iSPEC

2025 国际等离子体和能源转化前沿学术研讨会

HongKong INTERNATIONAL SYMPOSIUM ON PLASMA AND ENERGY CONVERSION

The 6th International Symposium on Plasma and Energy Conversion

Programme

THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

Dec. 03–06, 2025

ORGANIZERS

中国电工技术学会
China Electrotechnical Society

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CONTENT

WELCOME MESSAGE

Dear Colleagues, Friends, and Distinguished Guests,

It is our great pleasure to welcome you to the 6th International Symposium on Plasma and Energy Conversion (iSPEC2025), held 3–6 December 2025 in the vibrant city of Hong Kong. This year's symposium is proudly hosted by the Department of Building Environment and Energy Engineering at The Hong Kong Polytechnic University. The symposium will serve as a global platform for advancing innovative research and solutions in plasma and energy conversion.

Building on the success of its previous editions, iSPEC has become a leading international forum for idea exchange and scientific collaboration. Continuing this tradition, iSPEC2025 brings together experts and scholars worldwide to develop strategies for sustainable energy transformation. We are also pleased to introduce the inaugural iSPEC Youth Plasma Innovator Award, honoring two outstanding young researchers for their exceptional contributions.

The program features distinguished Plenary Lectures, over 150 oral and poster presentations, and engaging networking events that foster collaboration and community. These activities embody iSPEC's mission: to promote interdisciplinary exchange, inspire innovation, and accelerate the plasma-driven evolution of energy technologies for a sustainable world.

We sincerely thank you for your commitment to advancing plasma and energy conversion research and for your role in shaping a more sustainable energy landscape. We look forward to the insightful discussions and fruitful collaborations that will define iSPEC2025.

We wish you a productive and memorable stay in Hong Kong.

Warm regards,

Prof. Tao Shao
General Chair of iSPEC2025

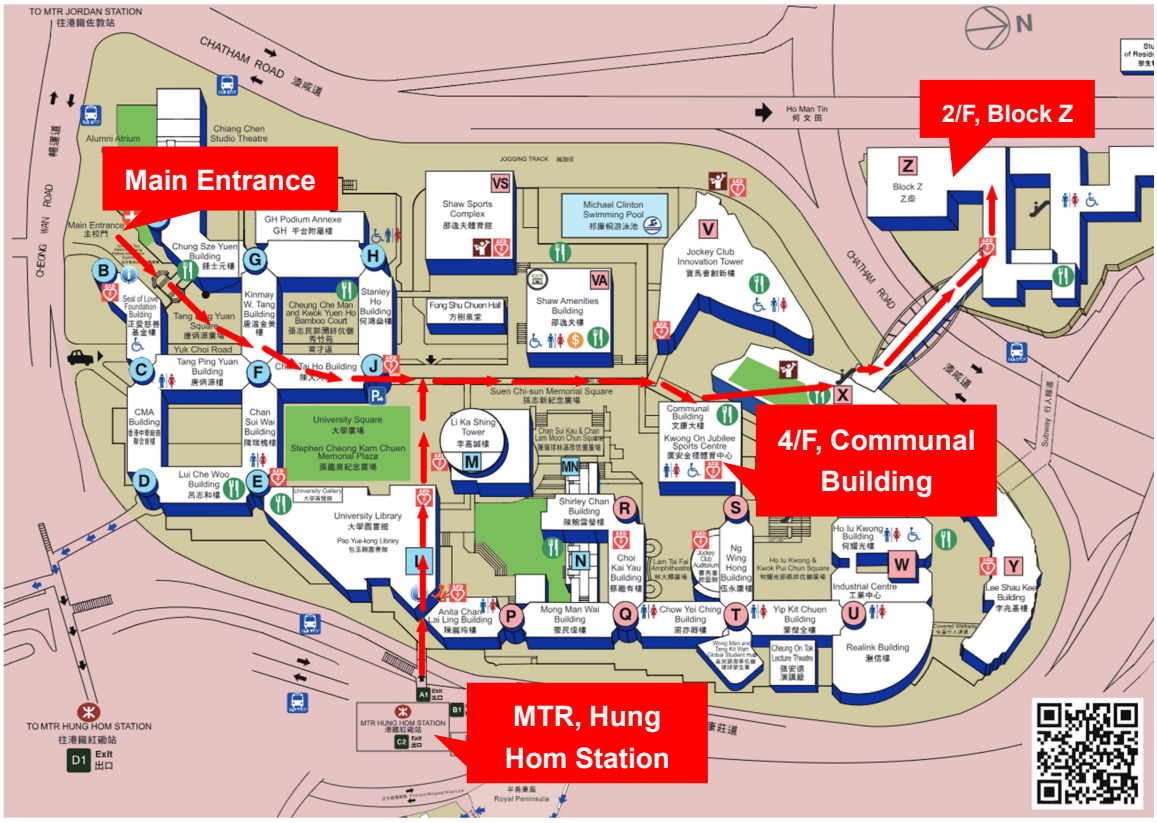
Prof. Yaping DU
Co-Chair of iSPEC2025

MAIN PROGRAM

Day 1: Dec. 03 (Wednesday), PolyU				
13:30 ~ 18:00	**Registration** (*2/F Podium, Block Z*)			
18:00 ~ 20:00	**Welcome Reception** (*4/F Staff Restaurant 聚賢樓, Communal Building)*			
Day 2: Dec. 04 (Thursday), PolyU				
9:00 ~ 9:30	**Opening Ceremony & Group Photo** (*Z207, Block Z*)			
9:30 ~ 10:30	**Plenary Session 1** (*Z207, Block Z*)			
10:30 ~ 11:00	**Coffee Break** (*Z208, Block Z*)			
11:00 ~ 12:30	**Plenary Session 2** (*Z207, Block Z*)			
12:30 ~ 14:00	**Lunch** (*4/F Staff Restaurant 聚賢樓, Communal Building)*			
14:00 ~ 16:00	**Plenary Session 3** (*Z207, Block Z*)			
16:00 ~ 16:30	**Coffee Break** (*Z208, Block Z*)			
16:30 ~ 18:00	**Plenary Session 4** (*Z207, Block Z*)			
Day 3: Dec. 05 (Friday), PolyU & Banquet				
9:00 ~ 10:30	**Session 1** (*Z205, Block Z*)	**Session 2** (*Z206, Block Z*)	**Session 3** (*Z207, Block Z*)	**Session 4** (*Z211, Block Z*)
10:30 ~ 11:00	**Coffee Break** (*Z208, Block Z*)			
11:00 ~ 12:30	**Session 5** (*Z205, Block Z*)	**Session 6** (*Z206, Block Z*)	**Session 7** (*Z207, Block Z*)	**Session 8** (*Z211, Block Z*)
12:30 ~ 14:00	**Lunch** (*4/F Staff Restaurant 聚賢樓, Communal Building)*			
14:00 ~ 15:30	**Session 9** (*Z205, Block Z*)	**Session 10** (*Z206, Block Z*)	**Session 11** (*Z207, Block Z*)	**Session 12** (*Z211, Block Z*)
15:30 ~ 16:00	**Coffee Break** (*Z208, Block Z*)			
16:00 ~ 17:30	**Poster Session 1** (*Z204, Block Z*)		**Poster Session 2** (*Z208, Block Z*)	
18:00 ~ 21:00	**Gala Dinner** (*Choi Fook Royal Banquet, Auto Plaza, East Tsim Sha Tsui*)			
Day 4: Dec. 06 (Saturday), PolyU				
9:00 ~ 10:30	**Session 13** (*Z205, Block Z*)	**Session 14** (*Z206, Block Z*)	**Session 15** (*Z207, Block Z*)	**Session 16** (*Z211, Block Z*)
10:30 ~ 11:00	**Coffee Break** (*Z208, Block Z*)			
11:00 ~ 12:30	**Session 17** (*Z205, Block Z*)	**Session 18** (*Z206, Block Z*)	**Session 19** (*Z207, Block Z*)	**Session 20** (*Z211, Block Z*)
12:30 ~ 13:00	**Closing Ceremony** (*Z207, Block Z*)			

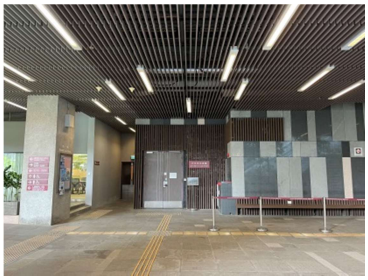
VENUE GUIDELINES

PolyU Campus Map



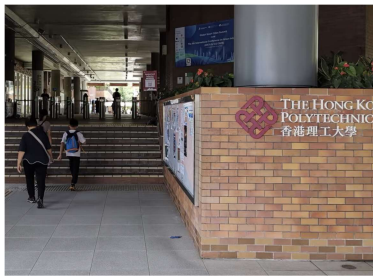
On-site Photos

Block Z



2/F Podium (Registration & Enquiry)

