Electronics and Devices, Ministry of Education, Faculty of Electronic and Information Engineering, Xi'an, China ² Huaneng Shandong Shidao Bay Nuclear Power Co., Ltd., Rongcheng, China ³ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China ⁴ Xi'an Jiaotong University, Shanxi Engineering Research Center of NDT and Structural Integrity Evaluation, State Key Laboratory for Strength and Vibration of Mechanical Structures, Xi'an, China ⁵ Suzhou Nuclear Power Research Institute, Suzhou, China
94-1037	From Simulation to Reality: CFD-ML-Driven Structural Optimization and Experimental Analysis of Thermal Plasma Reactors	H. Shi¹ , S. Wang ¹ , P. Wang ¹ ¹ Shanghai Jiao Tong University, School of Mechanical and Power Engineering, Shanghai, China
95-1108	OPTIMIZE SPATIAL CONSTRAINT EFFECT IN LIBSBASED ON THE BOLTZMANN PLANEMAPPING METHOD	H. Jian¹ , X. Wang ¹ ¹ Tsinghua University, Shenzhen International Graduate School, shenzhen, China

96-1117	GCMC Simulation of Zn ₂ (TTFTB) Adsorption for HFO-1234ze(E) and Its Decomposition Products	N. Tang ¹ , C. Gao ^{2,3} , D. Sun ¹ , R. Huang ^{2,3} , M. Zhang ¹ , D. Wang ^{2,3} , L. Li ¹ ¹ Electric Power Research Institute of Guangdong Power Grid Co., Ltd., China, Guangzhou, China ² CSG Electric Power Research Institute CO.,LTD, Guangzhou, China ³ United Laboratory of Advanced Electrical Materials and Equipment Support Technology, CSG, Guangzhou, China
97-1230	Condensation of Gaseous Carbon using Dual RF-ICP-Enhanced CVD Method and its Compressed Electrodes Property	Z. Yan ¹ , H. Zhang ¹ , Z. Song ¹ , H. Zhang ¹ , H. Pan ¹ , G. Chen ¹ ¹ University of Chinese Academy of Sciences, College of Materials Science and Opto-Electronic Technology, Beijing, China
98-1282	The influence of different DBD reactors on the properties of Plasma-activated water	Z. Zhao ¹ , H. Liu ¹ , D. Guo ¹ , X. Hao ¹ ¹ Xi'an Jiaotong University, Department of Environmental Science and Engineering, School of Energy and Power Engineering, Xi'an, China
99-1293	Simultaneous Epoxidation and CO Formation: Harvesting Oxygen from Carbon Dioxide	H. Xu ¹ , Z. Wei ¹ , K. Xie ¹ ¹ Xidian University, School of Aerospace Science and Technology, Shaanxi, Xi'an, China
100-1353	Highlight the plasma-generated reactive oxygen species (ROSs) dominant to degradation of emerging contaminants based on experiment and density functional theory	W. Jiang ¹ , H. Guo ¹ ¹ Nanjing Forestry University, Nanjing, China
101-1404	Characteristics of OH production at atmospheric-pressure discharge in He/Ar-Air dielectric barrier discharge	Y. Zhang ¹ , J. Yao ¹ , G. Liu ¹ , C. Yuan ¹ , X. He ⁵ , X. Wang ¹ ¹ Harbin Institute of Technology, School of Physics, Harbin, China ² Harbin Institute of Technology, School of Environmental Science and Engineering, Harbin, China
102-1424	Study on the Evolution Characteristics of Ar Plasma and Their Impacts on Depositing Films	Y. Fu ¹ , P. Ji ¹ ¹ Xi'an University of technology, School of Electrical Engineering, Xi'an, China
103-1490	Preparation of high-purity graphene based on dual-source-driven dielectric barrier discharge electric field coupling enhancement effect	L. Guo ¹ , S. J. Wu ¹ , S. W. Ma ¹ , S. J. Guo ¹ , X. L. Cui ¹ , J. L. Huang ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
104-1540	Study on the processes and properties of 45 steel powders prepared by plasma rotating electrode process	Q. Wang ¹ , P. Yu ¹ , J. Yan ¹ , H. Lan ¹ , C. Huang ¹ , B. Li ¹ ¹ Chinese Academy of Sciences, Ganjiang Innovation Academy,, Ganzhou, China
105-1728	Electrostatic fog harvesting: Principles, techniques and optimization	C. Li ¹ , D. Li ¹ , M. Xiao ¹ ¹ State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science and Technology, Wuhan, China
106-1740	Research on the treatment of silicone slurry by plasma fluidized bed and its mechanism	Z. Wang ¹ , G. Wang ² , Z. Ye ³ ¹ Zhejiang University of Technology, Department of Environment, Hangzhou, China ² Zhejiang University, Research Institute of Zhejiang University-Taizhou, Taizhou, China ³ Zhejiang University of Technology, Department of Environment, Hangzhou, China
107-1751	Filamentary Transition and Energy Stability Optimization of High Pressure Nanosecond Pulsed Discharges for Laser Chambers	L. Bai ¹ , X. Ma ² , Y. Zhu ^{1,2} , X. Jiang ³ , Y. Wu ² ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China ² Xi'an Jiaotong University, School of Mechanical Engineering, Xi'an, China ³ Beijing RSLaser Opto-Electronics Technology CO.,Ltd, Beijing, China

108-1805	Full Spectrum Radio-frequency Plasma Light Source Including Ultraviolet and Near infrared for Plant Grows	H. Jia ¹ , L. Xu ¹ , W. Huan ¹ ¹ Hefei Institutes of Physical Science, Chinese Academy of Sciences, Institute of Plasma Physics, Hefei, China
109-1992	The history of electrostatic precipitators and the advantages of Rico-Werks new controller generation Gemini	D. Szeremley ¹ ¹ Rico-Werk Eiserlo & Emmrich GmbH, Tönisvorst, North Rhine-Westphalia, Germany
110-2040	Direct Decomposition of CO ₂ Using Plate Dielectric Barrier Discharge Reactor	Z. Yu ^{1,3} , D. Wang ¹ , T. Zhang ¹ , Y. Zhang ² , C. Song ³ ¹ Dalian Maritime University, School of Science, Dalian, China ² Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China ³ Heilongjiang Provincial Key Laboratory of Plasma Biomass Materials Research and Testing, Heilongjiang Institute of Technology, Jixi, China
111-2062	Discharge mode transformations and reactive species generations of sliding arc reactor with ball-helix electrodes regulated by gas flow speeds and applied frequencies	B. Chen ^{1,3} , S. Huang ² , C. Zhang ² , F. Ding ³ , X. He ¹ , Y. Jiang ² ¹ Hohai University, College of Mechanics and Engineering Science, Nanjing, China ² Hohai University, College of Materials Science and Engineering, Changzhou, China ³ Hohai University, College of Renewable Energy, Changzhou, China
112-2096	Degradation of Organic Pollutants by Low Temperature Plasma Activated Peroxyacetic Acid	H. Wu ¹ , W. Ye ¹ , E. Ji ¹ , Z. Tan ¹ ¹ Nanjing Tech University, Nanjing, China
113-2158	Research on Metal Tube Forming Based on Vaporizing foil actuator	M. Li ¹ , X. Li ¹ , X. Tang ¹ , H. Liu ¹ , L. Li ¹ ¹ Huazhong University of Science and Technology, Wuhan National High Magnetic Field Center, Wuhan, 430074, China
114-2176	Fast Evaluation on the Fatigue Level of Copper contact wire Based on LIBS and Machine Learning in high speed railway	T. K. Fenta ¹ , L. Xia ¹ , W. Wei ¹ ¹ Southwest Jiaotong University, Department of Electrical Engineering, Chengdu, China
115-2226	Study on the Motion and Heating Behavior of Powder Particles in Radio Frequency Plasma	Y. Su ¹ , H. Zhu ¹ , P. Zhao ² , B. Wu ² , J. Li ² , L. Li ² , H. Ahmad ¹ , X. Jin ² , C. Geng ² ¹ Shanxi University, Institute of Theoretical Physics, Taiyuan, China ² Hefei Institutes of Physical Science, Chinese Academy of Sciences, Institute of Plasma Physics, Hefei, China
116-2281	Research on Metal Tube Forming Based on Vaporizing foil actuator	M. Li ¹ , X. Li ¹ , X. Tang ¹ , H. Liu ¹ , M. Gong ¹ , Z. Zhang ¹ , L. Li ¹ ¹ Huazhong University of Science and Technology, Wuhan National High Magnetic Field Center, Wuhan, 430074, China
117-2284	Organic micropollutant wastewater treatment using a plasma DBD-based flat 222 nm far UV-C excilamp	K. Ahlawat ¹ , R. Jangra ¹ , R. Prakash ¹ ¹ Indian Institute of Technology Jodhpur, Physics, Jodhpur, India
118-2297	Experimental study on the degradation of organic dye wastewater by plasma in collaboration with Fe ₃ O ₄ /PVDF nanofibers	X.Y. Sun ¹ , L.W. Li ¹ , M.H. Yang ¹ , W.L. Shao ¹ , J.X. He ¹ ¹ Zhongyuan Institute of Technology, Textile and garment Industry Research Institute, Zhengzhou, China
119-3001	Study of distributed plasma nitrogen fixation and solubilization based on microbubble enhancement	C. Lan ¹ , Professor D. Liu ¹ ¹ Huazhong University of Science and Technology, Wuhan, 430074, China

120-3005	Cu catalysts supported on siliceous mesocellular foam for enhancing non-thermal plasma-activated CO ₂ hydrogenation to methanol	<p>Yi Chen^{1,2}, Shaowei Chen^{1,2}, Xiaolei Fan^{2,3,4}, Huanhao Chen¹</p> <p>¹ State Key Laboratory of Materials-Oriented Chemical Engineering, College of Chemical Engineering, Nanjing Tech University, Nanjing 211816, China</p> <p>² Institute of Wenzhou, Zhejiang University, Wenzhou 325006, China</p> <p>³ Department of Chemical Engineering, School of Engineering, The University of Manchester, M139PL, United Kingdom</p> <p>⁴ Nottingham Ningbo China Beacons of Excellence Research and Innovation Institute, University of Nottingham Ningbo China, Ningbo 315048, China</p>
121-3006	Plasma-catalytic CO ₂ methanation over Ni supported on MCM-41 catalysts: Effect of metal dispersion and process optimization	<p>Shaowei Chen^{1,2}, Tianqi Liu¹, Jiangqi Niu³, Jianguo Huang¹, Xincheng Peng^{1,4}, Huanyu Zhou², Huanhao Chen², Xiaolei Fan^{1,5,*}</p> <p>¹ Institute of Wenzhou, Zhejiang University, Wenzhou 325006, China</p> <p>² State Key Laboratory of Materials-Oriented Chemical Engineering, College of Chemical Engineering, Nanjing Tech University, Nanjing 211816, China</p> <p>³ Department of Chemical Systems Engineering, Graduate School of Engineering, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan</p> <p>⁴ State Key Laboratory of Silicon Materials, School of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, Zhejiang, PR China</p> <p>⁵ Department of Chemical Engineering, School of Engineering, The University of Manchester, Oxford Road, Manchester M13 9PL, United Kingdom</p>
TA 6 Plasma Diagnostics		
122-840	Influence of different conductivities on spectral and electrical diagnosis of underwater microsecond high-current pulsed discharge	<p>S. Huang¹, Y. Liu¹, L. Li¹, Y. Xu¹, C. Zeng¹, F. Lin¹</p> <p>¹ Huazhong University of Science and Technology, Electrical Engineering/Automation Academy, Wuhan, 430074, China</p>
123-892	The spatial resolution effect of N ₂ /O ₂ on atmospheric pressure Ar plasma jet by emission spectrum	<p>S. Jiang¹, C. Zhu¹, Z. Wu²</p> <p>¹ University of Shanghai for Science and Technology, School of Mechanical Engineering, Shanghai, China</p> <p>² Shanghai University of Medicine and Health Sciences, The Shanghai Key Laboratory of Molecular Imaging, Shanghai, China</p>
124-1100	Evolution characteristics of vacuum arc plasma under two types of electrode structures based on the principle of two-colorimetric diagnosis	<p>S. Liu^{1,2}, Z. Yuan^{1,2}, L. Liu^{1,2}, P. Ya^{1,2}, L. Chen^{1,2}, Y. Pan^{1,2}</p> <p>¹ Huazhong University of Science and Technology, State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Wuhan, 430074, China</p> <p>² Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, 430074, China</p>
125-1913	Dissipation of post-disruption runaway current by multi-physical states injection	<p>Y. Dong¹, C. Chen¹, Y. Zhang¹</p> <p>¹ Southwestern Institute of Physics, Center for Fusion Science, Chengdu, China</p>
126-286	A Laser Quenching Fluorescence Diagnostic System for Measuring Edge Recycling Particle Velocity Distribution	<p>D. Jiang¹, C.-S. Yip¹, C.-Y. Jin^{1,2}, W. Zhang¹, X.-J. Liu¹</p> <p>¹ Hefei Institutes of Physical Science, Chinese Academy of Sciences, hefei, China</p> <p>² University of Science and Technology of China, hefei, China</p>

127-363	The temp Poster behavior of NO and O in non-equilibrium atmospheric pressure plasma driven by nanosecond voltage pulses	L. Wang ¹ , M. Laroussi ² , X. Lu ¹ ¹ Huazhong University of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China ² Old Dominion University, Electrical & Computer Engineering Department, Norfolk, Virginia, United States of America
128-365	Two-stage fusion framework driven by domain knowledge for penetration prediction of laser welding	J. Li ¹ ¹ Hunan University, the College of Mechanical and Vehicle Engineering, Changsha, China
129-491		
130-953	Plasma characterization in compact theta pinch	S. Turiel ¹ , A. Gribov ¹ , D. Maler ¹ , Y. E. Krasik ¹ ¹ Technion - Israel Institute of Technology, Plasma physics group, Haifa, Israel
131-1384	Effects of voltage waveform and gas composition on electron properties by Thomson scattering	E. Wu ¹ , X. Lu ¹ , L. Nie ¹ ¹ Huazhong University of Science and Technology, State key laboratory of advanced electromagnetic engineering and technology, School of Electrical and Electronic Engineering, Wuhan, China
132-1964	Design and experiment of the FIR laser Polarimeter/Interferometer on the HL-3 tokamak	P. Zhang ¹ , Y. Li ¹ , Y. Li ¹ , J. Mou ¹ , X. Gu ¹ , H. Wang ¹ , Z. Shi ¹ , W. Chen ¹ ¹ Southwestern Institute of Physics, Chengdu, China
133-1968	A two-channel CO ₂ laser dispersion interferometer design on HL-3	X. Gu ¹ , H. Wang ¹ , Y. Li ¹ , J. Mou ¹ , Y. Li ¹ , P. Zhang ¹ , Z. Shi ¹ ¹ South Western Institute of Physics, Chengdu, China
134-2008	Experimental measurements of HCOOH laser interferometer on the HL-3 Tokamak	J. R. Mou ¹ , Y. G. Li ¹ , Y. Li ¹ , H. X. Wang ¹ , X. Y. Gu ¹ , P. F. Zhang ¹ , Z. B. Shi ¹ ¹ South Western Institute of Physics, Chengdu, China
TA 7 Pulsed Power and Other Plasma Applications		
135-2069	Influence of Electrode Erosion Caused by Interphase Short- Circuit Arcing on Thermal-Pressure Effects in the Switchgear	P. Li ^{1,2} , Q. Liu ^{1,2} , S. Qin ^{1,2} , Y. Gao ³ , T. Wu ^{1,2} , Z. Pu ^{1,2} , C. Fang ^{1,2} ¹ Hubei Provincial Engineering Technology Research Center for Power Transmission Line, Yichang, China ² China Three Gorges University, College of Electrical Engineering and New Energy, Yichang, China ³ State Grid Hubei Electric Power Co., Ltd. Enshi Power Supply Company, Enshi, China
136-182	Experimental study on insulation recovery characteristics of the pre-fired gas spark switch in linear transformer driver modules	Z. Wen ¹ , Z. Wang ² , M. Lv ¹ , S. Fan ¹ , A. Qiu ¹ ¹ Xi'an Jiaotong University, Xi'an, China ² Northwest Institute of Nuclear Technology, Xi'an, China
137-961	The development of a repetitive corona - stabled trigger switch	H. Zhang ¹ , X. Qiu ¹ , M. Zhang ¹ , S. Shao ¹ , Y. Zhang ¹ , R. Li ¹ , J. Su ¹ ¹ Northwest Institute of Nuclear Technology, Xi an, China
138-1193	Experimental study on breakdown jitter of switch gap under different pre-ionization parameters	R. Zhai ¹ , J. Yin ¹ , W. Luo ¹ , Y. Hu ¹ , M. Qiu ¹ , T. Zhang ¹ , Q. Wu ¹ , P. Cong ¹ ¹ Northwest Institute of Nuclear Technology, National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi an, China
139-1213	Experimental study on multi-channel discharge characteristics of UV pre-ionization field-distortion gas switch	R. Zhai ¹ , J. Yin ¹ , W. Luo ¹ , Y. Hu ¹ , M. Qiu ¹ , T. Zhang ¹ , Q. Wu ¹ , P. Cong ¹ ¹ Northwest Institute of Nuclear Technology, National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China

