

# 2023 IEEE Sustainable Power and Energy Conference

*New-type Power and Energy Systems – Challenges and Opportunities*

Chongqing · China November 29–30

# PROGRAM

## Sponsors

Chinese Society for Electrical Engineering (CSEE)  
IEEE Power and Energy Society (IEEE PES)

## Hosts

Chongqing University  
State Grid Chongqing Electric Power Company  
Sichuan Energy Internet Research Institute, Tsinghua University  
Xi'an Thermal Power Research Institute Co., Ltd.  
China Electrical Equipment Group Co., Ltd.

## Media Support

Proceedings of the CSEE  
CSEE Journal of Power and Energy Systems  
New Type Power Systems  
Power System Technology  
Journal of Modern Power System and Clean Energy  
High Voltage Engineering  
High Voltage  
Global Energy Interconnection



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# Program at a Glance

## 2023 IEEE Sustainable Power and Energy Conference

November 29–30, 2023  
Radisson Blu Hotel Chongqing ( No.8 Huiquan Road, Shapingba District, Chongqing, China )

### November 28 (Tuesday)

09:00-20:00

Registration

Hotel Lobby

### November 29 (Wednesday)

09:00-09:30

Opening Ceremony

Tiankong Ballroom + Dadi Ballroom ( 1<sup>st</sup> floor )

09:30-12:00

Keynote Session

Tiankong Ballroom + Dadi Ballroom ( 1<sup>st</sup> floor )

14:00-17:30

Super Session

Green Intelligent Electrical Equipment Forum

Xiangshan Ballroom+ Xiangquan Ballroom (3<sup>rd</sup> floor)

Panel 1

Modeling and Analysis of Novel Power Systems

Jiehui Room ( 3<sup>rd</sup> floor )

Panel 2

Energy Storage and New Power Systems

Xianhui Room ( 3<sup>rd</sup> floor )

Panel 3

Women's Contribution to Carbon Neutrality and Novel Power System Technologies

Zunhui Room ( 3<sup>rd</sup> floor )

Panel 4

Low Carbon Integrated Energy Systems with Power, Hydrogen and Data Synergy

Yinghui Room ( 3<sup>rd</sup> floor )

Panel 5

Low Carbon Multi-energy Coupled System Planning and Operation

Fenghui Room ( 3<sup>rd</sup> floor )

Panel 6

Artificial Intelligence Technologies for Power Systems 1

Liquan Room ( 3<sup>rd</sup> floor )

14:00-17:30

Poster Session 1

Carbon Neutralization and Energy Transition & Multiple Energy Systems Integration

Meeting Room Foyer ( 3<sup>rd</sup> floor )

### November 30 (Thursday)

09:00-12:30

Panel 7

Novel Power System Frequency Modulation Technologies

Jiehui Room ( 3<sup>rd</sup> floor )

Panel 8

Artificial Intelligence Technologies for Power Systems 2

Xianhui Room ( 3<sup>rd</sup> floor )

Panel 9

Power System Operation and Planning from a Carbon Perspective

Zunhui Room ( 3<sup>rd</sup> floor )

Panel 10

Low Carbon Multi-Energy System Operation and Control

Yinghui Room ( 3<sup>rd</sup> floor )

Panel 11

Power Intelligent Computing

Fenghui Room ( 3<sup>rd</sup> floor )

Oral Session 1

Carbon Neutralization and Energy Transition & Multiple Energy Systems Integration

Liquan Room ( 3<sup>rd</sup> floor )

Poster Session 2

High Penetration of Renewable Energy

Meeting Room Foyer ( 3<sup>rd</sup> floor )

14:00-17:30

Panel 12

Flexibility and Resilience of High Percentage New Energy Power Systems

Jiehui Room ( 3<sup>rd</sup> floor )

Panel 13

Co-optimisation, Control, and Data Analytics in the Energy Internet Paradigm

Xianhui Room ( 3<sup>rd</sup> floor )

Panel 14

Power Balancing and Optimal Dispatch Techniques for Novel Power Systems

Zunhui Room ( 3<sup>rd</sup> floor )

Panel 15

Large Scale Electric Vehicle Grid Friendly Access and Intelligent Control of Charging and Discharging Technologies

Yinghui Room ( 3<sup>rd</sup> floor )

Oral Session 2

High Penetration of Renewable Energy

Fenghui Room ( 3<sup>rd</sup> floor )

Oral Session 3

Electronic Power Grid Systems & Application of Emerging Technologies

Liquan Room ( 3<sup>rd</sup> floor )

Poster Session 3

Electronic Power Grid Systems & Application of Emerging Technologies

Meeting Room Foyer ( 3<sup>rd</sup> floor )

## 1. Introduction

The 2023 IEEE Sustainable Power and Energy Conference (iSPEC2023) will be held on 29-30 November in Chongqing. The Conference is co-sponsored by the Chinese Society for Electrical Engineering (CSEE) and the IEEE Power and Energy Society (IEEE PES), and hosted by Chongqing University, State Grid Chongqing Electric Power Company, Tsinghua Sichuan Energy Internet Research Institute, Xi'an Thermal Power Research Institute Co., Ltd. and China Electrical Equipment Group Co., Ltd.

The 2023 IEEE Sustainable Power and Energy Conference (iSPEC2023) was jointly initiated by the Chinese Society for Electrical Engineering (CSEE) and IEEE PES in 2019, which is positioned as a comprehensive academic conference in the field of energy and power, and is held once a year.

The theme of iSPEC2023 is New-type Power and Energy Systems -- Challenges and Opportunities. The iSPEC2023 conference programme includes opening ceremony, keynote speeches, panels, paper sessions, and a forum for women engineers, inviting scholars from home and abroad to discuss topics such as energy transition, sustainable development of electric power, green and intelligent electrical equipment, modeling and analysis of new-type power systems, operation and planning of electric power systems from a carbon perspective, energy storage and new-type electric power systems, and planning and operation of low-carbon multi-energy coupled systems.

## 2. Organization

<b>Sponsors:</b>	Chinese Society for Electrical Engineering (CSEE) IEEE Power and Energy Society (IEEE PES)
<b>Hosts:</b>	Chongqing University State Grid Chongqing Electric Power Company Sichuan Energy Internet Research Institute, Tsinghua University Xi'an Thermal Power Research Institute Co., Ltd. China Electrical Equipment Group Co., Ltd.
<b>Media Support:</b>	Proceedings of the CSEE CSEE Journal of Power and Energy Systems New Type Power Systems Power System Technology Journal of Modern Power System and Clean Energy High Voltage Engineering High Voltage Global Energy Interconnection

**Conference website:** <http://iee-spec.csee.org.cn/2023/>

## 3. Committees

### 3.1 Steering Committee

<b>Chairpersons:</b>	Shu Yinbiao, Jessica J. Bian
<b>Members:</b>	Zhou Xiaoxin, Xue Yusheng, Huang Qili, Guo Jianbo, Li Licheng, Chen Weijiang, Liu Jizhen, Luo An, Tang Guangfu, Song Yonghua, Rao Hong, Fan Jianbin, Shen Yanhong, Kang Chongqing, Li Jian, Su Lixin, Liu Xinyu, Ban Jian

### 3.2 Technical Committee

<b>Chairpersons:</b>	Xie Kaigui, Kang Chongqing
<b>Members:</b>	Yang Xu, Hu Jiabing, Wang Shujuan, Sheng Fong, Wang Shouxiang, Yin Yi, Hua Wei, Ding Lei, Shuai Zhikang, He Zhengyou, Han Xiaoqing, Tang Wenhua, Wu Mingli, Wu Feng, Xiao Xianrong, Shuang Feng, Qi Lei, Dong Xuzhu, Wang He, Li Weilin, Li Weixing, Tang Bo, Li Dongdong, Lu Jiazheng, Xu Zhihong, Fu Mingli, Li Wenjiang, Zhong Jianying, Wu Heng, Han Junfei, Wang Yang, Ma Tingshan, Liang Faguang, Ju Wenping, Yao Mingyu

### 3.3 Organizing Committee

<b>Chairpersons:</b>	Zhao Jianjun, Hu Jianlin
<b>Members:</b>	Liu Min, Ren Zhouyang, Zeng Liqiang, Wang Chunli, Gao Jie, Xu Junfeng, Zhang Zhijin, Zhou Yanling, Gao Fangyu, Yu Zaizong, Li Yang, Zhu Yuting, Niu Litao, Yang Shuai,

## 4. Venue

### Radisson Blu Hotel Chongqing

**Address:** No.8 Huiquan Road, Shapingba District, Chongqing, China

**Contact:** Zhu Yan

**Tel.:** 18183113392



## 5. Welcome Speakers



**Shu Yinbiao**

**Academician of the Chinese Academy of Engineering**  
**President of the Chinese Society for Electrical Engineering**  
**The 36<sup>th</sup> President of the International Electrotechnical Commission (IEC)**

Dr. Shu is a professor-level senior engineer and Academician of Chinese Academy of Engineering. He has been mainly engaged in the research and development of energy and power development strategy, power grid operation and power system planning, construction of major ultra/extra-high voltage transmission projects and key technology. His research results have promoted the implementation of the "West-East Power Transmission" strategy and national power grid interconnection, and promoted the large-scale development and utilization of clean energy. Dr. Shu has won two Grand Prizes and one First Prize of National Science and Technology Progress, and the 2018 Guanghua Engineering Science and Technology Award.



**Jessica J. Bian**

**IEEE PES President**

Dr. Jessica J. Bian is a visionary leader and architect. She has spearheaded electric industry's reliability metrics and grid risk assessment. Currently she is the Vice President of Grid Services at Grid-X Partners. Before that, she was with the Federal Energy Regulatory Commission (FERC), Washington, DC. Previously, she was the Director of Performance Analysis at North American Electric Reliability Corporation (NERC) in Atlanta, Georgia. Under her leadership, a total of 18 industry-wide reliability indicators were established to determine grid reliability, adequacy, and associated risks. She is widely recognized as a pioneer and trusted world leader in the field. Before joining NERC, Dr. Bian was with PJM, ERCOT and Westinghouse Electric. She earned her Ph.D. in Electrical Engineering from Tulane University and published over 70 articles. She volunteers at the IEEE Power & Energy Society (PES); was the Society Secretary from 2016 to 2019.



**Wang Shuxin**

**Academician of the Chinese Academy of Engineering**  
**President of Chongqing University**

He has long been engaged in research on flexible mechanism system and its engineering application in marine equipment, medical equipment and manufacturing equipment. He successfully developed the "Micro Hand" minimally invasive surgical robot system, which was the first robot system in China to be given the endoscopic surgery robot registration certificate, and the "Petrel" underwater gliders, which set the world record of underwater working depth of 10,619 meters. He is holder of more than 100 national invention patents, three US patents and one European patent, and has published more than 100 academic papers. He has been awarded two second prizes of the National Technological Invention Award, one second prize of the National Scientific and Technological Progress Award, and one first prize of the National Teaching Achievement Award. He has been awarded the National Advanced Individual in Teacher's Morality, China Youth May Fourth Medal, and National Innovation Pioneering Award; and in 2021, he was honored with the ASME DED Leonardo da Vinci Award in the United States.



**Liu Xinyu**

**Deputy General Manager of State Grid Chongqing Electric Power Company**

Xinyu Liu, senior engineer (professor level), vice general manager and member of the Party committee of the State Grid Chongqing Electric Power Company. His work focuses on power system stability and control, electric market mechanism, big data analyze and application, and hydro-power and new energy dispatch. He plays a leading role in 13 more scientific programs and obtains 15 more scientific reward. Particularly, he was rewarded "State Grid Engineering and Technology Expert" and "State Grid professional and Leading Talent".

**Zeng Weidong****President of Xi'an Thermal Power Research Institute**

Weidong Zeng, the president of Xi'an Thermal Power Research Institute, Deputy Secretary of the Party Committee, Senior engineer. In the industry, he is the director of the National Engineering Research Center for Clean Low Carbon Thermal Power Generation System Integration and Operation and Maintenance of the National Development and Reform Commission, the chairman of the 3rd Committee of the Thermal Automation Special Committee of the Electrical Engineering Society, the chairman of the 4th National Power Plant Process Monitoring and Information Standardization Technology Committee. He mainly engaged in theoretical research and application of generator unit control. Furthermore, he presided over and participated in a number of national major science technology projects, such as the development and application of DCS system for smart power plants and large thermal power units. He had authorized 33 invention patents, made and revised 4 power industry standards, published more than 20 scientific and technological papers, and won 14 provincial and ministerial awards such as the first prize of China Electric Power Science and Technology Progress Award.

**Tang Yi****Vice Chairman of Chongqing Association for Science and Technology**

Tang Yi, Doctor of Engineering, Professor Senior Engineer, General Manager of Chongqing High-speed Group Chongqing Shouxun Science & Technology Co., Ltd., member of Chongqing Youth Science & Technology Leading Talents Association, member of China Youth Science & Technology Association, member of "Young Science & Technology Talents" of the Ministry of Transport, member of the Expert Committee of China Road Construction Association, person in charge of Chongqing Talent Innovation and Entrepreneurship Demonstration Team, vice Chairman of the Intelligent Transportation Professional Committee of Chongqing Artificial Intelligence Society, and reserve candidate for the third batch of Chongqing industrial technology leaders.

He has been engaged in scientific research, innovation, construction and application of "Smart High Speed" for a long time, and has successively completed more than ten scientific research projects including "Chongqing Highway Operation Monitoring and Efficiency Improvement Technology Research and Demonstration Application", which is a major science and technology project of the Ministry of Transport. The achievements have reached the international advanced level, and he has been awarded the "Top Prize of Transportation Science and Technology of Chongqing Municipality", the "Science and Technology Award of China Highway Society" and the "Geographic Information Technology Progress Award".