Communal Building



PolyU Entrance (Hung Hom Station Exit A1)

DAILY PROGRAM

Day 1: Dec. 03 (Wednesday), PolyU

13:30-18:00	**Registration** 2/F Podium, Block Z
18:00-20:30	**Welcome Reception** 4/F Staff Restaurant 聚賢樓, Communal Building

Day 2: Dec. 04 (Thursday), PolyU

9:00-9:30 **Z207**	**Opening Ceremony & Group Photo** Chair: Yaping Du (The Hong Kong Polytechnic University)
9:30-10:30 **Z207**	**Plenary Session 1** Chair: Tao Shao[1,2] (1. Institute of Electrical Engineering, Chinese Academy of Sciences, 2. Wuhan University)
9:30-10:00	**CO_2 conversion using plasma catalysis – prospects for scale-up** Anthony Murphy (CSIRO, Australia)
10:00-10:30	**Plasma Electrification for Power-to-X: A Pathway Toward a Circular and Net-Zero Economy** Xin Tu (University of Liverpool, United Kingdom)
10:30-11:00	**Coffee Break** **Z208**
11:00-12:30 **Z207**	**Plenary Session 2** Chair: Xin Tu (University of Liverpool)
11:00-11:30	**Redefining Electrocatalyst Fabrication: Low-Temperature Plasma Surface Engineering for Energy Conversion Electrode Materials** Rajdeep Singh Rawat (Nanyang Technological University, Singapore)
11:30-12:00	**Influence of longitudinal and transverse magnetic field on streamers in volume and on surface of a barrier discharge** Yuri Akishev (Troitsk Institute for Innovation and Fusion Research, Russia)
12:00-12:30	**Plasma Engineering for catalytic materials synthesis and modification in renewable energies** Oi Lun Li (Pusan National University, Korea)
12:30-14:00	**Lunch** 4/F Staff Restaurant 聚賢樓, Communal Building
14:00-16:00 **Z207**	**Plenary Session 3** Chair: Renwu Zhou (Xi'an Jiaotong University, China)
14:00-14:30	**Flexible Plasma Source and Skin Wound Healing** Guanjun Zhang (Xi'an Jiaotong University, China)
14:30-15:00	**Dynamic Interface Engineering of MoxC Catalysts via Cold Plasma for CO_2 Activation and Conversion** Chuan Shi (Dalian University of Technology, China)

15:00-15:30	**Bridging Fundamentals and Applications in Plasma Catalysis: Innovations in In Situ Characterization and Reactor Design** Xiaolei Fan (The University of Manchester, United Kingdom)
15:30-16:00	**Research progress on plasma modification to improve the dielectric properties of insulation materials** Cheng Zhang (Institute of Electrical Engineering, Chinese Academy of Sciences, China)
16:00-16:30	**Coffee Break** Z208
16:30-18:00 **Z207**	**Plenary Session 4** Chair: Zhitong Chen (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences)
16:30-17:00	**Plasma-activated media: a new generation of plasma medical technology** Dingxin Liu (Xi'an Jiaotong University, China)
17:00-17:30	**Plasma-Driven Innovation for Sustainable Resource Recovery and Energy Conversion** Guoxing Chen (Technical University of Darmstadt, Germany) - **iSPEC Youth Plasma Innovator Award Winner**
17:30-18:00	**Plasma-Liquid Interactions for Sustainable Chemical Conversions** Renwu Zhou (Xi'an Jiaotong University, China) - **iSPEC Youth Plasma Innovator Award Winner**

Day 3: Dec. 05 (Friday), PolyU & Banquet

9:00-10:30 **Z205**	**Session 1: Plasma technology for advanced manufacturing** Chairs: Yangyang Fu (Tsinghua University) Wenpeng Zhou (The Hong Kong University of Science and Technology)
9:00 - 9:18 **[Invited]**	**Enhancing β-Ga_2O_3 Power Devices through Plasma-activated Heterogeneous Integration Technology** *Wenpeng Zhou[1], Hanqin Zhou[1], Shan Huang[1], Man Hoi Wong[1] (1. The Hong Kong University of Science and Technology)
9:18 - 9:36 **[Invited]**	**Fabrication of W fuzz layers in small-scale laboratory setups** *Alexander V. Tumarkin[1], Maksim M. Kharkov[1], Dobrynya V. Kolodko[1,2], Andrey V. Kaziev[1] (1. National Research Nuclear University MEPhI, 2. Kotelnikov Institute of Radio Engineering and Electronics)
9:36 - 9:54 **[Invited]**	**Unveiling Opacity Effects on Ultraviolet Radiation in Laser-Sustained Plasmas** *Dongheyu Zhang[1], Junkang Mao[1], Yangyang Fu[1] (1. Tsinghua University)
9:54 - 10:06	**Modeling Filamentary Transitions in ArF Excimer Laser** *Luying Bai[1], Xiaochi Ma[1], Yifei Zhu[1], Yun Wu[1] (1. Xi'an Jiaotong university)
10:06 - 10:18	**Investigation of the velocity measurement and dynamic characteristics of a laser-sustained plasma flow field using the schlieren method** *Xiao Ma[1], Qing Xiong[1], Pengyu Wang[1] (1. Chongqing University)
10:18 - 10:30	**Characteristics of thermionic emission driven micro-scale discharge in different discharge modes** *Li Sun[1], Ming Xu[1] (1. Xi'an University of Technology)
9:00-10:30 **Z206**	**Session 2: Eco-friendly Gases for Electrical Insulation and Their Applications** Chairs: Yi Li (Wuhan University) Xiaolong Li (Shenyang University of Technology)
9:00 - 9:18 **[Invited]**	**Insulation characteristics at gas/insulator interface in DC-GIS/GIL filled with C_4F_7N gas mixture** *Xiaolong Li[1] (1. Shenyang University of Technology)
9:18 - 9:36 **[Invited]**	**Plasma catalysis on greenhouse gas conversion and its underlying mechanism** *Zhaolun Cui[1] (1. Dalian University of Technology)
9:36 - 9:54 **[Invited]**	**Advanced Gas Sensing Method and Device for C_4F_7N and its Fault Decomposition Component** *Yi Li[1] (1. Wuhan University)
9:54 - 10:06	**Efficient Arc Plasma Modeling and Quenching Evaluation of SF_6 Alternative Gases Using Deep Operator Learning** *He Ren[1], Linlin Zhong[1] (1. Southeast University)
10:06 - 10:18	**DBD Plasma Decomposition of SF_6: A Comparison between SF_6/N_2 and Pure SF_6 Systems** *Sihan Wang[1], Zhijian Han[1], Hongtu Cheng[1] (1. Nanjing Tech University)
10:18 - 10:30	**Variation of Decomposition Products of C_4F_7N/CO_2 Mixed Gas under Continuous Partial Discharge** Zhigang Wang[1], Wenke Li[1], Ning Lv[2], Ling Zhang[2], Shubo Ren[2], Xinbiao Li[1], Chenyi Liu[1], *Yu Zheng[2] (1. Henan Pinggao Electric Co. Ltd, 2. Wuhan University)

