

The 18th international conference on

AC and DC Power Transmission

PROGRAMME

ACDC 2022

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Rong ZENG (曾嵘)

Tsinghua University, China

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Tsinghua University, China

Gang SUN (孙岗)

State Grid ShanDong Electric Power Company, China

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Tsinghua University/Energy Internet Research Institute, China

Zongxiang LU (鲁宗相)

Tsinghua University/Tsinghua Sichuan Energy Internet Research Institute, China

Yantao LOU(娄彦涛)

Xi' an XD Power Systems Co., Ltd., China

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State Grid ShanDong Electric Power Company, China

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- 9 Yanpeng HAO, South China University of Technology, China
- 10 Jinliang HE, Tsinghua University, China Tsinghua University/Energy Internet Research Institute, China
- 11 Junjia HE, Huazhong University of science and technology, China
- 12 Alex Q. HUANG, University of Texas at Austin, America
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- 18 Xueliang LI, State Grid ShanDong Electric Power Company, China
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- 33 John Zheng SHEN, Simon Fraser University, America
- 34 DingHao SUN, State Grid Shandong Electric Power Company, China
- 35 Changping SUN, Institution of science and technology, China Three Gorges Project Corporation, China
- 36 Guangfu TANG, Global energy Internet Research Institute Co., Ltd, China
- 37 Yi WU, Xi'an Jiaotong University, China
- 38 Hao WANG, State Grid Shandong Electric Power Research Institute, China
- 39 Yudong WU, Zhuzhou CRRC Times Semiconductor Co., Ltd, China
- 40 Ping YAN, Institute of Electrical Engineering, Chinese Academy of Sciences, China
- 41 Xiaorong XIE, Tsinghua University, China
- 42 Shukai XU, Electric Power Research Institute China Southern Power Grid, China
- 43 Zheng XU, Zhejiang University, China
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- 47 Rong ZENG, Tsinghua University, China
- 48 Yuehua ZHANG, Beijing Power Equipment Group Co., LTD., China
- 49 Chengyong ZHAO, North China Electric Power University, China

Session Chairs 分会场主席名单
(in alphabetical order)

1. Bin CUI, Tsinghua University
2. Liangliang HAO, Beijing Jiaotong University
3. Jun HU, Tsinghua University
4. Yongliang LIANG, Shandong University
5. Jiapeng LIU, Tsinghua University
6. Yang LIU, Shandong Electric Power Research Institute of State Grid
7. Pengfei MENG, Sichuan University
8. Zipan NIE, Institute of Electrical Engineering Chinese Academy of Sciences
9. Lu QU, Tsinghua University
10. Jian SHI, Sichuan Energy Internet Research Institute of Tsinghua University
11. Qiang SONG, Tsinghua University
12. Shunliang WANG, Sichuan University
13. Yizhen WANG, Tianjin University
14. Weijie WEN, Tianjin University
15. Jinpeng WU, Tsinghua University
16. Zhanqing YU, Tsinghua University
17. Chao YUAN, Hunan University
18. ZhiChang YUAN, Tsinghua University
19. Zhikang YUAN, Tongji University
20. Bo ZHANG, Tsinghua University
21. Xiangyu ZHANG, North China Electric Power University
22. Biao ZHAO, Tsinghua University
23. Yao ZHOU, University of Pennsylvania
24. Chijie ZHUANG, Tsinghua University
25. Zhenning ZI, Tsinghua University

Conference Chair 大会主席



Rong ZENG 曾嵘

Tsinghua University, China 清华大学

Opening remark on the opening ceremony

Prof. Rong Zeng, Vice President of Tsinghua University. In 2012, he was awarded the IET Fellow. In 2013, he won the National Outstanding Youth Science Fund. In 2016, he was awarded the distinguished professor of the Changjiang Scholar by the Ministry of Education. He has long been engaged in the fundamental and key technologies research in the field of the advanced power transmission technology, and has made some achievements in such fields as the optoelectronic integrated electric-field sensor for intensive transient EMF measurement, the lightning physics, lightning protection and grounding on power system, electromagnetic transient simulation, DC power transmission and distribution, etc.