140-1358	Design and Optimizing the Trigger Structure of a Trigatron Gas Switch with Wide Working Coefficient	X. Zhang¹ , S. Tian ¹ , H. Cao ¹ , J. Yuan ¹ , S. Du ¹ , Y. Song ¹ , L. Chen ¹ , X. Li ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
141-1486	Prediction erosion resistance of gas switch electrode materials	Z. QingCheng¹ , Z. Tianyang ¹ , C. Peitian ¹ , W. Qilin ¹ , Z. Rongxiao ¹ , L. Weixi ¹ , Y. Jiahui ¹ , H. Yixiang ¹ ¹ Northwest Institute of Nuclear Technology, State Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China
142-1578	Bionic Spark Gap Switch Inspired by Woodpecker's Head	K. Luo¹ ¹ Huazhong Univeristy of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, 430074, China
143-1613	Research on Front Modulation Technology of Series High Voltage Power Supply Based on Solid State Switch	Y. Wang¹ , D. Zhang ¹ , L. Wang ³ , Y. Zhou ² , Z. Wang ¹ , Z. Liu ¹ , Q. Huang ¹ , K. Zhou ¹ ¹ Dalian University of Technology, School of Electrical Engineering, Dalian, China ² Tianjin Vocational and Technical Normal University, Tianjin, China ³ China Academy of Engineering Physics, Institute of Fluid Physics, Mianyang, China
144-2141	An Analytic Model of the 4H-SiC DSRD Output Pulse	D. Guo¹ , X. Tang ¹ , J. Guo ¹ , Y. Zhou ^{1,2} , Z. Jiang ¹ , Y. Feng ¹ , Y. Zhang ¹ , Q. Song ¹ ¹ Xidian University, School of Microelectronics, Xi'an, China ² Xidian University, Xidian-Wuhu Research Institute, Wuhu, China
145-2150	Research on Closing Delay Time Characteristics of Field-Breakdown Triggered Vacuum Switch with Different Trigger Electrode Materials	L. Yu¹ , X. Duan ¹ , L. Bu ¹ , M. Zhang ¹ , Y. Sun ¹ , M. Liao ¹ ¹ Dalian University of Technology, School of Electrical Engineering, Dalian, China
TA 8 Terahertz Sources, Radiation and Applications		
146-78	An optically pumped Terahertz pulse source with ultra-high repetition rates	X. Zhang¹ , R. Wang ¹ , Z. Luo ¹ , X. Liu ¹ ¹ National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
147-99	Simulation of Stimulated Brillouin Scattering at THz Frequency Range	X. Xu ^{1,2} , X. Qu ¹ , J. Lou ¹ , M. Gao ¹ , Y. Huang¹ ¹ National Innovation Institute of Defense Technology, Beijing, China ² University of Chinese Academy of Sciences, Beijing, China
148-110	A highly sensitive middle and far infrared wide-band mixing detection method utilizing a tunable local oscillator source	X. Yang¹ , X. Zhang ¹ , Z. Luo ¹ ¹ National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
149-117	Modulation of Terahertz Wave by Laser-Driven Plasma Current	X. Qu¹ , M. Gao ^{1,2} , Y. Feng ¹ , Z. Zheng ² , Z. Zhao ² , Y. Huang ¹ ¹ National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China ² National University of Defense Technology, Department of Physics, Changsha, China
150-160	Terahertz to near-infrared radiation generation using two-color laser pulses in plasma	D. Mishra¹ , B. Kumar ¹ ¹ University of Lucknow, Department of Physics, Lucknow, India
151-166	Study of terahertz sources based on beam-plasma system	Z. Xie¹ , S. Yang ¹ , Q. Luo ¹ , Z. Wang ¹ , S. Wang ¹ , Y. Gong ¹ ¹ University of Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, School of Electronic Science and Engineering, Chengdu, China

152-235	Modulation of terahertz waves by air plasmas	M. Gao ^{1,2} , X. Qu ¹ , Z. Zheng ² , Y. Feng ¹ , Z. Zhang ¹ , Z. Zhao ² , Y. Huang ¹ ¹ National Innovation Institute of Defense Technology, Beijing, Innovation Laboratory of Terahertz Biophysics, Beijing, China ² National University of Defense Technology, Department of Physics, Changsha, China
153-245	Interaction between terahertz waves and Ar atoms plasma excited by Few-cycle laser pulse	M. Gao ^{1,2} , Z. Zheng ¹ , L. Wang ¹ , Y. Feng ² , X. Wang ¹ , Z. Lv ¹ , D. Zhang ¹ , Z. Zhang ¹ , Y. Huang ² , Z. Zhao ¹ ¹ National University of Defense Technology, Department of Physics, Changsha, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
154-1295	High flatness full waveguide bandwidth tripler based on planar metal breaking three-dimensional resonance	Y. Dong ¹ , J. Chen ¹ , J. Zhou ¹ , Y. Zhang ¹ ¹ University of Electronic Science and Technology of China, School of Electronic Engineering, Chengdu, China
155-1400	Research into field emission terahertz radiation sources based on Localized Surface Plasmon Polaritons	S. Liu ¹ , J. Liu ¹ , J. Xiao ¹ , B. Zeng ¹ ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China
156-1446	340GHz On-chip Integrated Schottky Diode Frequency Quadrupler	H. Guo ¹ , H. Zhou ¹ , Y. Wu ¹ , J. Zhou ¹ , Y. Zhang ¹ , Y. Dong ¹ , Z. Yang ¹ ¹ University of Electronic Science and Technology of China, Engineering Center of Integrated Optoelectronic & Radio Meta-chip, Chengdu, China
157-1991		
158-79	Long wave mid-infrared passive single-pixel imaging based on parametric upconversion	X. Liu ¹ , Z. Zhang ¹ , X. Yang ¹ , X. Zhang ¹ ¹ National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
159-100	A Possible Role of Terahertz Wave in the Phosphorylation of CREB	B. Zhou ^{1,2} ¹ Tsinghua University, Department of Physics, Beijing, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
160-113	Study on spectral characteristics of skin spontaneous radiation in middle and far infrared bands	X. Yang ¹ , X. Zhang ¹ , X. Liu ¹ ¹ National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, Germany
161-303	Research on terahertz near-field technology in micro-nano biological imaging	W. Zhang ¹ , C. Peng ¹ , F. Jiang ¹ , Z. Yu ¹ , X. Jiang ² ¹ Institute of Energy, Hefei Comprehensive National Science Center, hefei, China ² Reproductive and Genetic Hospital, The First Affiliated Hospital of USTC, Division of Life Sciences and Medicine, University of Science and Technology of China, hefei, China
162-1438	Determination of chloride concentrations in cement paste with terahertz time-domain spectroscopy (THz-TDS)	H. Zhai ¹ , Y. Qiu ² , L. Gong ² , R. Dan ³ , W. Liu ¹ , L. Hu ² , X. Li ¹ , Y. Hang ⁴ , F. Shi ⁴ , Y. Li ² ¹ Xi'an Jiaotong University, Department of Microelectronics, School of Electronic and Information Engineering, Key Laboratory of Micro-Nano Electronics and System Integration of Xi'an City, Xi'an, China ² Xi'an Jiaotong University, Key Laboratory of Physical Electronics and Devices, Ministry of Education, Faculty of Electronic and Information Engineering, Xi'an, China ³ Xi'an Jiaotong University, School of Software Engineering, Xi'an, China ⁴ Suzhou Nuclear Power Research Institute, Suzhou Nuclear Power Research Institute, Suzhou, China

163-15	The terahertz spectral transmittance of different biological tissue	P. Liu¹ , T. Zhang ^{1,2} , H. Lin ¹ , Z. Zhang ¹ , Y. Wang ¹ , Z. Song ¹ ¹ Academy of Military Sciences, National Innovation Institute of Defense Technology, Beijing, China ² Xi'an Jiaotong University, School of Life Science and Technology, Shaanxi, China
164-39	DNA nano structures driven by terahertz waves	Y. Yuan¹ , J. Lou ² , Z. Zhang ² ¹ Xidian University, Xi'an, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
165-44	Terahertz Waves Enhance Permeability of NMDA Receptor Channel	Y. Zhong^{1,2} , Y. Sun ² , Z. Zhang ² , R. Jiang ² ¹ Tsinghua University, Department of Engineering Physics, Beijing, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
166-63	Investigation of Terahertz Electric Field Effects on the Selectivity of the Kv1.2 Potassium Ion Channel	X. Zhao¹ , W. Ding ¹ , H. Wang ¹ , Y. Liu ¹ , Y. Wang ¹ , Y. Li ¹ , C. Liu ¹ ¹ Xi'an Jiaotong University, School of Electronic and Information Engineering, Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an, China
167-64	Reversible control of neuron by Terahertz wave stimulation	Y. Sun^{1,2} , Z. Zhang ² , L. Guo ¹ , S. Wang ¹ , Y. Gong ¹ ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
168-70	A physical model of terahertz signal generation, transmission and amplification in myelinated nerves	Z. Xiang¹ ¹ National Innovation Institute of Defense Technology, Beijing, China
169-72	Laws of Regulation of Terahertz Waves on Weak Interactions in Biosystems	Y. Li¹ , Z. Zhang ¹ , Z. Song ¹ , Y. Huang ¹ ¹ National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
170-74	Numerical Simulation of Terahertz/Mid-Infrared Wave Propagation in Myelinated Nerve Fiber	Z. Zhang¹ , Z. Song ¹ ¹ National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
171-80	Possibility and Physical Mechanism of Light Stimuli Transferred into Terahertz Signals in Vision	Y. Li¹ , Z. Zhang ¹ , Z. Song ¹ , Y. Huang ¹ ¹ National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
172-677	Investigation on the Influence of Applied Terahertz Electromagnetic Field on the Permeability of Voltage-Gated Potassium Ion Channels Kv1.2	D. Wen¹ , X. Zhao ¹ , H. Wang ¹ , Y. Wang ¹ , Y. Liu ¹ , L. Gong ¹ , S. Lin ¹ , C. Liu ¹ , Y. Li ¹ ¹ Xi'an Jiaotong University, School of Electronic Science and Engineering, Xi'an, China
173-1010	Interaction of Terahertz Waves with the Voltage-gated sodium channel	X. Zhou¹ , H. Ning ¹ , L. Guo ¹ , Q. Zhang ¹ , K. Wang ¹ , S. Wang ¹ , Y. Gong ¹ ¹ University of Electronic Science and Technology of China, National Key Laboratory of Science and Technology on Vacuum Electronics, Chengdu, China
174-1537	Effect of THz fields on ion flow through KcsA channel by polarization of water molecules	Y. Wang¹ , H. Wang ¹ , W. Ding ¹ , Y. Li ¹ , C. Liu ¹ ¹ Xi'an Jiaotong University, School of Electronic Science and Engineering, Xi'an, China
175-2090	The insights into the relationship between the confined water's orderliness and its terahertz spectral	X. Zhou¹ , Z. Zhu ¹ , Y. Li ² ¹ University of Shanghai for Science and Technology, School of Optical-Electrical Computer Engineering, Shanghai 200093, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing 100071, China

TA 9 Special Sessions: Innovative Fusion Approaches		
176-780	The Influence of Air Ionization Effect on Streak Camera SGEMP	L. Yuan ^{1,3} , C. Meng ² ¹ Tsinghua University, Department of Engineering Physics, Beijing, China ² Zhejiang University, College of electrical engineering, Hangzhou, China ³ Tsinghua University, Key Laboratory of Particle Technology and Radiation Imaging, Ministry of Education, Beijing, China
177-1304	Analysis of the effects of strong stray magnetic fields generated by tokamak device on transformers assembled in power electronic converters	X. Zhao ^{1,2} , L. Jiang ¹ , G. Gao ¹ ¹ Hefei Institutes of Physical Science, Chinese Academy of Sciences, Anhui, China ² University of Science and Technology of China, Anhui, China
178-496	Chemical Synthesis of Electronic Gas Disilane by Silane Plasma Reaction	J. Wu ¹ , L. He ^{1,2} ¹ Tianjin university, School of Chemical Engineering and Technology, Tianjin, China ² National Engineering Research Center of Distillation Technology, Tianjin, China
179-617	Application of Reactive Plasma Deposition Technique in Preparation of High Quality Transparent Conductive Oxide Electrodes for Solar Cells	L. Zhang ¹ , J. Shang ¹ , Z. Che ¹ , Q. Wang ¹ , M. Cao ¹ , Y. Zhou ¹ , Y. Zhou ¹ , F. Liu ¹ ¹ University of Chinese Academy of Sciences, Center of Materials Science and Opto-Electronics Engineering, College of Materials Science and Opto-Electronic Technology, Beijing 100049, China
180-803	Preparation of few-layer graphene by annealing Ni3C film deposited by high power impulse magnetron sputtering	Z. Li ¹ , Z. Liu ¹ ¹ Beijing Institute of Graphic Communication, Laboratory of Plasma Physics and Materials, Beijing, China
181-821	Influence of precursor feedthrough position on ceramic surface insulating performance by APPJ film deposition	L. Li ¹ , Z. Xu ¹ , X. Cui ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
182-1262	Flexible control of scattering elements for plasma photonic crystals in dielectric barrier discharge	J. Wang ¹ , F. Liu ¹ , W. Fan ¹ ¹ Hebei University, Baoding, China
183-1334	Fabrication of carbon-coated aluminum nanoparticles and carbon quantum dots by arc discharge in liquid environment	R. Jia ¹ , S. Jia ^{2,1} , Y. Mo ¹ , Z. Shi ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China ² Sichuan University, College of Electrical Engineering, Chengdu, China
184-1363	Exsolution of Alloyed Nanoparticles in Perovskite Oxide by Plasma	Q. Li ¹ , Z. Zhu ¹ , J. Zhou ¹ , K. Wu ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
185-697	Design and Characteristics of a Microplasma Jet Triggered Repetitive Gas Switch Based on a Fiber Laser Power Supply System	S. Tian ¹ , H. Cao ¹ , X. Zhang ¹ , Y. Song ¹ , J. Yuan ¹ , S. Du ¹ , L. Chen ¹ , X. Li ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
186-825	Numerical Simulation of Cathode Microcrater Formation on Electrode Surface Based on Smoothed Particle Hydrodynamics	Y. Ma ¹ , Y. Zhang ¹ , J. Dai ¹ , L. Jin ¹ ¹ Tongji University, College of electronic and Information Engineering, Shanghai, China