9:00-10:18 **Z207**	**Session 3: Plasma-based Disinfection Technologies** Chairs: Zhitong Chen (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences) Liguang Dou (Institute of Electrical Engineering, Chinese Academy of Sciences)
9:00 - 9:18 **[Invited]**	**Cold Atmospheric Plasma: A Promising Adjunct for Dental Infection Control and Biofilm Management** *Rui Zhang[1], Zhitong Chen[2,3,4] (1. Peking University Shenzhen Hospital, 2. Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, 3. National Innovation Center for Advanced Medical Devices, 4. State Key Laboratory of Biomedical Imaging Science and System)
9:18 - 9:36 **[Invited]**	**Cold Atmospheric Plasma as a Next-Generation Therapeutic Platform for Infection and Inflammation** *Peiyu Wang[1], Renwu Zhou[2], Rusen Zhou[2], Gang Liu[1], and Erik W. Thompson[3,4] (1. Xiamen University, 2. Xi'an Jiaotong University, 3. Queensland University of Technology (QUT), 4. Translational Research Institute)
9:36 - 9:54 **[Invited]**	**A safe and effective air plasma against SARS-CoV-2** *Fei Cao[1], Zhitong Chen[1,2,3] (1. Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, 2. National Innovation Center for Advanced Medical Devices, 3. State Key Laboratory of Biomedical Imaging Science and System)
9:54 - 10:06	**Influence of Temperature and Humidity on Ozone Generation of Atmospheric-Pressure Air Dielectric Barrier Discharge** *Yangyang Chen[1], Mi You[1], Mengying Hu[1], Xinyi Zhang[1], Shuqun Wu[1], Qiaojue Liu[1] (1. Nanjing University of Aeronautics and Astronautics)
10:06 - 10:18	**Non-Thermal Plasma-Driven Water-Gas Shift Reaction: A Sustainable Pathway for Direct H_2O_2 Synthesis** *Yanshi Zhang[1], Jintao Sun[4], Daiqi Ye[1,2,3], Xin Tu[4], Junliang Wu[1,2,3] (1. South China University of Technology, 2. Guangdong Provincial Key Laboratory of Atmospheric Environment and Pollution Control, 3. National Engineering Laboratory for VOCs Pollution Control Technology and Equipment, 4. University of Liverpool)
9:00-10:18 **Z211**	**Session 4: Plasma-Based Material Surface Processing** Chairs: Hang Wang (Institute of Electrical Engineering, CAS) Xi Zhu (Nanjing Tech University)
9:00 - 9:18 **[Invited]**	**Engineering high-performance electrocatalysts by the DBD and RF plasma for the electrocatalytic water splitting** *Guangliang Chen[1], Jun Huang[2], Wei Chen[2]， Bin He[1] (1. Huzhou University, 2. Gannan Normal University)
9:18 - 9:36 **[Invited]**	**A fluid-controlled large-scale plasma brush operated in gradient discharge at atmospheric pressure for surface functionally graded modification** *Xi Zhu[1], Jiaju Jiang[1], Xiuhan Guan[1], Hua Zhu[1], Sen Wang[1], Hongtu Cheng[1], Inzamam Ul Haq[1], Zhi Fang[1] (1. Nanjing Tech University)
9:36 - 9:54 **[Invited]**	**Development of multifunctional powders via thermal plasma for advanced thermal management materials** *Yuge Ouyang[1], Zhen Xu[1], Zongxian Yang[2], Fangli Yuan[3] （1. Beijing Technology and Business University, 2. Henan University, 3. Institute of Process Engineering, Chinese Academy of Sciences）
9:54 - 10:06	**Study on Optimizing the Insulation Performance of the XLPE/SIR Interface in Cable Accessories via Plasma-Assisted Silicon Deposition** *Yuyao Zhong[1], Qing Xie[1], Jingli Liu[1], Ming Yan[1], Jun Xie[1], Qijun Duan[2], Yan Li[1] (1. North China Electric Power University, 2. Beijing Huairou Laboratory)
10:06 - 10:18	**Thermal Plasma－Enabled Synthesis and Carbon-Shell Engineering of MnO@C Cathodes for High-Performance Aqueous Zn-Ion Batteries** *Mengru Wang[1], Zongxian Yang[1], Fangli Yuan[2] (1. Henan University, China, 2. Institute of Process Engineering, Chinese Academy of Sciences)

10:30~11:00	**Coffee Break** **Z208**
11:00-12:24 **Z205**	**Session 5: Artificial Intelligence in Plasma Energy Conversion** Chairs: Linlin Zhong (Southeast University) Chao Wu (Tsinghua University)
11:00 - 11:18 **[Invited]**	**AI driven development of dielectric materials** *Chao Wu[1] (1. Tsinghua University)
11:18 - 11:36 **[Invited]**	**AI Driven Plasma Simulation: Frameworks and Applications** *Linlin Zhong[1] (1. Southeast University)
11:36 - 11:54 **[Invited]**	**Studies on electron transport properties in gases using physics-informed neural networks** *Satoru Kawaguchi[1], Kazuhiro Takahashi[1], Kohki Satoh[1] (1. Muroran Institute of Technology)
11:54 - 12:12 **[Invited]**	**Machine learning-based prediction and optimization for plasma-based CO_2 conversion in dielectric barrier discharge reactors** *Jiayin Li[1, 2], Xinpei Lu[3], Sirui Li[4], Annemie Bogaerts[1, 2] (1. Department of Chemistry, University of Antwerp, 2. Department of Chemistry, University of Antwerp, 3. Huazhong University of Science and Technology, 4. Eindhoven University of Technology)
12:12 - 12:24	**Predicting Electron-impact Ionization Cross Sections by Combining Graph Neural Network with DeepCSNet** *Yifan Wang[1], Linlin Zhong[1] (1. Southeast University)
11:00-12:30 **Z206**	**Session 6: Plasma Diagnostics** Chairs: Qing Xiong (Chongqing University) Yongxia Han (South China University of Technology)
11:00 - 11:18 **[Invited]**	**Fast gas heating and peculiarities of temperature measurements by optical emission spectroscopy in nanosecond surface dielectric barrier discharge** *Bin Zhang[1], Geoffrey Kreyder[3], Nikolay Popov[2], Sergey A Shcherbanev[3], Svetlana M Starikovskaia[3] (1. Nanjing University of Aeronautics and Astronautics, 2. Moscow State University, 3. Ecole Polytechnique)
11:18 - 11:36 **[Invited]**	**An Intelligent Sensing Approach of Electrohydrodynamics Relying on Optical Interference Mechanism** *Jia-Wei Zhang[1], Li Wang[1], Jianlong Ma[1],Yingdun Ye[1], Jianwei Zhang[1] (1. Xi'an University of Technology)
11:36 - 11:54 **[Invited]**	**High-sensitive E-FISH measurement on plasma in sub 1V/cm and low-pressure scenario** *Jianan Wang[1,2], Grayson Lacombe[2], Yihao Guo[1], Marien Simeni Simeni[2], Sander Nijdam[1] (1. Eindhoven University of Technology, 2. University of Minnesota)
11:54 - 12:06	**Emission Spectroscopy Characteristics of AC Arcs with Harmonic Components in Distribution Networks** *Tong Zhou[1], Qing Yang[1], Junjie Xu[1], Mengmeng Shi[1] (1. Chongqing University)
12:06 - 12:18	**Study on the Driving Characteristics of Targets by Electrical Explosion of Wires** *Yuliang Ma[1], Jingran Li[1], Xinxuan Xian[1], Da Huang[1], Jinhao Wu[1], Ruoyu Han[1] (1. Beijing Institute of Technology)
12:18 - 12:30	**Efficient CO_2 Conversion in a Rotating Gliding Arc Plasmatron and Mechanistic Study by in-situ Molecular Beam Mass Spectrometry** *Kaiyi Wang[1], Hao Zhang[1] (1. Zhejiang University)

11:00-12:30 **Z207**	**Session 7: Plasma-Activated Water** Chairs: Renwu Zhou (Xi'an Jiaotong University) Ruonan Ma (Zhengzhou University)
11:00 - 11:18 **[Invited]**	**Study on the Synthesis of Hydrogen Peroxide Using an H-Type Plasma Electrochemical Device** *Qiang Chen[1], Taiyu Liu[1] (1. Xiamen University)
11:18 - 11:36 **[Invited]**	**Plasma-activated water as potential green adjuvant to enhance the insecticidal activity of pesticides against cotton aphids** *Ruonan Ma[1], Cui Xu[1], Xuewei Chen[1], Zhen Jiao[1] (1. Zhengzhou University)
11:36 - 11:54 **[Invited]**	**Plasma-Activated Hydrogel and Its Biomedical Applications** *Hao Zhang[1,2], Dingxin Liu[1], Mingzhe Rong[1] (1. Xi'an Jiaotong University, 2. City University of Hong Kong)
11:54 - 12:06	**Potential use of plasma-activated water cleaning for aflatoxin B1 degradation in peanuts** *Shuqing Guo[1], Cui Xu[1], Junxia Feng[2], Hangbo Xu[1], Yongqin Fan[1], Dongjie Cui[1], Ruonan Ma[1,2], Zhen Jiao[1] (1. Zhengzhou University, 2. Huadu District People's Hospital of Guangzhou)
12:06 - 12:18	**Portable Plasma-Activated Saline Spray Accelerates Repair of Radiation-Induced Skin Injury** *Ying Li[1], Shulei Shuai[1], Yajie Liu[1] (1. Peking University Shenzhen Hospital)
12:18 - 12:30	**Gas-Liquid Plasma Discharge: New Insights into the Green Energy Conversion** *Dingwei Gan[1], Rusen Zhou[1], Renwu Zhou[1] (1. Xi'an Jiaotong University)
11:00-12:48 **Z211**	**Session 8: Film Dielectrics for High-Voltage Insulation and Energy Storage** Chairs: Junwei Zha (North China Electric Power University) Yuanwei Zhu (Xi'an Jiaotong University)
11:00 - 11:18 **[Invited]**	**Design and Characterization of Ethylene-styrene Gradient Copolymers towards Improved Dielectric Performances** *Yuanwei Zhu[1], Shengtao Li[1] (1. Xi'an Jiaotong University)
11:18 - 11:36 **[Invited]**	**Quantum-confined high temperature polyimide dielectric films** *Yuchao Li[1], Tonghui Zhang[1], Dongmei Zhang[1] (1. Liaocheng University)
11:36 - 11:54 **[Invited]**	**Electromagnetic regulation of dielectric framework materials** *Junye Cheng[1] (1. Shenzhen MSU-BIT University)
11:54 - 12:12 **[Invited]**	**Structural Design and High-Temperature Energy-Storage Performance of Polyimide dielectric Films** *Xuejie Liu[1], Zheng Gong[2], Junwei Zha[3] (1. City University of Hong Kong, 2. University of Electronic Science and Technology of China, 3. North China Electric Power University)
12:12 - 12:30 **[Invited]**	**Degradation and Self-Healing Competitive Mechanisms in Aging of Metallized Film Capacitor** *Chuansheng Zhang[1], Cheng Zhang[1], Tao Shao[2] (1. Institute of Electrical Engineering, Chinese Academy of Sciences, 2. Wuhan University)
12:30 - 12:48 **[Invited]**	**PVDF dielectric electrolytes** *Yanfei Huang[1] (1. Shenzhen University)
12:30-14:00	**Lunch** 4/F Staff Restaurant 聚賢樓, Communal Building

