



2025 IEEE INTERNATIONAL CONFERENCE ON ELECTRICAL ENERGY CONVERSION SYSTEMS AND CONTROL (IEEE IEEECSC 2025) & 2025 能源电力装备技术创新大会

Chongqing, China | May 23-25, 2025



CONFERENCE PROGRAM

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Xuxing Zhang, China Electric Institute, China
Weiwei Jin, Shanghai Electrical Apparatus Research Institute, China

Special Session Chairs

Special Session 01

Prof. Pat Wheeler, University of Nottingham, U.K, IEEE Fellow;
Prof. Tao Yang, University of Nottingham, U.K, IET Fellow;
Assoc. Prof. Qiang Gao, Shanghai Jiao Tong University, China;
Prof. Jiawei Chen, Chongqing University, China

Special Session 02

Prof. Jing Ou, Harbin Institute of Technology, China
Prof. Yingzhen Liu, Harbin Institute of Technology, China
Assoc. Prof. Peixin Liang, Northwestern Polytechnical University, China
Dr. Dawei Liang, University of Sheffield, UK

Special Session 03

Prof. Yunze He, Hunan University, China
Assoc. Prof. Wei Lai, Chongqing University, China
Assoc. Prof. Jun Zhang, Hohai University, China
Assoc. Prof. Zhaoyang Zhao, Southwest Jiaotong University, China
Post-doctoral Ran Yao, Chongqing University, China

Special Session 04

Prof. Jinghua Li, Guangxi University, China

Prof. Bin Zhou, Hunan University, China
Prof. Yujian Ye, Southeast University, China
Prof. Tao Ding, Xi'an Jiaotong University, China
Prof. Zhouyang Ren, Chongqing University, China

Special Session 05

Prof. Feng Deng, Changsha University of Science and Technology, China
Prof. Xia Lei, Xihua University, China
Prof. Qi Li, Southwest Jiaotong University, China
Prof. Sheng Chen, Hohai University, China
Prof. Zhouyang Ren, Chongqing University, China

Special Session 06

Researcher Shangjian Dai, Southeast University, China
Prof. Jianyu Pan, Chongqing University, China
Prof. Zicheng Liu, Huazhong University of Science and Technology, China
Researcher Yanfei Cao, Zhejiang University, China
Assoc. Prof. Lefei Ge, Northwestern Polytechnical University, China

Assoc. Prof. Xuwei Xiang, Chongqing University, China

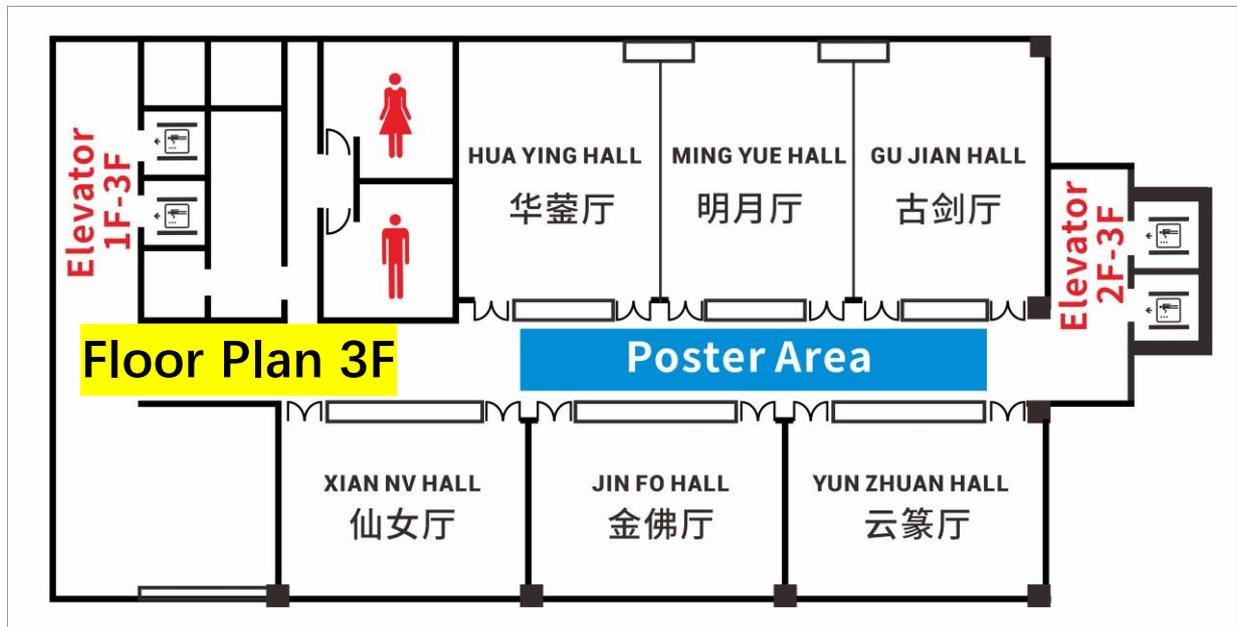
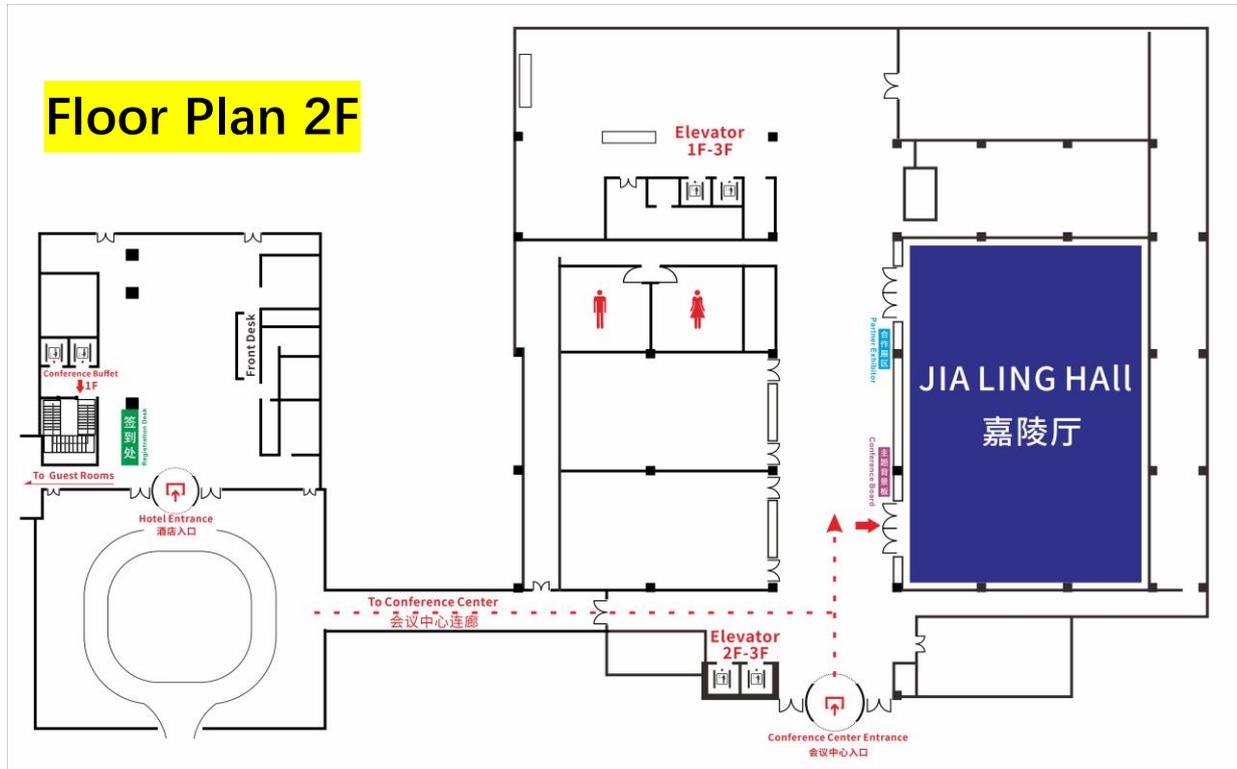
Special Session 07

Prof. Jian Hao, Chongqing University, China



Conference Venue

重庆施柏阁酒店 STEIGENBERGER CHONGQING



Agenda Overview-IEEE IEEESC 2025

Day 1 | May 23, Friday

Time	Activity	Venue
10:00-18:00	Sign-in & Conference Materials Collection	2F HOTEL LOBBY

Day 2 | May 24, Saturday

Time	Activity	Venue
Opening Ceremony		
Host: Prof. Hui Li, Chongqing University		
08:30-08:35	Address from: Jianlin Hu , Chongqing University	JIA LING HALL
08:35-08:40	Address from: Gaoyun An , IEEE China Council	
08:40-08:45	Address from: Hui Li , Chongqing University	
08:45-08:50	Address from: Hongfa Zhou , Shanghai Electrical Apparatus Research Institute	
Keynote Speech		
Host: Prof. Xi Xiao, Tsinghua University		
08:50-09:20	Prof. Don Tan <i>Academician of National Academy of Engineering, IEEE Fellow</i> Title: Ultra-fast Charging and Ubiquitous Infrastructure	JIA LING HALL
09:20-09:50	Prof. Mohamed Missous <i>Academician of the Royal Academy of Engineering</i> Title: Semiconductor Quantum Devices for State of Health Monitoring in the New Energy and Power Equipment Industries	
09:50-10:10	Group Photo & Coffee Break	
Host: Assoc. Prof. Qiang Gao, Shanghai Jiao Tong University		
10:10-10:40	Prof. Li Ran <i>IEEE Fellow, Chongqing University</i> Title: An Evolving Opinion: Requirement of Grid Forming Converters on Power Semiconductor Devices	JIA LING HALL
10:40-11:10	Prof. Pat Wheeler <i>IEEE PELS Vice-President for Technical Operations (2021 to date), University of Nottingham</i> Title: Electrical Propulsion Systems for Transportation Electrification: Power Electronics as the Enabling Technology	
11:10-11:40	Prof. René Peter Paul Smeets <i>IEEE Fellow and CIGRE Fellow</i> Title: Innovative Switching Technology as Decarbonization Enabler	



11:40-12:10	Prof. Yun Wang ASME Fellow and RSC Fellow, University of California, Irvine Title: PEM Fuel Cell Technology and Hydrogen Station Network for Automobiles	JIA LING HALL
12:10-13:30	Lunch @ 1F BELA BELA ALL DAY DINING RESTAURANT	
Technical Sessions		
13:30-15:10	TS01-Reliability and Optimization Technique of Power Electronic Devices	XIAN NV HALL
	TS02-Advanced Insulation Materials and Their Performance Analysis Technologies	HUA YING HALL
15:10-15:30	Coffee Break	
15:30-18:10	TS03-Advanced Control Techniques for High-quality Servo Motor Systems	XIAN NV HALL
	TS04-Advanced Insulation Materials and Their Performance Analysis Technologies	HUA YING HALL
14:00-17:00	Poster Session 01	
18:30-20:30	Banquet	
JIA LING HALL		

Day 3 | May 25, Sunday

Time	Activity	Venue
Technical Sessions		
08:30-10:10	TS05-Energy Conversion Techniques in Transportation Electrification	XIAN NV HALL
	TS06-Low-carbon Operation and Planning Technologies of Integrated Energy Systems	HUA YING HALL
10:10-10:20	Coffee Break	
10:20-12:35	TS07-Fault Analysis on Energy Conversion System	XIAN NV HALL
	TS08-Advanced Control for Renewable Energy System	HUA YING HALL
08:30-12:00	Poster Session 02	
3F POSTER AREA		