187-865	Research on arc discharge characteristics of metal-doped copper photocathodes	Y. Yang ^{1,2} , P. Liang ^{1,2} , X. Weng ¹ , C. Kong ² ¹ Northwest Institute of Nuclear Technology, State Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China ² Xi'an Jiaotong University, School Of Physics, Xi'an, China
188-1501	PIC simulation investigations on the effects of metallic vapor on vacuum surface flashover	R. Lian ¹ , D. Zhang ^{2,3} , Z. Guo ^{2,3} , Z. Jia ^{2,3} , B. Song ¹ , G. Zhang ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China ² Research Institute of Physics and Chemistry Engineering of Nuclear Industry, National Key Laboratory of Particle Transport and Separation Technology, Tianjin, China ³ Research Institute of Physics and Chemistry Engineering of Nuclear Industry, Tianjin, China
189-814	Application of a high-speed imaging system for characterization of a hypersonic plasma jet	C. Li ¹ , Q. Shu ¹ , Z. Cui ¹ , G. Li ¹ , Y.C.F. Thio ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
190-1617	A Hybrid Kinetic Code for Plasma-Jet-Driven Magneto-Inertial Fusion (PJMIF) Simulations	D. Li ¹ , Y.C.F. Thio ¹ , L. Jia ¹ ¹ ShanghaiTech University, Centre for Ultimate Energy, Shanghai, China
191-1657	Development of a laser interferometric system for measuring the density of a hypersonic plasma jet	Y. Sun ¹ , G. Li ¹ , J. Gu ¹ , L. Wang ¹ , Y.C.F. Thio ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
192-1663	A new SPH-based MHD code SPMHD	Z.H. Liu ¹ , S.B. Qi ¹ , J. Mu ¹ , J. Huang ¹ , Z. Li ¹ , Y.C.F. Thio ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
193-1667	Partition functions, adiabatic exponent and their role in the analysis of spectroscopic Doppler shift in determining the Mach number and temperature of a hypersonic plasma jet	Y.C. F. Thio ¹ , C.J. Hao ¹ , S.B. Qi ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
194-1688	Development of an advanced experimental system for fundamental investigations of glow and arcing discharge (GADX)	C.J. Hao ¹ , Y.C. F. Thio ¹ , P. Du ¹ , M.R. Li ¹ , X.Y. Guo ¹ , Y.R. Zhang ¹ , X.H. Zhu ¹ , C.C. Wu ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
195-1769	Design and modeling of a Laser Induced Florescence Diagnostics System for PJMIF development	C. Wu ¹ , Y. Yuan ¹ , Q. Han ¹ , Y.C. F. Thio ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
196-1770	Measuring the mass dispensed by an ultrafast gas valve in a two-stage gas injection system for an advanced plasma gun for PJMIF	Y. Jing ¹ , X. Zhang ¹ , Y. Zhu ¹ , Y. Liu ¹ , J. Mu ¹ , Y.C. F. Thio ¹ ¹ ShanghaiTech University, Center for Ultimate Energy, Shanghai, China
197-1773	A two-stage gas injection system for coaxial plasma gun as a driver for PJMIF	Y.C. F. Thio ¹ , D. Zhang ¹ , Y. Liu ¹ , D. Yuan ¹ , X. Zhang ¹ , W. Yuan ¹ , Y. Zhu ¹ , G. Li ¹ , M. Xu ¹ , Y. Shen ¹ ¹ Shanghai Tech University, Center for Ultimate Energy (CUE), Shanghai, China
198-1782	Development of an ultrafast gas valve in a plasma gun for PJMIF application	D. Zhang ¹ , Y. Liu ¹ , Y. Jing ¹ , D. Yuan ¹ , X. Zhang ¹ , Y. Zhu ¹ , G. Li ¹ , J. Mu ¹ , Y.C. F. Thio ¹ ¹ Shanghai Tech University, Center for Ultimate Energy (CUE), Shanghai, China
199-1819	The concept of Distributively Induced Quasi-Spherical Implosion Fusion (DIQSIF) and an analytic model for evaluating MRT instability within it	S.-C. Duan ¹ ¹ China Academy of Engineering Physics, Institute of Fluid Physics, Mianyang 621999, China
200-1847	Density Modulation of a plasma slab in advanced coaxial plasma guns developed as drivers for PJMIF	Y.C.F. Thio ¹ , J. Mu ¹ , M. Xu ¹ ¹ Shanghai Tech University, Center for Ultimate Energy (CUE), Shanghai, China

201-1169		
202-1547	Std-PINN: Source term decoupled physics-informed neural networks for solving multi-particle low-temperature plasma fluid model	Z. Fang¹ , Y. Pan¹ , D. Dai ¹ ¹ South China University of Technology, School of Electric Power Engineering, Guangzhou, China
203-1898	Secondary System Fault Diagnosis in EAST Intelligent Substations Using Deep Neural Networks	H. Chen^{1,2} , Y. Huang ¹ ¹ Institutes of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei 230031, China ² University of Science and Technology of China, Hefei 230026, China
204-1963	Calculation of cross sections based on graph neural networks with limited data	Y. Wang¹ , L. Zhong ¹ ¹ Southeast University, School of Electrical Engineering, Nanjing, China
205-2051	Plasma chemical kinetic simulation based on physics-informed neural networks	R. Wei¹ , J. Chen ¹ , Q. Wu ¹ , H. Ren¹ , L. Zhong ¹ ¹ Southeast University, School of Electrical Engineering, Nanjing, China
206-2301	Empowering Optical Diagnostics with Image-Based Spectral Analysis via Supervised Learning	J. Kim¹ , S.-C. Huh ¹ , S. Shin ² , S. Park ¹ ¹ Korea Advanced Institute of Science and Technology (KAIST), Department of Nuclear and Quantum Engineering, Daejeon, Republic of Korea ² Agency for Defense Development, AI Autonomy Technology Center, Daejeon, Republic of Korea

June 19 17:00-18:30 pm

Poster Sessions		
June 19 17:00-18:30 pm Room: The 3rd Floor Exhibition Area		
ID	Title	Name / Affiliation
TA 1 Basic Processes in Fully and Partially Ionized Plasmas		
1-766	Mechanisms of plastic deformation in sheared two-dimensional dusty plasmas	S. Lu¹ , D. Huang ¹ , Y. Feng ¹ ¹ Soochow University, Institute of Plasma Physics and Technology, School of Physical Science and Technology, Suzhou, China
2-1287	Shock waves in strongly coupled one-dimensional dusty plasmas under Yukawa interactions	W.-S. Duan¹ ¹ Northwest Normal University, College of Physics and Electronic Engineering, Lanzhou, China
3-1379	Heat Transfer Parameters in Two-Dimensional Yukawa Systems Under Uniform Magnetic Field Conditions: A Non-Equilibrium Molecular Dynamic Study	S. Kodanova^{1,2} , T. Ramazanov ^{1,2} , N. Djienbekov ^{1,2} , N. Bastykova ^{1,2} ¹ Al-Farabi Kazakh National University, Institute of Experimental and Theoretical Physics, Almaty, Kazakhstan ² Institute of Applied Sciences and Information Technology, Almaty, Kazakhstan
4-1638	Molecular dynamics simulation of interaction between energetic electron beam with charged dust particles in a 2D dusty plasma	W. Kong¹ , F. Yang ¹ , S. F. Liu ² ¹ Civil Aviation University of China, College of Science, Tianjin, China ² Nankai University, School of Physics, Tianjin, China

5-1689	The investigation of plume-surface interaction and dynamic properties of charged dust during the lunar landing	L. Kong¹ , W. Luo ² , S. Chen ² , Z. Zhang ¹ , J. Ren ² , G. Zhang ² , Y. Wang ² , W. Wang ² , H. Tang ² ¹ <i>Beihang University, School of Space and Environment, Beijing, China</i> ² <i>Beihang University, School of Astronautics, Beijing, China</i>
6-1990	Beltrami states in Earth's dusty mesosphere	S. M. Gondal¹ ¹ <i>University of engineering and Technology Lahore Pakistan, Department of Physics, Lahore, Pakistan</i>
7-2097	Effect of dust particle size on charged particles collision processes in complex plasma	N. K. Bastykova^{1,2} , O. Kosymbekov ^{1,2} , S. Kodanova ^{1,2} , T. Ramazanov ^{1,2} ¹ <i>Institute of Applied Sciences and Information Technology, Almaty, Kazakhstan</i> ² <i>Al Farabi Kazakh National University, Institute for Experimental and Theoretical Physics, Almaty, Kazakhstan</i>
8-746	Effect of basic metal addition on dry reforming of methane by plasma catalytic system	K. Kamiya¹ , K. Inoue ¹ , E. W. Qian ¹ , N. Kobayashi ² ¹ <i>Tokyo University of Agriculture and Technology, Graduate School of Engineering, Koganei, Japan</i> ² <i>Gifu University, Graduate School of Engineering, Gifu, Japan</i>
9-784	Strengthening of fluidized catalysts for green ammonia production using DBD plasma assistance	B. Zhang¹, J. Li¹ , H. Zuo ¹ , Y. Chen ¹ , N. Kobayashi ² ¹ <i>Zhengzhou University of Light Industry, Zhengzhou, China</i> ² <i>Gifu University, Gifu, Germany</i>
10-1121	Study of a He plasma jet with H ₂ O admixture by a plug-flow model	T. Zhu¹ , M. Baeva ¹ , F. Sigener ¹ , P. Bruggeman ² , S. Dongawar ² ¹ <i>Leibniz Institute for Plasma Science and Technology (INP), Leibniz Institute for Plasma Science and Technology (INP), Greifswald, Mecklenburg-Western Pomerania, Germany</i> ² <i>University of Minnesota, Department of Mechanical Engineering, Minneapolis, Minnesota, United States of America</i>
11-1442	Plausible Plasma Bubbles Provide the Common Origin of Amino acids and RNA-Nucleobases	D. Gan¹ , D. Liu ¹ , R. Zhou ¹ ¹ <i>Xi'an Jiaotong University, Center for plasma biomedicine, Shaanxi, Xi'an, China</i>
12-1604	Study on non-equilibrium plasma assisted ammonia ignition	M. Zhang¹ , H. Chen ² , X. Jiang ³ , Q. Chen ¹ , B. Yang ² ¹ <i>Beijing Jiaotong University, Beijing, China</i> ² <i>Tsinghua University, Beijing, China</i> ³ <i>Wuhan university of technology, Wuhan, China</i>
13-1625	Simulation of Partial Discharge with Two-dimensional Plasma Fluid Model Considering Practical Particle Reactions	H. Shi¹ ¹ <i>Huazhong Univeristy of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, 430074, China</i>
14-1844	Force-guided layout-based plasma reaction path mapping and screening of key reactions and species	H. Zhan^{1,2}, X. Chen^{1,2} , Y. Zhang ^{1,2} , P. Qin ^{1,2} , Q. Luo ^{1,2} , L. Lan ^{1,2} ¹ <i>Wuhan University, School of Electrical Engineering and Automation, Wuhan, China</i> ² <i>Wuhan University, State Key Laboratory of Environmental Protection for Power Grid, Wuhan, China</i>
15-2000	Enhanced Hydrogen Production through Enhanced Rotation in Bi reforming of Methane Using Rotating Gliding Arc Plasma under Different Operating Conditions: Experimental and Kinetic Studies	R. M. Pathak¹ , L. Rao ¹ ¹ <i>Indian Institute of Science Bangalore, Centre for Sustainable Technologies, Bangalore, India</i>
16-2209	Towards Understanding Photocatalytic Plasma Reforming of Methane to Syngas Using a TiO ₂ -Coated DBD	B. Kim¹ , J.H. Bae ¹ , S. Park ¹ ¹ <i>Korea Advanced Institute of Science and Technology, Department of Nuclear and Quantum Engineering, Daejeon, Republic of Korea</i>
17-3003	Electron shielding by active mesopore for mode-specific activation in plasma-mediated propane dehydrogenation at mild conditions	Zunrong Sheng¹ ¹ <i>Tianjin University</i>

TA 2 Microwave Generation and Plasma Interactions		
18-273	An improved Z-Transform Discontinuous Galerkin Time Domain Method for non-uniform plasma sheath	J. Guo ¹ , W. Shi ² ¹ Xidian University, Department of Physics, Xi'an, China ² Xidian University, School of Aerospace Science and Technology, Xi'an, China
19-314	Numerical simulation study of FDTD for Lorentz-Drude plasma model	H. Mo ¹ , H. Wang ¹ , Y. Han ¹ ¹ Xidian University, School of Physics, Xi An, China
20-2189	Simulation and optimization of a dummy load for the high power gyrotron at IAE	S. Xiong ¹ , Z. Zeng ¹ , Y. Jiang ¹ , G. Ma ¹ ¹ China Academy of Engineering Physics, Institute of Applied Electronics, Mianyang, China
21-2252	Magnetism design of the Halbach cylinders based on artificial neural network	X. Hu ¹ , W. Tie ¹ , Y. Shao ¹ , Y. Meng ¹ , Y. Li ¹ , J. Fang ¹ ¹ China Academy of Space Technology Xian, Shaanxi, Xi'an, China
22-2329	Statistics of Impedance and Scattering Matrices in Chaotic Microwave Cavity for the Single Channel Model	M. Liu ¹ , J. Dong ¹ , C. Liu ¹ , X. Liu ¹ , W. Jiang ² ¹ Xi'an Jiaotong University, xi'an, China ² Nagaoka University of Technology, Nagaoka, Japan
23-454	Multipactor Discharges in a One-sided Dielectric-Loaded Parallel-Plate Waveguide	X. Zhang ¹ , T. Wang ¹ , D. Li ¹ ¹ Xiangtan University, School of automation and electronic information, Xiangtan, China
24-990	W-Band Multi-Polarized Multi-Mode Wideband OAM Reflectarray Antenna with a Linearly Polarized Feed	L. Tian ^{1,2} , R. Zhang ³ , Y. Wang ^{1,2} , Z. Wang ^{1,2} , Y. Ren ^{1,2} ¹ Aerospace Information Research Institute, Chinese Academy of Sciences, Beijing 100094, China ² School of Electronic, Electrical and Communication Engineering, University of Chinese Academy of Sciences, Beijing 100049, China ³ the Key Laboratory of Science and Technology on High Power Microwave Sources and Technologies, Aerospace Information Research Institute, Chinese Academy of Sciences, Beijing 100094, China
25-1039	Theoretical Prediction of DSMP Within Dual-Frequency RF Fields	C. Luo ¹ , X. Zhang ¹ , T. Wang ¹ , Q. Hu ¹ ¹ Xiangtan University, School of automation and electronic information, Xiangtan, China
26-1994	Competition of Space charge effect and dielectric charging on multipactor saturation in a dielectric-loaded waveguide	Q. Hu ¹ , X. Zhang ¹ , T. Wang ¹ , C. Luo ¹ , S. Peng ¹ ¹ Xiangtan University, College of Automation and Electronic Information, Xiangtan, China
27-2122	Study on Microprocess of the breakdown in RBWO	X. Liu ¹ , C. Chen ¹ , D. Yang ¹ , Y. Cao ¹ ¹ Northwest Institute of Nuclear Technology, 2. Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi an, China
28-2270	Particle-in-Cell Simulation of Sub-THz Sheet Beam EIK	S. Chen ¹ , T. Liu ¹ , J. Bai ¹ , P. Wang ¹ , W. Pan ¹ , X. Chen ¹ , Y. Cao ¹ ¹ Beijing Institute of space long march Vehicle, Beijing, China
29-171	Effects of Water Injection on Hydrogen Production and OH Radical Generation in an Atmospheric Nitrogen Microwave Plasma Torch	X. Bai ¹ , X. Pu ¹ , Z. Jie ¹ , G. Zhang ¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, China
30-283	Microwave Caused Gas Heating and Radiation Heat Transfer in Resonant-type Microwave Plasma	Z. Tian ¹ , M. Wang ¹ ¹ Tsinghua University, Beijing, China
31-353	Study of the Electromagnetic Scattering Characteristics in Inductively Coupled Plasma Arrays	Y. Guan ¹ , Z. Zhang ¹ ¹ Southwest Jiaotong University (SWJTU), physics school, Chengdu, China