14:00-15:30 **Z205**	**Session 9: Plasma-Based Microplastic Treatment** Chairs: Guoxing Chen (Technical University of Darmstadt) Lina Liu (Nankai University)
14:00 - 14:18 **[Invited]**	**Mechanism of plasma catalytic CO_2 reforming of toluene by in situ probing the surface reaction** Yongqi Kuang[1], Jing Dai[1], *Lina Liu[1] (1. Nankai University)
14:18 - 14:36 **[Invited]**	**The aging characteristics of prefluoro rubber seal rings in ICP plasma** *Hang Wang[1], Qing Yan[1], Liguang Dou[1], Bangdou Huang[1], Cheng Zhang[1], Tao Shao[2] (1. Institute of Electrical Engineering, Chinese Academy of Sciences, 2. Wuhan University)
14:36 - 14:54 **[Invited]**	**Capturing atmospheric reservoirs: plasma induced water vapor nucleation and collection technology** Dingchen Li[1] (1. The Hong Kong Polytechnic University)
14:54 - 15:06	**Micro-discharge in tortuous pores：The deflect of primary ionization wave and the role of pre-ionization** *Dingyuan Peng[1], Jialu Duan[1], Lan Li[1], Ruobing Zhang[1] (1. Tsinghua Shenzhen International Graduate School)
15:06 - 15:18	**Study on Plasma-Wall Interactions in Confined Electrical Explosion Systems** *Da Huang[1], Jinhao Wu[1], Yuliang Ma[1], Jingran Li[1], Xinxuan Xian[1], Ruoyu Han[1] (1. Beijing Institute of Technology)
15:18 - 15:30	**Bench- and pilot-scale degradation of organic pollutants in high-salt wastewater using air microbubble discharge plasma jet** *Jianping Liang[1], Dezheng Yang[1] (1. Dalian University of Technology)
14:00-15:30 **Z206**	**Session 10: Plasma for Environment and Energy 1** Chairs: Guodong Meng (Xi'an Jiaotong University) Min Zhu (Nanjing University of Aeronautics and Astronautics)
14:00 - 14:18 **[Invited]**	**Enhancing methanol yield by modulating Cu/MgAlO interface for plasma catalyzed CO_2 hydrogenation** *Liguang Dou[1], Yuan Gao[1], Hang Wang[1], Cheng Zhang[1], Tao Shao[1,2] (1. Institute of Electrical Engineering, Chinese Academy of Sciences, 2. Wuhan University)
14:18 - 14:36 **[Invited]**	**Low-temperature plasma catalytic CO_2/H_2O conversion** *Guodong Meng[1], Linghan Xia[1], Yuan Gao[2], Tao Shao[2,3] (1. Xi'an Jiaotong University, 2. Institute of Electrical Engineering, Chinese Academy of Sciences, 3. Wuhan University)
14:36 - 14:54 **[Invited]**	**Enhancement of CO_2 conversion in ICP by temperature management** Su-Rong Sun[1], *Wen-Dong Wan[1], Hai-Xing Wang[1] (1. Beihang University)
14:54 - 15:06	**Plasma pyrolysis of coal for high-value chemicals** *Shaopeng Wang[1], Xianhui Chen[1], Weidong xia[1] (1. University of Science and Technology of China)
15:06 - 15:18	**The Effect of Nanosecond Pulse Parameters on the Conversion of Ammonia to Hydrogen in Plasma** *Ni Zhao[1], Jing Wang[1], Kaisen Zhao[1], Zhengshi Chang[2, 3] (1. Xi'an University of Technology, 2. Xi'an Jiaotong University, 3. State Key Laboratory of Electrical Insulation and Power Equipment)
15:18 - 15:30	**Motion Patterns and Improved CO_2 Conversion in Magnetic-Driven Gliding Arc Discharge** *Yang Liu[1,2], Zixiao Zhang[3], Xiangen Zhao[2], Yaping Du[2], Junjia He[1] (1. Huazhong University of Science and Technology, 2. The Hong Kong Polytechnic University, 3. State Grid Jiangxi Electric Power Research Institute)

14:00-15:36 **Z207**	**Session 11: Plasma-Enabled CO_2 Capture and Conversion to Valuable Chemicals** Chairs: Sirui Li (Eindhoven University of Technology) Jiayin Li (University of Antwerp)
14:00 - 14:18 **[Invited]**	**CSIRO Plasma Assisted CO_2 Hydrogenation Activities: Low Emission Fuel Production** *Yunxia Yang[1], Sana Ullah[1], Jiajia Zhao[1], Anthony Murphy[2] (1. CSIRO Energy BU, Clayton, Melbourne, Australia, 2. CSIRO Manufacture BU, Linfield, Sydney, Australia)
14:18 - 14:36 **[Invited]**	**CO_2 Conversion for Space Applications** *Zhengshi Chang[1], Zifan Ye[1], Qiang Fu[1], Jialun Luo[1] (1. Xi'an Jiaotong University)
14:36 - 14:54 **[Invited]**	**CO_2 Desorption and Conversion over Hydrotalcite in a Plasma–Sorbent System** *Pranav Arun[1], Ludovica Villantieri[2], Pierdomenico Biasi[2], Fausto Gallucci[1], Sirui Li[1] (1. Eindhoven University of Technology, 2. Casale SA, Lugano, Switzerland)
14:54 - 15:12 **[Invited]**	**Rational Catalyst Design for Ambient Plasma-Catalytic CO_2 Hydrogenation to Methanol** *Yaolin Wang[1], Xin Tu[1] (1.University of Liverpool)
15:12 - 15:24	**One-step valorization of CH_4 and CO_2 into platform chemicals via pulsed plasma** Yuan Gao[1], *Yuxuan Xu[1], Liguang Dou[1], Chong Qi[1], Cheng Zhang[1], Tao Shao[1, 2] (1. Institute of Electrical Engineering, Chinese Academy of Sciences, 2. Wuhan University)
15:24 - 15:36	**Combination of DBD and fluidized-bed catalysts for CO_2 and CH_4 conversion** * Shiyun Liu[1], Jiazheng Ren[1], Zhijun Cai[1], Danhua Mei[1], Zhi Fang[1] (1. Nanjing Tech University)
14:00-15:30 **Z211**	**Session 12: Plasma technologies for Intelligent semiconductors and devices** Chairs: Shaocong Hou (Wuhan University) Wenpeng Zhou (The Hong Kong University of Science and Technology)
14:00 - 14:18 **[Invited]**	**Plasma-assisted deposition of next-generation optoelectronic materials and devices** *Shaocong Hou[1] (1. Wuhan University)
14:18 - 14:36 **[Invited]**	**Ambient-Pressure XPS for Plasma-Enhanced Surface Reactions** *Jun Cai[1], Zhu-Jun Wang[1], Zhi Liu[1] (1. Shanghaitech University)
14:36 - 14:54 **[Invited]**	**Mechanisms of Refractive Effects in Laser-Sustained Plasmas** *Junkang Mao[1], Dongheyu Zhang[1], Jiacun Wu[1], Yangyang Fu[1] (1. Tsinghua University)
14:54 - 15:06	**Numerical Investigation of Plasma-Laser Conversion Characteristics of ArF Excimer Lasers** *Xiaochi Ma[1], Luying Bai[1], Yifei Zhu[1], Yun Wu[1] (1. Xi'an Jiaotong University)
15:06 - 15:18	**Charge transport and mode transition in bi-energetic-electron-beam-driven diodes** *Chubin Lin[1], Yangyang Fu[1] (1. Tsinghua University)
15:18 - 15:30	**Infrared and Visible Image Fusion for Laser Processing Monitoring** *Yao Liang[1], Wei Tian[1], Ziyang Hu[1], Zhuo Huang[1], Tiantian Deng[1], Guoliang Li[1] (1. South-Central Minzu University)

15:30~16:00	**Coffee Break** **Z208**	
16:00~17:30	**Poster Session 1 - ZeroArc Future: Grid Plasma Suppression** Z204	**Poster Session 2 - Plasma Nexus: Eco-Material-Bio Frontiers** Z208
18:00~21:00	**Gala Dinner** Choi Fook Royal Banquet, Auto Plaza, East Tsim Sha Tsui)	