## 6. Keynote Speakers



**Li Licheng**

**Academician of the Chinese Academy of Engineering**  
**Professor, School of Electric Power, South China University of Technology**

Li Licheng, grid engineering expert, DC transmission expert, academician of Chinese Academy of Engineering, professor, doctoral tutor of South China University of Technology School of Electricity. Li Licheng graduated from Tsinghua University in 1967, and then join into the Gansu Power Transmission and Transformer Engineering Company ; join the Communist Party of China in 1975; From 1984 to 1992, he was as China Southern Power Grid ultra-high voltage transmission company director; From 1992 to 2002, he was the director of Grid Department of China Southern Power Grid Corporation; Secretary General of Expert Committee of China Southern Power Grid Corporation in 2002; Elected as Academician of the Chinese Academy of Engineering in 2007; Received the Science and Technology Award of the Ho Leung Ho Lee Foundation in 2018. He has been engaged in power grid construction for a long time, and his research areas include power grid engineering, DC transmission and AC-DC parallel grid operation technology.



**Jessica J. Bian**

**IEEE PES President**

Dr. Jessica J. Bian is a visionary leader and architect. She has spearheaded electric industry's reliability metrics and grid risk assessment. Currently she is the Vice President of Grid Services at Grid-X Partners. Before that, she was with the Federal Energy Regulatory Commission (FERC), Washington, DC. Previously, she was the Director of Performance Analysis at North American Electric Reliability Corporation (NERC) in Atlanta, Georgia. Under her leadership, a total of 18 industry-wide reliability indicators were established to determine grid reliability, adequacy, and associated risks. She is widely recognized as a pioneer and trusted world leader in the field. Before joining NERC, Dr. Bian was with PJM, ERCOT and Westinghouse Electric. She earned her Ph.D. in Electrical Engineering from Tulane University and published over 70 articles. She volunteer sat the IEEE Power & Energy Society (PES); was the Society Secretary from 2016 to 2019.



**Li Jian**

**Vice President of Chongqing University**  
**Director of State Key Laboratory of Power Equipment Technology**

Li Jian, Vice President of Chongqing University, Director of the State Key Laboratory of Power Equipment Technology, recipient of the National Outstanding Young People's Science Foundation, and project leader of the National Key Research and Development Program, is an Associate Editor of IEEE T DIELECT EL IN, an Editorial Board Member of High Voltage Technology, a Board Member of IEEEDEIS, a Board Member of IEEE-CEIDP, and a member of the CIGRE Working Group.

He has long been engaged in technical research on intelligent and environmentally friendly insulation for power transmission and transformation equipment. He invented the high stability vegetable insulating oil and its performance regulation technology and preparation process method, leading China's natural ester transformer application research; he was the first one to develop the intelligent sensing terminal for power equipment, supporting the construction of China's provincial network level transmission and substation equipment sensing system. He has presided over more than 20 projects such as national key R&D projects, national "973 Program" projects and "863 Program" projects. He has won two second-class awards for national scientific and technological achievements and two first-class awards for provincial and ministerial scientific and technological achievements.



**Chul-Hwan Kim****IEEE Fellow****Professor, Sungkyunkwan University**

Chul-Hwan Kim is an IEEE Fellow, and he serves as a professor at School of Electrical and Electronics Engineering of Sungkyunkwan University, Seoul, Korea, and holds position of director of the center for power information technology currently.

He has authored or co-authored more than 310 (150 international, 160 domestic) refereed journals, 870(230 international, 640 domestic) conference proceedings papers, and 76 registered patents (13 international, 63 domestic), with an h-index of 44 (according to Google Scholar). He has won 121 awards including the 1st Youngmoon Park's award. He was technical program committees co-chair of IPST 2023 and the local program committee chair of IPST 2017. His research includes power system protection, transients, distributed renewable generation, and analysis and protection of MVDC, and LVDC systems.

**Zhong Jianying****Vice President of China Electrical Equipment Science and Technology Research Institute****Member of the Academic Committee of State Key Laboratory of Power Equipment Technology**

Zhong Jianying, Doctor of Engineering, Professorate Senior Engineer. She is a member of the Academic Committee of the National Key Laboratory of Power Transmission and Transformation Equipment Technology, a leading talent in scientific and technological innovation under the National "Ten Thousand People's Plan", a deputy to the 12th National People's Congress, and a National "38 Red Flag Woman". He has long been engaged in power transmission and distribution equipment technology research, presided over more than 40 projects under the "863 Programme" and the National Key Research and Development Programme, and presided over the research and development of more than 20 types of high-voltage switchgear, including GXL5-110O(L)/6300-63 rigid gas-insulated equipment, among which 126 kV non-fluorine environmentally friendly GIS and DC through-wall casing products were selected as the national standard. Among them, 126 kV fluorine-free environmentally friendly GIS and DC through-wall casing 2 products were selected as the first set of national equipment projects. The company has won more than 30 scientific and technological awards at provincial and ministerial levels.

## 7. Chairmen of the Opening Ceremony and Keynote Session

**Shen Yanhong****Deputy Secretary General of Chinese Society for Electrical Engineering**

She Yanhong has a master's degree and is a senior engineer. She is the Deputy Secretary General of the Chinese Society for Electrical Engineering (CSEE). Prior to her current position, she had severed several posts within CSEE, including the director of General Office, the director of Academic Department, and the director of Consultancy Department. Earlier in her career, she was the deputy director of the Science and Technology Department and the director of the Intellectual Property Office of China Electric Power Research Institute (CEPRI). Her expertise focuses on the management of research activities and social organization.

**Xie Kaigui****Dean of School of Electrical Engineering of Chongqing University  
Executive Deputy Director of State Key Laboratory of Power Equipment Technology**

Xie Kaigui is a National Outstanding Young Scientist, National "Ten Thousand People Program" Innovation Leader, Dean of School of Electrical Engineering, Chongqing University, Chairman of PMAPS 2016 International Conference and Technical Committee, IET Fellow. He is the chairman of PMAPS 2016 International Conference and Technical Committee, IET Fellow, member of two special committees of IEEE PES Reliability and Planning, and member of several special committees of China Electrical Engineering Society (CEES). He is also a member of the Electric Power Reliability Committee of the Chinese Society of Electrical Engineering and other specialized committees.

He has presided over 4 national key R&D projects, 863 projects, science and technology support projects, 1 National Outstanding Young Scientist Fund, 1 National Natural Science Foundation of China (NSFC) international cooperation key project, and 5 NSFC surface projects. He won the first prize of provincial and ministerial natural science, the first prize of scientific and technological progress, and the second and third prizes of provincial and ministerial levels. He has published more than 60 SCI papers and 140 EI papers, authorized 20 national invention patents, and published 7 monographs, translations and national power industry standards.



## 8. Technical Program

### 8.1 Registration ( Tuesday, November 28 )

Time	Schedule	Location
09:00-20:00	Registration and Sign-in	Hotel Lobby

### 8.2 Technical Sessions ( Wednesday, November 29 )

#### Opening Ceremony

**Chair:** Shen Yanhong, Deputy Secretary General of Chinese Society for Electrical Engineering

**Room:** Tiantong Ballroom + Dadi Ballroom (1<sup>st</sup> floor)

**Time:** 09:00-09:30, Wednesday, November 29

Opening Address	Shu Yinbiao Academician of the Chinese Academy of Engineering President of the Chinese Society for Electrical Engineering The 36th President of the International Electrotechnical Commission (IEC)
Guest Speaker	Jessica J. Bian President of IEEE PES
Guest Speaker	Wang Shuxin Academician of the Chinese Academy of Engineering President of Chongqing University
Guest Speaker	Liu Xinyu Vice President of State Grid Chongqing Electric Power Company
Guest Speaker	Zeng Weidong President of Xi'an Thermal Power Research Institute Co., Ltd.
Guest Speaker	Tang Yi Vice Chairman of Chongqing Association for Science and Technology

#### Keynote Session

**Chairman:** Xie Kaigu, Dean of the School of Electrical Engineering, Chongqing University  
Executive Deputy Director of State Key Laboratory of Power Equipment Technology

**Room:** Tiantong Ballroom + Dadi Ballroom ( 1<sup>st</sup> floor )

**Time:** 09:30-12:00, Wednesday, November 29

09:30-10:00	KS-01	Li Licheng Academician of the Chinese Academy of Engineering Professor, School of Electric Power, South China University of Technology	<i>Transparent Power Grid Empowers the Construction of New Power Systems</i>
10:00-10:30	KS-02	Jessica J. Bian President of IEEE PES	<i>Advancing Innovation in Grid Resilience and Edge Technologies</i>
10:30-11:00	KS-03	Li Jian Vice President of Chongqing University Director of State Key Laboratory of Power Equipment Technology	<i>Advanced Power Transmission Equipment Technology and Its Future Research</i>
11:00-11:30	KS-04	Chul-Hwan Kim Professor of Sungkyunkwan University	<i>A Development of MVDC Distribution System: Challenges and Opportunities</i>
11:30-12:00	KS-05	Zhong Jianying Vice President of China Electrical Equipment Science and Technology Research Institute	<i>Key Technologies and Applications of Power Switch Equipment for New Power Systems</i>

**Super Session : Green Intelligent Electrical Equipment Forum**

**Chairman:** Li Honglou, Vice Director, Science and Technology Innovation Department, China Electrical Equipment Group Co., Ltd.

**Room:** Xiangshan Ballroom+Xiangquan Ballroom ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:00, Wednesday, November 29

14:00-14:20	Address	Zhang Wenliang Former Assistant President of State Grid Corporation of China Honorary Council Member and Fellow of the Chinese Society for Electrical Engineering
		Ban Jian Executive Director and CEO of China Electrical Equipment Science and Technology Research Institute Co., Ltd.
14:20-14:40	SS-01	<i>Intelligent Perception and Its Application for the New Power Grid</i>  Chen Weigen Professor of Chongqing University
14:40-15:00	SS-02	<i>Exploration of Intelligent and Environmentally Friendly Electrically Driven High Voltage Switchgear</i>  Xiao Xi Professor and Vice Dean of Graduate School, Tsinghua University
15:00-15:20	SS-03	<i>Flexible and Digitalized New Energy Storage System Solutions</i>  Li Xiao Deputy Director of Technology, China Electric Equipment Group Science and Technology Research Institute Co., Ltd.
15:20-15:40	Coffee Break	
15:40-16:00	SS-04	<i>Research and Application of Key Technologies for Environmentally Friendly Transformers</i>  Xie Qingfeng Member of the Standing Committee of the Party Committee and Deputy General Manager of China Western Electric Co., Ltd.

16:00-16:20	SS-05	<i>Exploration and Practice of Green and Intelligent Independent Innovation of Power Grid Equipment</i>  Wang Yong Strategic Expert of China Southern Power Grid
16:20-16:40	SS-06	<i>Arc Quenching Performance of Perfluoro-Isobutyronitrile (PFIBN) Environmentally Friendly Gas Mixture</i>  Lin Xin Professor, School of Electrical Engineering, Shenyang University of Technology
16:40-17:00	SS-07	<i>Large Capacity Multi-Port Energy Router Technology</i>  Wang Huafeng Deputy Director, DC Institute, State Grid Smart Grid Research Institute

**Panel 1: Modeling and Analysis of New-Type Power Systems**

**Chairman:** Li Weixing, Dean of the School of Electrical Engineering, Dalian University of Technology

**Room:** Jiehui Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:00, Wednesday, November 29

14:00-14:20	Zhao Haoran Vice Dean of the School of Electrical Engineering, Shandong University	<i>Refined Real-time Simulation System for Large-scale Wind Farms</i>
14:20-14:40	Xu Jianzhong Professor of the School of Electrical and Electronic Engineering, North China Electric Power University	<i>Real-time Simulation Modelling of Electromagnetic Transient Refinement in Large Scale Wind Farms Based on RTDS</i>
14:40-15:00	Xu Shiyun Senior Engineer/Deputy Director of the China Electric Power Research Institute Co., Ltd.	<i>Key Technology for Analysing the Safety and Stability Characteristics of High Percentage New Energy Power Systems</i>
15:00-15:20	Zhu Yihua Senior Engineer/Director Assistant of the Southern Power Grid Research Institute Co., Ltd.	<i>Exploration of Simulation and Modelling System for Stability Support of Large Scale New Energy Grid Connection in Southern Power Grid</i>
15:20-15:40	Coffee Break	
15:40-16:00	Chao Pupu Associate Professor of the School of Electrical Engineering, Dalian University of Technology	<i>Structured Electromagnetic Transient Modelling Techniques and Applications for New Energy Power Generation</i>
16:00-16:20	Shair Jan Assistant Researcher / Shuimu Scholar of the Tsinghua University	<i>A Novel Power System Stabilizer for Wideband Oscillation Suppression in Converter-Dominated Power Systems</i>
16:20-17:00	Discussion	

**Panel 2: Energy Storage and New Power Systems**

**Chairmen:** Huang Fuqiang, Chair Professor of Shanghai Jiao Tong University

Li Hongzhi, Chief Expert of Xi'an Thermal Power Research Institute, Huaneng Group