32-1430	Design and Modeling of a Microwave Plasma Enhanced Chemical Vapour Deposition System for Growth of Diamond Films	K. Aranganadin ¹ , H.-Y. Hsu ² , M.-C. Lin ¹ ¹ Hanyang University, Multidisciplinary Computational Laboratory, Department of Electrical and Biomedical Engineering, Seoul, Republic of Korea ² National Taipei University of Technology, Department of Mechanical Engineering, Taipei, Taiwan
33-1431	Research on the High Power Microwave Effect mechanism of Typical RF devices in Ku-Band	H. Wei ¹ , W. Hong-gang ¹ , L. Guo-lin ¹ ¹ Changsha Aerospace Huacheng Technolog Co.,LTD, Changsha, China
34-1519	A high-efficiency room-temperature surface wave plasma jet based on rectangular waveguide	Y. Huang ¹ , Y. Yang ¹ , R. Peng ¹ , D. Han ¹ , W. Luo ¹ , H. Zhu ² , <u>W. Zhang</u> ¹ ¹ Guiyang University, School of Electronics and Information Engineering, Guiyang, China ² Sichuan University, School of Electronics and Information Engineering, Chengdu, China
35-1644	Design of phase-locked relativistic magnetrons with all-cavity-extraction	S. Xu ¹ , F. Qin ¹ , L. Lei ¹ , Y. Zhang ¹ ¹ China Academy of Engineering Physics, Mianyang, China
36-1713	Numerical simulation of the gas-discharge tube of a microwave switch of the S-band Microwave Pulse compressor at low and high-power levels	V. S. Igumnov ¹ , V. Y. Kozhevnikov ¹ , Z. Liu ¹ , C. Yuan ¹ ¹ Harbin Institute of Technology, School of Physics, Harbin 150030, China
37-1729	Model of the formation of a plasma channel in the gas-discharge tube of a microwave switch in a high-power microwave compressor	V. S. Igumnov ¹ , V. Y. Kozhevnikov ¹ , Z. Liu ¹ , C. Yuan ¹ ¹ Harbin Institute of Technology, School of Physics, Harbin, China
38-1739	Study of plasma ignition and diagnostic techniques for 9-cell SRF cavity cleaning	T. Zhu ^{1,2} , X. Bao ^{3,2} , <u>A. Wu</u> ² , T. Tan ² , C. Wang ² , C. Ouyang ² , Q. Chu ² , M. Yu ¹ , K. Zhang ¹ , Y. He ² ¹ Sichuan University, Institute of Nuclear Science and Technology, chengdu, China ² Chinese Academy of Sciences, Institute of Modern Physics, lanzhou, China ³ Lanzhou university, School of Nuclear Science and Technology, lanzhou, China
39-2077	Experimental study on suppression of radio frequency breakdown in graphite relativistic backward wave oscillator	Y. Hua ¹ , P. Wu ¹ , J. Sun ¹ , Z. Song ¹ , B. Liu ¹ ¹ Northwest Institute of Nuclear Technology, 2. Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an, China
40-2231	Localized Plasmon Phenomena in Inhomogeneous Plasma	L. Zhen ¹ , L. Qi ¹ , L. Ruibing ¹ ¹ Xiamen University, School of Aerospace Engineering, Xiamen, China
TA 3 Charged Particle Beams and Sources		
41-546	Design and Simulation of Sheet Electron Beam for Gridless Inductive Output Tube	M.K. Nadeem ¹ , S. Wang ² , J. Latif ¹ , B. Ali ¹ , Y. Gong ² ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China ² University of Electronic Science and Technology of China, National Key Laboratory on Vacuum Electronics, Chengdu, China
42-573	Particle-in-Cell Simulation of High-Energy Negative Ion Beam Neutralization in Plasma Targets	L. Zhang ¹ , Q. Zhang ¹ ¹ Dalian University of Technology, Department of Physics, Dalian, China
43-648	Relaxation and halo formation of an initially mismatched intense sheet beam	R. Pakter ¹ , A. H. Carlan Jr. ¹ ¹ Universidade Federal do Rio Grande do Sul, Institute of Physics, Porto Alegre, Brazil

44-916	Study on two types of breakdown mechanisms of 1-mm vacuum gap under microsecond pulse voltage	Y. Wu ^{1,2} , J. Su ² , X. Qiu ² , H. Zhang ² , B. Yu ² , L. Zhao ² , J. Shi ¹ ¹ Tsinghua University, 1. Department of Engineering Physics, Beijing, China ² Northwest Institute of Nuclear Technology, 2. Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an, China
45-926	Study on the backing material of solid lithium target for accelerator-driven neutron source	H.-F. Liu ¹ , N. Hagura ¹ , T. Kobayashi ² ¹ Tokyo City university, Setagaya, Japan ² RIKEN, Wako, Japan
46-942	Numerical simulation of the formation process of dense plasma focus	Q. Sun ¹ ¹ Institute of Applied Physics and Computational Mathematics, Beijing, China
47-1880	Research on emission stability of carbon/carbon composite material cathodes	T. Wang ¹ , J. Ju ¹ , F. Dang ¹ , W. Zhang ¹ , Y. Zhou ¹ , Z. Li ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
48-1908	Method for Evaluating Electron Beam Quality and Design of the Double-Cylindrical-Beam Gun	Y. Jia ¹ , H. Yin ¹ , Y. Wei ¹ ¹ University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China
49-2271	A design method for an electron beam expansion system using quadrupole magnets based on genetic algorithms	Y. Li ¹ , W. Tie ¹ , X. Hu ¹ , Y. Shao ¹ , Y. Meng ¹ , J. Fang ¹ ¹ China Academy of Space Technology(Xi'an), China Academy of Space Technology(Xi'an), Xi'an, China
50-2285	Focusing of keV Ion Beams from Plasma with Micro-Glass Capillaries Beyond the Self-Focusing Limit: Realization of Quantum Ion Beams	S. Barman ¹ , S. Bhattacharjee ¹ ¹ Indian Institute of Technology, Kanpur, Department of Physics, Kanpur, India
TA 4 High Energy Density Plasmas and Applications		
51-139	Development of a new E//B neutral particle analyzer and its first commissioning on HL-3	L. Zang ¹ ¹ Southwestern Institute of Physics, Center for Fusion, Chengdu, China
52-163	Development of high current and high frequency pulse power system for compact torus injector device	Y. Ye ² , Y. Li ¹ , M. Tan ² ¹ Hefei Proton Dance Technology Co.,LTD, Anhui, China ² Institute of Energy, Hefei Comprehensive National Science Center, Anhui, China
53-455	Low magnetic field helicon plasma sources for compact fusion reactor concept	W. Li ¹ , G. Wang ¹ ¹ Aerospace Information Research Institute, Chinese Academy of Sciences, Key Laboratory of Science and Technology on High Power Microwave Sources and Technologies, Beijing, China
54-744	Study of the impact of a pulsed plasma flow on thermonuclear reactor materials	A. B. Tazhen ¹ , M. K. Dosbolayev ¹ , T. S. Ramazanov ¹ ¹ Al-Farabi Kazakh National University, Institute of Experimental and Theoretical Physics, Almaty, Kazakhstan
55-1267	EMC3-EIRENE modelling of edge impurity transport and heat flux by toroidally localized argon seeding on CFETR X-divertor	T. Xie ¹ , H. Li ² , Y. Feng ³ , W. Zhang ⁴ , R. Ding ⁴ , L. Wang ⁴ , Y. Luo ⁵ , D. Wang ⁶ ¹ Northeast Agricultural University, School of Arts and Science, Harbin 150030, China ² Shenzhen University, College of Physics and Optoelectronic Engineering, Shenzhen 518060, China ³ Max-Planck-Institut für Plasmaphysik, Association EURATOM-IPP, D-17491 Greifswald, Germany ⁴ Institute of Plasma Physics, Chinese Academy of Sciences, Hefei 230031, China ⁵ Southwest Jiaotong University, Institute of Fusion Science, School of Physical Science and Technology, Chengdu 610031, China

		China ⁶ Dalian University of Technology, Key Laboratory of Materials Modification by Laser, Ion and Electron Beams (Ministry of Education), School of Physics, Dalian 116024, China
56-1348	Distributed Capacitance Optimizing and Core Snubber Design for CRAFT NNBI	B. Liu ^{1,2} , Z. Liu ^{1,2} , C. Jiang ^{1,2} , S. Liu ¹ , J. Pan ¹ , S. Chen ¹ , Y. Qu ^{1,2} , Y. Xie ^{1,2} ¹ Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei, China ² University of Science and Technology of China, Hefei, China
57-1380	The preliminary experiments of double biasing electrodes on Keda Torus eXperiment	J. Wu ¹ , T. Lan ¹ , G. Zhuang ¹ , J. Wu ¹ , W. Mao ¹ , C. Chen ¹ , X. Wang ¹ , P. Deng ¹ , Q. Dong ¹ , Y. Zhou ¹ , T. Wang ¹ , P. Lu ¹ , Z. Bai ¹ , Y. Huang ¹ , Z. Wu ¹ , Z. Wei ¹ , X. Wen ¹ , H. Wang ¹ , C. Zhou ¹ , A. Liu ¹ , J. Xie ¹ , H. Li ¹ , W. Ding ¹ , W. Liu ¹ ¹ University of Science and Technology of China, Department of Plasma Physics and Fusion Engineering, Hefei 230026, China
58-1598		
59-1671	Particle Orbit Tracer Code (PTC) with Application to Integrated Modeling for CFETR	L.Y. Chen ¹ , F. Wang ¹ , Z.X. Wang ¹ , Z.H. Lin ¹ , L. Wei ¹ ¹ Dalian University of Technology, Key Laboratory of Materials Modification by Laser, Ion, and Electron Beams (Ministry of Education), School of Physics, Dalian 116024, China
60-1703	Theoretical and experimental investigation of different Tokamak mode and comparison of MHD and RMP disturbances in Tokamak plasma by using Hamiltonian formula	F.S.F. Mir Mohammad Ali Roudaki ¹ , S.M. M. Aghamiri ¹ ¹ Shahid Beheshti University, Department of Nuclear Engineering, Tehran, Iran (Islamic Republic of)
61-1744	The role of neutral baffling in closed divertor for nitrogen-seeded detachment in TCV tokamak	G.-Y. Sun ¹ ¹ Ecole Polytechnique Fédérale de Lausanne, Swiss Plasma Center, Lausanne, Vaud, Switzerland
62-2074	Plasma Low Frequency Oscillations	G. Li ¹ ¹ Institute of Plasma Physics, Chinese Academy of Sciences, Hefei 230031, China
63-2288	Study on the stress distribution characteristics of graphite electrode under pulsed arc shock pressure	J. Guo ¹ , L. Li ¹ , H. Dai ² , K. Luo ¹ ¹ Huazhong Univeristy of Science and Technology, School of Electrical and Electronic Engineering, Wuhan, China ² China Ship Development and Design Center, Wuhan, China
64-227	Characterization of a Multi-wavelength Laser-sustained Plasma	D. Zhang ¹ , J. Liu ¹ , Y. Fu ¹ ¹ Tsinghua University, Department of Electrical Engineering, Beijing, China
65-299	Gas Component Identification for Laser-Induced Cavitation Bubbles	S. Liu ¹ , K. Nitto ¹ , O. Supponen ² , T. Nakajima ¹ , M. Farhat ³ , T. Sato ² ¹ Tohoku university, Sendai, Japan ² ETH Zurich, Zurich, Switzerland ³ EPFL, Lausanne, Switzerland
66-362	Prediction of penetration based on a multi-feature fusion of plasma and molten pool in laser welding	J. Li ¹ ¹ Hunan University, the College of Mechanical and Vehicle Engineering, Changsha, China
67-716	Laser-Produced Highly Charged Au Spectra and Configuration Interaction for Cu-like ions	B. Ma ¹ , J. Ren ¹ , W. Wei ¹ , S. Zhang ¹ , S. Wang ² , Q. Fan ² , W. Zhou ² , Y. Zhao ¹ ¹ Xi'an Jiaotong University, School of Physics, Xi'an, China ² China Academy of Engineering Physics, Laser Fusion Research Center, Mianyang, China
68-1011	Edge Focusing of Proton Beams in Plasma	X. Luo ¹ , Z. Deng ² , W. Qi ² , D. Wu ³ , J. Ren ¹ , Y. Zhao ¹ ¹ Xi an Jiaotong University, School of Physics, Xi an, China

		<p>² China Academy of Engineering Physics, Laser Fusion Research Center, Mianyang, China ³ Shanghai Jiao Tong University, School of Physics and Astronomy, Shanghai, China</p>
69-1068	Electromagnetically Induced Transparency in Strongly Relativistic Regime	<p>T.-H. Zhang^{1,4}, W.-M. Wang^{2,3}, Y.-T. Li^{1,3}, J. Zhang^{3,1} ¹ Institute of Physics, CAS, Beijing National Laboratory for Condensed Matter Physics, Beijing, China ² Renmin University of China, Department of Physics and Beijing Key Laboratory of Opto-electronic Functional Materials and Micro-nano Devices, Beijing, China ³ IFSA Collaborative Innovation Center, Shanghai Jiao Tong University, Shanghai, China ⁴ School of Physical Sciences, University of Chinese Academy of Sciences, Beijing, China</p>
70-1208	Horizontally Opposed, Counter Propagating Colliding Cavity Confined Plasma Dynamics	<p>P. K. Pandey^{1,2}, J. Costello² ¹ 1Symbiosis Institute of Technology, Nagpur Campus, Symbiosis International (Deemed University), Pune, India, Department of Engineering Physics, Nagpur, India ² Dublin City University, Dublin 9, Ireland, School of Physical Sciences, Dublin, Ireland</p>
TA 5 Industrial, Commercial and Medical Plasma Applications		
71-96	Effect of the Plasma Gas Type on the Surface Characteristics of 3Y-TZP Ceramic	<p>H.-K. Kim¹ ¹ Ajou University School of Medicine, Department of Dentistry, Suwon, Republic of Korea</p>
72-141	Study on the influence of surface conductivity of biomaterials and tissues treated by plasma jets	<p>J. Wang¹, Y. Fu¹, C. Ding¹, R. Zhang¹ ¹ Tsinghua University, Tsinghua University, Beijing, China</p>
73-422	Inactivation of <i>Mytilus galloprovincialis</i> Using Pulsed Power	<p>R. Honda¹, Y. Ishibashi², T. Yoshikawa², R. Sasamoto¹, H. Watanabe³, Y. Takeyoshi³, D. Wang¹, T. Namihira¹ ¹ Kumamoto University, Institute of Industrial Nanomaterials, Kumamoto, Japan ² Kumamoto University, Graduate School of Science and Technology, Kumamoto, Japan ³ Kyushu Electric Power Co., Inc., Research Institute, Fukuoka, Japan</p>
74-428	Study on an atmosphere pressure plasma jet interacting with fibre: effects of fiber permittivity and spacing	<p>X. Kong¹, R. Wang¹ ¹ Beijing University of Chemical Technology, College of Mechanical and Electrical Engineering, Beijing, China</p>
75-521	Plasma-activated biogel for microbial infection treatment	<p>J. Chen¹, W. Yang¹, J. Zhang¹, H. Zhang¹, L. Guo¹, R. Zhou¹, D. Liu¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Center for Plasma Biomedicine, Xi'an, China</p>
76-565	A study for achieving high effectiveness at less irradiation number on sterilization using pulsed plasma of cut vegetables packaging low oxygen atmosphere	<p>P. Cui¹, J. Koshimawari¹, K. Saito¹, Y. Minamitani¹ ¹ Yamagata University, Graduate School of Science and Engineering, Yonezawa, Japan</p>
77-594	Secondary activation on aqueous solution by plasma-treated cotton and its disinfection effect	<p>Z. Wang^{1,2}, W. Li², X. Wang², D. Liu² ¹ Xi'an Jiaotong University, Key Laboratory of Shaanxi Province for Craniofacial Precision Medicine Research, College of Stomatology, Xi'an, China ² Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Centre for Plasma Biomedicine, School of Electrical Engineering, Xi'an, China</p>

78-684	Study on the mechanism of low-temperature plasma induced cold tolerance in tomato	D. Cui¹ , S. Huang ¹ , H. Xu ¹ , R. Ma ¹ , Z. Jiao ¹ ¹ Zhengzhou University, Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, School of Agricultural Sciences, Zhengzhou, China
79-706	Air discharges plasma-activated injectable hydrogel for immunotherapeutic of cancer	Z. Wang¹ , D. Liu ¹ , H. Zhang ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Centre for Plasma Biomedicine, Xi'an, China
80-718	Research on ring-shaped diffusion of plasma jets in hydrogels and its influencing factors	J. Zhao¹ , Y. Fu ¹ , Y. Han ¹ , R. Zhang ¹ ¹ Tsinghua University, Shenzhen International Graduate School, Shenzhen, China
81-790	Experimental and Numerical Investigation of Bubble Characteristics in Micro-hole Electrode Pulsed Discharge	Y. Zhang¹ ¹ Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China
82-829	Inactivation of microorganisms on fabrics using plasma-activated nebulized mist driven by different plasma gases	P. Zhao¹ , S. Ma ¹ , L. Guo ¹ , Y. Jia ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Center for Plasma Biomedicine, Xi'an, China
83-830	Plasma-activated Microbubbles by Underwater Discharge for Efficient Water Treatment	M. Zhang¹ , M. Zhu ¹ , R. Zhou ¹ , D. Liu ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
84-972	Role and Mechanism of LncRNA-PVT1-Dependent KAT2A-Mediated HIF-1 α Signaling Pathway in the Inhibition of Cutaneous Squamous Cell Carcinoma by Cold Atmospheric Plasma	C. Yang¹ , M. Ren ¹ , L. Wang ¹ ¹ The Second Affiliated Hospital of Anhui Medical University, Anhui medical University, Dermatology and Venereology, Hefei, China
85-1026	Study on Surface Discharge of Microscale Water Filaments	Q. Qi¹ , X. Shuai ¹ , S. Y. Wei ¹ , L. W. Zheng ¹ ¹ Beijing Jiaotong University, College of electrical engineering, Beijing, China
86-1033		
87-1050	Cold atmospheric plasma degradation of deoxynivalenol in solid and liquid phase and its effect on wheat flour quality	Y. Fan¹ , X. Yang ¹ , D. Cui ¹ , H. Xu ¹ , R. Ma ¹ ¹ Zhengzhou University, Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, School of Agricultural Sciences, Zhengzhou, China
88-1089	Inhibition of Fungal Growth and Aflatoxin B1 Synthesis in <i>Aspergillus flavus</i> by Plasma-Activated Water	J. Wang¹ , H. Xu¹ , R. Ma ¹ , Q. Yao ¹ , D. Cui ¹ ¹ Zhengzhou University, Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, School of Agricultural Sciences, Zhengzhou, China
89-1092	Application of atmospheric cold plasma for zearalenone detoxification in cereals: Kinetics, mechanisms, and cytotoxicity analysis	C. Xu¹ , M. Liu ¹ , Y. Fan ¹ , D. Cui ¹ , H. Xu ¹ , R. Ma ¹ ¹ Zhengzhou University, Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, School of Agricultural Sciences, Zhengzhou, China
90-1096	Effects of atmospheric low-temperature plasma on blueberry quality and surface fungal diversity	S. Huang¹ , X. Hu¹ , D. Cui ¹ , H. Xu ¹ , R. Ma ¹ ¹ Zhengzhou University, Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, School of Agricultural Sciences, Zhengzhou, China
91-1122	Dual synergistic bactericidal mechanism of cold atmospheric plasma coupled with ZnO nanoparticles against <i>Staphylococcus aureus</i>	H. Xu¹ , M. Du ¹ , R. Ma ¹ ¹ Zhengzhou University, Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, School of Agricultural Sciences, Zhengzhou, China