Day 4: Dec. 06 (Saturday), PolyU

9:00-10:30 **Z205**	**Session 13: Plasma Fundamentals** Chairs: Quanzhi Zhang (Dalian University of Technology) Yu Zheng (Wuhan University)
9:00 - 9:18 **[Invited]**	**Approximate analytical solution for the distribution characteristics of corona displacement current in plate electrode** *Qizheng Ye[1], Zipeng Cheng[1], Wenhua Wu[1], Zheng Tian[1] (1. Huazhong University of Science and Technology)
9:18 - 9:36 **[Invited]**	**Review and Prospect of Lightning Flashover Criteria for Transmission Lines** * Yongxia Han[1], Shaomin He[1], Haojun Lin[1], Zhiming Liao[1] (1. South China University of Technology)
9:36 - 9:54 **[Invited]**	**A comprehensive perspective on CO_2 conversion in gliding arc discharges: a novel approach combining experiments and simulations** *Yang Liu[1,2,3], Xiangen Zhao[3], Tiago Dias[4], Tiago Silva[2], Pedro Viegas[2], Yifei Zhu[5], Yaping Du[3], Vasco Guerra[2], Junjia He[1] (1. Huazhong University of Science and Technology, 2. Universidade de Lisboa, 3. The Hong Kong Polytechnic University, 4. University of Michigan, 5. Xi'an Jiaotong University)
9:54 - 10:06	**Demonstration of similarity laws in DC microdischarge across low-to-high ionization degree regimes** *Zhen Wang[1], Zhihang Zhao[1], Yangyang Fu[1] (1. Tsinghua University)
10:06 - 10:18	**A Nonintrusive Reduced-Order Model for Electrostatic PIC Simulations via Deep Operator Learning** *Jianhua Lyu[1], Linlin Zhong[1] (1. Southeast University)
10:18 - 10:30	**Signal Extraction and Clustering of Partial Discharge in Motor Insulation Using Temporal Correlation-Based Clustering** *Li Wang[1], Chen Song[1], Fouad Belhora[2], Jianwei Zhang[1], Jia-Wei Zhang[1] (1. Xi'an University of Technology, 2. Chouaib Doukkali University)
9:00-10:18 **Z206**	**Session 14: Plasma for Material Processing** Chairs: Chuanlong Ma (Nanchang University) Tian Chang (Shaanxi University of Science and Technology)
9:00 - 9:18 **[Invited]**	**Plasma-solution synthesis of ferrites** *Kristina Smirnova[1], Alexander Ivanov[2], Dmitry Shutov[1], Vladimir Rybkin[2] (1. Russian Technological University (MIREA), 2. Ivanovo State University of Chemistry and Technology)
9:18 - 9:36 **[Invited]**	**Aerosol-Assisted Plasma Deposition of Multi-Functional Coatings for Environmental Application** *Chuanlong Ma[1], Muyang Qian[1], Lei Wang[2], Anton Nikiforov[3], Nathalie De Geyter[3], Rino Morent[3] (1. Nanchang University, 2. National University of Defense Technology, 3. Ghent University)
9:36 - 9:54 **[Invited]**	**Plasma-induced Fe-doped zeolitic imidazolate framework-8 derived P-Fe-N_3C for enhanced phenol degradation** *Ke Lu[1,2], Jianping Liang[1], Dezheng Yang[1] (1. Dalian University of Technology, 2. DUT-BSU joint Institute, Dalian University of Technology)
9:54 - 10:06	**Plasma-enabled methane decomposition to hydrogen and nanocarbon materials** *Dengke Xi[1], Lun Li[2], Tao Shao[2] (1. Institute of Electrical Engineering, Chinese Academy of Science, 2. Wuhan University)
10:06 - 10:18	**Preparation of Metal-Embedded Alumina Composite Particles by Electrical Explosion Plasma under Spatial Confinement** *Jingran Li[1], Xinxuan Xian[1], Da Huang[1], Jinhao Wu[1], Yuliang Ma[1], Ruoyu Han[1] (1. Beijing Institute of Technology)

9:00-10:30 **Z207**	**Session 15: Plasma-Enabled N_2 Fixation** Chairs: Xuekai Pei (Wuhan University) Yashuang Zheng (South China University of Technology)
9:00 - 9:18 **[Invited]**	**Can vibrational-translational nonequilibrium of $N_2(X)$ be exploited for efficient nitrogen fixation in air plasma discharge?** Junjie Qiao[1], Qi Yang[1], Licheng Wang[1], Xiao Ma[1], *Qing Xiong[1] (1. Chongqing University)
9:18 - 9:36 **[Invited]**	**Mechanisms of Oxide-Catalyzed NOx Formation in Plasma-Assisted Nitrogen Fixation** *Xuekai Pei[1], Yiheng Li[1], Jincong Wang[1] (1. Wuhan University)
9:36 - 9:54 **[Invited]**	**Modeling of a N_2/H_2 planar Dielectric Barrier Discharge with catalyst coated onto the Barrier** *Yashuang Zheng[1], Chuangxin Du[1], Yanpeng Hao[1] (1. South China University of Technology)
9:54 - 10:06	**Gas Absorption and Electron Stimulated Desorption on Al_2O_3 Surface with Molecular Dynamics Simulation** *Jianwei Zhang[1], Hairong Sun[1], Jiawei Zhang[1] (1. Xi'an University of Technology)
10:06 - 10:18	**Cross-scale multi-source corona discharge model: 3D simulation method based on fluid dynamics and ion transport equations** *Zhuoyang Tang[1], Chuan Li[1], Dingchen Li[2] (1. Huazhong University of Science and Technology, 2. The Hong Kong Polytechnic University)
10:18 - 10:30	**Plasma- Enhanced Ammonia Synthesis via Ni-Loaded Dendritic Mesoporous Silica Catalysts** *Linlin Liu[1], She Chen[1], Mengbo Li[1], Lipeng Zhong[1], Qiuqin Sun[1], Feng Wang[1] (1. Hunan University)
9:00-10:18 **Z211**	**Session 16: Plasma for Biomedicine** Chairs: Peiyu Wang (Xiamen University) Fei Cao (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences)
9:00 - 9:18 **[Invited]**	**Study on the pathway of action of pulsed low-temperature plasma jet on skin tissue** *Yongqiang Fu[1] (1. Dalian University of Technology)
9:18 - 9:36 **[Invited]**	**Cold atmospheric plasma-derived ROS detoxifies deoxynivalenol-induced nephrotoxicity** *Yupan Zhu[1], Ruonan Ma[1], Zhen Jiao[1] (1. Zhengzhou University)
9:36 - 9:54 **[Invited]**	**Real Time Temperature Control for Flexible Dielectric Barrier Discharge for Medical Safety Applications** *Zongyong Li[1], Le Yang[1], Qian Wei[1], Qiaojue Liu[1], Shuqun Wu[1]（1. Nanjing University of Aeronautics and Astronautics,）
9:54 - 10:06	**Catalyst-Free Degradation of Nitrate Using the Plasma Electrochemical Process** *Xianhao Chen[1], Zijian Cheng[1], Qiang Chen[1] (1. Xiamen University)
10:06 - 10:18	**Study on improving radiotherapy sensitivity of hypoxic colorectal cancer cells with cold atmospheric plasma** *Jin Wang[1,2], Yajie Liu[1], Ying Li[1] (1. Peking University Shenzhen Hospital, 2. Southern University of Science and Technology)
10:30~11:00	**Coffee Break** **Z208**