日程概览-2025 能源电力装备技术创新大会

第一天 | 5月23日, 星期五

时间	活动	会场
10:00-18:00	签到&会议资料领取	施柏阁酒店大堂 (2楼)

第二天 | 5月24日, 星期六

2025 能源电力装备技术创新大会-分会场		
14:00-17:30	分会场一: 新型储能技术及装备	云篆厅
	分会场二: 强电磁技术及装备	金佛厅
	分会场三: 高密度电机及驱动系统技术	古剑厅
	分会场四: 能源电力装备环境适应性技术	明月厅
15:30-16:00	茶歇	会议中心走廊 (3楼)
18:30-20:30	晚宴	嘉陵厅

第三天 | 5月25日, 星期天

2025 能源电力装备技术创新大会-分会场		
08:30-10:50	分会场五: 输变电装备智能化技术	云篆厅
	分会场六: 风电装备与风能高效利用技术	金佛厅
	分会场七: 智能配用电装备与系统	古剑厅
	分会场八: 核能运行控制与电气驱动技术	明月厅
09:45-10:00	茶歇	会议中心走廊 (3楼)
11:00-12:00	全国重点实验室管理及运行机制的研讨会	云篆厅



Keynote Speech



Professor Don Tan

Academician of National Academy of Engineering, IEEE Fellow

JIA LING HALL | 08:50-09:20, May 24

Bio.: Dr. Tan, with a PhD from Caltech, is a member of the National Academy of Engineering, and an IEEE fellow. He has served as Distinguished Engineer, Fellow, Chief Engineer-Power Conversion, Program Manager, Department Manager, and Center Director in a US Fortune 500 corporation. Unusually prolific as a visionary technical leader in ultra-efficient power conversion and electronic energy systems, Dr. Tan has pioneered breakthrough innovations with numerous high-impact industry firsts and record performances that received commendations from the highest level of US Government. He has developed hundreds of designs and thousands of hardware units deployed for space applications without a single on-orbit failure. His suite of world-class electronics performed flawlessly on the James Webb Space Telescope (JWST), located one million miles away, achieving world-record-breaking performances.

Dr. Tan is the IEEE Technical Activities Vice President-Elect 2025, Chair of IEEE Fellow Advisory and Oversight Subcommittee, and Vice Chair of IEEE Industry Engagement Committee. Among numerous others, Don has served as founding President of IEEE Transportation Electrification Council; Division II Director, IEEE Board of Directors; Fellow Committee Chair, IEEE PELS/PES eGrid Steering Committee Chair, PELS Long Range Planning Committee Chair, Nomination Committee Chair, PELS President, Editor-in-Chief (Founding) for IEEE Journal of Emerging and Selected Topics in Power Electronics, APEC (the fourth largest event in IEEE) General Chair, PELS Vice President-Operations, Guest Editor-in-Chief for IEEE Transactions on Power Electronics and IEEE Transactions on Industry Applications, Fellow Committee, PELS Vice President-Meetings, IEEE Chair for IEEE/Google Little Box Challenge (awarded \$1M cash prize), and IEEE/DoD Working Group Chair, developed IEEE/ANSI standards 1515/1573. Don has delivered about 120 keynotes/invited global presentations. He has received more than \$30M+ external customer funding for research and technology development. He also serves on many prestigious national and international award, review and selection committees.

Speech Detail

Ultra-fast Charging and Ubiquitous Infrastructure

Abstract: As the EV technology for the driving train entered the phase of maturity with many superior performances, significant progress in battery technologies ushered in the era of electrical vehicle proliferation. Battery-powered electric vehicles (BEV) are now in price parity with internal combustion engine (ICE) cars, even being more competitive. Many countries/regions now have aggressive mandates towards zero-emission to combat global climate change. A major remaining obstacle is the availability of ultra-fast charging required for long-haul driving and ubiquitous charging for everyday driving. We will discuss the challenges facing ultra-fast charging and available solutions coming on the horizon. We will provide a new thinking in achieving ubiquitous charging infrastructure by leveraging existing and readily-available technologies. For autonomous vehicles, wireless power charging provides a path forward. The newly-founded IEEE Transportation Electrification Council (TEC) is providing much-needed leadership in the technical space to help pushing for ubiquitous charging infrastructure on a global scale.



Keynote Speech



Professor Mohamed Missous

Academician of the Royal Academy of Engineering

JIA LING HALL | 09:20-09:50, May 24

Bio.: Mohamed Missous, FEng, FInsP, FIET, SMIEE is Professor of Semiconductor Materials and Devices at Chongqing University in the SKL-PET. He is also a part-time chair at the University of Manchester, UK. He is the founder and Technical Director of two spin-out companies (AHS Ltd and ICS Ltd). His areas of expertise include Molecular Beam Epitaxy of high-speed InP-based transistors, low-temperature THz materials and sub-millimetre wave Resonant Tunnelling Diodes (RTD) and Asymmetric SPACer Tunnel Diodes (ASPAT). His team has a long history of studying the manufacturability of Quantum Mechanical devices and technology transfer that have led to the successful commercialisation of QWHE and THz sensors and Photonic devices. He was awarded the 2015 Royal Society Brian Mercer award for manufacturability of tunnel devices. He is regularly invited to give talks at international venues on his research topics. He has published more than 240 papers on the topics above.

Speech Detail

Semiconductor Quantum Devices for State of Health Monitoring in the New Energy and Power Equipment Industries

Abstract: Lithium Iron Phosphate (LFP) batteries are key in energy storage from mobile phones to EVs to power systems. The precise (and delicate) manufacturing of these storage units calls for a thorough inspection of their mechanical, electrical and chemical states during manufacturing and subsequent operation. The most desirable inspection techniques are those that do not require any physical interaction with the device/equipment under test (Non-Destructive Testing) but yet can give detailed information about the integrity and state of health of the devices/equipment.

In this talk, I will describe the role of a new class of highly sensitive compound semiconductor magnetic sensors that have been developed for such tasks. These tiny semiconductor magnetic sensors (Quantum Well Hall Effect (QWHE) sensors) can measure magnetic fields $< 50\text{nT}$ with 0.5mm spatial resolution. Using specially integrated AC illumination coils, these magnetic imaging systems can be used for detecting defects and flaws in the various parallel plates of batteries allowing for depth profiling and detection of defects less than 1mm in size in typical LFP batteries. By using higher excitation frequencies in the MHz range, the QWHE sensors can detect flaws in very low-conductivity materials such as composites used in the aerospace industry. My second user case will examine how these new semiconductor quantum devices can inspect a variety of composite materials noninvasively.



Keynote Speech



Professor Li Ran

IEEE Fellow, Chongqing University

JIA LING HALL | 10:10-10:40, May 24

Bio.: Li Ran received a PhD degree in Electrical Engineering from Chongqing University (China) for his work on reliability evaluation of the transmission networks planned for Three-Gorge Hydro Power Plant (1989). He then participated in the commissioning of Gezhouba-Nanqiao HVDC System (1989-1990).

He was a postdoctoral research fellow with the Universities of Aberdeen, Nottingham and Heriot-Watt (Edinburgh), working on marine electrical propulsion, offshore electrical systems and electromagnetic compatibility (EMC) in power electronic systems. He became a Lecturer with the University of Northumbria (Newcastle, 1999) and later moved to Durham (2003) where he was promoted to a Chair in 2010. He joined the University of Warwick as a Professor of Power Electronics (2012), and is now part-time between Warwick and Chongqing. His more recent work has centred around power conversion and control for renewable generation and smart grids, and reliability of power semiconductors. He was seconded to Alstom Power Conversion at Kidsgrove (2001-2003) and took a sabbatical study leave at MIT (2007-2008).

Li is a Co-Director of the Warwick-Chongqing Joint Key Laboratory (WaCky Lab) in SiC Power Electronics.

Li was the recipient of a Global Research Award of the Royal Academy of Engineering, a Stanley-Gray Award of the IMarEST (Institute of Marine Engineering, Science and Technology) and IEEE Prize Paper Awards. In 2024, he was presented the Collaboration Commemoration Award by CRRC (China Railway).

Speech Detail

An Evolving Opinion: Requirement of Grid Forming Converters on Power Semiconductor Devices

Abstract: This presentation analyses the grid support functions expected from grid-forming converters and the corresponding requirements on power semiconductor devices. The analysis benchmarks the converter performance to that of a synchronous machine, further taking into account the effects of the converter location in the grid. It focusses on the dynamic response of synthetic inertia, frequency droop, voltage support and the requirement of protective relays. Cost effectiveness is a key metric in evaluating a solution option. The presentation shows the relative benefits and limitations of further developing silicon IGBT or SiC MOSFET and their packaging from device characteristics and thermal management points of view. The study aims to provide a stepping-stone towards the power hardware design of future grid forming converters.



Keynote Speech



Professor Pat Wheeler

IEEE PELS Vice-President for Technical Operations (2021 to date)
 University of Nottingham

JIA LING HALL | 10:40-11:10, May 24

Bio.: Prof. Pat Wheeler received his BEng [Hons] degree in Electrical Engineering in 1990 from the University of Bristol, UK. He received his PhD degree for his work on Matrix Converters from the University of Bristol, UK in 1994. In 1993 he moved to the University of Nottingham and worked as a research assistant in the Department of Electrical and Electronic Engineering. In 1996 he became a Lecturer in the Power Electronics, Machines and Control Group at the University of Nottingham, UK. Since January 2008 he has been a Full Professor in the same research group. He is currently the Director for Global Engagement in the Faculty of Engineering and the Director of the Power Electronics, Machines and Control Research Institute. He was Head of the Department of Electrical and Electronic Engineering at the University of Nottingham from 2015 to 2018. He is a member of the IEEE PELs AdCom and is currently IEEE PELS Vice-President for Technical Operations (2021 to date). He has published over 950 academic publications in leading international conferences and journals.

Speech Detail

Electrical Propulsion Systems for Transportation Electrification: Power Electronics as the Enabling Technology

Abstract: This presentation will consider the roadmaps for transportation electrification and the technological developments in use of power electronics which are going to be needed to make these visions viable. These developments and technology challenges will include the electrical drivetrain design and the applications of motor design and power converter topology choices as well as the impact of emerging technology advances including cooling techniques, integration, system optimisation and wide-bandgap semiconductors. The challenges for us as Power Electronics or Electrical Machines experts will also be explored and case studies from superbikes, solar cars and trucks used to illustrate the approaches being taken.



Keynote Speech



Professor René Peter Paul Smeets

IEEE Fellow and CIGRE Fellow

JIA LING HALL | 11:10-11:40, May 24

Bio.: René Peter Paul Smeets received a PhD degree for research work on switchgear in 1987. Until 1995, he was an assistant professor at Eindhoven University. During 1991 he worked with Toshiba Corporation in Japan on vacuum switchgear. In 1995, he joined KEMA, the Netherlands. At present, he is retired from KEMA Laboratories of CESI Group, but still active as an advisor. From 2001 -2013 he was part-time professor at Eindhoven University, the Netherlands. In 2013 he became adjunct professor at Xi'an Jiaotong University, China. Dr. Smeets is member of various of study/advisory committees of CIGRE after being in the lead of working groups in the field of emerging switching technologies such as HV vacuum switchgear, HVDC switchgear and SF6 alternatives. He was convenor of two maintenance teams in IEC on standardization of high-voltage switchgear. In 2008 he was elected Fellow of IEEE and in 2022 he was awarded a Fellowship of CIGRE. Since 2008 he is chairman of the "Current Zero Club", a scientific study group on current interruption. Dr. Smeets published and edited three books and authored over 300 international papers on testing and high-voltage switching technology in power systems. He received nine international awards, and conducted numerous trainings on all aspects of T&D switching technology all over the world.