ICOPS & APCOPTS 2024

92-1140	Unraveling the mechanism of plasma-activated water inhibiting the fungal growth and DON biosynthesis in <i>Fusarium graminearum</i>	J. Zhang ¹ , Y. Zhu ¹ , D. Cui ¹ , H. Xu ¹ , R. Ma ¹ ¹ Zhengzhou University, Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, School of Agricultural Sciences, Zhengzhou University, Zhengzhou, China, 450001, Zhengzhou, China
93-1185	A novel antibacterial mechanism of atmospheric cold plasma against <i>Staphylococcus aureus</i> through degrading staphyloxanthin on cell membrane	Y. Zhu ¹ , H. Xu ¹ , D. Cui ¹ , R. Ma ¹ ¹ Zhengzhou University, Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, School of Agricultural Sciences, Zhengzhou, China
94-1190	Effect of Cold Atmospheric Surface Microdischarge Plasma on the Inactivation of <i>Fusarium moniliforme</i> and Physicochemical Properties of Chinese Yam Flour	H. Feng ¹ , X. Yang ¹ , D. Cui ¹ , H. Xu ¹ , R. Ma ¹ ¹ Zhengzhou University, Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, School of Agricultural Sciences, Zhengzhou, China
95-1229	The effect and mechanism study on the inducing of viable but non-culturable yeast cells by plasma-activated water	Q. Yao ¹ , H. Xu ¹ , R. Ma ¹ ¹ Henan Key Laboratory of Ion-beam Green Agriculture Bioengineering, School of Agricultural Sciences, Zhengzhou University, Zhengzhou, China
96-1283	Analysis and Mechanism of Plasma-activated Liquids for Fungal Pathogen Control	D. Guo ^{1,2} , H. Liu ³ , X. Zhang ^{1,2} , X. Ma ^{1,2} , Y. Shi ^{1,2} , J. Mao ^{1,2} , Z. Zhao ³ ¹ Xi'an Jiaotong University, Key Laboratory of Physical Electronics and Devices of the Ministry of Education, Xi'an, China ² Xi'an Jiaotong University, School of Electronic Science and Engineering, Xi'an, China ³ Xi'an Jiaotong University, Department of Environmental Science and Engineering, School of Energy and Power Engineering, Xi'an, China
97-1416	Research on Application and Mechanism of Plasma Inhibition on Pituitary Tumor	Y.X. Liu ¹ , X. Yan ¹ , Y.X. Liu ² , Y.N. Xing ² , Y.Q. Guo ² ¹ Capital medical university, Chinese Neurosurgical Institute, Beijing, China ² Beijing Institute of Technology, Beijing, China
98-1491	Preliminary study on parameters affecting the welding strength of small intestine mucosa-mucosa end-to-end anastomosis ex vivo	Z. Caihui ¹ , Z. Hui ¹ , Q. Jian ¹ , L. Kefu ¹ ¹ Fudan University, School of Information Science and Technology, Shanghai, China
99-1495	Molecular mechanism of cold atmospheric plasma regulation of tumor progression	C. Zhang ¹ , J. Wan ¹ , R. Ma ¹ ¹ Zhengzhou University, Zhengzhou, China
100-1609	Air discharges plasma-activated injectable hydrogel for immunotherapeutic of cancer	Z. Wang ¹ , D. Liu ¹ , H. Zhang ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Centre for Plasma Biomedicine, Xi'an, China
101-1642	Simulation Study on the Influence Mechanism of Temperature on Dielectric Barrier Discharge Products	Y. Guo ¹ , L. Zhang ² , H. Luo ² , W. Gao ³ ¹ Beijing Institute of Technology, School of Aerospace Engineering, Beijing, China ² Tsinghua University, Department of Electrical Engineering, Beijing, China ³ Dalian Maritime University, School of Science, Dalian, China
102-1862	Dose-dependent cytotoxicity and genotoxicity in periodontal ligament fibroblasts induced by cold atmospheric plasma	X. Zhang ¹ , Y. Li ¹ , R. Wang ² , Z. Wang ¹ ¹ Capital medical university, Beijing Chao-Yang Hospital, Beijing, China ² Beijing University of Chemical Technology, College of Mechanical and Electrical Engineering, Beijing, China
103-2033	Characteristics of Plasma Activated Water Produced by Air Plasma Torch and Inhibition Efficacy on Grey Mould	H. Zhao ¹ , Y.-H. Sun ¹ , M.-Y. Sun ¹ , Y.-Y. Liu ¹ , B. Zhang ¹ , G.-J. Zhang ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Shaanxi, Xi'an, China

104-2200	Study of degradation of T-2 and HT-2 toxins in corn by nanosecond pulsed plasma	X. Duan ^{1,2} , C. Man ³ , C. Zhang ³ , Z. Liu ² , H. Fang ¹ ¹ China National Center for Food Safety Risk Assessment, Applied Nutrition Division I, Beijing, China ² Shanxi Agricultural University, College of Agricultural Engineering, Jinzhong, China ³ Chinese Academy of Sciences, Institute Electrical Engineering, Beijing, China
105-23	The synergistic effect between plasma and oxides for the enhanced plasma-enabled ammonia synthesis	X. Hu ¹ , T. Shao ¹ ¹ Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
106-294	DBD and spark discharge plasma enabled efficient CO ₂ dissociation driven by a compact and cost-effective power supply	Y. Xu ^{1,2} , Y. Gao ¹ , D. Xi ¹ , L. Dou ¹ , C. Zhang ^{1,2} , T. Shao ^{1,2} ¹ Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing 100190, China ² University of Chinese Academy of Sciences, Beijing 100049, China
107-337	Plasma-catalytic ammonia synthesis in dielectric barrier discharge with catalysts supported on alumina microspheres	Q. Jin ¹ , D. Mei ¹ , Y. Cai ¹ , S. Liu ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
108-566	Plasma Assisted Ammonia Synthesis in a Fluidized-Bed DBD reactor: Effect of Catalyst Particle Movement	K. Li ¹ , S. Chen ¹ , M. Li ¹ , L. Liu ¹ , Y. Li ¹ , G. Yang ¹ , F. Wang ¹ ¹ Hunan University, Changsha, China
109-806	Magnetically enhanced gliding arc discharge for the decomposition of biomass tar	D. Dai ¹ , S. Liu ¹ , D. Mei ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
110-856	The conversion characteristics of capacitively coupled radio frequency CO ₂ discharge and the mechanism of discharge mode transition under Martian pressure	Z. Ye ¹ , Q. Fu ¹ , T. Wei ¹ , J. Luo ¹ , Z. Chang ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China
111-872	CO ₂ decomposition in dielectric barrier discharge with different electrode configurations	C. Li ¹ , D. Mei ¹ , P. Zhang ¹ , S. Liu ¹ , Z. Fang ¹ ¹ Nanjing Tech University, College of Electrical Engineering and Control Science, Nanjing, China
112-885	Ammonia synthesis by DBD plasma catalysis: role of discharge power and feed gas ratio	Y. Zheng ¹ , Y. Hao ¹ , Z. Cui ¹ ¹ South China University of Technology, School of Electric Power Engineering, Guangzhou, China
113-992	Fast gas heating effects in energy small molecules conversion by pulsed spark discharge plasma	L. Li ¹ , S. Zhang ¹ , T. Shao ¹ ¹ Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Beijing, China
114-1079	Synergic investigation on the pulsed plasma-enabled C ₁ conversion for the production of platform chemicals	Y. Gao ¹ , L. Dou ¹ , Y. Xu ^{1,2} , C. Zhang ^{1,2} , T. Shao ^{1,2} ¹ Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China ² University of Chinese Academy of Sciences, Beijing, China
115-1312	Production of alcohols through plasma-catalytic dry reforming of methane	D. Xi ¹ ¹ CAS, IEE, Beijing, China
116-1320	Insight into the mechanism of plasma-enabled toluene hydrogenation for methyl-cyclohexane without catalyst	H. Sun ¹ , Z. Fan ^{1,2} , L. Dou ¹ , C. Zhang ¹ , T. Shao ^{1,2} ¹ Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, Beijing, China ² University of Chinese Academy of Sciences, Beijing, China

117-1403	Effects of fillers on electrical and shock-wave characteristics at underwater electrical explosion of metallic thin-wall tube	S. Zhang¹ , Y. Zhang ¹ , Y. Lu ¹ , C. Luo ¹ , S. Wang ¹ , A. Qiu ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Shaanxi, Xi'an, China
118-1428	Electrical explosion of Cu and Al wires in water: A comparison study	S. Zhang¹ , Y. Zhang ¹ , Y. Lu ¹ , C. Luo ¹ , S. Wang ¹ , A. Qiu ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Shaanxi, Xi'an, China
119-1435	Comparative study on underwater electrical explosions of straight and planar curved wires	S. Zhang¹ , Y. Zhang ¹ , Y. Lu ¹ , C. Luo ¹ , A. Qiu ¹ , S. Wang ¹ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Shaanxi, Xi'an, China
120-1732	Filamentary Transition and Energy Stability Optimization of High Pressure Nanosecond Pulsed Discharges for Laser Chambers	L. Bai¹ , X. Ma ³ , Y. Zhu ^{1,3} , X. Jiang ² , Y. Wu ³ ¹ Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China ² Beijing RSLaser Opto-Electronics Technology CO.,Ltd, Beijing, China ³ Xi'an Jiaotong University, School of Mechanical Engineering, Xi'an, Germany
121-2023	Transition of Glow-like Discharge Mode to Enhance the Energy Efficiency in Nitrogen Fixation	Y. Li¹ , X. Pei ¹ ¹ Wuhan University, State Key Laboratory of Power Grid Environmental Protection, School of Electrical Engineering and Automation, Wuhan, China
122-2028	Pulse Modulated Microwave Air Plasma for Nitrogen Fixation as NOx	Y. Luo¹ , Y. Li ¹ , T. Zhang ¹ , C. Man ¹ , J. Wang ¹ , S. Jiang ¹ , X. Pei ¹ ¹ Wuhan University, School of Electrical Engineering and Automation, Wuhan, China
123-636	A numerical investigation on hydrogen production via ammonia dissociation assisted by gliding arc plasma	Y. Qiu¹ , Y. Zhu¹ , N. Zhao ¹ , Z. Li ¹ ¹ Xi'an Jiaotong University, National Key Lab of Aerospace Power System and Plasma Technology, Xi'an, China
TA 6 Plasma Diagnostics		
124-398	Measurement of plasma parameters at a PBI using Langmuir probe	T. Tulenbergenov^{1,2} , B. Chektybaev ¹ , M. Skakov ³ , I. Sokolov ^{1,2} , A. Miniyazov ^{1,2} , G. Zhanbolatova ¹ , R. Nauryzbayev ¹ ¹ NNC RK, Institute of Atomic Energy, Kurchatov, Kazakhstan ² Shakarim University, Technical Physics, Semey, Kazakhstan ³ NNC RK, NNC RK, Kurchatov, Kazakhstan
125-647	Understanding Sheath Expansion in Flowing Plasmas	L. Beving¹ , M. Hopkins¹ , G. Severn ² ¹ Sandia National Laboratories, Applied Optical & Plasma Sciences, Albuquerque, New Mexico, United States of America ² University of San Diego, Department of Physics & Biophysics, San Diego, New Mexico, United States of America
126-932	Research on The Development and Calibration Method of Hundreds of kilovolts Pulse Calibration Platform	K. Mei^{1,2} , Z. Chen ^{1,2} , L. Cheng ^{1,2} , L. Xie ^{1,2} , Y. Shi ^{1,2} ¹ National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China ² Northwest Institute of Nuclear Technology, Xi'an, China
127-1088	Numerical Simulation Analysis of Clamp Type High Frequency Current Transformer for Partial Discharge Detection	H. Yang¹ , J. Wu² , X. Hu ¹ , L. Wang ² ¹ State Grid Anhui Electric Power Company Ltd., Electric Power Research Institute, Hefei, China ² China University of Mining and Technology, School of Electrical Engineering, Xuzhou, China
128-1171	UHF Calibration Method Based on S-parameter for GIS Partial Discharge Detection	H. Yang¹ , C. Fang² , X. Hu ¹ , L. Wang ² ¹ State Grid Anhui Electric Power Company Ltd., Electric Power Research Institute, Hefei, China ² China University of Mining and Technology, School of Electrical Engineering, Xuzhou, China

129-1235	Measurement of heat flux distribution in supersonic high frequency inductively coupled plasma wind tunnel	B. Wu¹ , X. Ge ¹ , D. Liu ¹ ¹ <i>Xidian, School of Space Science and Technology, Xi'an, China</i>
130-1272	Arc acoustic fault diagnosis in high-altitude icing areas	H. Wei¹ ¹ <i>China Three Gorges University, College of Electrical Engineering & New Energy, Yichang, China</i>
131-1274	Research on fault detection of transmission line based on acoustic signal	K. Chen¹ ¹ <i>China Three Gorges University, College of Electrical Engineering and New Energy, Yichang, China</i>
132-1635	DEVELOPMENT AND APPLICATION OF A D-DOT SENSOR FOR PEAKING CAPACITOR VOLTAGE MEASUREMENT IN A HIGH-ALTITUDE ELECTROMAGNETIC PULSE SIMULATOR	L. Cheng^{1,2} , W. Jia ¹ , K. Mei ¹ , Z. Chen ¹ , F. Guo ¹ , W. Ding ³ , W. Wu ¹ ¹ <i>Northwest Institute of Nuclear Technology, National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China</i> ² <i>National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China</i> ³ <i>Xi'an Jiaotong University, School of Electrical Engineering/State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China</i>
133-1996	Characteristics of short-gap pin-to-pin discharge flow field based on schlieren technique	H. Y. Chen¹ , K. X. Pei ¹ ¹ <i>Wuhan University, School of Electrical Engineering and Automation, Wuhan, China</i>
134-2071	On the coupling effect in the RF-biased inductively coupled plasma with the synchronous control	Y. He¹ , X. Ma ¹ , J. Zhang ¹ , X. Liu ¹ , J. Huang ¹ , Y. Xin ¹ ¹ <i>Soochow University, Suzhou, China</i>
TA 7 Pulsed Power and Other Plasma Applications		
135-2	Effect of Gas Switch Prefire in Multistage Linear Transformer Driver	Z. Wan¹ , W. Ding ¹ ¹ <i>Xi'an Jiaotong University, Xi'an, China</i>
136-85	Time-Delay Isolated Driver for IGBT Switch Arrays in BPFN	Y. Hao¹ , S. Qiu¹ , H. Zhou ¹ , Q. Liu ¹ ¹ <i>southwest jiaotong university, School of Physical Sciences and Technology, chengdu, China</i>
137-109	Extremely low-inductance series-connected power module enabled by insulation packaging enhancement	P. Zhang¹ , J. Ma ¹ , Y. He ¹ , L. Yu ¹ , S. Dong ¹ , B. Hu ¹ , C. Liu ¹ , C. Yao ¹ ¹ <i>Chongqing University, School of Electrical Engineering, Chongqing, China</i>
138-134	All-Solid-State Pulse Generator with Short Pulse Width and Short Rise Time Based on Linear Transformer Driver	H. Xue¹ , Q. Yuan ¹ , W. Ding ¹ , Y. Zheng ¹ , W. Gao ¹ ¹ <i>Xi'an Jiaotong University, Department of Electrical Engineering, Xi'an, China</i>
139-156	Asymmetric Mixed-Connected BPFN Pulse Generation	Y. Hao¹ , S. Qiu¹ , H. Zhou ¹ , Q. Liu ¹ ¹ <i>southwest jiaotong university, School of Physical Sciences and Technology, Chengdu, China</i>
140-192	Contact Heating Analysis of Flexible Connection of DC Busbar in Fusion Superconducting Magnet Power Supply System	H. Lei^{1,2} , G. Gao ^{2,1} , L. Jiang ^{2,1} ¹ <i>University of Science and Technology of China, Hefei, China</i> ² <i>Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei, China</i>
141-282	A novel square wave generator based on unequal-capacitance form of Blumlein pulse forming network	Q. Yuan¹ , G. Sun ¹ , H. Xue ¹ , W. Ding ¹ , Z. Wan ¹ , S. Nie ¹ , W. Gao ¹ ¹ <i>Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China</i>
142-560	Electrical Properties of Different Materials Studied by Sub-Microsecond Underwater Electrical Explosions of Single Wires	R. Grikshtas¹ , N. Asmedianov ¹ , S. Efimov ¹ , Y. E. Krasik¹ ¹ <i>Technion - Israel Institute of Technology, Plasma Physics Laboratory, Haifa, Israel</i>
143-632	Specific current action integral of different materials studied by underwater electrical explosions of foils	N. Asmedianov¹ , R. Grikshtas ¹ , S. Efimov ¹ , G. Liziakin ¹ , Y. Krasik¹ ¹ <i>Technion, Department of Physics, Haifa, Israel</i>