11:00-12:30 **Z205**	**Session 17: Plasma for Environment and Energy 2** Chairs: Shaojun Xu (The University of Manchester, United Kingdom) Dingchen Li (The Hong Kong Polytechnic University)
11:00 - 11:18 **[Invited]**	**Non-Thermal Plasma-Assisted Toluene Reforming over Ni/N-Doped Porous Carbon: Revealing Synergy Mechanisms** *Tian Chang[1], Mingyan Xiao[1], Yu Wang[1], Qian Shang[1] (1. Shaanxi University of Science & Technology)
11:18 - 11:36 **[Invited]**	**Measurement of Swarm Parameters of Novel C_4F_7N-Based Ternary Gas Mixtures as Replacement for SF_6 Gas** *Yu Zheng[1], Ling Zhang[1], Shubo Ren[1], Ning Lv[1], Ying Zhang[2], Chi Zhang[2] (1. Wuhan University, 2. State Grid Hubei Electric Power Co., Ltd)
11:36 - 11:54 **[Invited]**	**Spark Discharge Plasma-Enabled CO_2 Dissociation Enhanced by Synergistic Optimization of Electrode Geometry and Oxygen Carrier Packing** *Yuxuan Xu[1,2], Yuan Gao[1], Liguang Dou[1], Dengke Xi[1], Hang Wang[1], Chong Qi[1,2], Tao Shao[3] (1. Institute of Electrical Engineering, Chinese Academy of Sciences, 2. University of Chinese Academy of Sciences, 3. Wuhan University)
11:54 - 12:06	**Research on the Conversion of Active Species in Plasma Activated Water and Its Multi Field Applications** *Haotian Gao[1], Yuantao Zhang[1], Dawei Liu[2], Xiaolong Wang[1] (1. Shandong University, 2. Huazhong University of science and technology)
12:06 - 12:18	**Plasma-Catalytic Methane to Methanol: Unlocking Synergy through Tailored Nickel Dispersion** *Danting Peng[1], Yanshi Zhang[1], Yufei Ji[1], Junfei Liu[1], Guannan Huo[1], Daiqi Ye[1], Junliang Wu[1] (1. South China University of Technology)
12:18 - 12:30	**Plasma Tuning Local Environment of Ni/Al for Hydrogen Production from Ammonia Decomposition** *Weili Zhou[1], Wenshuo Zhang[2], Yulong Shan[1] (1. Research Center for Eco-Environmental Science, Chinese Academy of Sciences, 2. Taizhou University)
11:00-12:30 **Z206**	**Session 18: Plasma Mitigation and Utilization in Modern Power Systems** Chairs: Shengxin Huang (Hefei University of Technology) Jinxin Cao (Wuhan University)
11:00 - 11:18 **[Invited]**	**Comparison of Transient Responses of Wind Turbine Generator with Different Operational Conditions Subjected to Rocket-Triggered Lightning Flashes** *Mi Zhou[1] (1. Wuhan University)
11:18 - 11:36 **[Invited]**	**HiPIMS-to-arc transitions in hydrogen and helium** *Andrey V. Kaziev[1], Nikolay S. Sazonov[1], Dobrynya V. Kolodko[1,2], Alexander V. Tumarkin[1], Maksim M. Kharkov[1] (1. National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Kotelnikov Institute of Radio Engineering and Electronics)
11:36 - 11:54 **[Invited]**	**Acoustic Pressure Signals Observed at 90 m and 130 m from the Return Strokes of Rocket-triggered Lightning** *Jinxin Cao[1], Jianguo Wang[1], Li Cai[1], Mi Zhou[1], Hengxing Xu[1], Yadong Fan[1] (1. Wuhan University)
11:54 - 12:06	**Influence of Conductive Particles on Charge Accumulation and Electrical Breakdown in DC Wall Bushings** *Xiaodi OuYang[1], She Chen[1], Xiang Xie[1], Lipeng Zhong[1], Qiuqin Sun[1], Feng Wang[1] (1. Hunan University)
12:06 - 12:18	**An Unsupervised Approach for Low Voltage AC Series Arc Fault Detection based on Harmonic Elimination and Autoencoder** *Junjie Tan[1], Chuanzhen Jia[1,2], Hepeng Li[1], Qingsha Cheng[1] (1. Southern University of Science and Technology, 2. The Hong Kong Polytechnic University)

12:18 - 12:30	**A Study on Breakdown Probabilities of XLPE Electrical Trees Based on Sample Generation and Data-Driven Models** *Kang He[1], Jiahong He[1] (1. Southeast University)
11:00-12:30 **Z207**	**Session 19: Plasma for Environment and Energy 3** Chairs: Yunxia Yang (CSIRO, Australia) Chuanlong Ma (Nanchang University)
11:00 - 11:18 **[Invited]**	**CSlRO reactor designs for plasma-assisted CO_2 methanation** *Jiajia Zhao[1], Anthony B. Murphy[2], Yunxia Yang[1] (1. CSIRO Energy, Clayton South, Australia, 2. CSIRO Manufacturing, Lindfield, Australia)
11:18 - 11:36 **[Invited]**	**Plasma Synthesis and Mechanistic Investigation of Low-Coordination Cobalt-based Catalysts for Electrochemical Hydrazine Oxidation** *Qian Liu[1], Xin-Yao Yu[2] (1. Shenzhen Polytechnic University, 2. Anhui University)
11:36 - 11:54 **[Invited]**	**Non-thermal plasma-driven multiphase sustainable nitrogen fixation** *Tianyu Li[1], Jingwen Huang[1], Jing Sun[1], Renwu Zhou[1], Dingxin Liu[1] (1. Xi'an Jiaotong University)
11:54 - 12:06	**Mechanism of CO_2 to alcohols catalyzed by Co/Cu-BDC-NH_2 synergism plasma** *Pengchen He[1], Chong Qi[1,2], Yuan Gao[1], Cheng Zhang[1,2], Tao Shao[3] (1. Institute of Electrical Engineering, Chinese Academy of Sciences, 2. University of Chinese Academy of Sciences, 3. Wuhan University)
12:06 - 12:18	**Packed-Bed Dielectric Barrier Discharge under Martian Pressure: Discharge Behavior and Its Effect on CO_2 Splitting** Lang Liu[1], *Min Zhu[1], Enze Zhang[1],Chaohai Zhang[1] (1. Nanjing University of Aeronautics and Astronautics)
12:18 - 12:30	**Pulse Modulated Radio Frequency Discharge Characteristics of CO_2 Under Martian Pressure** *Zifan Ye[1], Luyao Liu[1], Qiang Fu[1], Jialun Luo[1], Zhengshi Chang[1] (1. Xi'an Jiaotong University)
11:00-12:36 **Z211**	**Session 20: Pulsed Power Technology and Applications** Chairs: Jiawei Zhang (Xi'an University of Technology) Yuxuan Ding (The Hong Kong Polytechnic University)
11:00 - 11:18 **[Invited]**	**Computational and theoretical study of large scale rotating spokes and micro instabilities in partially magnetized E×B plasmas** *Liang Xu[1], Minghao Lu[1] (1. Soochow University)
11:18 - 11:36 **[Invited]**	**The shock wave and hydrodynamics of underwater spark discharge under the influence of artificial bubbles** *Ying Sun[1] (1. Shandong University)
11:36 - 11:54 **[Invited]**	**The channel expansion effect of nanosecond pulsed spark discharge plasmas in air and liquid** *Shuai Zhang[1], Lun Li[1], Tao Shao[2] (1. Institute of Electrical Engineering (IEE) of Chinese Academy of Sciences, 2. Wuhan University)
11:54 - 12:12 **[Invited]**	**Numerical Investigation on Modulated Characteristics of Gyro-magnetic Nonlinear Transmission Line** *Weihao Tie[1], Yilin Li[1], Jianjun Wang[1], Xiaocheng Hu[1], Yongchun Shao[1], Yu Meng[1], Jinyong Fang[1] (1. China Academy of Space Technology (Xi'an))
12:12 - 12:24	**Study on the Plasma Energy Concentration Effect Based on Electrically Exploded Metal Bridge Foil under Extreme Confinement** *Jinhao Wu[1], Yuliang Ma[1], Jingran Li[1], Xinxuan Xian[1], Da Huang[1], Ruoyu Han[1] (1. Beijing Institute of Technology)

12:24 - 12:36	**Investigation of Muzzle Arc Formation in an Electromagnetic Railgun Based on High-Speed Imaging and Multi-Physics Simulation** *Jingtong Feng[1], Jiali Liu[1], Luyao Liu[1], Ali Mohammed Ali Abdo[1], Xi Chen[1], Yang Shen[1], Hongshun Liu[1] (1. Shandong University)
12:30-13:00 **Z207**	**Closing Ceremony**

POSTER INFORMATION

Poster Session 1 (Z204)

Chairs: **Guanjun Zhang** (Xi'an Jiaotong University)
Junjia He (Huazhong University of Science and Technology)
Yaping Du (The Hong Kong Polytechnic University)