Opening Remark 开幕致辞



Mr. Paulo Lopes 龙宝罗

IET (The Institution of Engineering and Technology) 英国工程技术学会

Opening remark on the opening ceremony

Paulo Lopes is the China Country Head at the IET and responsible to develop and execute strategies to expand IET's operations in China by building partnerships with key partners, government entities, multinational companies, and associations across the country. Paulo has more than 15 years of work experience in strategy, management, consultancy, innovation, and certification across five continents.

He has been in China since 2014 where he specialized in supporting international companies to expand their operations in China and in supporting Chinese companies to expand globally. Paulo holds a MBA from Tsinghua-MIT Sloan as well as MSc Environmental Technology, Imperial College London.

Keynote speaker 主旨演讲嘉宾



Licheng LI 李立涅

Academician of Chinese Academy of Engineering 中国工程院院士
China Southern Power Grid Co., Ltd., China 中国南方电网

Report Title: New Power System Requires Power Electronics Technology

报告主题：新型电力系统需要电力电子技术

Mr. LI Licheng, academician of the Chinese Academy of Engineering. He was born in Jianhu County, Jiang Su Province in 1941. He graduated from Dept. of Electrical Engineering, Tsinghua University in 1967 and majored in High Voltage Technology. He was elected academician of Chinese Academy of Engineering in 2007.

Li Licheng is an expert in power technology, especially in the field of power grid engineering and HVDC transmission technology. He presided over the theoretical research, key technology development and engineering construction of the world's first $\pm 800\text{kV}$ UHVDC transmission project. Li Licheng advocated VSC-HVDC transmission technology, presided over the theoretical research of VSC-HVDC and ultra high voltage multi terminal VSC-HVDC. In addition, he proposes the concept and theoretical framework of transparent electric network, integrating modern sensing technology, information technology, digital technology and intelligent technology into the power system, which makes power grid fully visible, observable and controllable.



Weijiang CHEN 陈维江

Academician of the Chinese Academy of Sciences 中国科学院院士
State Grid Corporation of China 中国国家电网

Report Title: Flexible Low-Frequency AC Transmission

报告主题：柔性低频交流输电

Weijiang Chen was born in Zibo, Shandong province, China. He is an academician of the Chinese Academy of Sciences, expertise in high voltage and insulation technology, a senior consultant for the State Grid Corporation, a member of the Standing Committee of China Association for science and technology, an executive director of the Chinese Society of Electrical Engineering (CSEE) and China Electrotechnical Society (CES).

He received a B.S. degree in electrical engineering from Hefei University of Technology, Hefei, China, in 1982, and an M.S. degree from China Electric Power Research Institute, Beijing, China, in 1985. His research interests focus on electromagnetic transient analysis methods and protection technologies for power systems. He was in charge of the fundamental research on electromagnetic and insulation characteristics of AC and DC UHV transmission systems, which supported the development of UHV transmission technology and engineering construction. His research area also includes the fundamental of the lightning attachment process to power transmission lines and lightning protection techniques of overhead distribution lines. He proposed the damage risk assessment-based lightning protection method, which is widely used in power systems and high-speed rail traction power supply systems.

He has obtained more than 140 national invention patents and published more than 270 papers which are indexed by SCI and EI. In 2008, he won the second prize in National Technological Invention (ranking first). He won the National Science and Technology Progress Award Special Award in 2012 (ranking second). He was awarded the second prize of the National Science and Technology Progress Award in 2015 (ranking first). He won the China Electric Power Outstanding Contribution Award in 2013.