144-848	Study on Life Characteristics of High-Voltage Ceramic Capacitors under Short Pulses	Z. Liu¹ , X. Qiu ^{2,1} , W. Yan ¹ , S. Shao ¹ ¹ Northwest Institute of Nuclear Technology, Key Laboratory of Advanced Science and Technology on High Power Microwave, Xi'an, China ² Xi'an Jiaotong University, Key Laboratory of Physical Electronics and Devices, Ministry of Education, Faculty of Electronic and Information Engineering, Xi'an, China
145-952	Theoretical investigation on double-matched stacked Blumlein pulse generators	X. Qiu^{1,2} , J. Su ² , Y. Li ¹ , R. Li ² , J. Cheng ^{1,2} , B. Yu ² ¹ Xi'an Jiaotong University, Key Laboratory of Physical Electronics and Devices, Ministry of Education, Faculty of Electronic and Information Engineering, xi'an, China ² Northwest Institute of Nuclear Technology, Key Laboratory of Advanced Science and Technology on High Power Microwave, xi'an, China
146-1236	Experimental Study on the Diagnosis and Regulation of POS Plasma Distribution	J. Wang^{1,2} , P. Zhang ¹ , H. Yang ¹ , H. Wei ¹ , T. Sun ¹ , X. He ² ¹ National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Northwest Institute of Nuclear Technology, Shaanxi, Xi'an, China ² Zhejiang University, College of Electrical Engineering, Hangzhou, China
147-3011	Development of all-solid-state DOS nanosecond pulse generator based on inductive energy storage	Guowei Ge¹ , Shuaiyin Wang ¹ ¹ School of Electrical and Information Engineering, Zhengzhou University, Zhengzhou 450001, China
148-1359	A novel magnetic coupling isolation driver circuit applied to series SGTO switches	B. Hu¹ , L. Yu ¹ , J. Ma ¹ , C. Yao ¹ , S. Dong ¹ , B. Hu ¹ ¹ Chongqing University, Electrical Engineering, Chongqing, China
149-1458	Simultaneous Measurement of Normal and Tangential Pulsed Electric Fields With a Dual Probe	C. Liu¹ , L. Yu ¹ , C. Yao ¹ , S. Dong ¹ , J. Ma ¹ , P. Zhang ¹ ¹ Chongqing University, State Key Laboratory of Power Transmission Equipment Technology, School of Electrical Engineering, Chongqing University, Chongqing, China
150-1488	Stackable all solid-state multilevel Marx pulse module	L. Chen¹ , J. Qiu¹ , K. Liu ¹ , H. Zhao ¹ ¹ Fudan University, Department of Light Sources and Illuminating Engineering, Shanghai, China
151-1523	Solid-State LTD Based Pulsed Power Generators for Plasma Application	J. Wen¹ , T. Sugai ¹ , A. Tokuchi ¹ , W. Jiang ¹ ¹ Nagaoka University of Technology, Extreme Energy-Density Research Institute (EDI), Nagaoka, Japan
152-1614	Analysis of the influence of structure and assembly errors on the characteristics of armature-rail contact surface	K. Zhou¹ , D. Zhang ¹ , Y. Zhou ² , Z. Wang ¹ , Z. Liu ¹ ¹ Dalian University of Technology, School of Electrical Engineering, Dalian, China ² Tianjin University of Technology and Education, School of Electrical Engineering and Automation, Tianjin, China
153-1701	Simulation of the development of arc plasma on the solid-liquid interface during high-speed gliding electrical contact	Y. Zhou¹ , K. Zhou ² , D. Zhang ² , Z. Bing ¹ ¹ Tianjin university of technology and education, Institute of automation and electrical engineering, Tianjin, China ² Dalian University of Technology, Department of Electrical Engineering, Dalian, China
154-1937	A method for state detection of the augmented special linear motor	W. Ye^{1,2} , W. Xu ^{1,2} , J. Wang ^{1,2} , X. Xu ^{1,2} , R. Fu ^{1,2} , P. Yan ^{1,3} ¹ Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing 100190, China ² Institute of Electrical Engineering and Advanced Electromagnetic Drive Technology, Qilu Zhongke, Jinan 250104, China ³ University of Chinese Academy of Sciences, Beijing, 100049, Germany

155-1940	Study on calculation model of discharging process with the pulse power supply based on capacitor	W. Xu ^{1,2} , X. Xu ^{1,2} , R. Fu ^{1,2} , X. Li ¹ , W. Ye ^{1,2} , P. Yan ^{1,2} ¹ Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing 100190, China ² Institute of Electrical Engineering and Advanced Electromagnetic Drive Technology, Qilu Zhongke, Jinan 250104, China
156-1941	Research on the impact of efficiency of different parameters in pulse power supply based on capacitor with calculation model	W. Xu ^{1,2} , X. Xu ^{1,2} , K. Liu ^{1,2} , R. Fu ^{1,2} , X. Li ¹ , W. Ye ^{1,2} , P. Yan ^{1,3} ¹ Institute Electrical Engineering, Chinese Academy of Sciences, Beijing 100190, China ² Institute of Electrical Engineering and Advanced Electromagnetic Drive Technology, Qilu Zhongke, Jinan 250104, China ³ University of Chinese Academy of Sciences, Beijing, 100049, Germany
157-2084	Research on grounding protection system of the CSMC superconducting magnet coil of the CRAFT	B. Ye ^{1,2} , G. Ge ² , S. Wang ² , Y. Li ² , Q. Jiang ² ¹ Anhui Jianzhu University, Hefei, China ² Chinese Academy of Sciences, Institute of Plasma Physics, Hefei Institute of Physical Science, Hefei, China
158-2166	Electrical evaluation of 26700 lithium-ion batteries as the prime power supply for pulsed-power system	T. Hu ¹ , H. Zhang ¹ , Z. Zhang ¹ ¹ National University of Defense Technology, College of Advanced Interdisciplinary Studies, Changsha, China
159-2188	Simulation of transformer winding under high-altitude electromagnetic pulse	Q. Zhou ¹ , Y. Li ² , X. Xiao ² , X. He ² , L. Jia ³ , G. Liu ³ ¹ The Hong Kong Polytechnic University, Department of Building Energy and Environment Engineering, Hong Kong, China, Hong Kong Special Administrative Region ² China Southern Power Grid, Guizhou Electric Power Research Institute, Guiyang, China ³ China Southern Power Grid, State Key Laboratory of HVDC Transmissions Technology, Guangzhou, China
160-2229	High controllability electronic acceleration excitation pulse power supply based on BUCK module cascade	H. Dai ¹ , S. Yang ¹ , J. Chen ¹ , M. Yang ¹ , L. Xiao ¹ ¹ China Ship Development and Design Center, Wuhan, China
161-2279	10GW Subnanosecond High Voltage Pulse Generator Using a Blumlein-Tesla transformer and Time-domain Pulse Compression topology	W. Tie ¹ , <u>Y. Li</u> ¹ , X. Hu ¹ , Y. Shao ¹ , Y. Meng ¹ , J. Fang ¹ ¹ China Academy of Space Technology(Xi'an), China Academy of Space Technology(Xi'an), Xi'an, China
TA 8 Terahertz Sources, Radiation and Applications		
162-49	Broadband Terahertz Metasensor with Pixelated Multi-Fano Metasurfaces for Enhanced Biomolecular Identification	H. Ruan ¹ , Z. Zhang ¹ , X. Yang ¹ , J. Lou ¹ , R. Wang ¹ ¹ National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
163-50	Extending Plasma Channels for Enhanced Terahertz Wave Generation with Spatial Light Modulator	Y. Feng ¹ , R. Wang ¹ , C. Liu ^{1,2} , Y. Ai ³ , X. Qu ¹ , Y. Huang ¹ ¹ National Innovation Institute of Defense, Innovation Laboratory of Terahertz Biophysics, Beijing, China ² University of Electronic Science and Technology of China, School of Physical Electronics, Chengdu, China ³ National Innovation Institute of Defense, Beijing, China
164-137	A 360-degree 3-bit Terahertz Phase Shifter	H. Liang ^{1,2} , S. Gu ² , L. Zou ¹ , S. Liang ³ , Y. Zhang ² , Z. Yang ^{1,2} ¹ Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Huzhou Key Laboratory of Terahertz Integrated Circuits and Systems, Huzhou, China ² University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China ³ Hebei Semiconductor Research Institute, National Key Laboratory of Application Specific Integrated Circuit, Shijiazhuang, China

165-142	Artificial Chiral Metasurface with Giant Circular Dichroism in Terahertz Range Inspired by the Truxene Molecule Scaffold	L. Zou ¹ , H. Liang ¹ , K. Wu ¹ , T. Jiang ¹ , D. Liang ¹ , Y. Zhang ¹ , Z. Yang ¹ ¹ University of Electronic Science and Technology of China, Huzhou Key Laboratory of Terahertz Integrated Circuits and Systems, Yangtze Delta Region Institute (Huzhou), Huzhou, China
166-579	310GHz Low-Loss Subharmonic Mixer	X. Yang ¹ , J. Zhou ¹ , J. Yang ¹ , T. Zhou ¹ , H. Zhou ¹ , J. Liang ¹ , Y. Zhang ¹ , Z. Yang ¹ ¹ University of Electronic Science and Technology of China, Engineering Center of Integrated Optoelectronic & Radio Meta-chips, Chengdu 611731, China
167-707	Microlens-integrated UTC photodiodes for High-bandwidth and high-saturation-power performances	W. Yuan ^{1,2} , H. Liang ^{1,2} , L. Zou ¹ , T. Jiang ¹ , Y. Zhang ^{1,2} ¹ Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Huzhou Key Laboratory of Terahertz Integrated Circuits and Systems, Huzhou, China ² University of Electronic Science and Technology of China, School of Electronic Science and Engineering, Chengdu, China
168-1420	Design of the 330GHz Ultra-wideband Subharmonic Mixer	J. Yang ¹ , X. Yang ¹ , T. Zhou ¹ , J. Zhou ¹ , J. Liang ¹ , Y. Zhang ¹ , Z. Yang ¹ ¹ University of Electronic Science and Technology of China, Engineering Center of Integrated Optoelectronic & Radio Meta-chips, Chengdu, China
169-1460	300-350GHz Low-Loss Subharmonic Mixer	X. Yang ¹ , J. Zhou ¹ , J. Yang ¹ , T. Zhou ¹ , H. Zhou ¹ , J. Liang ¹ , Y. Zhang ¹ , Z. Yang ¹ ¹ University of Electronic Science and Technology of China, Engineering Center of Integrated Optoelectronic & Radio Meta-chips, Chengdu 611731, China
170-1674	Optimized Design Methodologies for Optical Chips and High-Speed Circuits	K. Zhang ^{1,2} , J. Xu ² , M. Zeng ² , Y. Peng ² , Y. He ² , W. Cui ^{3,1} ¹ Northwestern Polytechnical University, School of Electronics and Information, Xi'an, China ² Xi'an Jiaotong University, School of Microelectronics, Xi'an, China ³ China Academy of Space Technology, National Key Laboratory of Science and Technology on Space Microwave, Xi'an, China
171-1867	Three-Dimensional Terahertz Metasurfaces for Ultrafast All-Optical Logic Operations with Temporal Properties	H. Yuan ¹ , J. Liang ¹ ¹ Air Force Engineering University, Air Defense and missile Defense Academy, Shaanxi, Xi'an, China
172-2142	Study on the Generation of Terahertz Waves in Collision Plasma	Y. Bao ¹ , X. He ¹ , W. Su ¹ ¹ Hohai University, College of Mechanics and Engineering Science, Nanjing, China
173-67	Metasurfaces for Monitoring the Evolution of Gastric Cancer Cells	Y. Jiao ^{1,2} , Q. Jia ^{1,2} , Z. Ma ^{1,2} , R. Wang ² , Z. Zhang ² , X. Du ¹ ¹ Chinese PLA General Hospital, Department of General Surgery,, Beijing, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
174-92	Electromagnetic induced transparency sensors based on out-of-plane symmetry breaking anapole enhancement	B. Zhang ^{1,2} , X. N. Zou ¹ , D. R. Wang ² , H. X. Du ¹ ¹ First Medical Center of the Chinese PLA General Hospital, Beijing, China. ² National Innovation Institute of Defense Technology, Beijing, China
175-93	Rapid, high-throughput, low-concentration detection of sepsis-associated inflammatory factors based on terahertz technology combined with microfluidic	B. Zhang ^{1,2} , X. N. Zou ¹ , D. R. Wang ² , H. X. Du ¹ ¹ First Medical Center, Chinese PLA General Hospital, Department of General Surgery, Beijing, China ² National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China
176-627	Rigorous coupled wave analysis of multilayer metal-dielectric pore-particle composite arrays	S. Peng ¹ , X. Zhang ¹ , J. Zeng ¹ , S. Yan ¹ , Q. Hu ¹ ¹ Xiangtan University, College of Automation and Electronic Information, Xiangtan, China