Speech Detail

Innovative Switching Technology as Decarbonization Enabler

Abstract: Almost all innovations in power engineering are related to the energy transition, which aims towards a total decarbonization of the energy value chain around the middle of this century. In this keynote, the contribution of switching technology for the decarbonization will be highlighted. Two cases will be discussed:

In recent years, replacement of the intense greenhouse gas SF6 is a strong driver towards innovation. This has led to the development of technology and products with a very low greenhouse warming potential using SF6-free technology for insulation and current interruption in HVAC transmission systems. One technology uses compressed air for insulation and vacuum interrupters for current interruption, whereas a competing technology uses a mixture of natural origin gases with a fluorinated compound covering insulation and interruption. The development, challenges and actual status of these technologies will be highlighted.

The second case is related to high-voltage DC transmission. For the harvesting of large scale renewable energy, meshed HVDC transmission grids are essential and under development. For the reliable operation of HVDC grids, HVDC circuit breakers are crucial. Also in this case, two technologies compete, one based on high-frequency current injection in ultra-fast vacuum switches, the other on power electronics combined with mechanical switches. Technologies, their challenges, status and projects will be highlighted, that will clarify why fault current interruption in DC systems is a special technological challenge.



Keynote Speech



Professor Yun Wang

*ASME Fellow and RSC Fellow
University of California, Irvine*

JIA LING HALL | 11:40-12:10, May 24

Bio.: Yun Wang received his B.S. and M.S. degrees in Mechanics and Engineering Science from Peking University in 1998 and 2001, respectively. He went to the Pennsylvania State University where he earned his Ph.D degree in Mechanical Engineering in 2006. Dr. Wang joined the Mechanical and Aerospace Engineering department at the University of California, Irvine in 2006. He has produced over 100 publications in PEM fuel cell, Li-air battery, and other energy systems, including three books on PEM Fuel Cell and Thermal Fluid Science. Dr. Wang served as Track chair/co-chair, session chair/co-chair, conference chair and committee member for many international conferences on fuel cell, thermal energy, and machine learning. Dr. Wang received 2018 Reviewer of The Year from the Journal of Electrochemical Energy Conversion and Storage and is currently Professor at the UC Irvine, ASME fellow, RSC fellow, and associate editor for the journal of heat and mass transfer.

Speech Detail

PEM Fuel Cell Technology and Hydrogen Station Network for Automobiles

Abstract: Proton exchange membrane (PEM) fuel cells play a pivotal role in a sustainable society through the direct and electrochemical conversion of hydrogen's chemical energy to electricity with water as the only byproduct. Several fuel cell vehicles (FCV) have been successfully commercialized. At present, the high cost and the lack of a hydrogen infrastructure are two main barriers to the worldwide deployment of PEM fuel cells. In this talk, I will present the status of PEM fuel cell, FCV, and hydrogen station network development. Fundamental aspects of PEM fuel cell's research and development (R&D), critical to component design and material selection for FCV application and cost reduction, will be discussed in detail, including dynamic responses, time constants [1], multi-dimensional physics, cold start, and porous media flow field design. Examples of artificial intelligence (AI)-assisted R&D will be presented.



Technical Session

Technical Session 01: Reliability and Optimization Technique of Power Electronic Devices

Session Chair: Assoc. Prof. Wei Lai, Chongqing University

XIAN NV HALL | 13:30-15:10, May 24

Time	Paper Detail
13:30-13:50	Speech Title: Online Detection Technology for Self-Excited Mechanical Stress Waves in Power Devices Invited Speaker: Yunze He, Hunan University
13:50-14:10	Speech Title: Condition Monitoring the Inhomogeneous Thermal Fatigue of Multichip IGBT Module Based on the Thermal Time Constant Invited Speaker: Jun Zhang, Hohai University
14:10-14:30	Speech Title: Online Temperature Monitoring for Lithium-ion Batteries Based on Interface Converters Invited Speaker: Zhaoyang Zhao, Southwest Jiaotong University
14:30-14:50	Speech Title: Reliability Evaluation Method of IGBT Devices for the Electric Locomotive Traction System Invited Speaker: Wei Lai, Chongqing University
14:50-15:10	Speech Title: Contact Pressure Distribution Measurement for the Press Pack IGBT by Ultrasonic Measurement Method Invited Speaker: Ran Yao, Chongqing University

Technical Session 02: Advanced Insulation Materials and Their Performance Analysis Technologies

Session Chair: Prof. Jian Hao, Chongqing University

HUA YING HALL | 13:30-15:10, May 24

Time	Paper Detail
13:30-13:50	Speech Title: Varnish–Oil Compatibility and Degradation Mechanisms for Enhanced High-Temperature Electrical Insulation Performance Invited Speaker: Feipeng Wang, Chongqing University
13:50-14:10	Speech Title: Silicone Rubber Dry-type Transformer: a New Generation of Energy-saving and Environmentally Friendly Dry-type Transformers Invited Speaker: Qiang Fu, Electric Power Research Institute of Guangdong Power Grid Co., Ltd.
14:10-14:30	Speech Title: Gas-Solid Interface Charge Accumulation Characteristics under Repetitive Impulses Based on Runaway Electron Beams and Charge Combined Measurement Invited Speaker: Geng Chen, North China Electric Power University
14:30-14:50	Speech Title: Research Progress of Silicone Rubber Insulation Properties and Simulation of High Voltage Cable Accessories Invited Speaker: Guochang Li, Qingdao University of Science and Technology
14:50-15:10	Speech Title: Application of Photon Counting in Insulation Defect Detection Invited Speaker: Chuanyang Li, Tsinghua University



Technical Session

Technical Session 03: Advanced Control Techniques for High-quality Servo Motor Systems

Session Chair: Prof. Jianyu Pan, Chongqing University

XIAN NV HALL | 15:30-18:00, May 24

Time	Paper Detail
15:30-15:50	<p>Speech Title: Mechanism- and Data-integrated Fault Diagnosis Method for Multiphase Motor Drive Systems</p> <p>Invited Speaker: Zicheng Liu, Huazhong University of Science and Technology</p>
15:50-16:10	<p>Speech Title: A Self-Optimization Commutation Correction Strategy Integrating Model Calculation and Tabu Search for High-Speed BLDCM</p> <p>Invited Speaker: Yanfei Cao, Zhejiang University</p>
16:10-16:30	<p>Speech Title: Model Predictive Control for T-Type Three-Level Dual Three-Phase PMSM Drives</p> <p>Invited Speaker: Xuewei Xiang, Chongqing University</p>
16:30-16:45	<p>Paper ID: 3677</p> <p>Paper Title: DGEBA and MTHPA Crosslinking Reaction Process Analysis</p> <p>Author(s): Hang Zhang, Zhijin Zhang, Chao Liu, Xingliang Jiang, Jianlin Hu, and Qin Hu</p> <p>Presenter: Hang Zhang, Chongqing University</p>
16:45-17:00	<p>Paper ID: 9584</p> <p>Paper Title: Modulated Model Predictive Control for Current Source Inverter Fed Permanent Magnet Synchronous Motor Drive System</p> <p>Author(s): Yanfei Cao, Guangxue Chen, Daoming Sun, and Tingna Shi</p> <p>Presenter: Guangxue Chen, Zhejiang University</p>
17:00-17:15	<p>Paper ID: 6137</p> <p>Paper Title: A Novel Error-Bounded Thermal Prediction Methodology in PM Machines via Hybrid CFD and Recurrent Neural Network</p> <p>Author(s): Kai Qi Yuan, Yu Wang, Hanju Ding, and Yaojie Sun</p> <p>Presenter: Kaiqi Yuan, Fudan University</p>
17:15-17:30	<p>Paper ID: 2436</p> <p>Paper Title: Analysis of Overvoltage in Renewable Energy Integration Systems During Single-Phase Short Circuit and Open-Phase Operation Faults</p> <p>Author(s): Ziqian Yang, Wangqianyun Tang, Ye Zhang, and Wei Liu</p> <p>Presenter: Ziqian Yang, State Key Laboratory of HVDC, China Southern Power Grid Electric Power Research Institute</p>
17:30-17:45	<p>Paper ID: 277</p> <p>Paper Title: A Simple Power Transistor Voltage Drop Identification Technique for Motor Drives</p> <p>Author(s): Yang Dai and Qiang Gao</p> <p>Presenter: Yang Dai, Shanghai Jiao Tong University</p>
17:45-18:00	<p>Paper ID: 2870</p> <p>Paper Title: Interruption Phenomenon Analysis and Optimization Research on the Conventional HVDC Converter Valve in Asynchronous Interconnected Power System</p> <p>Author(s): Yukun Zhu, Fukun Peng, Shufei Li, Jiemin Yang, Chuantao Yao, and Jianxiang Huang</p> <p>Presenter: Yukun Zhu, Electric Power Research Institute, China Southern Power Grid</p>



Technical Session

Technical Session 04: Advanced Insulation Materials and Their Performance Analysis Technologies

Session Chair: Prof. Jian Hao, Chongqing University

HUA YING HALL | 15:30-18:10, May 24

Time	Paper Detail
15:30-15:50	Speech Title: Advanced Polypropylene Cable Insulation based on Dual Functional Grafting Invited Speaker: Zhonglei Li, Tianjin University
15:50-16:10	Speech Title: Discharging Characteristics of Alternative Ester-based Transformer Oil in Large Insulation Gaps under Submicrosecond Pulsed Voltages Invited Speaker: Wu Lu, Shanghai University of Electric Power
16:10-16:30	Speech Title: Characteristics of Perfluoromethyl Vinyl Ether: A New Eco-friendly Alternative Gas for SF6 Invited Speaker: Song Xiao, Wuhan University
16:30-16:50	Speech Title: Transient Responses of MOVs and the Carrier Transport Across Double Schottky Barriers Invited Speaker: Kangning Wu, Xi'an Jiaotong University
16:50-17:10	Speech Title: Insulation Characteristics at Gas/insulator Interface in DC-GIS/GIL: Progress in Simulation and Experiment Invited Speaker: Xiaolong Li, Shenyang University of Technology
17:10-17:25	Paper ID: 8877 Paper Title: Analysis of Nonlinear Oscillations Triggered by the Reactive Power Deadband Control of SVG Author(s): Jiawei Yu, Chao Luo, Yihua Zhu, and Xin Zhou Presenter: Jiawei Yu, Electric Power Research Institute, China Southern Power Grid
17:25-17:40	Paper ID: 3735 Paper Title: Phase Change Material Integrated with Power Module Substrate for Junction Temperature Suppression Author(s): Zheyang Zhu, Xingjian Shi, Jingyang Hu, Haoze Luo, Xin Xiang, Wuhua Li, and Xiangning He Presenter: Zheyang Zhu, Zhejiang University
17:40-17:55	Paper ID: 6819 Paper Title: Research on Contact Pressure Modeling Method for PP-IGBT Based on Ultrasonic Technology Author(s): Zeyu Duan, Ran Yao, Hui Li, Wei Lai, Peng Yang, Wenqian Yuan, Yirun Ji, Qing Huai, Xi Yuan, and Minxiang Yang Presenter: Zeyu Duan, Chongqing University
17:55-18:10	Paper ID: 2237 Paper Title: An Optimization of Desaturation Short-circuit Protection for SiC MOSFET Module Author(s): Qi Zhang, Xinlin Liao, Yang Li, Chao He, Chenyu Cao, and Luwei Wang Presenter: Qi Zhang, Chongqing University of Technology