**Room:** Xianhui Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:30, Wednesday, November 29

14:00-14:20	Tobias Janoschka Chief Expert of Jena Battery Co., Ltd.	<i>Unlocking the future of stationary energy storage: Metal-free flow batteries as a key to grid stability and climate targets</i>
14:20-14:40	Li Yinshi Professor of Xi'an Jiaotong University / Deputy Director of National Innovation Platform for Industry-Education Integration of Energy Storage Technology	<i>High-performance Carbon-based Porous Electrodes for Flow Batteries</i>
14:40-15:00	Zhang Xuelin Research Assistant of Tsinghua University	<i>Key Technologies and Engineering Practice of Compressed Air Energy Storage</i>
15:00-15:20	Zhang Yu Senior Expert/Former Senior Engineer of State Grid Shanghai Electric Power Research Institute	<i>Energy Storage Technology in New Power System and Its Standard System</i>
15:20-15:40	Coffee Break	
15:40-16:00	Han Wei Senior Engineer/Deputy Director of Xi'an Thermal Power Research Institute Co., Ltd.	<i>New Long-Term Energy Storage Technology and Its Application</i>
16:00-16:20	Wang Chao Leading Technical Expert/Senior Engineer of Guangdong New Energy Storage National Research Institute Co.	<i>Thoughts on Energy Storage System Integration and Application under Full Access to Electricity Markets</i>
16:20-16:40	Wang Wei Senior Engineer/Deputy Director of Xi'an Thermal Power Research Institute Co., Ltd.	<i>Molten Salt Thermal Storage Coupled with Coal Power Unit Frequency and Peak Regulation and Safe Steam Supply Technology</i>
16:40-17:30	Discussion	

**Panel 3: Women's Contribution to Carbon Neutrality and Emerging Power System Technologies**

**Chairmen:** Han Lei, Deputy Director of the Journal Centre, China Electric Power Research Institute Co., Ltd.

Wang Xiaoru, Professor of Southwest Jiaotong University

**Room:** Zunhui Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:30, Wednesday, November 29

14:00-14:20	Jessica J. Bian	President of IEEE PES <i>Behind each membership, there is a dream!</i>
14:20-14:40	Wang Xiaoru	Professor of Southwest Jiaotong University <i>IEEE PCCC WiP work report</i>
14:40-15:00	Zhang Jinying	Professor of Xi'an Jiaotong University <i>The Exploration and Applications of 2D Structures</i>
15:00-15:20	Qin Hongxia	Beijing Sifang Relay Automation Co. Vice President and Chief Engineer, Professorate Senior Engineer <i>Discussion on the Development of Key Technologies for Modern Smart Distribution Grids</i>
15:20-15:40		Coffee Break
15:40-16:00	Yu Juan	Professor of Chongqing University <i>Sharing of 10 years research experience in the field of artificial intelligence integration in the power industry</i>
16:00-16:20	Xuan Tingting	CEC Shanghai Electric Power Design Institute Co. Assistant general Manager, General Manager of Distribution Network Division <i>Creating a green platform for resource sharing, providing a bridge for member co-operation, fostering more women leaders, and helping to realise the national</i>
16:20-16:40	Chen Tao	State Grid Chongqing Electric Power Research Institute Chief Expert of State Grid System Operation Analysis <i>From the development of energy supply in Chongqing to the development of system analysis</i>
16:40-17:00	Du Yue Fang	Professor of University of Electronic Science and Technology of China <i>You just need more training</i>
17:00-17:30		Discussion

**Panel 4: Low-carbon Integrated Energy Systems for Electricity, Hydrogen and Data synergy**

**Chairmen:** Lin Jin, Associate Professor of the Department of Electrical Engineering, Tsinghua University

Qiu Yiwei, Associate Researcher of the School of Electrical Engineering, Sichuan University

**Room:** Yinghui Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:00, Wednesday, November 29

14:00-14:20	Liu Nian Zhang Kuan	Professor North China Electric Power University Vice Dean of the School of Electrical and Electronic Engineering, North China Electric Power University <i>Long-cycle Balance Mechanism and Planning Method of Integrated Energy System with Electricity-Hydrogen-Carbon Fusion</i>
14:20-14:40	Yang Zhifang	Professor of Chongqing University <i>Discrete Optimisation of Integrated Energy Systems Driven by Physical Characteristics</i>
14:40-15:00	Zhang Xuexia	Associate Professor of Southwest Jiaotong University <i>Key Technology of Fuel Cell/Lithium Battery Health Management/Key Technology of Hybrid Power System Health Management Research for Locomotives</i>
15:00-15:20	Wang Jianxiao	Assistant Researcher of Peking University <i>Energy System Data Sharing Technology and Application</i>
15:20-15:40		Coffee Break
15:40-16:00	Pan Guangsheng	Assistant Researcher of Southeast University <i>Hydrogen Economy under the Framework of RCEP (Regional Comprehensive Economic Partnership): A Pathway Study of Hydrogen Trade Based on Offshore Wind Power Generation</i>
16:00-16:20	Qiu Yiwei	Research Associate of Sichuan University <i>Full Time Scale Energy Management for off-grid Solar and Wind-based Hydrogen Production System</i>
16:20-17:00		Discussion



**Panel 5: Planning and Operation of Low-Carbon Multi-energy Coupled Systems**

**Chairman:** Cao Xiaoyu, Associate Professor of the Department of Electronics and Information Science, Xi'an Jiaotong University

**Room:** Fenghui Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:00, Wednesday, November 29

14:00-14:20	Lv Tianguang Professor of Shandong University	<i>Synergistic Planning of Highly Renewable Permeable Energy Systems Considering CSP and Seasonal Power Balance</i>
14:20-14:40	Li Yuanzheng Associate Professor of Huazhong University of Science and Technology	<i>Artificial Intelligence Enabled Novel Power System Optimal Operation</i>
14:40-15:00	Zheng Weiye Associate Professor of South China University of Technology	<i>Incentive-based operation coordination mechanism of electric and thermal integrated energy system</i>
15:00-15:20	Zhang Zhong Associate Professor of Dalian University of Technology	<i>Mechanism Analysis of Carbon Market Price Uncertainty on Power Grid Dispatch</i>
15:20-15:40	Coffee Break	
15:40-16:00	Liu Yikui Research Associate, Sichuan University	<i>Joint Planning of Distributed Power and Energy Storage Systems for Low Carbon Distribution Grids</i>
16:00-16:20	Zhou Yuzhou Assistant Professor of Xi'an Jiaotong University	<i>Optimal Dispatch of Micro-Energy Systems Containing a High Percentage of Renewable Energy Sources</i>
16:20-16:40	Pan Guangsheng Research Assistant of Southeast University	<i>Robust Optimal Configuration of Electric Hydrogen Production System under Market Environment</i>
16:40-17:00	Discussion	

**Panel 6: Artificial Intelligence Technologies for Power Systems 1**

**Chairman:** Youbo Liu, Professor of the School of Electrical Engineering, Sichuan University

**Room:** Liquan Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-16:40, Wednesday, November 29

14:00-14:20	Qiu Gao Research Associate of the School of Electrical Engineering, Sichuan University	<i>Data-driven Mining of New Energy Outgoing Cross-section Potential and Practical Staging Control Technology</i>
14:20-14:40	Wang Bo Professor of Wuhan University Smart Grid Research Institute	<i>Construction of Digital Defence and Control Technology System of Electric Power Production Safety for New Power System</i>
14:40-15:00	Cao Di Lecturer of University of Electronic Science and Technology	<i>Deep Reinforcement Learning Based Differential Voltage Control Method for Distribution Networks</i>
15:00-15:20	Zhang Jun Professor of the School of Electricity and Automation, Wuhan University	<i>Interpretation of Artificial Intelligence Large Model Technology and its Frontier of Power System Application</i>
15:20-15:40	Coffee Break	
15:40-16:00	Qiao Ji Senior Engineer of Intelligent Technology Application Department, Artificial Intelligence Application Research Centre, China Electric Power Research Institute	<i>Power Artificial Intelligence Technology and Application of Data Mechanism Fusion</i>
16:00-16:40	Discussion	

### 8.3 Technical Sessions ( Thursday, November 30 )

#### Panel 7: Frequency Modulation Technology in Novel Power System

**Chairmen:** Chen Lei, Research Associate of the Department of Electrical Engineering, Tsinghua University

Hong Feng, Associate Professor of the North China Electric Power University

**Room:** Jiehui Room ( 3<sup>rd</sup> floor )

**Time:** 09:00-12:00, Thursday, November 30

09:00-09:20	Chang Dongfeng Senior Engineer of the Xi'an Thermal Power Research Institute Co., Ltd.	<i>Progress in the Application of FM Technology for Thermal Power Generating Units</i>
09:20-09:40	Hong Feng Associate Professor of the North China Electric Power University	<i>Energy Modal Regulation Mechanism of Coal Power Unit-Flywheel Energy Storage System for Grid Frequency Support</i>
09:40-10:00	Chen Yiping Professorial Senior Engineer/Senior Technical Expert of the China Southern Power Grid Power Dispatch Control Centre	<i>Construction of New Power System Frequency Regulation System in Yunnan: From High Percentage Hydropower to Water-Wind-Scenery Complementary Frequency Regulation System</i>
10:00-10:20	Liao Siyang Associate Professor of Wuhan University	<i>Large-capacity Industrial Load Participation in Grid FM Control Technology and Engineering Practice</i>
10:20-10:40	Coffee Break	
10:40-11:00	Wu Linlin Senior Engineer/Director of the Power Science Research Institute, State Grid Jibei Electric Power Co., Ltd.	<i>Demand Positioning Study of New Energy Inertia Response and Primary FM in New Power System</i>
11:00-11:20	Feng Zhang Associate Professor of Shandong University	<i>Discussion on New Energy Non-Virtual Inertia FM Control</i>
11:20-12:00	Discussion	

#### Panel 8: Artificial Intelligence Technologies for Power Systems 2

**Chairmen:** Hu Bo, Professor of Chongqing University

Ren Zhuoyang, Associate Professor of Chongqing University

**Room:** Xianhui Room ( 3<sup>rd</sup> floor )

**Time:** 09:00-12:00, Thursday, November 30

09:00-09:20	Zhao Junhua Director of the Sino-Singapore Joint Research Centre for Intelligent Energy Storage, The Chinese University of Hong Kong (Shenzhen)	<i>Artificial Intelligence-Driven Synergy in Electricity and Carbon Markets</i>
09:20-09:40	Wang Yi Assistant Professor / PhD Supervisor of the University of Hong Kong	<i>Data Valuation in Multi-Energy Systems Based on End-to-End Optimisation</i>
09:40-10:00	Hui Hongxun Assistant Professor of the University of Macau	<i>Demand-Side Flexible Resource Regulation for Novel Power System Flexibility Enhancement</i>
10:00-10:20	Li Zhiyi Research Fellow of Zhejiang University	<i>Optimal Power System Operation Method Using End-to-End Learning</i>
10:20-10:40	Coffee Break	
10:40-11:00	Shao Changzheng Associate Professor of the Chongqing University	<i>Application of Artificial Intelligence in High Reliability Operation of Active Distribution Grids</i>
11:00-11:20	Liang Yingqi PhD of the National University of Singapore	<i>Data-driven Grid Blockage Management Based on Sparse Sensitivity Discrimination</i>
11:20-11:40	Li Hui Postdoctoral Researcher of University of Macau	<i>Deep Learning Based Medium and Long Term Power Analysis for New Energy Generation</i>
11:40-12:00	Discussion	

**Panel 9: Power System Operation and Planning from a Carbon Perspective**

**Chairmen:** Zhang Ning, Associate Professor Department of Electrical Engineering, Tsinghua University

Du Ershun, Research Assistant of the Carbon Neutral Research Institute, Tsinghua University

**Room:** Zunhui Room ( 3<sup>rd</sup> floor )

**Time:** 09:00-12:00, Thursday, November 30

09:00-09:20	Gao Hongjun	Associate Professor of the Sichuan University	<i>Low-carbon Planning for Distribution System Interactive with Integrated Energy Station under Energy Internet Development</i>
09:20-09:40	Li yaowang	Research Assistant of Tsinghua Sichuan Energy Internet Research Institute	<i>Low Carbon Cloud Energy Storage: Basic Concepts And Benefit Analysis</i>
09:40-10:00	Yong Pei	Associate Professor of Chongqing University	<i>Renewable Energy Deployment for ICT Infrastructure to Achieve Decarbonization Goals</i>
10:00-10:20	Wang Peng	Research Assistant of Tsinghua University	<i>Novel Carbon-Oriented Power System Planning and Optimization Methods and Applications</i>
10:20-10:40	Coffee Break		
10:40-11:00	Si Fangyuan	Associate Professor of Beijing Jiaotong University	<i>Resilience Oriented Safety Rule Extraction and Operation Optimisation for Urban Energy Systems</i>
11:00-11:20	Ye Chengjin	Distinguished Research Fellow of Zhejiang University	<i>Demand Response of Carbon Neutral Urban Smart Buildings</i>
11:20-11:40	Wang Yi	Assistant Professor of the University of Hong Kong	<i>Thermodynamic Data-Driven Aggregation for Building Virtual Power Plants</i>
11:40-12:00	Discussion		

**Panel 10: Operation and Control of Lowcarbon Multi-energy Systems**

**Chairmen:** Li Yong, Vice Dean of School of Electrical and Information Engineering, Hunan University

Mu Yunfei, Deputy Director of Department of Electrical Engineering, College of Electrical Automation and Information Engineering, Tianjin University

**Room:** Yinghui Room ( 3<sup>rd</sup> floor )

**Time:** 09:00-12:00, Thursday, November 30

09:00-09:20	Mu Yunfei	Deputy Director of Department of Electrical Engineering, College of Electrical Automation and Information Engineering, Tianjin University	<i>Carbon-energy Synergy Hub Modeling, Sensitivity Analysis and Their Application to Integrated Energy Systems</i>
09:20-09:40	Li Gengfeng	Professor of Xi'an Jiaotong University	<i>Some Thoughts on Carbon Reduction on the Load Side of Multi-Energy Systems</i>
09:40-10:00	Ai Xiaomeng	Associate Professor of Huazhong University of Science and Technology	<i>Optimal Scheduling of Power System Energy Storage under Uncertain Environment</i>
10:00-10:20	Yang Dechang	Associate Professor/Deputy Director of China Agricultural University, China	<i>Low Carbon Operation of Agricultural Energy Internet Considering Industrial Synergy</i>
10:20-10:40	Coffee Break		
10:40-11:00	Lin Gang	Postdoctoral Researcher of the University of Macau	<i>Virtual Inertia Control and Low Frequency Oscillation Mechanism of DC Microgrids</i>
11:00-11:20	Li Yong	Vice Dean of School of Electrical and Information Engineering, Hunan University	<i>Autonomous Operation and Energy Management of Multi-energy Systems</i>
11:20-12:00	Discussion		