177-786	SIMULATION OF THZ WAVE PROPAGATION ON BANDGAP AND POINT DEFECT DEVICE BY MICROPLASMA PHOTONIC CRYSTALS	B. Zhou ¹ , Z. Zhong ¹ , Z. Li ¹ , S. Wu ¹ ¹ <i>Nanjing University of Aeronautics and Astronautics, Electrical Engineering/Automation Academy, Nanjing, China</i>
178-1848	Active Metasurfaces for Modulating Terahertz Waves	J. Lou ¹ ¹ <i>National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China</i>
179-1849	Active Terahertz Metasurfaces for Biosensing Gastric Cells	J. Lou ¹ ¹ <i>National Innovation Institute of Defense Technology, Innovation Laboratory of Terahertz Biophysics, Beijing, China</i>
180-1871	Inaccuracy Estimation of Analyte Distribution for Refractive Index Biosensor based on Terahertz Metasurface	C. Zhang ¹ , X. Zhang ² ¹ <i>Air Force Engineering University, Shaanxi, Xi'an, China</i> ² <i>Aerospace Information Research Institute, Chinese Academy of Sciences, Shaanxi, Xi'an, China</i>
181-1917	Breaking Out-Of-Plane Symmetry Terahertz Meta-biosensor With Adjustable Radiation Intensity	J. Zhang ¹ , J. Liang ¹ ¹ <i>Air Force Engineering University, Air Defense and missile Defense Academy, Xi an, China</i>
TA 9 Special Sessions: Innovative Fusion Approaches		
182-528	Measurement of Density Distribution for Gas-puff Loads Using Acetone Planar Laser-induced Fluorescence Technology	L. Wang ¹ , G. Wu ² , M. Li ¹ , A. Qiu ² ¹ <i>Northwest Institute of Nuclear Technology, Xi an, China</i> ² <i>Xi'an Jiaotong University, Xi an, China</i>
183-547	Design and Simulation of Load Current Multipliers on a Megaampere-Class Linear-Transformer-Driver Module	C. Cheng ¹ , H. Wei ² , H. Wu ² , Y. Hong ¹ , Y. Zheng ¹ , A. Qiu ¹ ¹ <i>Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China</i> ² <i>Northwest Institute of Nuclear Technology, National Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China</i>
184-555	Kinetic character of ions under the electrostatic- and electromagnetic-field high frequency fluctuation in the radial MITL	H. Wu ¹ ¹ <i>National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Northwest Institute of Nuclear Technology, Xi'an, China</i>
185-826	Thomson Scattering Measurements of Precursor Plasma Parameters in Aluminium Wire Array on Qiangguang-I Facility	M. Li ¹ , J. Wang ¹ , Y. Li ¹ , T. Sun ¹ ¹ <i>National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Northwest Institute of Nuclear Technology, Xi'an, China</i>
186-1949	Experimental Study on the Dissipative Characteristics of Cathode Plasma of a Coaxial Magnetic Insulated Transmission Line under 3MV/100kA	Y. R. Yang ¹ , H. Wei ¹ , Y. P. Hong ² , L. P. Wang ¹ , H. Y. Wu ¹ , T. Huang ¹ ¹ <i>Northwest Institute of Nuclear Technology, Xi an, China</i> ² <i>Xi an Jiaotong University, Xi an, Chin</i>
187-1051	Cleaning of Hydrocarbon Pollutants on Stainless Steel Surface by Atmospheric Pressure Plasma Jet	J. Zhang ¹ , J. D. Meng ¹ ¹ <i>Xidian University, School of Aerospace Science and Technology, Xi'an, China</i>
188-1202	The Determination Model of Anodic Melting in High Current Electron Beam Diode	W. Yan ¹ , D. Lai ² , A. Yi ¹ , C. Huang ¹ , M. Zhang ³ ¹ <i>Northwest Institute of Nuclear Technology, State Key Laboratory of Laser Interaction with Matter, Xi'an, China</i> ² <i>Northwest Institute of Nuclear Technology, State Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China</i> ³ <i>Tsinghua University, Department of Engineering Physics, Xi'an, China</i>

189-1231	Fiber-optic Controlled Trigger Generator for Synchronously Triggering Linear Transformer Driver Modules	W. Zhiguo ¹ , W. Jiachen ¹ , W. Hao ¹ , J. Hongyu ¹ , J. Xiaofeng ¹ ¹ Northwest Institute of Nuclear Technology, National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China
190-1610	Six-gap gas switch based on resistance voltage balance and corona assisted triggering	H. Jiang ^{1,2} , X. Jiang ² , Z. Wang ² , F. Sun ² , H. Wei ² , C. Lou ² , A. Qiu ¹ ¹ Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an, China ² Northwest Institute of Nuclear Technology, National Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Xi'an, China
191-2057	The Effect of Rail Arc Height at The Initial Stage of Large Current Linear Motor	W. Cheng ^{1,2} , W. Xu ^{1,2} , P. Yan ^{1,3} ¹ Chinese Academy of Sciences, Institute Electrical Engineering, Beijing, China ² Qilu Zhongke, Institute of Electrical Engineering and Advanced Electromagnetic Drive Technology, Jinan, China ³ University of Chinese Academy of Sciences, Beijing, China
192-2059	Analysis of the Influence of Cable Layout on the Busbar Electromagnetic Force of Linear Drive Motor	W. Cheng ^{1,2} , W. Xu ^{1,2} , Z. Wang ^{1,2} , P. Yan ^{1,3} ¹ Chinese Academy of Sciences, Institute Electrical Engineering, Beijing, China ² Qilu Zhongke, Institute of Electrical Engineering and Advanced Electromagnetic Drive Technology, Jinan, China ³ University of Chinese Academy of Sciences, Beijing, Germany
193-1382	An improved avalanche triode Marx circuit which solves the second stage switch vulnerability problem	Y. Liao ¹ , L. Yu ¹ , C. Yao ¹ , S. Dong ¹ , B. Hu ¹ ¹ Chongqing University, Electrical Engineering, Chongqing, China
194-1836	Development of an active energy recovery system for microsecond pulse power supplies based on thyristor and silicon carbide switches	C. Li ¹ , T. Deng ¹ ¹ Anhui University, School of Electrical Engineering and Automation, Hefei, China
195-2139	An improved frequency adaptive phase-locked loop for Tokamak power supply	L. Tan ^{1,2} , Y. Wu ^{1,2} , J. Lu ^{1,2} , P. Fu ^{1,2} , J. Li ¹ , Y. Yunxiang ^{1,2} , P. Wang ^{1,2} ¹ Hefei Institutes of Physical Science, Chinese Academy of Science, Hefei, China ² University of Science and Technology of China, Hefei, China
196-1686	Discharge observation of combined air gap under low air pressure	T. Jiang ¹ , J. Gao ¹ , W. Xiao ² , B. Luo ² , H. Zhang ² , Z. Zhong ² ¹ Hunan University, College of Electrical and Information Engineering, Changsha, China ² Research Center Electric Power Research Institute, China Southern Power Grid, Guangzhou, China
197-1697	Simulation of Pressure Rise in an aerospace fastener assembly due to representative lightning strike conditions	L. Yao ¹ , Z. Duan ^{1,2} ¹ University, Hefei University of Technology, Hefei, China ² National Key Laboratory of Electromagnetic Information Control and Effects, National Key Laboratory of Electromagnetic Information Control and Effects, Hefei, China
198-1858	Comparison of Lightning Induced Voltage in Aircraft Cables under Various Shielding Methods	X. Rao ¹ , M. Zhou ¹ , L. Cai ¹ , J. Cao ¹ , J. Wang ¹ , Y. Fan ¹ ¹ Wuhan University, School of Electrical Engineering and Automation, Wuhan, China
199-1896	Surge protective device failure caused by triggered lightning continuing current and M component	S. D. Chen ¹ , X. Yan ¹ , L. W. Chen ¹ , G. Yang ¹ ¹ The Institute of Tropical and Marine Meteorology, China Meteorological Administration, Guangzhou, China

200-1962	The opacity of lightning near-infrared spectrum	<p>X. Wang^{1,2}, H. Wang¹, W. Lyu², L. Chen², M. Ying², Q. Qi², B. Wu², W. Xu², L. Hua¹, B. Wang¹, J. Yang³</p> <p>¹ Nanjing University of science and technology, School of Emergency Management, Nanjing, China</p> <p>² State Key Laboratory of Severe Weather & CMA Key Laboratory of Lightning, Chinese Academy of Meteorological Sciences, Beijing, China</p> <p>³ Key Laboratory of Middle Atmosphere and Global Environment Observation (LAGEO) Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China</p>
201-2080	Analysis of De-icing Coating on Lightning Protection Performance in Wind Turbine Blade	<p>Q. Huang¹, G. Jiang², H. Zhu², Y. Cheng², W. Li², D. Wei², S. Xu², B. Wang¹, B. Li¹, H. Yu¹, D. D. Zhang¹</p> <p>¹ Dalian University of Technology, College of electrical engineering, Dalian, China</p> <p>² China Resources New Energy Investment Co., Ltd. Suizhou Branch, Suizhou, China</p>
202-2199	The multiplicity characteristics of negative cloud-to-ground lightning	<p>Y. Pan¹, D. Zheng², Y. Zhang¹</p> <p>¹ Fudan University, Department of Atmospheric and Oceanic Sciences & Institute of Atmospheric Sciences, Shanghai, China</p> <p>² China Meteorological Administration, State Key Laboratory of Severe Weather & CMA Key Laboratory of Lightning, Beijing, China</p>
203-2212	Wind turbine lightning risk assessment method based on lightning induced space	<p>J.Y. Yao¹, Z.B. Yang¹</p> <p>¹ Northeast Electric Power University, Department of Electrical Engineering, Jilin, China</p>
204-2233	Measurement and simulation of lightning current and electromagnetic field produced by Canton Tower strokes	<p>L. Chen¹, W. Lyu², Y. Ma², B. Wu², Y. Zhang³, Q. Qi², Q. Yin¹, H. Liu²</p> <p>¹ Institute of Tropical and Marine Meteorology, China Meteorological Administration, Guangzhou, China</p> <p>² State Key Laboratory of Severe Weather, Chinese Academy of Meteorological Sciences, Beijing, China</p> <p>³ Institute of Atmospheric Sciences, Fudan University, Shanghai, China</p>
205-2269	Characterization of femtosecond laser-induced positive polarity discharge with long air gap	<p>Q. Peng¹, Z. Pei², C. Ren³, X. Fan², W. Chen²</p> <p>¹ North China Electric Power University, Beijing 102200, China</p> <p>² Hefei University of Technology, Anhui, China</p> <p>³ Institute of Electrical Engineering of the Chinese Academy of Sciences, Beijing 100080, China</p>
206-2332	Acoustic Pressure Signals Observed at 90 m and 130 m from the Return Strokes of Rocket-triggered Lightning	<p>J. Cao¹, J. Wang¹, L. Cai¹, M. Zhou¹, Y. Fan¹</p> <p>¹ Wuhan University, School of Electrical Engineering and Automation, Wuhan, China</p>
207-3002	The advantages of ChatGPT-4 in the field of auxiliary atmospheric pressure plasma research	<p>Ruihang Bai¹, and Dawei Liu¹</p> <p>¹ Huazhong University of Science and Technology, Wuhan, 430074, China</p>
208-3005	Physics-Informed Meta-Instrument for eXperiments (PIMIX) with Applications to Fusion Energy	<p>Z. Wang¹</p> <p>¹ Los Alamos National Laboratory, P-4 Thermonuclear Plasma Physics, Los Alamos, New Mexico, United States of America</p>

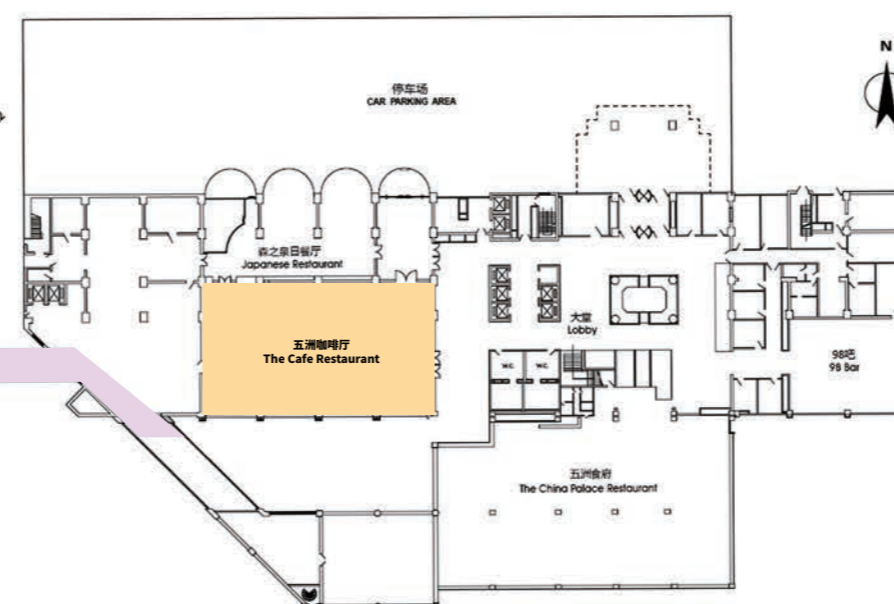
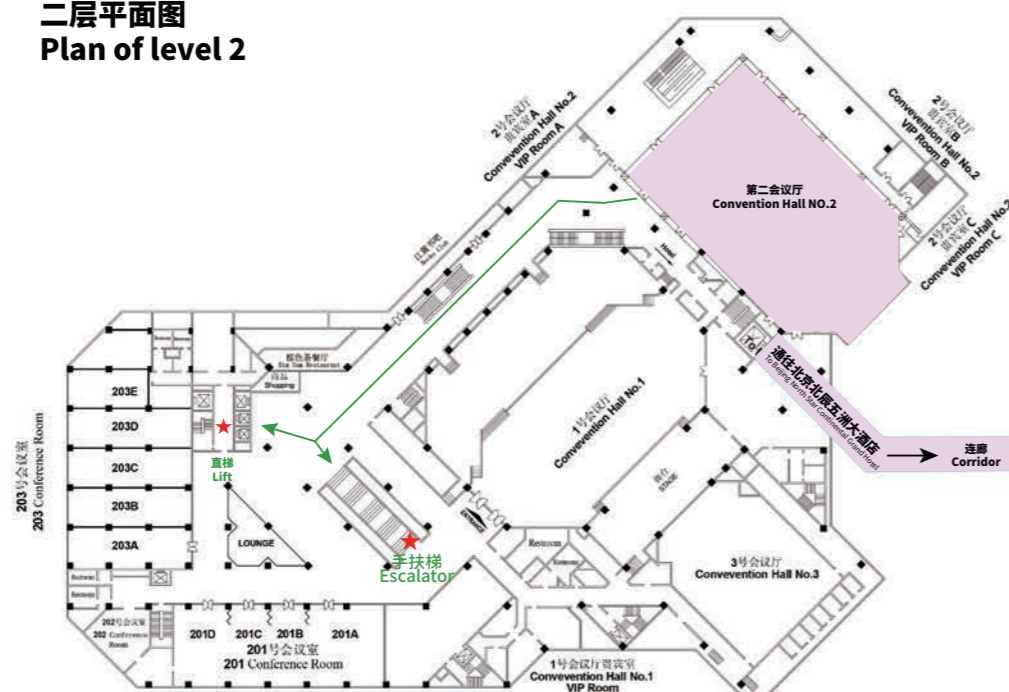
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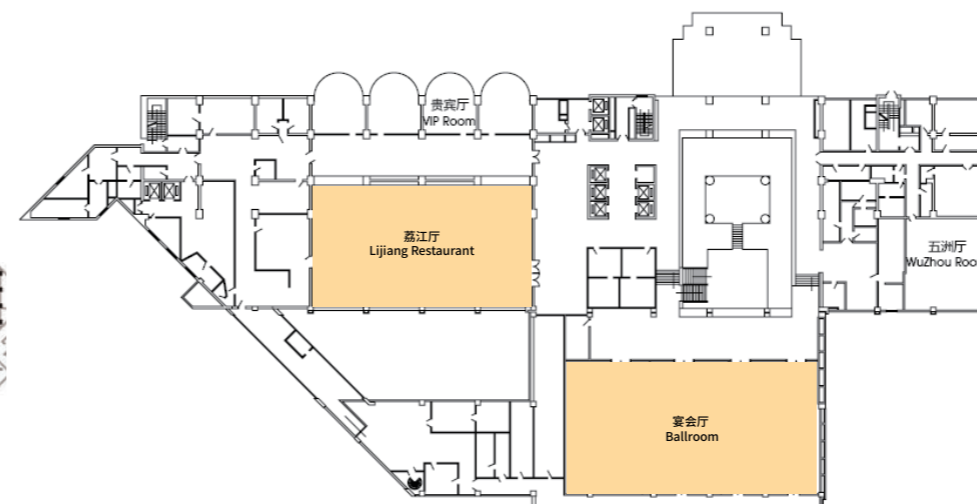
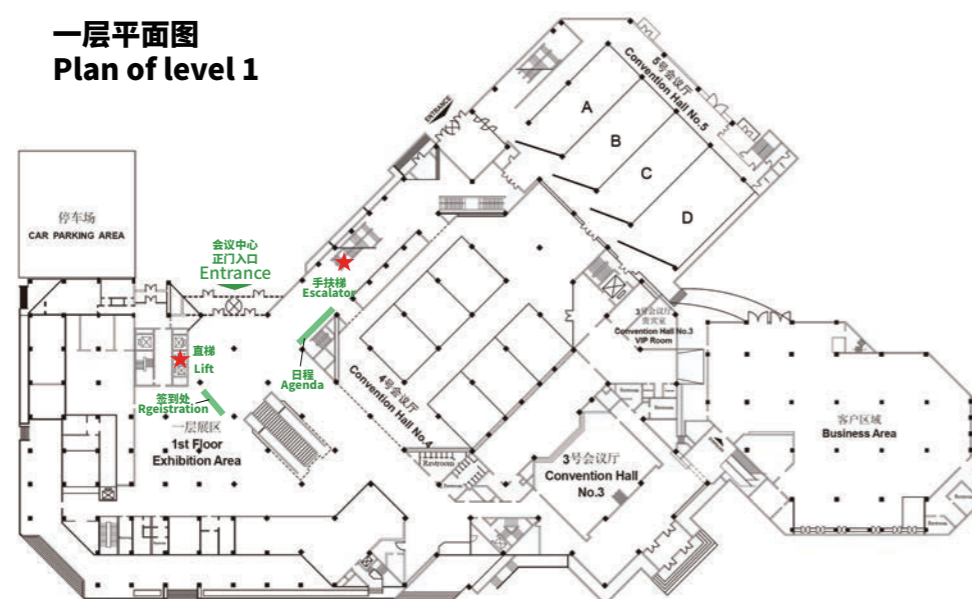
二层平面图
Plan of level 2