Technical Session

Technical Session 05: Energy Conversion Techniques in Transportation Electrification

Session Chairs: Assoc. Prof. Qiang Gao, Shanghai Jiao Tong University
Prof. Jiawei Chen, Chongqing University

XIAN NV HALL | 08:30-09:50, May 25

Time	Paper Detail
08:30-08:50	Speech Title: Modeling and Control of Onboard Microgrid in More Electric Transportation Systems Invited Speaker: Fei Gao, Shanghai Jiao Tong University
08:50-09:05	Paper ID: 8103 Paper Title: Grid-Forming Control Strategy for the Emergency Power Supply Mode of the "Grid-Source-Storage-Train" Collaborative Power Supply System Based on Virtual Synchronous Generator Author(s): Lu He, Qiujiang Liu, Mingli Wu, Teng Li, Mengkai Liu, and Jingjing Ye Presenter: Lu He, Beijing Jiaotong University
09:05-09:20	Paper ID: 8074 Paper Title: A Novel Approach to Powertrain Efficiency Enhancement Using Motor Windings as Inductive Elements for Voltage Boosting in Fuel Cell Systems Author(s): Yu Duan, Yuanyuan Jin, Yu Li, Xianjin Yin, Jiayang Zhang, and Caizhi Zhang Presenter: Yu Duan, Changan UK R&D Centre Ltd.
09:20-09:35	Paper ID: 7858 Paper Title: A Novel Low-Speed Rotor Position Estimation Algorithm for Permanent Magnet Synchronous Motors Based on a Simplified Fundamental PWM Excitation Method Author(s): Bin Tang, Qiang Gao, Yu Duan, and Jiayang Zhang Presenter: Qiang Gao, Shanghai Jiao Tong University
09:35-09:50	Paper ID: 5103 Paper Title: Instability Risk Assessment of Large Scale Photovoltaic Access to Railway Traction Power Supply System Author(s): Wenyu Wu, Qiujiang Liu, Mingli Wu, Teng Li, Mengkai Liu, and Jingjing Ye Presenter: Wenyu Wu, Beijing Jiaotong University

Technical Session 06: Low-carbon Operation and Planning Technologies of Integrated Energy Systems

Session Chair: Assoc. Prof. Zhouyang Ren, Chongqing University

HUA YING HALL | 08:30-10:10, May 25

Time	Paper Detail
08:30-08:50	Speech Title: Studies on the Response Capability of Flexible Loads through Model-Based Analysis and Control Invited Speaker: Jinghua Li, Guangxi University
08:50-09:10	Speech Title: Carbon-Electricity Joint P2P Trading and Optimization Operation in Multi-Microgrid Invited Speaker: Xia Lei, Xihua University
09:10-09:30	Speech Title: Optimal Operation of Multiple Electricity-Hydrogen Integrated Energy Systems under the Background of Energy and Transportation integration Invited Speaker: Qi Li, Southwest Jiaotong University
09:30-09:50	Speech Title: Moving Towards Low-Carbon Integrated Energy Systems: A Market Perspective Invited Speaker: Sheng Chen, Hohai University
09:50-10:10	Speech Title: Regulation and Control Technology of Integrated Electric-Hydrogen Energy Systems Invited Speaker: Zhouyang Ren, Chongqing University



Technical Session

Technical Session 07: Fault Analysis on Energy Conversion System

Session Chair: Prof. Jing Ou, Harbin Institute of Technology

XIAN NV HALL / 10:20-12:20, May 25

Time	Paper Detail
10:20-10:35	<p>Paper ID: 1348 Paper Title: Performance Evaluation and Analysis of Position Sensorless Control with Initial Speed Estimator for High response Flying-start Author(s): Rongjiao Hao and Shinji Doki Presenter: Rongjiao Hao, Nagoya University</p>
10:35-10:50	<p>Paper ID: 2790 Paper Title: Optimal Approximation Order Analysis of The Phase-Error-Free Discrete-time Model for Induction Motor High Speed Drive Author(s): Zhifa Fang and Shinji Doki Presenter: Zhifa Fang, Nagoya University</p>
10:50-11:05	<p>Paper ID: 4593 Paper Title: Research on Internal Discharge Faults and Light Gas Production in Transformers Author(s): Sirun Tan, Hao Chen, Xiangyu Zhang, Haibing He, Yangxin You, and Tianyan Jiang Presenter: Sirun Tan, Chongqing University of Technology</p>
11:05-11:20	<p>Paper ID: 727 Paper Title: Modeling and Control of Modular Multilevel Converters' Current Dynamics via Modified Nodal Analysis and Linear Quadratic Regulator Author(s): Chuantong Hao, Hui Ma, Jianhua Lei, Geng Qin, and Zhihua Guo Presenter: Chuantong Hao, Shenzhen Poweroak Newener Co., Ltd.</p>
11:20-11:35	<p>Paper ID: 2532 Paper Title: Attention-Enhanced MLP Model for Robust Fault Diagnosis in Photovoltaic Systems under Data Loss and Noise Interference Author(s): Xingyuan Mei, Peng Wang, Qianlin Chang, and Jia Ye Presenter: Xingyuan Mei, Chongqing University</p>
11:35-11:50	<p>Paper ID: 4524 Paper Title: Analysis and Calculation of AC Fault Characteristics of New Energy Transmission System through DC Author(s): Yanxun Guo, Tantan Feng, and Junjie Feng Presenter: Tantan Feng, Zhengzhou Univeristy</p>
11:50-12:05	<p>Paper ID: 5603 Paper Title: An Optimization Method for Multi-Factor Wind Farm Siting Based on the Adaptive GA-PSO Algorithm Author(s): Zhen Pan, Yi Song, and Hong Hu Presenter: Zhen Pan, Guangxi Power Grid Co., Ltd.</p>
12:05-12:20	<p>Paper ID: 3897 Paper Title: Assessment Method for Wind Power Acceptance Capacity in Rural Power Grids Based on Improved Non-Parametric Estimation Author(s): Zhen Pan, Huiling Qin, and Lijuan Huang Presenter: Zhen Pan, Guangxi Power Grid Co., Ltd.</p>



Technical Session

Technical Session 08: Advanced Control for Renewable Energy System

Session Chair: Assist. Prof. Yanglin Zhou, Tsinghua University

HUA YING HALL | 10:20-12:35, May 25

Time	Paper Detail
10:20-10:35	<p>Paper ID: 423 Paper Title: Automated Metamodel-Based Framework for the Design Optimization of Externally Excited Synchronous Machines Author(s): Abdullah Sharaf, Chengqian Zheng, and Markus Henke Presenter: Markus Henke, Technische Universität Braunschweig</p>
10:35-10:50	<p>Paper ID: 1490 Paper Title: Surrogate Model-Based Full Operating Condition Optimization Design for Permanent Magnet Synchronous Motors Author(s): Jinghaoran Du, Hui Li, Xuwei Xiang, Bin Yuan, and Peng Jiang Presenter: Jinghaoran Du, Chongqing University</p>
10:50-11:05	<p>Paper ID: 1089 Paper Title: BP Neural Network-Enhanced Active Disturbance Rejection Control for Inertial Synchronous Control of Permanent Magnet Synchronous Wind Turbines Author(s): Hao Zhang, Hui Li, Qihong Wu, Hao Zhou, Zhen Zhang, and Hongtao Tan Presenter: Hao Zhang, Chongqing University</p>
11:05-11:20	<p>Paper ID: 1822 Paper Title: Frequency Response Strategy for Grid-Forming Wind Turbine Systems Considering DC Side Dynamics Author(s): Bozhe Wu, Lei Liu, Jiaqi Wang, and Haoyu Jiao Presenter: Bozhe Wu, Xi'an Jiaotong University</p>
11:20-11:35	<p>Paper ID: 1167 Paper Title: Topology Construction Based on Graph Theory for SOC Balancing in Dynamic Reconfigurable Battery System Author(s): Fang Qi, Yanglin Zhou, Yuran Zhang, Xiangqiang Shen, Ence Hou, and Song Ci Presenter: Yanglin Zhou, Tsinghua University</p>
11:35-11:50	<p>Paper ID: 1070 Paper Title: A Terminal Vibration Suppression Strategy Based on Single-integral Multi-Damping Feedback Control for Permanent-Magnet Magnetic Drive System Author(s): Lu Zhufei, Feng Zhou, Luo Pan, and Tang Qipeng Presenter: Feng Zhou, Huazhong University of Science and Technology</p>
11:50-12:05	<p>Paper ID: 8877 Paper Title: Analysis of Nonlinear Oscillations Triggered by the Reactive Power Deadband Control of SVG Author(s): Jiawei Yu, Chao Luo, Yihua Zhu, and Xin Zhou Presenter: Jiawei Yu, Electric Power Research Institute, China Southern Power Grid</p>
12:05-12:20	<p>Paper ID: 325 Paper Title: Research on Fault Reconfiguration Technology for Distribution Networks Considering Both Cost and Load Importance Author(s): Yiyan Liu, Lingyue Jiao, Yong Lu, Xianfeng Xu, Menggen Li, and Jiahao Wu Presenter: Lingyue Jiao, Chang'an University</p>
12:20-12:35	<p>Paper ID: 7531 Paper Title: A Novel Method for SOC Estimation of Dynamic Reconfigurable Battery Networks Author(s): Ence Hou, Yanglin Zhou, Chuang Liu, Qiang Qi, and Song Ci</p>



Poster Session 01

Venue: 3F POSTER AREA | Time: 14:00-17:00, May 24

Board No.	Paper ID	Paper Detail
01	4214	Paper Title: Cavity-enhanced Raman Spectroscopy Detection Technology for Dissolved Multicomponent Gases in Insulating Oil Author(s): Jianyi Wang, Xueli Liu, Dongyang Zheng, Fu Wan, and Hongcheng Sun
02	1993	Paper Title: Voltage Quality and Safety Optimization in High-reliable DC Microgrids with Droop Control Author(s): Yujie Zhou, Hongxing Ye, Liang He, and Pan Luo
03	8147	Paper Title: Optimal Energy Management Strategy for Diesel-Methanol Dual-Fuel Powered All-Electric Ship Author(s): Lin Sun, Fan Ma, Haishun Sun, You Wu, Runlong Xiao, and Bin Li
04	9392	Paper Title: Optimization of Wind Farm Flexibility Enhancement Strategies Considering Market Regulations Author(s): Fujing Wang, Lin Guo, Xiaolei Wang, and Yu Kong
05	9073	Paper Title: An Integrated Multi-Port Shore to Ship Charging System for Flexible Vessel Accommodation and Grid Interconnection Author(s): Hang Wu, Hang Yu, Xujing Tang, and Chengqing Yuan
06	7096	Paper Title: Thermal Design and Analysis of Power Supply Module Based on Icepak Author(s): Changquan Pei, Yanjun Zhang, Fan Xu, Jie Ding, and Ling Fang
07	742	Paper Title: Electric Vehicle Charging Station Planning Author(s): Minghao Ma
08	4082	Paper Title: Research on the Calculation of Equivalent Ice Thickness Considering the Influence of Dynamic Wind Load on Iced Conductor Author(s): Dongchang Gong and Ran Li
09	2377	Paper Title: Condition Monitoring Method for the Multi-chip IGBT Module Based on the Radiator Temperature Author(s): Jun Zhang, Zhihuan Wang, and Haiyan Sun
10	6748	Paper Title: Day-ahead Economic Dispatch of Large Power Grid Considering Ramping Ability of Multi-type Power Sources and Callability of Reserve Author(s): Jun Wu, Mutao Huang, Xingbang Chen, Zewei Gong, Xianzhuo Liu, and Jingshu Zhang
11	2755	Paper Title: Charge Accumulation Characteristics on Insulator Surface Under Temperature Gradients in DC GIS Author(s): Ran Zhuo, Sicheng Zhao, Pu Han, Cheng Pan, Zijun Pan, Yuhan Ye, and Shiyi Mao
12	2273	Paper Title: Impact of Temperature on Dielectric Behavior of Oil-Impregnated Insulation Pressboard Author(s): Jun Liu, Ran Zhuo, Leilei Gu, Peilong Chen, Meng Gao, Kui Xu, Sicheng Zhao, Kun Li, and Shurong Xu