No.	Title & Authors
P1-1	**Movement Law and Adsorption Characteristics of Metallic Particles in C_4F_7N/CO_2 Mixed Gas-Filled GIS and Their Impact on Insulation Safety** *Dongyu Guo[1], Yu Zhou[2], Zhanpeng Yang[1], Jianyuan Xu[1], Xiaolong Li[1], Wen Wang[3] (1. Shenyang University of Technology, 2. Zhejiang Zheneng Jiahua Power Generation Co., Ltd., 3. China Electric Power Research Institute)
P1-2	**Electric Field Distribution Characteristics of C_4F_7N/CO_2 Gas Mixture DC-GIS Under Temperature Gradient** *Dongyu Guo[1], Dongsheng Li[1], Jianyuan Xu[1], Xiaolong Li[1], Wen Wang[2] (1. Shenyang University of Technology, 2. China Electric Power Research Institute)
P1-3	**The Modeling of Transfer Potential between Independent Grounding Grids under Arc Faults in Low Voltage Distribution Grids** *Yubo Zhang[1], Xiaojia Sun[1], Mei Huang[1], Kun Tan[1], Zhe Li[1], Zuowei Chen[1], Zhanhua Huang[1], Bo Geng[1] (1. Shenzhen Power Supply Bureau Co., Ltd.)
P1-4	**Analysis of Direct Lightning-Induced Faults in Low-Voltage Distribution Networks and Safety Assurance Optimization** *Zhe Li[1], Kun Tan[1], Bo Geng[1], Jiahui Lin[1], Shoukang Luo[1] (1. Shenzhen Power Supply Bureau Co., Ltd.)
P1-5	**Lightning-Induced Faults in Low-Voltage Distribution Networks via Hybrid VTS-PEEC Method** *Xiaobing Xiao[1], Xipeng Chen[1], Lei Jia[1], Huaifei Chen[1], Lu Qu[1] (1. State Key Laboratory HVDC Transmissions Technology, China Southern Power Grid)
P1-6	**Study on Gas Production Characteristics of Transformer Oil Cracking under Power-Frequency Voltage** *Jiantao Sun[1], Hang Wang[2], Yikun Zhao[1], Rui Wu[2] and Cheng Zhang[2] (1. China Electric Power Research Institute, 2. Institute of Electrical Engineering, Chinese Academy of Sciences)
P1-7	**Molecular Dynamics Simulation of the Sintering Initial Stage for $ZnO@SiO_2$ Core-Shell Structure** *Li Song [1,2], Zhi Ye[1], Sibo Mao[1], Junjia He[1] (1. Huazhong University of Science and Technology, 2. Shanxi University)
P1-8	**Numerical Simulation Study on the Influence Mechanism of the Length-to-width Ratio of the Yoke on the Vibration Characteristics of Magnetic Shielded Hollow Current-limiting Reactors** *Ming Yi[1], Weiqi Yang[1], Sibo Mao[1], Junjia He[1] (1. Huazhong University of Science and Technology)
P1-9	**Microstructural and Electrical Properties of Varistors Prepared from $ZnO@SiO_2@Bi_2O_3$ Nanopowders** *Zhi Ye[1], Li Song[1], Sibo Mao[1], Junjia He[1] (1. Huazhong University of Science and Technology)
P1-10	**Study on Thermal Stress in Wind Power Systems during Lightning Strikes: Thermal Stress Differences at Different Lightning Strike Stages** *Shenghong Xiang[1], Mi Zhou[1], Yucheng Huang[1], Ziyi Wang[1], Yiyu Lin[1], Jianguo Wang[1], Li Cai[1], Jinxin Cao[1], Yadong Fan[1] (1. Wuhan University)

P1-11	**Transient Voltage Analysis of DC Cables in a Photovoltaic System Under a Nearby Rocket-Triggered Lightning Flash** *Yiyu Lin[1], Mi Zhou[1], Yucheng Huang[1], Ziyi Wang[1], Shenghong Xiang[1], Jianguo Wang[1], Li Cai[1], Jinxin Cao[1], Yadong Fan[1] (1. Wuhan University)
P1-12	**Smart Monitoring of Leakage Current of Photovoltaic under Dust Environment Based on Passive Optical Fiber Sensor** *Yingdun Ye[1], Jianlong Ma[1], Fouad Belhora[2], Jia-Wei Zhang[1] (1. Xi'an University of Technology, 2. Chouaib Doukkali University)
P1-13	**Research on Multi-scale Arc Fault Edge Detection for Low-voltage Systems Based on Lightweight Network** *Hepeng Li[1], Chuanzhen Jia[1,2], Junjie Tan[1], Qingsha S. Cheng[1] (1. Southern University of Science and Technology, 2. The Hong Kong Polytechnic University)
P1-14	**Study on protection characteristics of wind power system under SPD configuration: Effects of different SPD configurations and different lightning current amplitudes** *Ziyi Wang[1], Mi Zhou[1], Jiangtao Chen[1], JianguoWang[1], Li Cai[1], Jinxin Cao[1], Yadong Fan[1] (1. Wuhan University)
P1-15	**Electric Field Calculation and Structure Optimization of Shielding Device Used for the Bushing of Air-insulated Switchgear** *Ruiyang Guan[1,2], Chenzhu Xie[2], Bin Li[1], Daosheng Ouyang[3], FumingLin[3], Guohai Han[3] (1. Tianjin University, 2. Xiamen University of Technology, 3. Ningbo Tian'an Smart Grid Technology Co., Ltd.)
P1-16	**Influence of Oil Flow Velocity on Bubble Coalescence and Electric Field Distortion in Transformer Oil** *Jiali Liu[1], Jingtong Feng[1], Ali Abdo[1], Luyao Liu[1], Simeng Li[2], Yuqing Wang[1], Hongshun Liu[1] (1. Shandong University, 2. Xi'an Jiaotong University)
P1-17	**Analysis of Metal Ablation Characteristics and Influencing Factors During the Short-Circuit Arcing** *Peng Li[1], Qihui Liu[2], Bingchen Hou[1], Tianyu Xiao[1], Yehe Gao[3] (1. China Three Gorges University, 2. Quzhou Power Supply Company, State Grid Zhejiang Electric Power Co., Ltd., 3. Enshi Power Supply Company, State Grid Hubei Electric Power Co., Ltd.)
P1-18	**Metal Temperature Estimation and Fault Identification Method Based on Analysis of Sunlight-Reflected Image Intensity** *Zheng Tian[1], Xingwang Li[1,2], Yuze Chen[2], Chengxiang Lei[2], Qizheng Ye[1], Zipeng Cheng[1], Wenhua Wu[1], Chang Ge[1] (1. Huazhong University of Science and Technology, 2. Electric Power Research Institute, Guangdong Power Grid Co., Ltd.)
P1-19	**Fault Diagnosis Method for GIS Equipment Under Low Sampling Condition of MEMS Sensor** Le Lai[1], Yanke Tian[1], Guichang Zhang[2], Aikebaier Maimaiti1, Kun Shang[2], *Bin Zhang[2] (1. Extra-High Voltage Branch Company, State Grid Xinjiang Electric Power Co., Ltd., 2. Shandong University)
P1-20	**Research on Partial Discharge Detection of GIS Based on Deep Learning and Mechanical Vibration Signals** Le Lai[1], Yanke Tian[1], Kun Shang[2], Aikebaier Maimaiti[1], Xingwei Wei[2], *Bin Zhang[2] (1. Extra-High Voltage Branch Company, State Grid Xinjiang Electric Power Co., Ltd., 2. Shandong University)
P1-21	**Application and Performance Optimization of Discrete Phase-Shifting Control in Isolated AC-DC Matrix Converters** *Jiajun Du[1], Wenlang Deng[1], JiajunRen[1], Linke Gao[1] (1. Xiangtan University)
P1-22	**A Non-Cascade Dual-Time-Scale Sliding Mode Control for High-Performance Vienna Rectifiers** *Yu Jiang[1], Yougui Guo[1], Bomin Huang[1], Zhixian Huang[1], Zicheng Nie[1], Xijun Yang[2], Fei Gao[2] (1. Xiangtan University, 2. Shanghai Jiao Tong University)

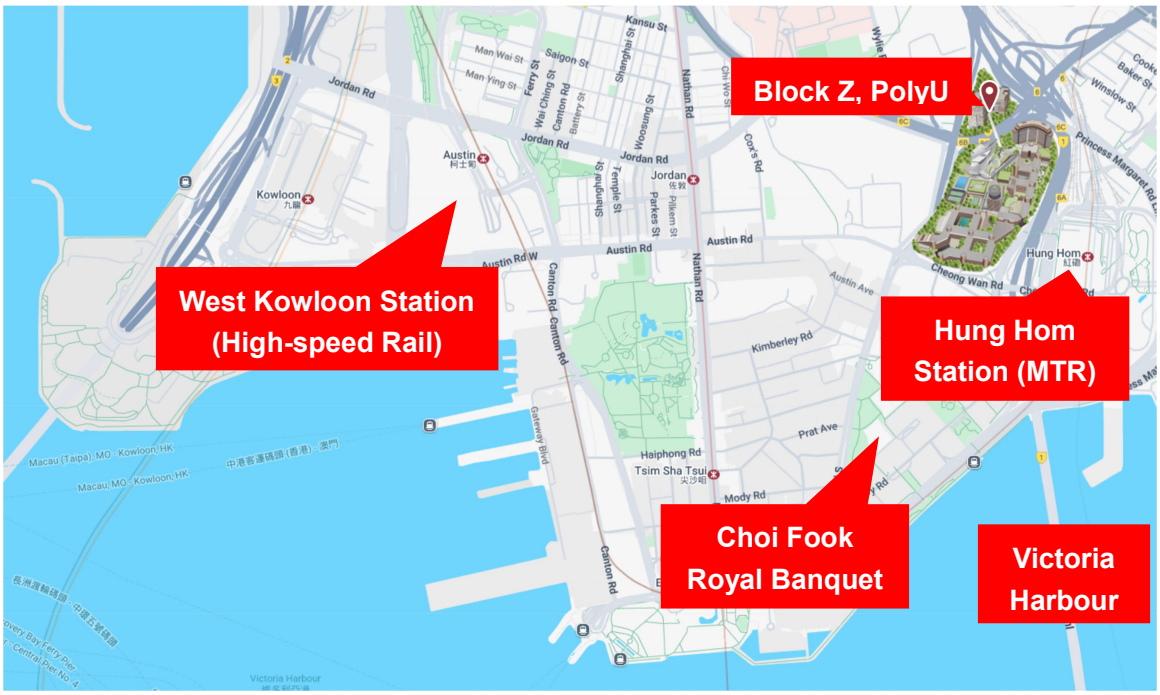
Poster Session 2 (Z208)