### Panel 11: Power Intelligent Computing

**Chairman:** Wang Yishen, Institute of Computing and Applications, State Grid Smart Grid Research Institute Co., Ltd., Principal Scientist

**Room:** Fenghui Room ( 3<sup>rd</sup> floor )

**Time:** 09:00-12:00, Thursday, November 30

09:00-09:20	Wang Yishen	Institute of Computing and Applications, State Grid Smart Grid Research Institute Co., Ltd., Principal Scientist	<i>Charging and Discharging for Batteries and High-Performance Converters in Electric Vehicles</i>
09:20-09:40	Diao Ruisheng	Associate Professor of Zhejiang University	<i>Intelligent Control Method for Distributed Resources Based on Hybrid Driving of Mechanism and Artificial Intelligence</i>
09:40-10:00	Cui Mingjian	Professor of College of Electrical Automation and Information Engineering, Tianjin University	<i>A Data-Driven Joint Voltage Stability Assessment Methodology Considering Load Uncertainty: Variational Bayesian Inference and Multi-CNN Integration Models</i>
10:00-10:20	Wang Yi	Assistant Professor of The University of Hong Kong	<i>Key Technologies for Power and Energy Big Data Sharing</i>
10:20-10:40	Coffee Break		
10:40-11:00	Cheng Dawei	Associate Professor of Tongji University	<i>Deep Spatio-Temporal Attention Neural Network Modelling for Time Series Data Prediction</i>
11:00-11:20	Zheng Le	Lecturer of North China Electric Power University	<i>Interpretable Augmented Intelligence Method for Transient Stability Assessment of Power Systems</i>
11:20-11:40	Song Bochuan	Institute of Computing and Applications, State Grid Smart Grid Research Institute Co., Ltd.	<i>Research on Retrieval Enhanced Large Models for Grid Main Equipment Operation and Maintenance Maintenance</i>
11:40-12:00	Discussion		

### Panel 12: Flexibility and Resiliency in Renewable Energy dominated Power System

**Chairman:** Jiang Tao, Professor of School of Electrical Engineering, Northeast Power University

**Room:** Jiehui Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:00, Thursday, November 30

14:00-14:20	Li Gengfeng	Professor of Xi'an Jiaotong University	<i>Research on Resilience Assessment and Enhancement of Power Distribution System</i>
14:20-14:40	Zhong Haiwang	Associate Professor of Department of Electrical Engineering, Tsinghua University	<i>Portfolio Optimisation of Source-Network-Hoist-Storage Interaction</i>
14:40-15:00	Xu Yin	Professor of Beijing Jiaotong University	<i>Rapid Recovery and Extreme Survival of Critical Loads in Extreme Disasters Based on Microgrids</i>
15:00-15:20	Wang Jianxiao	Research Assistant of Peking University	<i>Optimal Operation of Power Systems Driven by Digital and Analytical Coupling</i>
15:20-15:40	Coffee Break		
15:40-16:00	Hou Kai	Associate Professor of Tianjin University	<i>Global Sensitivity Analysis and Application of Integrated Energy System Resilience Assessment</i>
16:00-16:20	Liao Siyang	Associate Professor of Wuhan University	<i>Real-Time Industrial Load Control Technology and Engineering Applications for Novel Power Systems</i>
16:20-17:00	Discussion		



**Panel 13: The Energy Internet Paradigm of Co-optimization, Control, and Data Analytics Technologies**

**Chairman:** Xu Yan, Associate Professor of Nanyang Technological University

**Room:** Xianhui Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-16:30, Thursday, November 30

14:00-14:20	Wang Yu Professor of Chongqing University	<i>Cooperative Control of Information Physical Systems in Microgrid Clusters</i>
14:20-14:40	Liao Kai Professor of Southwest Jiaotong University	<i>Optimal Operation Control of Transportation-Grid Integration System</i>
14:40-15:00	Gou Bin Associate Professor of Southwest Jiaotong University	<i>Data-Driven Intermittent Fault Diagnosis of Traction Inverter Voltage Sensors</i>
15:00-15:20	Chi Yuan Research Assistant of School of Electrical Engineering, Chongqing University	<i>Virtual Power Distribution Facility with Integrated Energy Storage</i>
15:20-15:40	Coffee Break	
15:40-16:00	Xu Yan Associate Professor of Nanyang Technological University	<i>Participation of Energy Storage Systems in Grid Frequency Regulation Support: Distributed Control and Data-Driven Control</i>
16:00-16:20	Konstantinos Kopsidas Senior Lecturer in Power Systems Planning & Reliability, Department of Electrical & Electronic Engineering of University of Manchester	<i>Cyber-Physical Reliability of Dynamic Line Rating ICT Failures in OHL Networks</i>
16:20-16:30	Discussion	

**Panel 14: New Power System Electricity Power Balance and Optimal Dispatch Techniques**

**Chairmen:** Yang Ming, Vice Dean of School of Electrical Engineering, Shandong University

Zhang Jinping, Professor-level Senior Engineer and Department Director of China Electric Power Research Institute

**Room:** Zunhui Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:00, Thursday, November 30

14:00-14:20	Sun Shumin Professor-level Senior Engineer and Chief Expert of State Grid Shandong Electric Power Research Institute	<i>Distributed Photovoltaic Grid-connected Dispatch Management Practice in Shandong Province</i>
14:20-14:40	Zhaohao Ding Associate Professor/Director of North China Electric Power University	<i>Energy-Transportation Collaborative Decision Optimisation for Net Fleet with Uncertainty and Risk Perception</i>
14:40-15:00	Zhang Lu Associate Professor of China Agricultural University	<i>A Cooperative Operation Method for AC-DC Hybrid Distribution Grids Considering Strong Coupling of Power Spatio-Temporal Dynamics</i>
15:00-15:20	Wang Luhao Associate Professor of Jinan University	<i>Optimisation of Distributed Electricity Trading for Multi-subject Producers and Consumers Professor</i>
15:20-15:40	Coffee Break	
15:40-16:00	Li Benxin Associate Professor of Northeast Electric Power University	<i>A Stochastic Optimization Method for Generator Sets Overhaul Considering Inertia-dependent Primary FM Constraints</i>
16:00-16:20	Li Peng Research Associate of Shandong University	<i>Evaluation and Enhancement of Grid Power Balance Capability with Scaled New Energy Integration</i>
16:20-17:00	Discussion	

**Panel 15: Research on the Synergistic Development of New Energy Vehicles and Power Grids under the Requirements of a New Type of Power System**

**Chairmen:** Mu Yunfei, Professor of School of Electrical Automation and Information Engineering, Tianjin University

Li Yong, Vice Dean of School of Electrical and Information Engineering, Hunan University

**Room:** Yinghui Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:00, Thursday, November 30

14:00-14:20	Zhao Yuming Director of Shenzhen Power Supply Bureau/Professorate Senior Engineer	<i>New Energy Vehicles and Power Grid Synergistic Development under New Power System Requirements</i>
14:20-14:40	Li Yong Professor/Vice Dean of Hunan University	<i>Charging and Discharging for Batteries and High-Performance Converters in Electric Vehicles</i>
14:40-15:00	Yang Ye Senior Engineer, State Grid Smart Internet of Vehicles Co., Ltd.	<i>Key Technologies and Solutions for Vehicle-Network Interaction</i>
15:00-15:20	Jin Yang Professor of Zhengzhou University	<i>Active Safety Detection and Protection of Liquid-Cooled Lithium-Ion Battery Packs against Thermal Runaway</i>
15:20-15:40	Coffee Break	
15:40-16:00	Hu Junjie Professor of North China Electric Power University	<i>Key Technologies and Applications of Scale-up Electric Vehicle Participation in Grid Peaking</i>
16:00-16:20	Xiang Yue Associate Professor of Sichuan University	<i>Evaluation and Enhancement of Electric Vehicle Access to Distribution Grid Carrying Capacity Sun Shumin, Professor, State Grid Corporation of Shandong, China</i>
16:20-17:00	Discussion	

**8.4 Paper Sessions**

**Oral Session 1: Carbon Neutralization and Energy Transition & Multiple Energy Systems Integration**

**Chairman:** Fang Sidun, Professor of Chongqing University

**Room:** Liqun Room ( 3<sup>rd</sup> floor )

**Time:** 09:00-11:55, Thursday, November 30

Timeline	Paper Title	Authors
09:00-09:07	Renewable Energy Based Microgrid Scheme for Greener Ship: Evaluation through Techno-Economic Performance Analysis	Rashid Iqbal, Yancheng Liu, Muhammad Arslan
09:08-09:15	Research on Capacity Allocation and Operation Scheduling of Independent Energy Storage in Electricity Spot Market	Zihao Tian, Donghan Feng*, Yun Zhou, Shaolun Xu, Ling Luo, Jing Liu
09:16-09:23	Uniform Modeling of Hybrid AC/DC Transmission Network for Path-Aware Inter-Provincial Electricity Trading	Shiyuan Tao, Zhenfei Tan, Zheng Yan, Hui Deng, Ziqing Zhou
09:24-09:31	An Innovative Energy System Integrating Carbon Capture and Waste-to-energy based on Energy Cascade Utilization	Qingbo Wang, Zhiyuan Qi, Dezheng Deng, Yanan Wang, Heng Chen, Rongrong Zhai
09:32-09:39	Energy-saving Potential Assessment of Building Energy System Considering Climate Impacts	Zhenwei Zhang, Hongxun Hui
09:40-09:47	Size Design of the Storage Tank in Liquid Hydrogen Superconducting Magnetic Energy Storage Considering the Coupling of Energy and Matter	Chuang Wang, Jiakun Fang, Li Li, Meng Song, Ying Xu, Kewei Hu, Zhiyao Zhong, Zhixing Yang
09:48-09:55	Magnetic Field Effects on Water Electrolysis Performance on a Microfluidic Platform	Hao Li, Ang Lu, Tianshu Dong, Danji Huang, Chaolong Song, Jinyu Wen, Jiakun Fang, Yuan Pan
09:56-10:03	Analytic Hierarchy Process Based Optimal Forest Economic Decision-making and Carbon Sequestration Model	Xiangzhao Xing, Xiaolong Yang, Rao Fu, Hanhui Che

10:04-10:11	Profitability Analysis of Generators in Energy and Ancillary Service Joint Procurement	Yang Tang, Yifeng Liu, Weiqiang Huo, Meng Chen, Ye Guo, Wenli Wu
10:12-10:19	Multi-energy Flow Recursion Method for Integrated Electricity-Gas System	Hongbin Wu, Feixiong Chen, Zhenguo Shao, Yiwei Chen
10:20-10:27	Influence of the Fluctuating Input on Hydrogen Production by Alkaline Water Electrolysis	Yuheng Ying, Hao Li, Zhiyao Zhong, Danji Huang, Kewei Hu, Ang Lu, Jiakun Fang
10:28-10:35	Optimal Power Allocation Strategy for Scaled Hydrogen Storage System Considering Power-efficiency Coupling Relationship	Min Liu, Qiliang Wu, Zhaowei Wang, Bo Zhao, Leiqi Zhang, Junhui Li, Xingxu Zhu
11:00-11:07	Online Early Warning Model of Windage Yaw Discharge on Transmission Lines Based on Monte Carlo Random Sampling	Meng Li, Jianlin Hu, Mingguan Zhao, Yang Yang, Xinsheng Dong, Hongfei Deng
11:08-11:15	Frequency Response Distortion Compensation of CVT Based on Electromagnetic Dual Inverse Modeling	Shuoyan Lin, Xiaoxiao Luo, Yongfu Li, Ming Yang
11:16-11:23	Simulation Study of Ferroresonance on Secondary Side of Main Transformer in a 500kV System	Chuanzong Zhu, Shichang Li, Yong Li, Jiajun Li, Gang Li, Ke Wang, Yifeng Shi
11:24-11:31	Second Harmonic Characteristics of Converter Transformer With Inter-Turn Short Circuit Fault	Gang Li, Ke Wang, Xiaohan Zhao, Mingyang
11:32-11:39	Ionization Field Dependence on Streamer Development Properties for Mineral Oil and Different Types of Natural Esters	Jingwen Zhang, Jian Hao, Wenyu, Wei Qin, Xiong Liu, Qian Wang, Junyi Zhang
11:40-11:47	Effects of Stray Capacitance on Voltage Transfer Characteristics of Capacitive Voltage Transformer	Shuyong Guo, Shifeng Long, Tingjin Shen, Xiang Huang, Yuan La, Lianhong Zhong, Haoshuai Zhu
11:48-11:55	Key Technical Interventions regarding Energy Sources as part of Net Zero Implementation in Industries	Abhijit Lohakarey