一层平面图
Plan of level 1



一层平面图
Plan of level 1

二层平面图
Plan of level 2



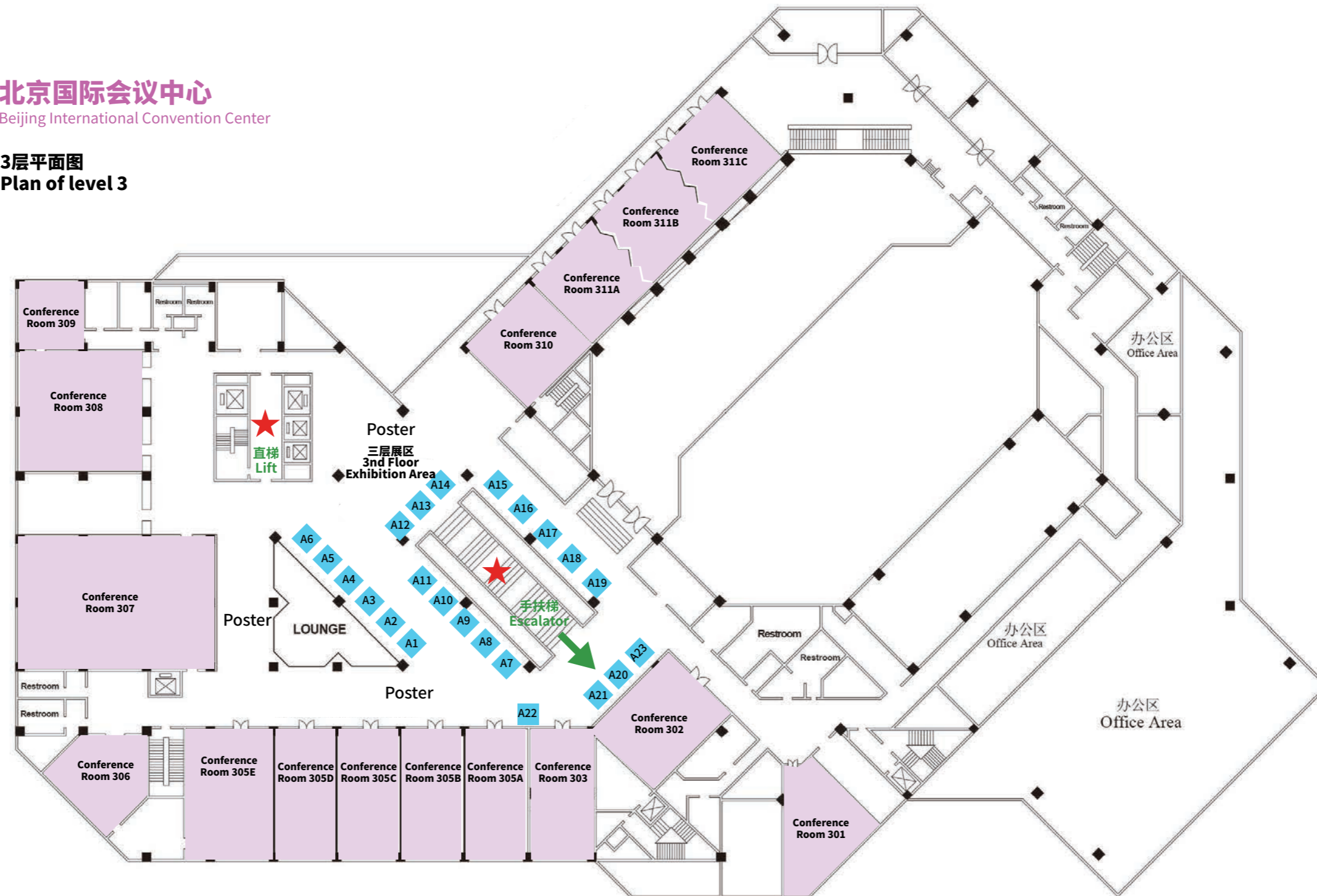
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The 51st International Conference on Plasma Science &
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北京国际会议中心 Beijing International Convention Center

3层平面图 Plan of level 3



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Exhibitors



Traffic Information

Location of Beijing International Convention Center and Transportation Introduction



Conference Venue

Beijing International Convention Center

No. 8, Beichen East Road, Chaoyang District, Beijing

会议地点

北京国际会议中心

北京市-朝阳区-北辰东路8号

Transportation Introduction

1. Beijing Station to Beijing International Convention Center:

- (1) Approximately 13 kilometers away from the Beijing International Convention Center, it takes about 30 minutes by car (estimated taxi fare: 37 yuan).
- (2) Public transportation: Walk about 450 meters to take Line 2 of the subway (Inner Circle). Get off at Chongwenmen Station (1 stop), transfer within the station and walk about 175 meters to switch to Line 5 towards Huixinxijie Beikou Station (10 stops). From there, walk to the A Northwest Exit and take bus 613 towards Bagou Village. Get off at Yayuncun Station after one stop and walk about 289 meters to reach the Beijing International Convention Center. The whole journey takes about 50 minutes.

2. Beijing North Station to Beijing International Convention Center:

- (1) Approximately 11 kilometers away from the Beijing International Convention Center, it takes about 22 minutes by car (estimated taxi fare: 31 yuan).
- (2) Public transportation: Walk about 1 kilometer to take bus 387. Get off at Anhuiqiao North Station after 10 stops and walk about 727 meters to reach the Beijing International Convention Center. The whole journey takes about 1 hour and 6 minutes.

3. Beijing Chaoyang Station to Beijing International Convention Center:

- (1) Approximately 14 kilometers away from the Beijing International Convention Center, it takes about 25 minutes by car (estimated taxi fare: 36 yuan).
- (2) Public transportation: Walk about 100 meters to take bus 413. Get off at Dongfeng Beiqiao East Station after 5 stops, transfer by walking about 295 meters, and take bus 400 towards the direction of Dongfeng Beiqiao North Station. Get off at Yayuncun Station after 9 stops, then walk about 289 meters to reach the Beijing International Convention Center. The whole journey takes about 1 hour and 22 minutes.

4. Beijing West Station to Beijing International Convention Center:

- (1) Approximately 21 kilometers away from the Beijing International Convention Center, it takes about 32 minutes by car (estimated taxi fare: 58 yuan).
- (2) Public transportation: Walk about 438 meters to take bus 694. Get off at Anhuiqiao North Station after 10 stops and walk about 727 meters to reach the Beijing International Convention Center. The whole journey takes about 1 hour and 15 minutes.

5. Beijing South Station to Beijing International Convention Center:

- (1) Approximately 22 kilometers away from the Beijing International Convention Center, it takes about 46 minutes by car (estimated taxi fare: 60 yuan).
- (2) Public transportation: Walk about 43 meters to take Line 14 of the subway. Get off at Puhuangyu Station after 3 stops, transfer within the station and walk about 157 meters to switch to Line 5 towards Huixinxijie Beikou Station (10 stops). From there, walk to the A Northwest Exit and take bus 613 towards Bagou Village. Get off at Yayuncun Station after one stop and walk about 289 meters to reach the Beijing International Convention Center. The whole journey takes about 1 hour and 1 minute.

6. Beijing Fengtai Station to Beijing International Convention Center:

- (1) Approximately 32 kilometers away from the Beijing International Convention Center, it takes about 42 minutes by car (estimated taxi fare: 80 yuan).
- (2) Public transportation: Take Line 10 of the subway (Inner Circle) directly. Get off at Anzhenmen Station after 20 stops, transfer by walking about 119 meters, and take bus 620. Get off at Anhuiqiao North Station after 2 stops, then walk about 727 meters to reach the Beijing International Convention Center. The whole journey takes about 1 hour and 9 minutes.

7. Beijing Capital International Airport to Beijing International Convention Center:




- (1) Approximately 24 kilometers away from the Beijing International Convention Center, it takes about 30 minutes by car (estimated taxi fare: 69 yuan).
- (2) Public transportation: Walk about 85 meters to take Airport Bus Line 4 (Princess Tomb Line). Get off at Xibahe Station after 2 stops, transfer by walking about 178 meters, and take bus 379. Get off at Anhuiqiao North Station after 8 stops, then walk about 727 meters to reach the Beijing International Convention Center. The whole journey takes about 1 hour and 18 minutes.

8. Beijing Daxing International Airport to Beijing International Convention Center:




- (1) Approximately 69 kilometers away from the Beijing International Convention Center, it takes about 1 hour and 20 minutes by car (estimated taxi fare: 180 yuan).
- (2) Public transportation: Walk about 480 meters to take the Beijing Daxing Airport International Airport Line. Get off at Caoqiao Station after 2 stops, transfer by walking about 100 meters, and take Line 19 of the subway. Get off at Mudanyuan Station after 7 stops, transfer by walking about 331 meters, and take bus 645. Get off at Yayuncun Station after 5 stops, then walk about 572 meters to reach the Beijing International Convention Center. The whole journey takes about 1 hour and 35 minutes.

Contact Information





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**The 51st International Conference on Plasma Science &
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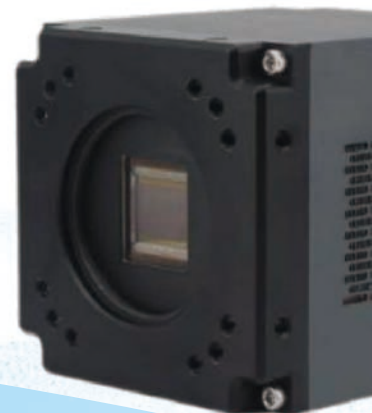
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谱分析仪和高速采样示波器等，为科研人员和工业界提
解决方案使我们的服务宗旨。我们致力于与客户建立合
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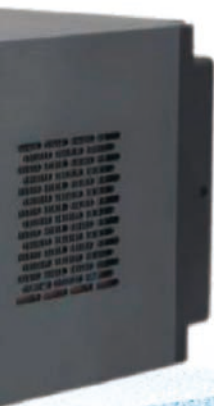
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等离子体电场应用

Lionel DUVILLARET
教授
测试系统设计者
法国里昂大学

等离子羽流
等离子体射流
全介质探头
测量单一电场分量
获取真实的时域场强演化

随意选择
安心

一维 / 三维测量

**等离子体
矢量电场测量和特性分析**

频率及通道模块化

主机和探头

光学电场探头
10 Hz - 100 GHz
从 mV/m 到 MV/m
绝对电场强度测量
确定 DBD 临界值
矢量和偏振测量
电场地图绘制
测量至 mV/m !
无场扰动
无限制、无缺点,
您需要的探头

省心
放心

时间分辨式电场图

等离子体射流

等离子体射流应用

在等离子体射流内部测量
多场景支持

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信测科技

kapteos 电光场强探头

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购买的轻松 售后的轻松

电光场强探头

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1 通道 - 3 通道模块化选择
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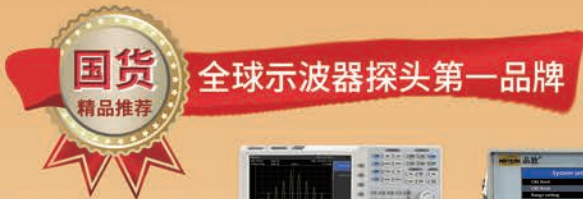
品致®

示波器探头技术标准倡导者

广州德肯电子股份有限公司(Pintech品致)位于广州市联东U谷黄埔科技总部港,公司成立于2006年,是一家专注于电子测量测试仪器仪表产品研发、制造及销售的高新技术企业。公司已在广东股权交易中心挂牌(股权代码:880555),荣获“高新技术企业”、“省级专精特新企业”、“科技型中小企业”等多个荣誉称号,并与华南理工大学合作成立研究生实习基地。



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4. 数字示波器 (500MHz/5GSa/s)
5. 高压放大器 (3MHz/30kV)
6. 交/直流电源 (500-100kVA/0-100kV)
7. 信号发生器 (200MHz/双通道)
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PicoSpec[®] Picosecond Gated Single Photon Spectrometer



EchelleSpec中阶梯门控光谱仪
EchelleSpec Mid-Echelle Gated Spectrometer

以更快的速度记录瞬态现象

record transient phenomena at a faster frame rate

光阴极快门频率高达500KHz，可以实现更高频率信号的同步采集

Photocathode repetition frequency up to 500KHz can realize synchronous acquisition of higher frequency signals

精准时序控制8通道数字延迟脉冲控制器，10ps精度，35ps外触发抖动

Accurate timing control, 8-channel digital delay pulse controller, 10ps precision, 35ps external trigger jitter

单光子计数光谱采集，光谱基线为0，可实现真正的光谱定量分析

Single photon counting spectrum acquisition with a spectral baseline of 0 enables true spectral quantitative analysis

以皮秒精度捕捉瞬态过程

to capture transient process with picosecond precision

2/4/8真实通道成像分幅相机，8幅图片采集仅需24ns

2/4/8 real channel imaging framing camera, acquisition of 8 pictures takes only 24ns

基于微通道板(MCP)数千倍的光学增益，精准捕捉单光子级光谱信号

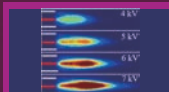
Based on the optical gain of microchannel plate (MCP) thousands of times, the spectral signal of single photon level is accurately captured

高分辨皮秒门控光谱仪，覆盖紫外-近红外波段

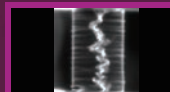
High-resolution picosecond gated spectrometer, covering the UV-near infrared spectrum



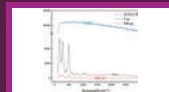
逐光[®]MF八分幅相机拍摄等离子体射流图像
Plasma jet images captured by eight-frame camera



高压放电等离子体成像
High-voltage discharge plasma imaging



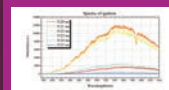
双丝负载Z轴等离子体成像
Dual filament loaded Z-pinch plasma imaging



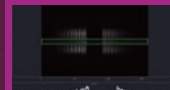
高温钠长石时间门控拉曼光谱
Time-gated Raman Spectroscopy of albite minerals under high temperature



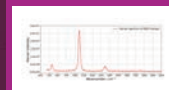
激光诱导等离子体光谱
Laser-induced plasma spectroscopy



固体推进剂样品点燃过程瞬态发射光谱
Transient emission spectroscopy during the ignition of solid propellant sample



激光与氦气放电相互作用中汤姆逊散射光谱
Thomson scattering spectroscopy in laser-helium discharge interaction



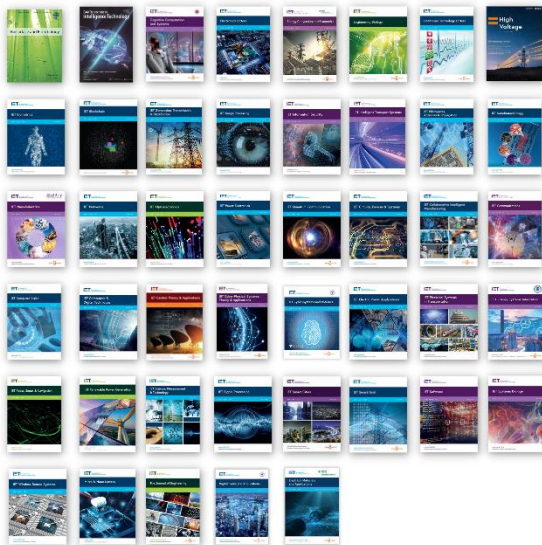
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