Poster Session 01

Venue: 3F POSTER AREA | Time: 14:00-17:00, May 24

Board No.	Paper ID	Paper Detail
13	3744	Paper Title: Degradation Characterization of Safe Operating Area of IGBT Devices Considering Aging Affects Author(s): Huachen Hou, Ran Yao, Hui Li, Wei Lai, and Yinghong Hu
14	9708	Paper Title: Improved Model Predictive Control for Dual Active Bridge Converters with Variable Frequency Phase Shift Modulation Author(s): Quanxue Guan, Peng Liao, Luigi Rubino, Wei Jiang, Likai Zheng, and Xiaodong Li
15	8463	Paper Title: Research on Automatic Inference and Decision-making of Reactor Main Pump Faults Diagnosis Based on CNN-LSTM and D-S Evidence Theory Author(s): Kai Wang, Zhi Chen, Xuecen Zhao, Yifan Jian, and Yuan Min
16	2735	Paper Title: Soft-Start Strategy for LLC Resonant Converters Based on Dual-Pulse Modulation Author(s): Mingzhi Su and Ying Feng
17	8761	Paper Title: Research on Conducted EMI Modeling and Simulation for Automotive DC-DC Converters Author(s): Chao He, Xinlin Liao, Jin Jia, Heming Zhao, Yun Long, and Yu Zhan
18	6043	Paper Title: Model Predictive Control with Hybrid Variable Frequency and Phase Shift Modulation Accounting for Implementation Constraints Author(s): Wei Jiang, Peng Liao, Likai Zheng, Quanxue Guan, Yun Mou, and Xiaojun Tan
19	3818	Paper Title: Thermal Analysis of Gallium Oxide Devices under Various Package Structures Author(s): Renkuan Liu, Xiaorong Luo, Jie Wei, Gaoqiang Deng, Yuxi Wei, Hui Li, Wei Lai, Ran Yao, Xiao Wang, and Xianping Chen
20	75	Paper Title: Optimizing Hybrid AC/DC Microgrid Configurations for Campus Office Buildings Considering DC Load Characteristics and Specific DC Load Types Author(s): Yi Zhang, Zhiqiang Wang, Chuangao Li, and Jili Zhang
21	8261	Paper Title: Research on a Kind of Coolant Pump Working Condition Switching Control Technology Author(s): Dapeng Gao, Liang He, Pan Luo, Bingcheng Zhou, Yifei Zhong, and Jianbo Han
22	9875	Paper Title: Research on a New Type of Low Loss Low-Voltage DC Circuit Breaker Author(s): Xunuo Chen, Fangkai Zhang, Yifei Wu, Yi Wu, and Tianpei Shan
23	3555	Paper Title: Effect of Sympathetic Inrush Current Induced from PQ Control Station on Transformer Saturation at DC Voltage Control Station in VSC-HVDC System Author(s): Jiarui Hu, Fangtao Fan, and Ming Lei
24	9521	Paper Title: Simulation Study on Device Characteristics of Press Pack IGBT Chips Considering Process Defects Author(s): Da Guo, Ran Yao, Hui Li, Lai Wei, Yirun Ji, Wenqian Yuan, and Qing Huai
25	988	Paper Title: A Data Load Spatio-temporal Scheduling Method Considering Thermal Inertia in Data Centres Author(s): Junyao Gao, Jinfei Meng, Yuming Zhao, Xiandong Xu, Yuhan Liu, Yuze Zhao, and Zhuo Chen



Poster Session 01

Venue: 3F POSTER AREA | Time: 14:00-17:00, May 24

Board No.	Paper ID	Paper Detail
26	2045	Paper Title: Short-Term Residential Load Forecasting Method Based on Combined Deep Learning Model Author(s): Hailang Zhou, Xuewei Li, Mingya Sheng, and Run Zhang
27	8170	Paper Title: A Non-PLL synchronization Method for VSG-Based Inverter Considering the Effects of Grid Voltage Imbalance and Harmonics Author(s): Yong Lu, Wu Lei, Zhen Zhang, Xianfeng Xu, Shen'ao Xia, and Yuyao Gao
28	88	Paper Title: Optimization Research on Reactor Control System under Mode-C Operation Control Mode Author(s): Ying Zhang, Zhi Chen, Qing Chu, and Jixiang Zhou
29	1159	Paper Title: Linear Interpolation Methods Both for Node and Branch Connections Applied on Moving Reluctance Network Model Author(s): Man Zhang, Hongqin Xie, and Chuang Hu
30	4571	Paper Title: Research on Fault Prediction of Secondary Processing Circuit of Temperature Measuring Instrument in Nuclear Power Plant Based on GWO-LSTM Author(s): Deng Zhiguang, Chen Zhi, Li Zhengxi, He Liang, Zhu Biwei, and Yu Zihao
31	5469	Paper Title: Recurrence Plot-based Channel Shift Network for Hydrogen Production Load Forecasting in Integrated Energy System Author(s): Shibo Wang, Yan Cheng, Guangqi Zhou, Shumin Sun, Xiaoqi Zhang, Fengyun Bi, and Yunhai Lv
32	910	Paper Title: Model-based Assessment of Electromagnetic Interference Impact on Electric Motor Drive Systems Author(s): Yifei Zhong, Dapeng Gao, Pan Luo, and Bingcheng Zhou
33	698	Paper Title: Multi-Objective Optimization Design for a New Consequent-Pole Hybrid Excited Machine with Segmented Stator Author(s): Guangyu Qu, Jinyi Yu, Zhenghan Li, Yingcan Liu, Yaoyao Luo, and Wei Liu
34	8472	Paper Title: Influence of Ultrasonic Inspection Parameters on the Detection of Cable Lead Seal Defects Author(s): Zhiming Zhen, Jishi Zheng, Qiushen Cai, Hai Zheng, Wei Zou, and Jianping Chen
35	4462	Paper Title: Effects of Different Nano-Dopants on the Band Structure of LDPE Author(s): Yani Wang, Wenjun Wu, Ruobing Xu, and Xingwu Yang
36	4195	Paper Title: Optimized Dielectric and Ferroelectric Properties of P(VDF-HFP)/ Co3O4 Nanocomposites for Flexible Thin Film Capacitor Applications Author(s): Nirajan Khatri, Feipeng Wang, and Ruta W. Deusedith
37	5018	Paper Title: Cross-Domain AI-Enhanced Imaging for Power Systems Diagnostics Using Medical AI Techniques, Inspired by Stanford's Mini-Fellowship Program Author(s): Gurnoor Singh Dang, Majid Rodgar, and Michael Snyder
38	331	Paper Title: Breakdown Characteristics of C ₄ F ₇ N/CO ₂ /O ₂ Gas Mixtures with Low Content of C ₄ F ₇ N Author(s): Xianglin Lu, Jing Yan, Pu Chen, Yuxin Lin, Hanyan Xiao, and Tianxin Zhang
39	4545	Paper Title: Research on Integrated System of PMSM Drive and Battery Heating Author(s): Songyi Wang, Xinjian Wang, Chenzhi Liu, and Yuhang Zhou



Poster Session 01

Venue: 3F POSTER AREA | Time: 14:00-17:00, May 24

Board No.	Paper ID	Paper Detail
40	8549	Paper Title: Structural Design and Test of 500kv Dry-Type Air-Core Shunt Reactor with Encapsulated Coil Series Connection Author(s): Zuoming Xu, Wei Hu, Guangdong Zhou, Xiongjie Xie, Fuquan Luo, and Yaoqin Li
41	6078-A	Paper Title: Research on High Power Density MMC Valve for Offshore Wind Power Author(s): Jun Zhang, Shuhong Wang, and Youpeng Huangfu
42	4772	Paper Title: Study on the Compatibility of Natural Esters with Solid Materials for Transformers Author(s): Yihua Qian, Qing Wang, Yifeng Zhao, Lei Peng, and Yuxuan Pan
43	7857	Paper Title: Multi-Frequency Fiber-Optic Sensing Integration with Data-augmented Models for Partial Discharge Pattern Recognition Author(s): Yi Ao, Zhixian Zhang, Xingang Chen, and Lintao Ma
44	1888	Paper Title: Hardware Design and Testing of Compact Power Submodule with 3.3 kV SiC Devices Author(s): Yansheng Zou, Kai Xiao, Haibo Tang, Zihong Xie, Zixi Chen, Runming Zheng, Hong Lei, and Jianyu Pan
45	6208	Paper Title: Speed Observation for a Class of Port-Hamiltonian Systems Author(s): Hao Sheng and Yamashita Yuh
46	2745	Paper Title: MMC Loss Reduction Control Strategy Considering Capacitor Voltage Ripple Suppression Author(s): Yonghui Song, Hong Cao, Shuyang Wang, Jiaqi Liu, Feiyang Dai, and Dan Li
47	1996	Paper Title: Research on Fault Modeling and Simulation of ROV Electric Propulsion System Based on Modelica Author(s): Taotao Li, Zhuling Jiang, Rui Wang, Qi Yi, Yu Qian, and Boqun Lin
48	8355	Paper Title: Research on Nuclear Reactor Accident Diagnosis Method Based on Cross-Layer Collaborative Temporal Convolutional Network Author(s): Mohan Liu, Jie Chen, Kai Xiao, Liang He, Ke Huang, and Yiliang Li
49	4751	Paper Title: Research on Fire Safety and Environmental Characteristics of Green Synthetic Ester Author(s): Huarui Wang, Weiping Zhang, Xinzhong Zhang, Weiguang Huang, Zhiwei Huang, Hanzhao Li, and Qinghong Chen
50	7576	Paper Title: Economic Scheduling of PEDF Hydrogen Ports Considering the Demand Response of Multiple Types of Ship Loads Author(s): Hanran Wang, Quan Sui, and Chang Liu
51	7636	Paper Title: Frequency Domain Spectroscopy Characteristics of Transformer Oil-paper Insulation under Wide Temperature Range Author(s): Limin Qu, Lifeng Cheng, Jian Zhang, Zhengqin Zhou, Dewen Zhang, Jing Zhang, and Peng Zhang
52	8444	Paper Title: Frequency Domain spectroscopy Characteristics Dielectric Loss Normalization Method of transformer oil-paper Insulation and under Wide temperature Range Author(s): Hao Zhan, Lifeng Cheng, Yulong Ma, Jing Zhang, Zhenbo Du, and Kuan Zheng
53	1472	Paper Title: Analysis of Power Density for Phase Change Material Thermal Energy Storage Modules Based on Grid Flexibility Author(s): Chaomurilige, Geng Qiao, Xiaoqing Zhang, and Xiao Hu