### Oral Session 2: High Penetration of Renewable Energy

**Chairman:** Li Hui, Postdoctoral Researcher of University of Macau

**Room:** Fenghui Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:11, Thursday, November 30

Timeline	Paper Title	Authors
14:00-14:07	Seismic Analyses on Pillar Electrical Equipment in Offshore Wind Power Systems	Wang Liao
14:08-14:15	A Protection Scheme for New-energy Integration Lines in Active Distribution Networks	Dacai Chen, Nuo Cheng, Xue Chen, Xiaofei Ruan, Zheyu Han, Zhihui Dai
14:16-14:23	A Transmission Cost Allocation Approach Considering Operating States of Microgrids	Yuheng Jiang, Hao Liu, Ye Guo, Cheng Huang, Qian Zhou
14:24-14:31	Comparative Differences of Physical Mechanism Model and Data-Driven Model on Overhead Transmission Line Icing Thickness Prediction	Xiaolu Bai, Jianshuang Lv, Decheng Cai, Yiyang Shen, Yi Wan, Hui Hou
14:32-14:39	A Decentralized Collaborative Scheduling Method for Multiple Microgrids Considering Market Environment	Xiao Ding, Chengying Jiang
14:40-14:47	A Short-Term Wind Power Scenario Generation Method Based on Conditional Diffusion Model	Jinghaoyan, Paili, Yuehuihuang
14:48-14:55	Dynamic Security Region Evaluation Considering the Uncertainty of Renewable Energy	Chao Huo, Pu Cheng, Cheng Peng, Xiuting Rong, Naixin Duan, Songhao Yang
14:56-15:03	A Novel Prediction Method for Ice Accretion Event of Wind Turbine	Jie Yan, Ziyun Zhang, Han Wang, Shuang Han, Yongqian Liu
15:04-15:11	Power Systems Preventive Control Considering Balance Between Uncertainty and Control Costs	Xiuting Rong, Cheng Peng, Pu Cheng, Chao Huo, Xuetao Dong, Songhao Yang
15:12-15:19	Comprehensive Evaluation of Distributed Photovoltaic Power Randomness based on Copula Function	Yili Ma, Yi Huang, Yuhan Hou, Anyu Wang, Yue Yuan

15:20-15:27	The VMD-CNN-Trans Model used for Ultra-short-term Power Prediction in Wind Farms	Fu Guobin, Wang Xuebin, Zhu Han, Song Rui, Xu Yang, Cheng Dingran, Cui Yang, Jing Renyue
15:28-15:35	Online Storage Control for Stable Wind Power Commitment via Lyapunov Optimization	Hongyu Yi, Chenbei Lu, Chenye Wu
16:00-16:07	A Small-Signal Voltage Control Strategy for Coupled Inductor Based Multiport DC Collection System	Hongxing Wang, Shenghua Wei, Tao Tao, Xinran Guo, Yi Yang, Wen Chen
16:08-16:15	A Coupled-inductor-based Multiport DC Integrated System and Small-signal Model for Wave Energy	Hongxing Wang, Chonggan Liang, Taolue Yang, Shi Liu, Zhigang Liu, Wenjun Ou
16:16-16:23	State Prediction of Small Signal Synchronous Stability of Converter Interfaced Generation System Based on Koopman Operator and Time Delay Embedding	Xin Liu, Le Zheng, Zheng Wang, Yingyun Sun
16:24-16:31	Modelling Supply-Demand Imbalance Risk in Power Systems with Wind Power Reserves	Congcong Pan, Bo Hu, Changzheng Shao, Hui Lu, Kaigui Xie, Amjad Anvari-Moghaddam
16:32-16:39	Probabilistic Risk Assessment of Over-voltage Based on Voltage Sensitivity Analysis in Distribution Networks	Nan Feng, Yun Su, Yuyao Feng, Yufan Zhang, Ren Zhang, Haoming Liu
16:40-16:47	Small-signal Synchronous Stability Mechanism of Renewable Energy Transmission System Through VSC-HVDC Working as Island Mode	Ziqian Yang, Banrong Zhou, Yingshuang Wu, Mingshun Liu, Ye Zhang, Yin Wang, Wangqianyun Tang
16:48-16:55	A Data-Driven Evaluation Framework for Wind Power Generation Uncertainty Management	Yunxiao Zhang, Jingshi Cui, Chenye Wu
16:56-17:03	A Study of Evaluation Methods for Water Utilization in Run-of-river Power Station Clusters	Changlin Xiao, Xidong Xu, Jian Shen
17:04-17:11	Assessment for Frequency Support Capability of Wind Turbine from Energetic Perspective	Zhou Zhiting, Hui Li, Jie Zheng, Hongtao Tan, Hanfeng Peng, Xiuqi Zhang, Xuwei Xiang

### Oral Session 3: Electronic Power Grid Systems & Application of Emerging Technologies

**Chairman:** Pan Jianyu, Professor of Chongqing University

**Room:** Liqun Room ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:02, Thursday, November 30

Timeline	Paper Title	Authors
14:00-14:07	An Improved XGBoost-based Transient Stability Assessment Method for Power System	Yiliu Tian, Yi Tang
14:08-14:15	Graph Computing Applications In Unit Commitment Historical Data Management	Yishen Wang, Zhou Fei, Hong Zhu, Siyan Liu, Zhuang Tang, He Yang
14:16-14:23	Appliance V-I Trajectory Detection for NILM based on Conditional Autoencoder	Zhiwen Yu, Ruifeng Zhao, Ruiyao Jia, Wenjie Zheng, Jinjiang Zhang, Shiming Li
14:24-14:31	Review on the Seismic Reliability Evaluation of Power Systems in China	Miao Huiquan, Gao Siyuan
14:32-14:39	Noise Injection Free Privacy Preserving Energy Consumption Profiling	Jiahao Zhang, Haoxiang Wang, Chenye Wu
14:40-14:47	Research on DBSCAN for Extraction of Typical Scenarios in New Energy Power System	Zhengrong Li, Haibo Zhang
14:48-14:55	Electric Field Simulation Analysis of Bird Droppings Flashover Characteristics of Insulation Drainage Line	Haifeng Jin, Yingchun Du, Zhiwen Diao, Yongxin Zhang, Shiyu Zhang, Maoqiang Bi
14:56-15:03	A Model-driven Early Warning Approach for Transmission Lines Failure under Wind Storms	Haoran Chen, Shibin Bai, Zhihao Tian, Gang Liu, Changgang Li, Qiulong Ni, Chang Wu
15:04-15:11	Study on Steady-state Characteristics of MMC-HVDC Connected Weak AC System	Yang Wankai, Cao Hong, Gao Chengfu, Cheng Qi, Song Yonghui
15:12-15:19	Asymmetrical Press-Pack IGBT for Modular Multilevel Converter	Tan Lingqi, Ma Kai, Li Ying, Li Xinwei, Ma Yanjun, Xie Yuting, Zhong Xiaohan



15:20-15:27	Convolutional Neural Networks and Small Current Fault Line Selection	Li Rong, Ren Rui, Zheng Kuncheng, Yang Chen, Dong Xiaofeng, Yang Lifan, Cao Yu
15:28-15:35	Early Warning Model for Transmission line De-icing Jumps Based on BP Neural Network	Mingguan Zhao, Jianlin Hu, Meng Li, Yang Yang, Xinsheng Dong, Hongfei Deng, Yijie Liu, Weiyi Zeng, Peiyu Qing
16:00-16:07	Research on Fiber-enhanced Raman Spectroscopy Detection of Transformer Hydrocarbon Fault Gas	Weiping Kong, Fu Wan, Hongcheng Sun, Yingkai Long, Weigen Chen
16:08-16:15	Abnormal Data Detection and Correction Using CAWOA-BP Neural Network	Zhiyu Liao, Jiachen Feng, Haiyu Li
16:16-16:23	Study on the Characteristics of the Breaking Process of LVDC Circuit Breakers in Large Time-constant Circuits	Shiyi Sheng, Yibo Gao, Xinsen Xu, Xidong Xu
16:24-16:31	A Region-based Reliability-Constraint Unit Commitment Model	Xuan Li, Mingshun Liu, Chengrong Lin, Lingzi Zhu, Dongxu Chang
16:32-16:39	Scenario Generation of Renewable Energy Based on Improved Diffusion Model	Sheng Li, Chuanyu Xu, Lishen Wei, Ruijie Li, Xiaomeng Ai
16:40-16:47	Wind and PV Power Ramp Events Prediction Based on Long Short-term Memory Network	Zengwei Wang, Zhendong Li, Yutian Liu, Huan Ma
16:48-16:55	Recursive Interval State Estimation Algorithm for Power System	Kunxi Hu, Feixiong Chen, Zhenguo Shao, Hongbin Wu, Jiabin Ding, Xiang Zhan
16:56-17:02	Flexibility Assessment of Active Distribution Networks Considering the Impact of Cyber Failures	Zhengyang Xu, Zihao Tian, Siguang Zheng

### Poster Session 1: Carbon Neutralization and Energy Transition & Multiple Energy Systems Integration

**Room:** Meeting Room Foyer ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:00, Wednesday, November 29

Paper Title	Authors
Optimization Method for Medium and Long Term Electricity Market Trading of Clean Energy Power Plants	Mengfei Xie, Shuangquan Liu, Huaxiang Cai, Yugong Jia, Bin Liu
Summary and Enlightenment of Hydropower Participation in Electricity Market Practice Research	Huaqu Li, Peishan He, Dianning Wu, Ling Chen
Design and Implementation of an Adaptive Market Evolution Retail Settlement Model	Huaqu Li, Peishan He, Dianning Wu, Ling Chen
Distributed Multi-energy Operation of Interconnected Energy Hubs with Soft Open Points	Yi Ge, Hu Li, Wenjia Zhang, Zesen Li
Study on Life Cycle Carbon Emission Accounting Management of Power Transmission and Transformer Project	Chaoqun Li, Zhe Zhang, Weiming Lin
Modeling and Analysis of Interaction Between Power Industry and Typical Upstream and Downstream Industries	Jingrui Chen, Yijing Yang, Qi Bu, Chongdong Zhou, Suwen Dao
Co-optimization of Wastewater Treatment Plants Interconnected with Power Distribution System	Shiyi Shi, Zhenyu Wu, Yang Mao, Xia Zhao
Data-Driven Optimal Power-water Flow: A linearize Machine Learning Approach	Dingyi Liu, Zhenyu Wu, Yu Liang, Xia Zhao
Temperature Optimization for Efficient Power-to-Hydrogen Water Electrolysis	Ke Chen, Jie Yang, Kewei Hu, Feng Chen, Jiakun Fang
Performance Analysis and Optimization of Combined Cooling, Heating and Power System based on Carbon Dioxide Energy Storage	Pingyang Zheng, Yunkai Yue, Jiahao Hao, Zhentao Zhang, Junling Yang, Yanan Li
An Efficient Power System Risk Identification Method Considering PMU Bad Data	Yin Wang, Jieling Li, Mingshun Liu, Dongxu Chang, Lingzi Zhu, Liweiyong Guo
Analysis of Virtual Power Plant Technology and Participation Mechanism in the Electricity Market	Xiangrui Liu, Yuhui Xing, Xiufeng Li

Energy Efficient Thermal Management of 5G Base Station Site Based on Reinforcement Learning	Liang Liu, Jiang Wu, Yaping Liu, Zhanbo Xu, Xiaohong Guan
Design and Implementation of Energy Carbon Management System for High Voltage Substation	Chaoqun Li, Weihong Zhang, Daliang Hu
Design and Research of Electricity Market Mechanisms for Consuming Clean Energy	Xiangrui Liu
Day-Ahead Optimization and New Energy Integration Capacity Assessment of Integrated Energy Systems	Gaoqiang Zhao, Zeming Li, Yongli Wang, Ran Liu, Liang Zhao, Wenxi Fu, Qizhen Chen
Green Ammonia Futures: Design and Analysis Based on General Equilibrium Theory	Yuhao Cai, Yiwei Qiu, Buxiang Zhou, Tianlei Zang, Ge He, Xu Ji
Thermodynamic and Economic Analysis of a Novel Coupled System based on Low Carbon Biomass Utilization	Zhiyuan Qi, Dezheng Deng, Qingbo Wang, Jiayang Lv, Heng Chen, Gang Xu
Flexible Matching and Bundling of New Energy and Conventional Power Sources for External Power Transmission Transactions	He Yuankang, Sun Xiaoqiang, Ding Tao, Ye Hongxing, Yuan Bo, Zhao Dewei, Liu Jing
A Cost-benefit Analysis Method for Multi-market Resources Considering Peer-to-peer Transactions	Hua Feng, Shiqi Sun, Hanbing Zhang, Jichao Ye, Ning Ding, Yonghai Xu
Low-Carbon and Economy Double-Layer Dynamic Dispatching Strategy of Virtual Power Plant Under Centralized Control	Zhong Yongjie
Evaluation and Optimization of Carbon Emissions in Renewable Energy Power Systems	Peidong Han, Pai Li, Jinping Zhang, Chi Li
The Enlightenment of the Construction of Australian Electricity Futures Market to Yunnan Province	Xuan Yang
Modeling Method of Gas Turbine for Full Process Dynamic Simulation	Mu Shixia, Wang Hongfu, Liu Tao, Dai Hanyang, Yu Dahai
Target Driver Design of Metasurface for Tri-band Wideband Energy Harvester	Yanliu, Gangxie