Chairs: **Xin Tu** (University of Liverpool)
Anthony Murphy (CSIRO Manufacturing)
Tao Shao (Wuhan University)

No.	Title & Authors
P2-1	**Regulation of Cellular Redox Homeostasis in Arabidopsis Thaliana Seedling by Atmospheric Pressure Cold Plasma-Generated Reactive Oxygen/Nitrogen Species** *Dongjie Cui[1], Ruonan Ma[1], Jie Zhuang[2], Zhen Jiao[1] (1. Zhengzhou University, 2. Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences)
P2-2	**Plasma-Activated Water Regulates Soil Microbiota for the Control of Wheat Fusarium Crown Rot** *Shijie Zhang[1] (1. Zhengzhou University)
P2-3	**Experimental Study on the Upgrading of Bio-oil Model Compound Guaiacol by Plasma Treatment** *Xiaojiao Wu[1], Yadi Liu[1], Yan Sun[1], Xiaolong Wang[1] (1. Shandong University)
P2-4	**Study on the Development of Tip-strip Surface Dielectric Barrier Discharge Channel** *Jinyu Tang[1], Hui Jiang [1], Yufei Han[1] (1. Chongqing University)
P2-5	**Study on the Characteristics of Nanosecond-Pulsed Coaxial Dielectric Barrier Discharge in Humid Air under Atmospheric Pressure** *Can Ding[1], Xiangdong Liu[1], Wenhui Chen[1] (1. China Three Gorges University)
P2-6	**Synthesis of Nanoparticles Using a Discharge Plasma Operated in a Venturi Tube** *Zijian Cheng[1], Xianhao Chen[1], Qiang Chen[1] (1. Xiamen University)
P2-7	**A Method for Tracing Streamer Development Trajectory in Long Air Gap Discharge** *Weiqi Yang[1], Ming Yi[1], Lili Guo[1], Junjia He[1] (1. Huazhong University of Science and Technology)
P2-8	**Positive Leader Discharge Channel Branching at Natural High Altitudes** *Changzhi Peng[1], Haohao Jin[1], Songzhuang Yang[1], Li Cai[1], Xuzhu Dong[1], Bing Luo[2] (1. Wuhan university, 2. CSG Electric Power Research Institute Co., Ltd.)
P2-9	**Ar/H_2 Plasma Discharge for Hydrodeoxygenation of Guaiacol: Mechanism Investigation and Process Optimization for Efficient Bio-Oil Upgrading** *Yan Sun[1], Yadi Liu[1], Xiaojiao Wu[1], Xiaolong Wang[1] (1. Shandong University)
P2-10	**A High-Performance CuO Doped ZnO Catalyst for SF_6 Catalytic Degradation with Ammonia Promotion** *Zhihui Li[1], Fuping Zeng[1], Kexin Zhu[1], Haotian Li[1, 2], Xiangyu Wang[1], Hua Jiang[1] (1. Wuhan University, 2. Nanjing Tech University）
P2-11	**Parameters Optimization Reaction of Nitrogen Fixation by Microwave Plasma Combined with Water Mist Absorption** *Xiaoying Wu[1], Xiangbin Guo[1], Zihao Li[1], Yatao Zhu[1], Bingyan Chen[1] (1. Hohai University)
P2-12	**Electromagnetic Rail Launch Characteristics at Different Trigger Positions** *Luyao Liu[1], Jingtong Feng[1], Xi Chen[1], Yuqing Wang[1], Yang Shen[1], Hongshun Liu[1] (1. Shandong University)
P2-13	**Propagation Effects of Lightning Electromagnetic Fields in Multi-Peak Terrain** *Hengxing Xu[1], Jinxin Cao[1], Jianguo Wang[1], Shanqiang Gu[2], Yingpu Xie[2], Han Zhang[2] (1. Wuhan University, 2. Hubei Key Lab Power Grid Lightning Risk, State Grid Elect Power Res Inst)

P2-14	**Data-Driven Investigation of Influencing Factors in Positive Leader Branching** *Lili Guo[1], Xiangen Zhao[2], Xiankang Wang[3], Xiaopeng Liu[3], Junjia He[1] (1. Huazhong University of Science and Technology, 2. The Hong Kong Polytechnic University, 3. Electric Power Research Institute, State Grid Hubei Electric Power Co., Ltd.)
P2-15	**Numerical Simulation of Ground Current Characteristics in Positive Streamer Discharges under Plate-Plate and Needle-Plate Electrodes** *Zipeng Cheng[1], Qizheng Ye[1], Wenhua Wu[1], Zheng Tian[1], Chang Ge[1] (1. Huazhong University of Science and Technology)
P2-16	**Coordination of Cobalt Phthalocyanine onto g-C_3N_4 for Boosting Photoreduction of CO_2** *Xuehua Zhang[1], Guangjin Zhang[1] (1. Institute of Process Engineering, Chinese Academy of Sciences)
P2-17	**Study on the Characteristics and Mechanisms of Plasma-Activated Water against Staphylococcus Aureus biofilms** *Zimu Xu[1], Shuheng Hu[1], Bin Zhu[1], Yufan Xu[1], Qi Wu[1], Cheng Cheng[2] (1. Hefei University of Technology, 2. Anhui Institute of Plasma Physics, Chinese Academy of Sciences)
P2-18	**Impact of Liquid Surface Deformation on Discharge Properties and Chemical Composition in Plasma-Liquid System** *Junke Cao[1] (1. Huazhong University of Science and Technology)
P2-19	**Multi-Objective Optimization Design of a Compact Electron Beamline Based on the NSGA-II Algorithm** *Yilin Li[1], Weihao Tie[1], Xiaocheng Hu[1], Bing Duan[1], Yongchun Shao[1], Yu Meng[1], Jinyong Fang[1] (1. China Academy of Space Technology (Xi'an))
P2-20	**Investigation on Modulated Characteristics of a Compact Gyromagnetic Nonlinear Transmission Line** *Bing Duan[1], Weihao Tie[1], Yilin Li[1], Xiaocheng Hu[1], Yongchun Shao[1], Yu Meng[1], Jinyong Fang[1] (1. China Academy of Space Technology (Xi'an))
P2-21	**Investigation of Thermal Aging Behavior and Energy Storage Performance via Polycarbonate/Fluorene Polyester All-Organic Multilayer Composite Dielectrics** *Yu Feng[1], Yanqing Wang[1], Dongyu Hou[1], Dong Yue[1] (1. Harbin University of Science and Technology)

Surrounding Guidelines



Gala Dinner Address: Choi Fook Royal Banquet, 13/F, Auto Plaza, No. 65 Mody Road, Tsim Sha Tsui, Kowloon.

Transportation to PolyU

From	Transport Options	Duration	Cost (HKD)
Hong Kong International Airport	Airport Express to Kowloon Station, then taxi to PolyU	~ 35 min	~ 105
	Bus A21: Direct bus to Hung Hom Station	~ 50 min	~ 35
	Taxi: Direct ride	~ 40 min	~ 300-350
West Kowloon High-Speed Rail Station	MTR: Walk to Austin MTR Station, take Tuen Ma Line to Hung Hom Station, exit A1	~ 10 min	~ 30-50
	Taxi: Direct ride	~ 15 min	~ 5-10
Shenzhen: Luohu Port or Futian Port	MTR: East Rail Line directly towards Hung Hom Station	~ 55 min	~ 46

信测，轻松测试场景 模块化解决方案

Test Easy, Build Modulars!

信测科技

轻松测试
轻松工作

EMI
断续骚扰
喀呖声分析仪

EMI
连续骚扰
测量接收机

T4 探头支架 ⊕ C4 场强仪

可扩展

9.25 GHz
EMS 汽车抗扰度
电场校准

可扩展

9.25 GHz
EMS 民标抗扰度
电场校准

C4 场强仪 ⊕ T1

可扩展

EMC
轻松工作
电场测量
价值共创
科研

40 GHz ⊕ 9.25 GHz
EMS 军标抗扰度
电场校准

高功率微波

皮利级脉冲

等离子体

复杂严苛环境

全介质
电场探头

全介质磁场探头

可扩展

电光 / 磁光
测试系统

高压直流

合成场强

可扩展

~ 10 000 W
~ 40 GHz
功率放大器

雷电监测及预警

可扩展

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HongKong INTERNATIONAL SYMPOSIUM ON PLASMA AND ENERGY CONVERSION

THE HONG KONG POLYTECHNIC UNIVERSITY
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