Poster Session 01

Venue: 3F POSTER AREA | Time: 14:00-17:00, May 24

Board No.	Paper ID	Paper Detail
54	6026	Paper Title: A Fault-Tolerant Control Strategy for FOC of Five-Phase PMSM Based on Zero-Sequence Current Suppression Author(s): Guangyu Qu, Zhenghan Li, Yingcan Liu, Jinyi Yu, and Yaoyao Luo
55	8619	Paper Title: Energy-Power-Current Coordinated Control Strategy of Integrated System Comprising MMC and Submodule-Configured-Distributed Energy Storage Author(s): Chuantong Hao, Hui Ma, Jianhua Lei, Geng Qin, and Zihua Guo
56	6990	Paper Title: Research on Energy-efficiency of Amorphous Alloy Motor Based on ANSYS Author(s): Huoda Hu and Chaohui Zhao
57	3897	Paper Title: Assessment Method for Wind Power Acceptance Capacity in Rural Power Grids Based on Improved Non-Parametric Estimation Author(s): Zhen Pan, Huiling Qin, and Lijuan Huang
58	3842	Paper Title: Aging Test Method and Analysis of Press-pack IGBT Devices Based on the Equivalent of VSC Operation Conditions Author(s): Yan Xiong, Yuebin Zhou, Zhiyong Yuan, Kai Ma, Ying Li, Lingqi Tan, Yunjie Wu, Wei Lai, and Hui Li
59	5340	Paper Title: Research on Accelerated Life Testing and Reliability Prediction Technology for All Domestic Chip Relay Protection Devices Author(s): Yifan Zhang, Xuecheng Dong, Wei Li, Xiaoli Zhang, Guoliang Zhang, and Min Zhao
60	6808	Paper Title: Loss Analysis of Switching Device Based on SHE-PWM in PMSM Vector Control Author(s): Jun Guo and Yaohui Gai
61	4572	Paper Title: Four-Vector-Optimized Model Predictive Current Control for Dual Three-Phase PMSM With Harmonic Closed-loop Control Author(s): Hao Zhou, Xuwei Xiang, Hui Li, Peng Jiang, Hao Zhang, and Hongbo Song
62	176	Paper Title: Assessment of Adjustable Potential for Residential Air-conditioning Load Clusters Based on Physics-Data Hybrid-Driven Approach Author(s): Mingya Sheng, Xuwei Li, Hailang Zhou, Zhu Li, and Huicai Wang
63	3558-A	Paper Title: Feedback and Boundary Control for a Hybrid Spacecraft System Author(s): Xuezhong Hou
64	4867	Paper Title: Partial Discharge Characteristics of Typical Defect Models by Optical-UHF Combined Detection Author(s): Taoran Yang
65	6193	Paper Title: Research on Electro-Thermal Field Distribution Characteristics of 36 kV-26 kA Bushings under Varying Load Ratios Author(s): Weihua Zhong, Huimin Wang, Hui Xu, Ruochun Xia, Wei Jiang, and Jiaying Wang
66	2105	Paper Title: Integrated Oil-gas Separation and Raman Spectroscopy Gas Detection Component for Online Dissolved Gas Analysis in Transformer Oil Author(s): Jianyi Wang, Xueli Liu, Dongyang Zheng, Fu Wan, Tongqin Ran
67	7472	Paper Title: Analysis of the Impact of Micro-Terrain Airflow Disturbance in High Mountain Watersheds on the Temperature Distribution of Ice-Covered Transmission Lines Author(s): Yun Liang, Lu Zhang, Jingjing Cui and Xingliang Jiang
68	4205	Paper Title: Improved Control Strategy for Inverter Side Current Feedback of LCL Grid-Connected Inverter under Weak Grid Author(s): Kewen Li, Xinhao Lin, Xiaoyong Yu, Lvzerui Yuan, Shifeng Ou and Shuyin Duan



Poster Session 02

Venue: 3F POSTER AREA | Time: 08:30-12:00, May 25

Board No.	Paper ID	Paper Detail
01	4665	Paper Title: Research and Design on the CAN Bus Optical Fiber Communication Converter for Strong Electromagnetic Interference and High Efficiency Author(s): Yunfei Zhang and Yue Dong
02	2946	Paper Title: Research on DSP Control System of Three Phase Staggered Multiple Bidirectional DC/DC Chopper Author(s): Changchun He, Hu Li, Zitao Jin, and Quanzhu Zhang
03	7749	Paper Title: Coordinated Optimization of Topology Reconfiguration and Distributed Resource Scheduling for Overload Mitigation in Distribution Systems Author(s): Hao Hu, Siqi Qian, Mingqi Lou, Tianyi Chen, Ziming Li, and Yujian Ye
04	2057	Paper Title: Flexibility Assessment of Grid Controllable Resources Based on RBF Flow Calculation Author(s): Yixuan Chen, Xinggong Wang, Run Huang, Peng Sun, and Hao Cao
05	7921	Paper Title: Promotion Strategy and Assessment Method of Power System Resilience Based on Proximal Policy Optimization Algorithm Author(s): Yixuan Chen, Guangzeng You, Xinggong Wang, Chen Wu, and Minyu Zhong
06	4070	Paper Title: Quasi-Single-Stage AC-DC Converter Based on Triple-Active-Bridge Structure with Low-iTHD Author(s): Tianming Bai, Zheng Dong, Tianqu Hao, Shouyuan Wu, Tianlong Liu, and Hongzheng Liu
07	9103	Paper Title: Inductance Analysis of Surface-mounted Permanent Magnet Synchronous Machines Using Mesh-based Magnetic Equivalent Circuit (MEC) Author(s): Yixiang Yuan, Han Zhao, Xiaochen Zhang, David Gerada, He Zhang, Wenting Chu, Yue Wang, and Yannian Hui
08	2634	Paper Title: Research on Adjustable Resource Allocation Methods Based on SAC Algorithm Author(s): Dajun Si, Yixuan Chen, Guangzeng You, Peng Sun, and Ji Ren
09	9501	Paper Title: Electric Vehicle Charging Reliability Assessment Considering Failures of Power Systems and Power Electronics Components Author(s): Jiaqing Kuang, Difei Tang, Han Wang, Junpeng Li, Xi Song, and Kaijie Yang
10	8684	Paper Title: Wind Energy Resource Assessment Technology for Multi-Type Complex Terrains Based on CNN Author(s): Zhen Pan, Min Li, and Lijuan Huang
11	2827	Paper Title: Research on Voltage Compensation Capability of a Novel Hybrid Distribution Transformer Considering LCL Filter Influence Author(s): Hui Huang, Tingmo Zhou, Qingyou Liao, Zhaoye Yan, Qiufeng She, and Baichuan Zhu
12	427	Paper Title: Adaptive Droop Control Based Cooperative Control Method for Energy Optimization of Hybrid HVDC systems with Renewable Energy Author(s): Jinli Lv, Jiankang Zhang, Yuan Zhi, Kangping Wang, and Pengjiang Ge
13	4980	Paper Title: Multi-dimensional Structure Optimization for Cogging Torque and Torque Ripple Reduction in High-speed Permanent-magnet Motor with Dual-phase Magnetic Materials Author(s): Jiahui Wang, Jing Ou, Chenyi Yang, Yingzhen Liu, and Dianguo Xu
14	3831	Paper Title: H^∞ Control Method of LLC Resonant Converter Based on Loop Shaping Author(s): Yanwei Ding, Lei Ma, Zheyang Huang, and Yongyi Liao



Poster Session 02

Venue: 3F POSTER AREA | Time: 08:30-12:00, May 25

Board No.	Paper ID	Paper Detail
15	9415	Paper Title: Predictive Control for Interleaved Totem-pole Bridgeless PFC Converter Operating in Both Continuous and Discontinuous Conduction Mode Author(s): Yang Li, Yihui Xia, and Feng Liu
16	9413	Paper Title: Configuration and Optimization Method for Multi-Group Electrolyzers with High Efficiency, Stability, and Cost-Effectiveness Author(s): Ruihan Duan, Liwei Zhang, and Te Li
17	508	Paper Title: Research on Multi-Level Transmission Sections Stability limits of Northwest China Power Grid Based on Low Voltage Impact Analysis Author(s): Suning Li, Tiezhu Wang, and Haotian Xu
18	5789	Paper Title: Optimal Maintenance Scheduling of Transmission Systems with a Reinforcement Learning Approach Author(s): Zhichen Cai, Zhenhuan Ding, and Mingxing Zhu
19	8169	Paper Title: Engineering Application of MOSFET Negative Voltage Drive Circuit Design in Bridge Circuit Author(s): Zhuwen Han, Shanshan Wang, Jie Ding, Ling Fang, and Changquan Pei
20	9463	Paper Title: Frequency Response Detection Method for Grid Side Winding Faults of Converter Transformers without Removing Leads Author(s): Qiang Liu, Yu Shang, Fan Wang, Ziwei Wang, Jian Gao, Haonan Xie, and Tianyan Jiang
21	6776	Paper Title: Investigation of the Breakdown Testing Method for BOPP Films under Interlayer Pressure Author(s): Xintong Zhang, Geng Chen, Zixuan Zhao, Youping Tu, and Zhong Zheng
22	5911-A	Paper Title: Analysis of Low-Frequency Stress Wave Signal Influence Parameters Based on PVDF Sensor Author(s): Yunze He and Qiyang Li
23	3424	Paper Title: Toward Eco-Friendly High Voltage Insulators: Enhancing AC Breakdown Strength of Epoxy Resin by Epoxidized Castor Oil Author(s): Ruta W. Deusededith, Xingliang Jiang, Mahmoud A. Ali, Khatri Nirajan, and Hang Zhang
24	6125	Paper Title: Preventive Control Model Considering Static Safety Constraints for Interconnected Power Grid Author(s): Xiuqiong Hu and Jingxuan Liu
25	9185	Paper Title: A Power Coordination Control Strategy for Wind and Thermal Power Bundling Systems Author(s): Yanxun Guo, Tonxin Zhao, Xiaomei Yao, and Yaoqiang Wang
26	274	Paper Title: Electric Field Strength and Spray Thickness Effect on Frequency Domain Dielectric Properties of Epoxy-impregnated Paper Author(s): Qian Zeng, Jian Hao, Hao Tang, Yi Zhang, Wenlong Liao, and Dingqian Yang
27	7706	Paper Title: Thermal Simulation of Air-cooled PMSM with Novel Winding Structure and Specialized Cooling Design for eVTOL Applications Author(s): Zhe Huang, Yingzhen Liu, Jing Ou, and Dianguo Xu