Research on Electrolyzer Modeling and Day ahead Scheduling Considering the Influence of Electrolyzer Temperature	Dongsen Li, Kang Qian, Haiwen Shao, Yufei Peng
Research on Loss Reduction Tracking and Tuning Method of Distribution Network Based on Time-domain Load Integration	Jianye Cui, Lizhong Jia, Guanjun Zhao, Bo Zhang, Yihang Zhang, Jiming Ma
An Optimization Method for the Development Driving Force of Carbon-Electricity Market Based on the PEST Theory	Min Luo, Shangli Zhou, Yuchen Lai
The Non-Cooperative Bilateral Trading Among DG Owners Considering both Investment and Operation Stages	Zhu Yuerong, Xiao Yunpeng, Wang Xiuli
Research on the Traceability Mechanism of Green Electricity Consumption in the Electricity Market	Qinggui Chen, Dianning Wu, Ling Chen, Peishan He, Yingying Feng
Optimal Operation of Electro-Hydrogen Coupled Distribution Systems Considering Comprehensive Demand Response	Chengyu He, Yukun Liu, Zhijun Chen, Xiqiao Lin
Low Carbon Robust Optimization Operation Strategy for Multi-Prosumers Based on Electricity and Heat Distributed Trading Model	Lei Qi, Qian Ai
Power Coordination Control of Stand-alone DC Microgrid with Photovoltaic and Energy Storage System in the Smart Park	Zhengang Wang, Deguang Xu, Qiong Wu, Xu Zhang, Feifei Gui
A Bi-Level Scheduling Strategy for EV Aggregator based on a Dynamic Pricing Mechanism under the Contract Service Mode	Ziyun Yu, Wanlei Yao, Shan Gao
Transaction Model and Clearing Algorithm Investigation of Flexible Block Trading Mechanism in the European Electricity Market	Qi Liu, Wei Wang, Siyu Di
Decomposition and Parallel Computation of Inter-provincial Medium and Long-term Transaction Optimization Model Considering Time Coupling Constraints	Ziyu Zhang, Tao Ding, Chenxing Yang, Shuo Liu, Haihua Cheng
Research on Data-driven Cluster Analysis of Electric Vehicle Charging Sessions	Wanlei Yao, Ziyun Yu, han Gao

Real-time Dispatchable Power Evaluation Method of Charging Station Based on User Demand	Jieming Zhang, Lili Liang, Leyan Ding, Haolin Liang, Xianchao Chen, Fan Zhang, Fafu Lin, Jun Yang
Research on the Adaptability of Renewable Portfolio Standards System in the Electricity Market Environment	Weiheng Li, Xiangrui Liu, Linxin Yang
Capacity optimal allocation of wind-solar-fire low-carbon power generation system based on green certificate-carbon emission equivalent interaction mechanism	Zhaopeng Liu, Qihua Chen, Liangnian Lv, Yunguang Wang, Aisikaer
A Reliability Pricing Method of Distribution Networks Based on Long-run Incremental Cost	Chang Ju, Fulong Song, Caihao Liang, Chen Chen, Tao Ding, Yuzheng Liu
Predicting The Number of Hydrogen Fuel Cell Vehicles and Demand of Hydrogen Refueling in Shanghai Based on Diffusion Model	Chen Fu, Mingxing Guo, Jing Yu, Li Lan, Yizhou Xu, Haoming Liu
Research on the Profit Mode of Energy Storage to Accommodate Renewable Energy in Yunnan Power Market	Xiangrui Liu, Wangming Feng
A Novel Stochastic Hierarchical Framework for Smart Management of Electric Vehicle Aggregation with Demand Response Mechanism	Wenqiang Xie, Chenyu Zhang, Vikram Kumar, Tao Chen
Probabilistic Unit Commitment in Renewable Smart Islands Incorporating Plug-In Electric Vehicles and energy storage devices	Hong Shen, Ke Huang, Muhammad Usman Sadiq
Optimal distribution network reconfiguration of CHP-based hybrid AC-DC microgrids considering wind turbines and economic model of fuel cells	Dian Li, Zhou Rong, Ge Zhao, Muhammad Mubashir Ashraf
Research on an Optimization Model for Resource-load-storage Integrated System Operation Considering Demand Side Response	Yinglong Lv, Dingyao Xiao, Shijun Tang, Yanbo Liu, Ang Deng
Evaluation of Flexible Ramping Resources in Rural Areas via the Multi-Time-Scale Carbon Flow	Biao Chen, Daiyu Xie, Jia Tang, Binbin Chen, Yuansheng Zhang, Yixin Zhuo
Voltage Control Method for Distribution Network Based on Distributed Energy Storage Joint Operation	Fei Gao, Jianfang Li, Xiaohui Song, Yu Zhang, Yajie Li, Shanshan Zhao

Gas Sensing Behavior of TM-doped Graphene on Gases of Insulated Materials Carbonization	Yuan La, Lianhong Zhong, Ran Zhuo, Mingli Fu, Meng Gao, Qiulin Chen
Study on User Classification Mechanism in Power Retail Market Based on Bias Energy Management	Tianxu Sun, Meihan Jin, Yuhui Xing, Wenjiao Ding, Xiangrui Liu
A Two-Layer Optimal Dispatch Model for Demand Response Incorporating Multiple Loads	Fangbo He, Ligeng Pei, Chenguang Zhang, Liushuangfei Xie, Yuhan Huang, Tao Ding
An Analytical Method of Day-Ahead Load Curve for Adjustable Loads under Price-Based Demand Response	Fangbo He, Rui Zheng, Yuhan Zhang, Qingqing Zhou, Yuhan Huang, Yuge Sun, Tao Ding
Comparative Analysis of Carbon Footprints for 110 kV Polypropylene(PP) and Cross-linked Polyethylene(XLPE) Insulated Cables	Yifan Zhang, Mingli Fu, Yunpeng Zhan, Shuai Hou, Baojun Hui, Lingmeng Fan, Yuan La, Lianhong Zhong
Design and Application of Error Clearing Method for Electricity Retail Market Based on Minimization Method	Huaqu Li
Characterization of the Regulation Capacity of Flexible Loads Represented by Air-conditioning Temperature-controlled Loads	Zhu Rui, Chen Yongtao, Li Xiaotian, Yan Pengfei, Zhang Yuan
The Rapid Computational Model for Power Output of Ice-covered Wind Turbines Based on Airfoil Aerodynamic Parameters	Hu Qin, Hu Ziyuan, Li Baoju, Fu Xiaobiao, Rao Lipeng, Duan Jiamin
Forecasting of Short-term Wind Power in Ice Season Based on Wind Turbine Operating State and Deep Learning	Hanlin Xia, Qin Hu, Yuming Liu, Lin Wang, Yufan Wu, Dengfeng Li, Lipeng Rao
Method for monitoring the icing thickness of ground wire using sag measurement technology	Lei Zhengfei, Hu Qin, Wu Haitao, Jiang Xingliang, Liu Jie, Bao Jiankang
Ground Wire Induced Voltage and Suppression Methods in the Double-Circuit Transmission Line with the Same Tower	Jian He, Qin Hu, Xuye Chen, Zhenguo Wang, Kaihua Jiang, Ruixiang Tao
Analysis of the key factors for generation capacity adequacy: A real-world case study	Zhiheng Li, Senmao Li, Tao Xie, Wenjie Zhao, Danning Lin, Qirui Li

Characterization Of Water Content Of Silicone Rubber Based On Terahertz Technology	Luo Guofang, Zhang Tengyi, Liu Yunfan, Fang Chen, Wang Zhihui, Zhou Jiankan
Defect detection of insulating paperboard based on terahertz imaging	Luo Guofang, Zhang Tengyi, Li Jiajun, Fang Chen, Wang Zhihui, Zhou Jiankan
On Voltage Regulation via Ride Hailing Fleet Management	Zixiao Dou, Zhaohao Ding
Analytical study on the dielectric properties of tetrameric insulating oils based on biological substrates	Han Chen, Zhibo Zheng, Run He, Zhengyong Huang, Qiang Wang, Feipeng Wang, Jian Li
Influence of Dielectric Constant of Insulation Oil on Wave Process of Transformer Winding	Haoyong Song, Qingdan Huang, Yuqing Chen, Huihong Huang, Yong Wang
Influence of Oil Duct Height on Winding Temperature Rise of Vegetable Oil Transformer	Qingdan Huang, Haoyong Song, Yuqing Chen, Huihong Huang, Yong Wang
Research on Insulation Structure Optimization of Autotransformer Winding	Haoyong Song, Qingdan Huang, Yuqing Chen, Huihong Huang, Yong Wang
The Study of VFTO Distribution in the Insulation System of IOCT	Qingdan Huang, Haoyong Song, Yuqing Chen, Huihong Huang, Yong Wang
Review of Insulator Wet Flashover Modelling and Factors Affecting Characteristics	Chuanbang Xia, Furong Pan, Qin Hu, Dunhua Long, Wenqi Rong, Yanan Wei, Zhenyu Zhou
Low-carbon economic dispatch of integrated energy system considering electric vehicles	Yanhong Xiao, Jianlin Tang, Houpeng Hu, Bin Qian, Jiexiang Ou, Xiaomin Lin, Zerui Chen, Fan Zhang
Effect of Vegetable oil instead of Mineral oil on the Performance of Panel-type Radiator	Qingdan Huang, Haoyong Song, Yuqing Chen, Huihong Huang, Yong Wang

**Poster Session 2: High Penetration of Renewable Energy**
**Room:** Meeting Room Foyer ( 3<sup>rd</sup> floor )

**Time:** 09:00-12:30, Thursday, November 30

Paper Title	Authors
Increasing The Hosting Capacity of Electric Vehicles in Distribution Network Considering Reactive Power Regulation of Charging Pile	Xin Xing, Zhixin Fu, Jing Xu, Jian Wang
Testing and Verification of Distribution Transformer Substation Area Flexible Interconnection Technology Considering Multiflow Fusion	Yang Zhichun, Han Gang, Yang Fan, Lei Yang, Hu Wei, Su Lei, Min Huaidong, Liu Yu
A Reconfiguration Method for Distribution Network with Countywide PV Generation Using IGDT	Yi Gao, Wangxia Yang, Shupeizhang, Dongmei Wang, Jinfu Chen
Research and Application of Transmission Network Reconfiguration Method for Emergency Treatment	Luo Cuiyun , Sun Yan, Song Yunxiang, Ling Xiejing
Research on the Application of Maintenance Sensitivity and Network Reconfiguration in Power Grid Security and Stability Platform	Sun Yan , Luo Cuiyun, Li Guangming, Wu Yin
Analysis of an abnormal fever defect of 220kV capacitive voltage transformer	Rongli, Xin Chen, Chao Yang, Min Yang, Feiming Jiang, Yunfei Pu
Dynamic Operational Risk Evaluation of Power Systems Considering Renewable Energy Generation Variability	Changzheng Shao, Bo Hu, Longxun Xu, Chengrong Lin, Kaigui Xie
An evaluation index system for the evolution of distribution network morphology	Gang Han, Huaidong Min, Zhichun Yang, Fan Yang, Yang Lei, Yu Liu, Shi Luo
Study on Constraint Limits of HVDC Tie-line Based on Risk Assessment	Zhe Zhang, Haibo Zhang, Xueqin Tian, Yanguang Hu
Division of Home Micro-grid Group in the Low Voltage Distribution System based on Reliability	Weiwei Ma, Jian Zhao, Jian Yu, Hui Hui, Yang Zhao, Ming Gao, Liming Yang



Aggregate Dispatchable Power of Virtual Power Plants Considering Wind and Solar Uncertainty	Jinhua Tian, Zhong Zhang, Genhong Qi, Shuguang Hu, Wenbin Liu, Hongkun Yang
Impact Analysis of Distribution Network Integrated Electric Vehicles Based on Monte Carlo Algorithm	Tongyu Li, Haoran Wu, Heng Chen, Jinjun Wang, Tao Liu
Comparison and Evaluation of Deeply Penetrated Photovoltaic for Distribution Networks: A Case Study	Haojia Chen, Jie Gao, Jian Di, Qiushi Cui, Jiayong Zhong, Jian Chen
Matrix Exergy Efficiency Optimization Strategy of Energy Station Considering Variable Operating Condition Characteristic	Zhong Yongjie
Comprehensive evaluation and selection of offshore wind power DC collection system topology	Shaowu Wang, Jian Shi, Tingting Cheng, Zhanqing Yu, Jin Zhang, Lu Qu, Jie Liu, Zhengning Zi, Yuanzhen Li, Zhenhua Lv
Photovoltaic Region Prediction Based on Improved Convolutional Neural Network and Cluster Analysis	Siyi Wang, Dongli Jia, Keyan Liu, Wanxing Sheng, Shuai Wang, Zhaoying Ren
SSO Mitigation Strategy on the PMSG Wind Turbine Interfaced with AC System by a Improved Chopper Control	Su An, Chao Luo, Qingxin Pu, Qinfeng Ma, Mingshun Lin, Lingzi Zhu
Application of Improved Reinforcement Learning Technology for Real Time Operation and Scheduling Optimization of Virtual Power Plant	Zhang Chao, Zhang Ying, Ji Yu
Response-Compensated DMPC-Based Frequency Control Strategy for AGC with Large-Scale Wind Power	Peng Zhang, Zhonghua Mo, Muhammad Shahid Mastoi, Yinghai Yang, Shaorong Cai, Mannan Hassan, Delin Wang
Research on the Distribution Characteristics and Parameter Estimation of Relay Protection Device Action Time	Wang Zhijie, Li Yanjun, Wang Wenhuan, Gao Chenguang, Liu Yadong
Research on the Market Guarantee Mechanism for Yunnan Power Grid Abundance under the New Power System	Meihan Jin, Tianxu Sun, Rongxin Wang