Poster Session 02

Venue: 3F POSTER AREA | Time: 08:30-12:00, May 25

Board No.	Paper ID	Paper Detail
28	4286	Paper Title: A Method for Predicting Residual Availability of Power Transmission System of Generator Set Considering Mutation Detection Author(s): Guojun Zhang, Yunsheng Wang, and Chenchen Tian
29	1191	Paper Title: Optimal Dispatch of Power Grid Considering the Balance between Supply and Demand of Extreme Weather Source-load Flexibility Author(s): Bo Bao, Xuchen Tang, Yun Yang, Shuiping Zhang, Jian Xiong, and Keteng Jiang
30	86	Paper Title: A Compound Control Strategy for Quasi-Z-source T-type Three-level Inverter Based on Sliding Mode Control Author(s): Jiande Yan, Yunwen Cao, and Hui Hu
31	9800	Paper Title: Impact of Environmental Heat Dissipation on Device Performance Author(s): Yuchi Chen, Ran Yao, Hui Li, Wei Lai, Wenqian Yuan, Yirun Ji, Qing Huai, Xi Yuan, and Minxiang Yang
32	5990	Paper Title: Day-ahead Wind Power Forecasting in Extreme Weather Based on Multi-source Numerical Weather Prediction Data Fusion Author(s): Minjing Yang, Tianrui Luan, Yun Yang, Xinyin Liu, and Keteng Jiang
33	9952	Paper Title: Error Correction Strategy for Phase Current Reconstruction in Permanent Magnet Synchronous Motors with Single DC-Link Current Sensing Author(s): Peng Jiang, Hui Li, Xuwei Xiang, Siyu Chen, and Hongbo Song
34	9461	Paper Title: Optimal Allocation Method of Multi-Type Power Flow Regulation Devices Based on a Transmission Corridor Capability Evaluation Matrix Author(s): Xingning Han, Weiyuan Wang, Zhiwei Wang, Wenjia Zhang, Boliang Liu, Feifei Zhao, and Wanchun Qi
35	4302	Paper Title: Reliability Analysis of Stator Shielding Sleeve Based on Hybrid Data-Mechanism Driven Approach Author(s): Xin Zhang, Shuangfan Yang, Hui Li, Xuwei Xiang, and Nengqing Liu
36	2466	Paper Title: Fault Current Calculation of MMC-HVDC System Considering Mechanical DC Circuit Breaker Author(s): Jinfeng Wang, Yuanyuan Zeng, Junjie Feng, Xiaomei Yao, Yifei Wang, and Yanxun Guo
37	8477	Paper Title: Sine-Cosine Algorithm Based Second Harmonic Current Suppression Applied for Single-phase Converter of Hybrid System Author(s): Erxuan Zhang, Chengrui Li, Binxing Li, Gaolin Wang, and Dianguo Xu
38	3453	Paper Title: Study on the Four-Quadrant Magnetic Field Modulation and Power Ratio between Permanent Magnet and Magnetic Field Modulation in a Tangential Concentrated Magnetic Hybrid Excitation Generator Author(s): Chaohui Zhao, Zhenghao Cao, and Hangyu Gao
39	6839	Paper Title: Research on Low Voltage Ride-through Control Strategy of Doubly Fed Induction Generator Author(s): Jiankang Zhang, Jinli Lv, Yuan Zhi, and Xiaoqi Zhang
40	759	Paper Title: Research on Loss Optimization Method of Power Signal Dual Modulation in ZVT-BUCK Converters Author(s): Minxia Tan, Tianqu Hao, Chuan Yan, Xijun Liu, Zheng Dong, and Hongzheng Liu



Poster Session 02

Venue: 3F POSTER AREA | Time: 08:30-12:00, May 25

Board No.	Paper ID	Paper Detail
41	1652	Paper Title: Model Predictive Direct Speed Control of PMSM Based on a Novel MRAS Position Sensorless Author(s): Zhe Song, Weihong Zhou, and Xi Xiao
42	1635	Paper Title: Research on Optimal Configuration of Island Energy System Based on Artificial Intelligence Technology Author(s): Shanshan Wang, Zhuwen Han, Ling Fang, Jie Ding, Yanjun Zhang, and Zeliang Lin
43	865	Paper Title: Stability Analysis of Grid-Connected Doubly Fed Wind Power Generation Systems under Fault Conditions Author(s): Yangbo Chen, Shoubao Liu, Wentao Zhang, and Shujia Zeng
44	6797	Paper Title: Power System Frequency Response Prediction with Spatio-Temporal Graph Convolutional Networks Author(s): Zhiting Zhou, Hui Li, Jie Zheng, Xuwei Xiang, Ran Yao, and Hongtao Tan
45	1456	Paper Title: Simulation Method and Analysis of Spring Failure in Press-Pack IGBT Devices Based on Electro-Thermal Co-Simulation Author(s): Yuqi Wang, Ran Yao, Wei Lai, Hui Li, Wenqian Yuan, Yirun Ji, Minxiang Yang, Qing Huai, and Xi Yuan
46	7670	Paper Title: Chaotic Characteristics Analysis of Doubly-Fed Wind Power Systems Based on Lyapunov Exponents Author(s): Na Cao and Zhongzhi Song
47	4951	Paper Title: Study of Process Parameters for Plasma Etching Fabrication of Superhydrophobic Glass Surfaces Author(s): Lin Liu, Yutai Li, Zhili Zhou, Xintong Liu, Qinghao Wen, Zhijin Zhang, Qin Hu, and Xingliang Jiang
48	7609	Paper Title: Research on Adaptive Heartbeat Mechanism for Nuclear Instrumentation and Control Communication Networks Author(s): Lan Wang, Zhi Chen, Ao Cui, Wei Luo, and Ziqing He
49	2206	Paper Title: Investigation on Dynamic Modeling of Hinge Wear in Motor-Direct-Drive High-Voltage Circuit Breakers Author(s): Bowen Zhang, Hui Li, Peng Jiang, Xuwei Xiang, and Ran Yao
50	9722	Paper Title: Study on Open-circuit Fault Diagnosis of Three-level Inverter Based on AO-DKELM Author(s): Wang Bingyuan, Fu Xianlei, and Ma Zhipeng
51	7497	Paper Title: Analysis and Control of Transient Stability for Phase Angle Jump in Grid-Forming Devices Author(s): Ling Fang, Jie Ding, Shanshan Wang, Zhuwen Han, Changquan Pei, and Zeliang Lin
52	6932	Paper Title: Electromagnetic Design and Optimization of an Outer-rotor Flux-switching Permanent Magnet Motor Author(s): Fuqiang Wang and Baoquan Kou
53	7410	Paper Title: Multi-Scenario Analysis of Hopf Oscillator-Controlled Inverter in Islanded Systems Based on Optimal Numerical Integration Methods Author(s): Yuxiang Liu, Hua Ye, Wenxin Zhang, Ang Li, Lizheng Yu, and Tianchang Liu
54	2422	Paper Title: Reinforcement Learning-Based Low-Level Control Strategy for Modular Multilevel Converters Author(s): Geng Qin, Hui Ma, Zhihua Guo, Jianhua Lei, and Chuantong Hao



Poster Session 02

Venue: 3F POSTER AREA | Time: 08:30-12:00, May 25

Board No.	Paper ID	Paper Detail
55	4244	Paper Title: Secondary Cable Short-Circuit Fault Detection Based on Data Mining and Integrated Learning Fusion Algorithm Author(s): Hongsong Dong, Chuanqian Jian, Pingchuan Ma, Peng Chen, Yuxue Chen, and Chenxi Wei
56	5309	Paper Title: Analytical Calculation and Analysis of Electromagnetic Vibration-Excitation Sources for Near-Pole Slot Permanent Magnet Motors Author(s): Wenzhan Wang, Xiaohu Liu, Zhifang Yuan, Yufan Gao, Daojiri Huang, and Dehua Zhao
57	770	Paper Title: Experimental Investigation on Surface Potential Measurement of Tri-Post Insulators Under Electro-Thermal Coupled Fields Author(s): Xiaolong Li, Jixiang Han, and Dongyu Guo
58	3115	Paper Title: Ultrasonic Guided Wave-Based 3D Localization and Failure Mode Recognition for Shield Can Cracks in Nuclear Main Pumps Author(s): Peng Yang, Hui Li, Ran Yao, Wei Lai, Xuwei Xiang, Zeyu Duan, Xin Zhang, and Zhi Chen
59	890	Paper Title: State Estimation and Life Prediction of IGBT Devices Based on Particle Filtering Algorithm Author(s): Xuehai Li, Ran Yao, Siyu Chen, Wei Lai, Fusheng Wang, and Zeyu Duan
60	6022	Paper Title: Prediction Method of Eddy Current Losses in Shield Sleeve Failure Based on Bagging Ensemble Learning Author(s): Keying Li, Nengqing Liu, Hui Li, Xuwei Xiang, and Xin Zhang
61	7163	Paper Title: Position-Sensorless Offline Parameter Identification Method for Permanent Magnet Synchronous Motors Considering Inverter Nonlinearity Author(s): Sidong He, Xuwei Xiang, Hui Li, Liyuan Liang, Shuai Li, and Peng Jiang
62	5340	Paper Title: Research on Accelerated Life Testing and Reliability Prediction Technology for All Domestic Chip Relay Protection Devices Author(s): Yifan Zhang, Xuecheng Dong, Wei Li, Xiaoli Zhang, Guoliang Zhang, and Min Zhao
63	5316	Paper Title: Time Series Recurrence Analysis of Partial Discharge by Optical Detection Author(s): Zhaokai Lei
64	4326	Paper Title: Optimization and Improvement of $\pm 800\text{kV}$ RIP Capacitor Type DC Bushing Author(s): Zheng Wen, Daomin Min, Wei Jiang, and Jiaying Wang
65	1124	Paper Title: High-Voltage Real Capacitance Analysis for Dry-type Bushings Insulated by Epoxy Resin Impregnated Paper Under Different Moistures Author(s): Wei Chen, Zefeng An, Xiaodong Lv, Shenglin Fu, Shu Fang, and Xize Dai
66	9354	Paper Title: Field Experimental Study on Suppressing Ice-Induced Torsional Vibration of Overhead Ground Wires Using Orthogonal Double-Pendulum Anti-Twist Devices Author(s): Liu Hai Tao, Junbin Yun, Yu Liang, Yong Lu and Xingliang Jiang
67	3360	Paper Title: Review of Site Testing Technologies for Converter Transformers Author(s): Yu Chen, Youchao Liu, Jinsong Fu, Weidong Liu, Wen Kang and Guolin Yang
68	7606	Paper Title: Modeling and Simulation of Fuzzy Logic and PID-Controlled Bidirectional DC-DC Converters for G2V/V2V Electric Vehicle Charging Systems Using MATLAB/Simulink Author(s): Hao Feng and Tesfalem Marmacha Malto



2025 能源电力装备技术创新大会

世界各国都将发展高端装备产业作为国家发展战略的核心，能源电力装备作为战略性新兴产业的重中之重，是实现能源安全和稳定供给的国之重器。面对能源供需格局新变化，国际能源发展新趋势，高端能源电力装备国产化替代是必然趋势。为推动能源电力装备产业高端化、智能化、绿色化发展和技术创新，促进国际交流与合作，共同培育新动能、发展新质生产力，将于2025年5月23-25日在重庆举办**2025 能源电力装备技术创新大会**以及高端能源电力装备先进技术成果的展览展示系列活动。该会议与**2025 IEEE 国际电能转换系统与控制会议 (IEEE IECCSC 2025)** 同期召开，旨在搭建一个国际化、高水平的交流平台，提升国际合作与产学研用结合，为实现全球绿色低碳转型和可持续发展目标贡献智慧与力量。

大会组织机构

重庆大学	清华大学
华中科技大学	湖南大学
河北工业大学	中国科学院电工研究所
中国电器科学研究院股份有限公司	上海电器科学研究院
输变电装备技术全国重点实验室	新型电力系统运行与控制全国重点实验室
强电磁技术全国重点实验室	海上风力发电装备与风能高效利用全国重点实验室
智能配用电装备与系统全国重点实验室	高密度电磁动力与系统全国重点实验室
工业产品环境适应性全国重点实验室	先进核能技术全国重点实验室
中国核学会核设备分会	