Analysis of a Steel Core Rupture Fault in a Strain Wire Clamping Connection Pipe	Qingfeng Wen, Wei Guo, Chenxi Zhou, Yangming Wang, Yan Bu, Zehui Liang, Longji Li, Songbo Wang
Evaluation of the Adjustable Potential of Industrial User Load Based on Electricity Data Mining	Yu Nan, Gang Zheng, Yi Zong, Shu Zhang, Bolu Ran
Research on Economic Operation of Distribution Networks with Distributed Photovoltaic	Xiao Qian, Lizhong Jia, Guanjun Zhao, Bo Zhang, Yihang Zhang, Jiming Ma
Absolute Stability Analysis of Single-Phase Grid-Tied Inverters with Open-Loop Synchronization	Yu Qiao, Jinming Xu, Jiahua Kang, Cheng Cheng
Performance Evaluation and Parameter Identification for Primary Frequency Response Control of Wind Turbine	Yixuan Su, Yang Liu, Ziqi Liu, Qingchen Liu, Tenghui Li, Xingwei Xu, Litao Guo, Weidong Li
Research on LVRT Control Combination Strategy of PV Station	Zhuang Liu, Yusheng Ding, Jinghong Zheng, Yiyun Gou
Economic Evaluation of Distributed Resources by Locational Marginal Price	Hanyan Huang, Weichao Zhang
Energy Storage Configuration Method of Sending End Grid considering Frequency Deviation Limit	Heng Wang , Yuxin Weng, Yu Li, Yiqian Sun, Xinyan Zhang , Zhe Wang, Li Bo, Liya Ma
A novel wind power converter for increasing output voltage of generator-converter unit and analysis of its characteristics	Lv Wei, Hu Xiangyu, Zhou Yang, Gong Sijin, Lin Liguang, Mou Xiaoning
Comprehensive Evaluation and Optimization for Instantaneous Reactive Power and Short-circuit Current of Synchronous Condenser in UHVDC Converter Station of Heavy Load Center	Yiyun Xiong, Yuyao Feng, Xuejun Xiong, Mingjie Pan, Xitian Wang
Economic Analysis of High Penetration of Renewable Energy under Market Environment	Jichao Ye, Hanbing Zhang, Hui Huang, Xinwei Hu, Xinhua Wu, Yonghai Xu, Chao Yang
Frequency Stability Characteristics and Parameters Optimization of Isolated Grids with High Proportion of New Energy and Small Hydropower	Pu Qingxin , He Xianqiang, An Su, Chang Dongxu, Li Chengxiang, Zhu Yihua
Research on Wind Turbine Control Hardware in Loop Real-time Simulation and its Application	Guanming Zeng, Liang Tu, Yihua Zhu, Chengxiang Li, Mingqun Liu, Peng He

Optimal Dispatch of Renewable Energy Consumption in Microgrid Based on Load Aggregators and Storage Devices Regulation	Xin Sun, Chunsun Tian, Yang Liu, Yafei Zhang, Tao Ding, Jiawen Bai, Liushuangfei Xie
Distributed Photovoltaic User Interaction Service System and Key Technologies	Enguo Zhu, Yan Liu, Kuixi Chen, Guoquan Zheng, Congcong Li, Zheng Jing
Research on Low Voltage Distributed Photovoltaic Group Control Strategies	Yan Liu, Enguo Zhu, Kuixi Chen, Guoquan Zheng, Congcong Li, Zheng Jing
Research on Optimization Control Strategy Using Model Predictive Control of Wind Turbine Generators	Hao Tao
Impact of the Interaction of Multi-PLLs on the Transient Synchronization Stability of Multi-Energy Complementary System With Energy Storage Systems	Cai Yan, Deping Ke, Jian Xu
A Survivability Assessment Model for the Weak-Link Power Grid under Extreme Events	Ziheng Pan, Congcong Pan, Gang Ruan, Bo Hu, Yu Wang, Kaigui Xie
Mechanism Analysis of Sustained Oscillation Employing Nonlinear Analysis in Bidirectional DC Converter	Guoning Wang, Xiaohong Wang, Jinli Wu, Xiaochun Mou, Weimei Ge, Zhigang Wang
Analysis of Forecast Bias Characteristics of Weather Model Forecast for Multiple Types of Energy Stations	Siqiu Zhang, Qiushi Wen
Battery-storage-centered Microgrids: Modelling and Simulation Demonstration	Dongrui Quan, Lingfeng Tang, Xiaoyang Wang, Haipeng Xie
Reliability Assessment of Road-Electricity Coupled Distribution Network Considering Electric Vehicle Demand Response	Yawen Zheng, Hao Bai, Xiaofeng Dai, Wei Li, Rui Tong, Min Xu
Incremental Learning-based Online Risk Assessment of Power System Operation with High Renewable Energy Penetration	Danling You, Song Gao, Xuri Chen
Flexible Adjustment Resource Allocation Method for High Proportion of New Energy Areas based on K-means Clustering	Wu Huimin
A Capacity Compensation Mechanism for Long-term Energy Storage in Spot Market	Jiangyi Hu, Haoyu Wang, Qiang Xiao, Shiling Zhang, Qian Zhou, Fan Ye, Mi Zhang

Thinking on the Electricity Market Operation Mechanism and Key Technologies to Promote Consumption of High Proportional Renewable Energy	Mengfu Tu, Lin Bo, Jinjun Lu
Coupling Characteristics of Subsynchronous Oscillation Frequencies in Multi-Renewable Power Plants Integrated to Power System	Biyue Huang, Qingming Xin, Xiaobin Zhao, Zhiyong Yuan, Junjie Feng, Huan Li
Building a rapid prototype system of security and stability control system based on digital twin	Qitao Liu, Xiaofeng Feng, Manli Li, Jinhua Ren, Zhaoyang Yin
Multiple grid-connected consumption mechanism and practice of high-quality development of new energy in Gansu Province	Zhang Bolin, Li Xiaohu, Zhang Yongrui
Adaptive Control Strategy of Battery Energy Storage Participating in Frequency Regulation for New Power Grid	Fengchao Chen, Lide Zhou, Zejian Qiu, Junwei Zhao
Estimation of new energy absorption capacity based on practice in Gansu province	Wu Guodong, Hu Dian-Gang, Liu Lijuan
ADMM-Based Two-Phase Distributed Scheduling of Integrated Transmission-Distribution Systems	Junni Su, Fengchao Chen, Zejian Qiu, Weijian Lai
Day-ahead to intraday optimization model for power systems with reliability constraints	Yudun Li, Yuntao Sun, Naiyong Li, Yu Han, Jinming Lin, Ziheng Pan, Bo Hu
Improved integrated inertial frequency modulation control strategy of ACEPSU applied to abandoned mine	Xiuqi Zhang, Qinglong Liao, Yongfu Li, Qian Wang, Hui Li
Reliability-Aware High-Voltage Distribution Network Reconfiguration	Fengchao Chen, Yipeng He, Huan Rao, Rui Zhang, Su Xin, Wei Yan, Chao Lei
Small-signal wide-range-frequency oscillation analysis of renewable energy grid-connected system under electromagnetic transient scale	Haoyue Gong, Jian Zhang, Libo Zhang, Qinyong Zhou, Buyang Qi, Qiang Guo
Hydrodynamic Frequency Analysis based Floating OWT Power Quality Mitigation	Lingte Chen, Jin Yang, Chengwei Lou
Analysis of a misjudged partial discharge in switchgear	Zou Jing
Partial discharge testing and defect analysis of casing pipes through cabinets	Zou Jing
Research and Implementation of a Simplified Electromagnetic Transient Model for Voltage Source Converter	Zhao Min, Ding Ping, An Ning, Cai Jing

Design of Electric Power Maintenance Evaluation System Based on immersive VR	Jihong Kong, Yisong Lv, Wenqi Luo, Chao Wu, Yongxin Pang, Man He
Analysis of the application of passive architecture in substations in alpine regions	Qiang Wang, Xiuyun Gao, Ying Wang, Hongshan Wu, Heng Chen, Xiuyan Wang
Research on the Construction and Application of Intelligent IoT System under Source Network Load Storage Collaboration	Liyue Chen, Sheng Zhou, Haiyang Liu, Mengjie Zhao, Ning Niu
Evaluation System of Substation Based on AHP-EWM and Matter-element Extension Theory	Qiang Wang, Jingsi Yang, Zhenhai Li, Yao Xiao, Chengyu Jia, Heng Chen, Honggang Chen
A Fault Location Algorithm for Distribution Network Based on Transient Feature Extraction	Yao Liu, Qiushi Cui, Jian Luo, Heng Guo, Lixian Shi
A comprehensive analysis of wind farm's capability to participate in frequency regulation of power grids	Peng Zhang, Muhammad Shahid Mastoi, Delin Wang, Shaorong Cai, Malik Haris, Mannan Hassan, Atazaz Hassan
Voltage Estimation Method for Distribution Network Based on Wiener Filter	Haotian Ma, Wanxing Sheng, Keyan Liu, Kaiyuan He
GIS equipment defect diagnosis based on X-ray detection technology	Yi Zhang
Analysis of Transient Voltage Stability of Alternating Current and Direct Current High Voltage Large Grid	Wang Tao, Wang Shudong, Hu Lei, Chen Guofeng, Li Songrui, Li Dongluo
Preventive Control Method of Improving Transient Voltage Stability for Power System Based on the Attention of CNN	Zhendong Li, Jiongcheng Yan, Yutian Liu, Li Li, Hanbing Qu
Analysis and application of grid size influence in air flow field simulation of high voltage circuit breaker	Miaoxin Li, Haozhang
Research on Distribution Network Load Balancing Based on Regional Precise Regulation	Tian Wang, Ning Zhou, Yongfeng Yang, Jingnan Li, Jiming Ma
Topology Analysis and Short Circuit Fault Simulation Research of Power Electronic Transformers Based on Modular Multilevel Converter	Zihao Song, Ningning Chen, Qilou Xu

**Poster Session 3: Electronic Power Grid Systems & Application of Emerging Technologies**
**Room:** Meeting Room Foyer ( 3<sup>rd</sup> floor )

**Time:** 14:00-17:30, Thursday, November 30

Paper Title	Authors
Harmonic Voltage Effect on the Breakdown and Failure Probability Characteristics of Oil-Paper Insulation Based on Experimental Analysis	Weiju Dai, Zhihu Hong, Qingyun Min, Jingyi Zhang, Jie Wu, Qian Zeng
Typical design for the master station function of security and stability control system for power grid	Xia Haifeng, Liu Tianyi, Yan Yunsong, Liu Qiang, Qin Tian, Lai Yening
Simulation Study of Transformer Core Vibration Characteristics Under Harmonic Current	Guochao Qian, Dexu Zou, Weiju Dai, Jin Hu, Jing Xu, Jixiang Wang
Research on DC Transient Voltage Generation Method for VSC-HVDC Control and Protection Testing	Chen Kun, Zhang Longen, Hu Xingyang, Yao Qixin
Study on the Method of Measuring Transient Overvoltage Using CVT's Additional Capacitance	Xuan Li, Qionglin Li, Shuangyin Dai, Jiangbo Chen, Shipu Wu
Research on Back-to-Back HVDC Additional Frequency Synchronous Control Strategy Applied to Asynchronous Interconnected Systems	Qinlei Chen, Libin Huang, Shuyong Li, Xuehua Lin, Wencong Wu, Mingkang Wu, Liang Tu, Qi Guo
Research on the topology of large-scale offshore wind power based on distributed medium voltage DC collection and high voltage DC transmission	Zhiguang Lin, Jian Shi, Tingting Cheng, Lu Qu, Jie Liu, Zhanqing Yu, Zhenhua Lv, Zhengning Zi, Qun Li
Influence of Laser Modulation Mode on the Performance of Photoacoustic Spectroscopic Detection of Trace-Level SF <sub>6</sub> Characteristic Gas	Ying Chen, Fengxiang Ma, Yue Zhao, Zhengjie Xu, Xiaoxiao Xu, Wei Cheng, Chen Hang, Kexin Zhu
Improved IGSE Core Loss Calculation Method Based on The Magnetic Density Distribution Characteristics of Large-Size Cores	Weihong Yang, Yongsheng Xu, Qiulin Chen, Jialiang Hu, Bin Cui, Zhe Yang, Biao Zhao, Qianhao Sun



Research and device development based on broadband and wide-range current transformer compensation technology	Dongguo Liu, Fang Zhao, Fuzhou Zhang, Wen Chen, Jixiang Wang, Gang Liu, Li Yi, Jie Tang, Haibin Wang, Jing Xu
Compact Grounding Resistance Reduction Method For Distribution Line Poles With Flexible Graphite Grounding Modules	Danxing Li, Qingbin Wang, Kaitian Huang, Xianzhong Zhao, Zudi Huang, Yuxi Wang, Liming Chen, Siliang Suo
Transient Response Characteristics Analysis of DFIG under Symmetric Voltage Sudden Changes in the Grid	Hao Jiang, Lixiong Xu, Xiaodan Cui, Yang Liu, Jialong Wu, Jiaqi Feng
Current Harmonic Compensation Strategy for Series-Shunt Multiport Soft Normally Open Points	Linlin Chu, Ming Zong, Yue Yi, Can Feng, Haohua Peng, Jianqiao Zhou, Jianwen Zhang, Gang Shi
Calculation Method for Short-Circuit Current of Direct-Drive Wind Turbine Units Considering Transient Phase-Locked Loop Deviation	Ling Xu, Mengyao Zhang, Shuqi Bi, Jinxin Ouyang, Jun Yao
Capacity Allocation of Multifunctional Electric-hydrogen Hybrid Energy Storage for Flexible Interconnected Distribution Grids	Fan Xinming, Li Xin, Gang Shi, Jianqiao Zhou, Jianwen Zhang
The effect of Atmospheric Pressure and Temperature on corona discharge process at lightning rod tip	Xiaoqing Wang, Lu Qu, Yueguang Yang, Minchuan Liao, Yuqin Liao, Huaifei Chen
Research and Application of Redundancy Method of Black Module in SVG Device	Qingtao Wang, Fangling Li, Hui Yan, Haozhong Zheng, Dan Wu, Wang Liu
Capacity Optimization Configuration of Multi-Microgrid Shared Energy Storage Based on Negotiation Game	Zhao Qingsong
Two-tier optimal scheduling of microgrid cluster distribution system based on energy interaction	Miao Guixi, Wang Xin, Yuan Liang, Huang Wei, Ma Hui
Topology Comparison for Power Flow Controller in AC Grid	Ran Chen, Hua Huang, Wei Bao, Jianqiao Zhou, Jianwen Zhang, Gang Shi
Research on Low Voltage Ride Through Control Strategy of BESS Considering Fault Recovery Characteristics	Zhou Liu, Yuming Zhao, Yan Li, Xiong Du, Ze Wei