分会场一

新型储能技术及装备

承办单位： 清华大学，新型电力系统运行与控制全国重点实验室

召集人： **程林** 新型电力系统运行与控制全国重点实验室副主任，清华大学教授

周杨林 新型电力系统运行与控制全国重点实验室助理研究员

主持人： **程林** 新型电力系统运行与控制全国重点实验室副主任，清华大学教授

2025年5月24日 14:00-17:00 | 云篆厅

时 间	报 告 内 容
14:00-14:30	报告题目： 新型电力系统中混合储能技术 汇报人： 程林, 清华大学
14:30-15:00	报告题目： 基于电压/频率暂态支撑的磁悬浮惯量飞轮技术研究 汇报人： 姜新建, 清华大学
15:00-15:30	报告题目： 柔性压缩空气储能技术 汇报人： 陈来军, 清华大学
15:30-16:00	茶歇
16:00-16:30	报告题目： 基于 IGCT 的百兆乏级静止式同步调相机 汇报人： 屈鲁, 清华大学
16:30-17:00	报告题目： 百兆瓦级动态可重构电池储能技术 汇报人： 周杨林, 清华大学



分会场二

强电磁技术及装备

承办单位： 华中科技大学，强电磁技术全国重点实验室

召集人： **文劲宇** 强电磁技术全国重点实验室主任，华中科技大学校长助理/教授

郑玮 强电磁技术全国重点实验室副主任，华中科技大学教授

主持人： **王镜毓** 华中科技大学副研究员

2025年5月24日 14:00-17:00 | 金佛厅

时 间	报 告 内 容
14:00-14:30	<p>报告题目：面向未来聚变堆的等离子体控制研究进展</p> <p>汇报人：袁旗平，中国科学院等离子体物理研究所</p>
14:30-15:00	<p>报告题目：模块化多电平直流融冰装置研究开发与工程应用</p> <p>汇报人：王冕，贵州电网有限责任公司电力科学研究院</p>
15:00-15:30	<p>报告题目：聚变实验装置数智化运行平台 CODIS 的现状以及展望</p> <p>汇报人：夏凡，核工业西南物理研究院</p>
15:30-16:00	茶歇
16:00-16:30	<p>报告题目：重要电力装备台风致灾活动预测及风险识别技术</p> <p>汇报人：侯慧，武汉理工大学</p>
16:30-17:00	<p>报告题目：面向继电保护整定计算的数据驱动电网极端运行方式快速搜索</p> <p>汇报人：王镜毓，华中科技大学</p>



分会场三

高密度电机及驱动系统技术

承办单位: 中国科学院电工研究所, 高密度电磁动力与系统全国重点实验室

召集人: **徐伟** 高密度电磁动力与系统全国重点实验室主任, 研究员
赵聪 高密度电磁动力与系统全国重点实验室秘书, 副研究员
主持人: **徐伟** 高密度电磁动力与系统全国重点实验室主任, 研究员

2025年5月24日 14:00-17:30 | 古剑厅

时 间	报 告 内 容
14:00-14:30	报告题目: 基于叠层 DBC 的碳化硅模块封装设计 汇报人: 宁圃奇, 中国科学院电工研究所
14:30-15:00	报告题目: 超高速电磁推进变频供电系统关键技术研究与应用 汇报人: 赵聪, 中国科学院电工研究所
15:00-15:30	报告题目: 高密度高速电机系统关键技术及其应用 汇报人: 王又珑, 中国科学院电工研究所
15:30-16:00	茶歇
16:00-16:30	报告题目: 高可靠性电磁动力装置健康状态监测及剩余使用寿命预测 汇报人: 仇志杰, 中国科学院电工研究所
16:30-17:00	报告题目: 多物理场耦合下电磁轨道温度演化建模方法 汇报人: 王贡伟, 中国科学院电工研究所
17:00-17:30	报告题目: 基于数学模型反向拟合的脉冲功率电源时序求解策略研究 汇报人: 刘婉钰, 中国科学院电工研究所



分会场四

能源电力装备环境适应性技术

承办单位： 中国电器科学研究院股份有限公司，工业产品环境适应性全国重点实验室

召集人： **孙君光** 中国电器科学研究院股份有限公司党委副书记、副总经理，工业产品环境适应性全国重点实验室常务副主任，教授级高级工程师

王俊 中国电器科学研究院股份有限公司科技发展部部长，工业产品环境适应性全国重点实验室副主任，教授级高级工程师

主持人： **王俊** 中国电器科学研究院股份有限公司科技发展部部长，工业产品环境适应性全国重点实验室副主任，教授级高级工程师

2025年5月24日 14:00-17:30 | 明月厅

时 间	报 告 内 容
14:00-14:30	报告题目： 复合绝缘子典型故障、成因和检测方法 汇报人： 邓禹，中国电力科学研究院
14:30-15:00	报告题目： 面向输变电设备的湿热海洋环境多因素耦合模拟试验技术研究 汇报人： 王俊，中国电器科学研究院股份有限公司
15:00-15:30	报告题目： 热带海岛环境下配网用复合横担关键技术研究与应用 汇报人： 陈林聪，海南电网有限责任公司电力科学研究院
15:30-16:00	茶歇
16:00-16:30	报告题目： 电工绝缘材料环境老化带电检测技术 汇报人： 王希林，清华大学深圳国际研究生院
16:30-17:00	报告题目： 电场和磁场影响下导体材料腐蚀机理 汇报人： 夏晓健，福建省电力有限公司电力科学研究院
17:00-17:30	报告题目： 电工装备在沿海湿热环境下的失效机理及防治技术 汇报人： 申子魁，华南理工大学



分会场五

输变电装备智能化技术

承办单位: 重庆大学, 输变电装备技术全国重点实验室

召集人: **李剑** 输变电装备技术全国重点实验室主任, 重庆大学副校长/教授

李辉 输变电装备技术全国重点实验室副主任, 重庆大学教授

主持人: **李辉** 输变电装备技术全国重点实验室副主任, 重庆大学教授

2025年5月25日 08:30-10:50 | 云篆厅

时 间	报 告 内 容
08:30-08:55	报告题目: 直流换流装备监测评估技术研究与应用 汇报人: 张晓龙, 中国电力科学研究院有限公司
08:55-09:20	报告题目: 高比例新能源接入下的油气田配微网智能化技术研究 汇报人: 刘志文, 许继电气科学技术研究院
09:20-09:45	报告题目: 真空灭弧室真空度检测技术研究 汇报人: 袁欢, 西安交通大学
09:45-10:00	茶歇
10:00-10:25	报告题目: 伺服电机驱动智能化高压断路器关键技术研究 汇报人: 尹泽, 国网江苏省电力有限公司电力科学研究院
10:25-10:50	报告题目: 电力智能感知与应用 汇报人: 陈伟根, 输变电装备技术全国重点实验室



分会场六

风电装备与风能高效利用技术

承办单位: 湖南大学, 海上风力发电装备与风能高效利用全国重点实验室

召集人: **黄守道** 海上风力发电装备与风能高效利用全国重点实验室主任, 湖南大学教授

黄晟 海上风力发电装备与风能高效利用全国重点实验室副主任, 湖南大学教授

主持人: **黄晟** 海上风力发电装备与风能高效利用全国重点实验室副主任, 湖南大学教授

2025年5月25日 08:30-10:50 | 金佛厅

时 间	报 告 内 容
08:30-08:55	报告题目: 大型风电机组安全高效运行关键技术研究 汇报人: 严新荣, 中国华电集团有限公司
08:55-09:20	报告题目: 基于构网型技术的海上风电送出方案探究 汇报人: 王猛, 金风科技有限公司
09:20-09:45	报告题目: 人工智能在风机服役质量中的应用与展望 汇报人: 屈尹鹏, 湖南大学
09:45-10:00	茶歇
10:00-10:25	报告题目: 超大型复合材料风电叶片关键技术研究进展及未来需求 汇报人: 彭超义, 中车时代新材有限公司
10:25-10:50	报告题目: 特高压直流受端电网稳定性提升措施研究及实践 汇报人: 陈道君, 国网湖南省电力有限公司



分会场七

智能配用电装备与系统

承办单位: 河北工业大学, 智能配用电装备与系统全国重点实验室

召集人: **刘卫朋** 智能配用电装备与系统全国重点实验室执行主任, 河北工业大学电气工程学院院长/研究员

辛振 智能配用电装备与系统全国重点实验室副主任, 河北工业大学教授

主持人: **辛振** 智能配用电装备与系统全国重点实验室副主任, 河北工业大学教授

2025年5月25日 08:30-10:50 | 古剑厅

时 间	报 告 内 容
08:30-08:55	报告题目: 风光无限 20 年 汇报人: 刘辉, 国网冀北智能配网中心
08:55-09:20	报告题目: 改进状态枚举法及其在可靠性与韧性评估中的应用 汇报人: 侯恺, 天津大学
09:20-09:45	报告题目: 高压大容量电力电子开关组件及其应用 汇报人: 张翔宇, 华北电力大学
09:45-10:00	茶歇
10:00-10:25	报告题目: 新能源汽车电控系统用薄膜电容材料: 现状与展望 汇报人: 冯梦佳, 河北工业大学
10:25-10:50	报告题目: 氢基社区微电网低碳运行技术 汇报人: 陈海文, 河北工业大学



分会场八

核能运行控制与电气驱动技术

承办单位: 中国核动力研究设计院, 先进核能技术全国重点实验室, 四川省核学会反应堆工程分会

召集人: **陈智** 中核集团集团科技带头人/副总师/研高, 先进核能技术全国重点实验室智能控制技术方向学术带头人

何亮 中国核动力研究设计院科技带头人/副总师/研高

主持人: **陈智** 中核集团集团科技带头人/副总师/研高, 先进核能技术全国重点实验室智能控制技术方向学术带头人

2025年5月25日 08:30-10:50 | 明月厅

时 间	报 告 内 容
08:30-08:55	报告题目: 多工况条件下堆控设备关键部件故障预测研究 汇报人: 陈智, 中国核动力研究设计院
08:55-09:20	报告题目: 核电站智能化进程中的机遇、挑战和应对措施 汇报人: 朱加良, 中国核动力研究设计院
09:20-09:45	报告题目: 基于强化学习的核反应堆系统多变量智能协调控制研究 汇报人: 王鹏飞, 西安交通大学
09:45-10:00	茶歇
10:00-10:25	报告题目: 面向高维流数据的核电厂开集故障诊断及深度持续学习方法研究 汇报人: 林萌, 上海交通大学
10:25-10:50	报告题目: 可移动小型反应堆智能自主控制方法研究 汇报人: 孙培伟, 西安交通大学



全国重点实验室管理及运行机制的研讨会

主持人： 曾礼强 输变电装备技术全国重点实验室副主任

2025年5月25日 11:00-12:00 | 云篆厅

出席单位：

输变电装备技术全国重点实验室	新型电力系统运行与控制全国重点实验室
强电磁技术全国重点实验室	海上风力发电装备与风能高效利用全国重点实验室
智能配用电装备与系统全国重点实验室	高密度电磁动力与系统全国重点实验室
工业产品环境适应性全国重点实验室	先进核能技术全国重点实验室



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中小型电机专委会