Intelligent Switching Line Device for Temperature Rise Test of Power Distribution Equipment	Jian Fang, Hongbin Wang, Min Zhang, Haicheng Hong, Xiang Lin, Yan Tian, Fengxiang Zhou
A collaborative communication-less frequency support control for the DRU-HVDC integrated offshore wind farm	Wenxin Feng, Haotian Yu, Xu Cai, Renxin Yang, Xinfang Ren, Yanle Dong, Guangqiang Peng, Xianghui Ma
A Novel Scheme for DRU-HVDC Transmitted Offshore Wind Farm	Xinfang Ren, Haotian Yu, Xu Cai, Renxin Yang, Wenxin Fen, Zhichao Zhang, Guangqiang Peng, Hang Liu
Comparison Analysis of Power Frequency Electric Field under Transmission Lines between Laboratories	Ni Yuan, Wan Hao, Hu Jingzhu, Zhou Bing, Wang Yanzhao, Zhang Yemao
Research on the Preparation Method and Performance Analysis of Insulation Components Suitable for High-voltage Switchgear	Zhenwei Guo, Zenghui Xu, Hui Zhang, Yingchun Yang, Yang He, Chengfeng Liu
A novel thyristor-based unipolar to bipolar DC power grid interface converter suitable for medium and high voltage application	Yi Lu, Qiu Peng, Qian Chen, Jianqiao Zhou, Jianwen Zhang, Gang Shi
A Multiport Embedded DC Power Flow Controller with Fault Current Limiting Capability	Haiqing Cai, Mingzhang Su, Zhihao Chen, Jianwen Zhang, Jianqiao Zhou, Jiajie Zang, Yuwen Liu
Electric field distribution of 110 kV insulator under uneven pollution	Fanrong Zhou, Zhijin Zhang, Guohui Pang, Yutang Ma, Hualong Zheng, Hao Geng
Switching Impulse Discharge Characteristics of Ring-plate Air Gap at High Altitude	Sun Yong, Xiao Wei, Lu Wenhao, Cui Yanjie, Shi Hailin, Zhang Zhijin
Mid-high frequency suppression strategy based on damping control in offshore wind farms	Bo Zhang, Jie Zheng, Hui Li, Hanqi Huang, Qinghe Li, Zhiting Zhou, Hongtao Tan, Xuwei Xiang
Evolution Analysis of The Remote Extension of State Grid's Dispatch Exchange	Wang Yihua, Zhang Xin, Li Qin, Shi Yanping, Zheng Wangli, Huo Xuesong



Research on Influencing Factors of Chip Dynamic Current Distribution in IGBT Module	Cui Meiting, Chen Zhongyuan, Li Hongji
Fretting Wear Failure Modeling of Press-Pack IGBT Device based on Digital Twin Method	Yuqi Wang, Ran Yao, Hui Li, Zeyu Duan, Bailing Zhou, Zhongyuan Chen, Jinyuan Li, Ruimiao Wang
Online Evaluation of Fretting Wear Aging Status of Press-Pack IGBT Device	Huachen Hou, Ran Yao, Hui Li, Zeyu Duan, Bailing Zhou, Zhongyuan Chen, Jinyuan Li, Ruimiao Wang
Short-term Load Forecasting Based on LSTM and Causal Convolution	Qiuli Wu, Yangsheng Liu, Shan Li, Chengwei Huang, Longfei Zhang
Few-Shot Electricity Load Forecasting Based on FCM and LSTM	Qiuli Wu, Changfu Wei, Peng Liu, Wei Zhang
Research on Integrated Energy Demand Response Strategy Based on Digital Twin	Song Zhang, Guanghuai Li, Yang Cao, Yue Tan, Ziyi Liu, Ying Ren
PD Pattern Recognition for Generator Stator Bar: A Data-driven Learning Approach	Zixin Xiang, Jianlin Hu, Yue Sun, Ting Zhu, Zijia Wang, Zhan Song, Xi Zhang, Wei Huang
A Power System Frequency Nadir Prediction Model Based on FNP-DBN Fusion-Driven Method	Qili Ding, Xiangxu Wang, Weidong Li, Zhengwen Li, Hui Zeng, Nan Zou
Research on mechanism-based modeling and migration learning for cable local discharge diagnosis under small sample conditions	Maosen Guo, Zaijun Wu, Yi Zhang, Zhengcheng Yang
Reliable Transmission Scheme Based on Time-Sensitive Network in Smart Grid	Feifei Zhou, Tao Ma, Qinru Jiang, Yunfei Zhu, An Lu, Huixuan Wang
Frequency Assessment Method Based on Integrating SFR Model and Data Knowledge	Jinhui Chen, Zonghan Li, Shiyun Xu, Ping Wu, Bing Zhao, Baocai Wang, Yanhong Jiang, Yi Cheng
Reinforcement Learning Based Energy Internet System Optimal Dispatch: A Survey	Binwen Zhang, Ye Li, Sheng Chen, Jian Li, Ji Qiao
Load Autoformer: A Transformer architecture for short-term load forecasting	Chenghan Li, Kan Li

Wind turbine fault detection method based on deep adversarial unsupervised learning	Jie Song, Xingang Yang, Aiqiang Pan, Mengyuan Zhang, Yan Yang, Yidong Zhou
Deep Learning-Based Air Conditioning Set Temperature Prediction with Meteorological Data	Jiaying Chen, Liwei Ding, Kang Zhang, Chenglong Hou, Zhenya Lai
Deep Translation Model-Based Electric Vehicle Load Disaggregation Method	Heng Guo, Qiushi Cui, Zihong Xie, Yao Liu, Lixian Shi, Qianggang Wang
Power Distribution Network Precision Investment Management	Gao Xiaohai, Wang Hongwei, Chen Zhuoer, Long Maofeng
A fast adaptive acquisition method for burst spread spectrum communication system	Hailong Zhang, Enguo Zhu, Xuan Liu, Ran Li, Yi Ren, Jizhe Lu
Research on Park User Identification Based on Improved K-MEANS and Multidimensional Potential Index of Distributed Energy Storage	Weiting Xu, Yunchi Qiao, Yang Liu, Wei Wang, Zhichao Ren, Huaqiang Li, Ziyao Wang
Whole Process Simulation of VFTO Coupling to Power Transformer Core Earthing Conductor	Ke Xuezhi, Zuo Yan, Li Zhaohui, Yang Peng, Ma Xuejun, Li Bailin
Capacity Degradation Prediction of Lithium-ion Battery Cycling with Various Protocols	Wenkai Ye, Yalun Li, Hewu Wang, Minggao Ouyang
Research on the Cross-disciplinary Data Fusion Framework Based on Unified Computational Operational Platform	Xiaohui Wang, Bihuang Zheng, Yanwei Wang, Chao Jing
Blockchain-Based Data Storage System for Electricity Market	Weihua Zhao, Ran Chen, Jiabei Zhang, Rongxin Wang, Xian Zou
Comprehensive performance evaluation system of shunt capacitors based on entropy weight method and grey correlation degree	Chen Li, Tang Lin, Zuo Zhongqiu, Lei Xiaoyan, Li Qianqian, Chen Zhonghua
Structural Design of UHF Microstrip Antenna Incorporating the Serpentine Arrangement with Hilbert fractal Structure	Jian Fang, Xiang Lin, Yan Tian, Min Zhang, Jian Sun, Kairan Li
Early fault detection method for distribution lines based on multi-scale wavelet transform and deep neural network	Jian Fang, Xiang Lin, Yan Tian, Min Zhang, Jian Sun, Kairan Li

Analysis and Application of User Power Consumption Characteristics Profile Based on Big Data Technology	Fei Xu, Daoxing Li, Zhixiang Ji, Yanwei Wang
Aging-Related Reliability Evaluation for Low-Voltage Cable Based on Multi-Source Data Fusion Method	Hao Bai, Xiao Liu, Wei Li, Chao Shen, Yipeng Liu, Ruolin Zhang
Consortium Blockchain-based Community Electricity Trading with Arbitration	Yuzhe Jiang, Cheng Huang, Hongzhi Lu, Yong Zhao, Yaowen Yu
Substation Alarm Event Identification Based on BERT and Cosine Similarity	Zhenyu Zhou, Huan Long
Personalized Edge-Cloud Collaborative High-Fall-risk Monitoring Strategy for Grid Workers at Heights	Aijun Ma, Xingchen Weng, Yang Wu, Bin Wang, Fengliang Zhang, Yongwei Chen, Wei Xu, Wei Xiang
Smart Belt for Real-time Posture Monitoring of Grid Workers at Heights	Aijun Ma, Xingchen Weng, Yongwei Chen, Wei Xu, Chengcheng Liang, Jianqiang Dong, Zongning Hu
A Method of Anomaly Data Identification and Correction for Industrial and Commercial Consumers' Electricity Loads	Yi Ding, Jing Yang, Liyong Wei, En Wang, Zhidong Deng, Kunpeng Liu, Peng Jin, Xin Luo
Research on Situation Awareness Strategy of Source-Network-Load-Storage&nbsp;System based on Metaverse and Blockchain	Song Zhang, Guanghuai Li, Xin Ye, Jiaqi Zhao, Jichao Zhang, Yingli Jiang
Supplier Performance Reliability Analysis of UHV Power Grid Engineering based on Big Data Technology	Yanan Wei, Yuanjie Rong, Zhiwei Song
A Novel Short-Term Intelligent Forecasting Method for Bus Loads Driven by Hybrid TCN-BiLSTM	Qiuli Wu, Wei Zhang, Changfu Wei, Yangsheng Liu, Peng Liu
Research on The Monitoring Method of Glaze Icing Based on Capacitance Effect	She Qianhao, Xingliang Jiang, Chen Yongtao, Wang Qian, Long Yingkai, Li Yongfu, Jiang Xiping, Qin Wei
Experimental Study of Electro-Impulse De-Icing for Wind Turbine Blades under Glaze Icing Condition	Lin Liu, Xingliang Jiang, Yu Chen, Qiulin Chen, Haitao Wu, Jia Liu
Multi-level modeling and magnetic-thermal coupling analysis of transformers for digital twins	Yuanqi Lai, Xiangcheng Li, Jie Wu, Fan Yang, Xingwang Wu

Cavity-Enhanced Raman Spectroscopy Detection Technology Based on Optical Feedback for Dissolved Fault Gases in Transformer Oil	Yaotian Bai, Hongcheng Sun, Weiping Kong, Yingkai Long, Fu Wan
Cavity-enhanced Raman Spectroscopy for Simultaneous Detection of Characteristic Dissolved Gases in Oil	Hongcheng Sun, Yaotian Bai, Weiping Kong, Yingkai Long, Fu Wan
Detection of transformer fault characteristic gas based on cantilever-enhanced Photoacoustic spectroscopy	Ying Zhang, Yingkai Long, Zhiyi Luo, Tongqin Ran, Fu Wan
In-situ Raman Spectroscopy Detection of Dissolved Gases in Transformer Oil Based on Oil-gas Separation Membrane	Tongqin Ran, Hongcheng Sun, Zhiyi Luo, Yingkai Long, Fu Wan
Dispersion Staining Method for Extracting Image Characteristics of Suspended Fibers in Transformer Oil	Zhibo Zheng, Bowen Lu, Wenyan Gan, Zhengyong Huang, Qian Wang, Feipeng Wang, Jian Li
Rank Load Forecasting Performances of Multiple Datasets	Shu Liu, Dalin Qin, Yi Wang

## 9. Paper Session Guidelines

### 9.1 Oral Sessions

An approximate of 8 minutes will be allocated to the presentation of each paper in iSPEC2023. Session Chairpersons will be in charge of keeping authors to the time allowed. Authors are required to prepare their PowerPoint slides in advance, using the mandatory template (available on conference website). Please submit your presentation in ppt or pptx format to the volunteers at your oral session room at least 30 minutes prior to the session.

### 9.2 Poster Sessions

Poster Sessions are arranged at the foyer of the meeting rooms on the 3rd floor. Authors are required to be present during their poster session time to interact with other participants.

The organization will print those posters that are sent to the conference secretariat in due time. Conference volunteers will hang and take down those posters according to the poster schedule.

Authors who failed to submit their posters in due time are asked to bring their A0 poster to the conference venue, using the mandatory template.

## 10. Meals and Coffee Breaks

	Time	Content	Location
November 28th	18:30-21:00	Welcome Reception	Haiyang Ballroom ( 1 <sup>st</sup> Floor )
November 29th	15:20-15:40		Coffee Break
	12:30-14:00	Lunch	Fresh Cafe All Day Dining ( 2 <sup>nd</sup> Floor )
	18:30-21:00	Dinner	Haiyang Ballroom ( 1 <sup>st</sup> Floor )
November 30th	10:30-10:50		Coffee Break
	15:20-15:40		
	12:30-14:00	Lunch	Gele Ballroom ( 3 <sup>rd</sup> Floor )
	18:30-21:00	Dinner	Gele Ballroom ( 3 <sup>rd</sup> Floor )

## 11. Useful Information

### 11.1 Registration

- (1) Preregistered and paid participants can sign in and pick up the conference package at the registration desk.
- (2) On-site registration is available at the registration desk. Participants can complete registration form and payment to get access to the conference.

### 11.2 Simultaneous Interpretation Headset

Simultaneous interpretation will be provided for the opening ceremony and keynote speeches on the morning of 29 November. Simultaneous interpretation headsets will be available at the entrance to the conference venue on request and will be returned after use.

### 11.3 Name Badge

All attendees of iSPEC2023 are kindly requested to wear their name badges throughout the conference to access technical sessions and social programs.

### 11.4 Conference Secretariat

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