Kuang SHENG 盛况
Zhejiang University 浙江大学

Report Title: The Development of Power Semiconductor Devices for Power Transmission

报告主题：输电用电力电子器件的发展

Kuang Sheng received the B.Sc. degree from Zhejiang University, Hangzhou, China, in 1995, and the Ph.D. degree from Heriot-Watt University, Edinburgh, U.K., in 1999. He has worked in Cambridge University and was a tenured associate professor in Rutgers University. He is currently a distinguished professor and the Dean of the Electrical Engineering College in Zhejiang University. His research interests include power electronic devices and integrated circuits. He has published over 300 papers in academic journals and conferences. He holds 50 patents in power semiconductor devices and ICs. He is a Changjiang Scholar, a recipient of the Distinguished Young Scholar of the NSFC and the Second Prize of the National Technology Innovation Award. He was the General Chair of ISPSD 2019 and is an AdCom member of the ISPSD.



Jinjun LIU 刘进军
Xi'an Jiaotong University 西安交通大学

Report Title: Power electronics driving transmission and distribution systems to a new era

报告主题：电力电子技术正在推动输配电系统迈入新时代

Jinjun Liu received his B.S. and Ph.D. degrees in electrical engineering from Xi'an Jiaotong University (XJTU), Xi'an, China, in 1992 and 1997, respectively.

He then joined the XJTU Electrical Engineering School as a faculty. From late 1999 to early 2002, he was with the Center for Power Electronics Systems, Virginia Polytechnic Institute, and State University, Blacksburg, VA, USA, as a Visiting Scholar. In late 2002, he was promoted to a Full Professor and then the Head of the Power Electronics and Renewable Energy Center at XJTU. From 2005 to early 2010, he served as an Associate Dean of Electrical Engineering School at XJTU, and from 2009 to early 2015, as the Dean for Undergraduate Education of XJTU. He is currently an XJTU Distinguished Professor of Power Electronics. He co-authored 3 books (including one textbook), published over 500 technical papers in peer-reviewed journals and conference proceedings, holds 70 invention patents (China/US/EU), and delivered many times plenary keynote speeches and tutorials at IEEE conferences or China national conferences. His research interests include modeling, control, and design methods for power converters and electrified power systems, power quality control and utility applications of power electronics, and micro-grids for sustainable energy and distributed generation. Since 2013, he has been the Vice Chair of the Chinese National Steering Committee for College Electric Power Engineering Programs.



Jinliang HE 何金良

Tsinghua University, China 清华大学

Report Title: Micro Current and Voltage Sensors for Intelligent Power Transmission Systems

报告主题: 智能输电系统用微型电流电压传感器

Professor HE received a Ph.D. in high voltage engineering from Tsinghua University in Beijing in 1994 and was a visiting professor at Stanford University from 2014 to 2015. Currently, he is a Cheung-Kong Scholar Distinguished Professor of the Ministry of Education of China in the Department of Electrical Engineering, Tsinghua University and leads the university's High Voltage and Insulation Technology Research Institute. His research interests include advanced power transmission technology, smart insulation materials and equipment, and intelligent sensing technology. He is a member of CIGRE C4 committee and was a member of the IEEE PES Fellow Evaluation Committee. He is a Fellow of IEEE, IET, CSEE, and HPEM.



Yantao LOU 娄彦涛

Xi'an XD Power Systems Co., LTD 西安西电电力系统有限公司

Report Title: Application of IGCT in future high-power electronic equipments

报告主题: IGCT 在大功率电力电子设备中的应用

Mr. LOU Yantao, the senior engineer, is currently the Secretary of the Party Committee and General Manager of Xi 'an XD Electric Power System Co., LTD. He is also the director of the National Energy Power Electronics Technology and Equipment R&D Center, and the director of Shaanxi Distributed Microgrid Engineering Technology Research Center.

His focus is mainly on the research and design of the HVDC transmission system, once participated in the research and design of several national key DC engineering systems and led the technical team to complete the autonomy and localization of HVDC transmission converter valves. He has participated in various national scientific research projects such as the National Science and Technology Support Program, the National 863 Program, and the National Key R&D Program. He has successively won the Science and Technology Progress Award of Shaanxi Province and the Science and Technology Award of China Machinery Industry. He has been authorized to accept more than 20 patents and published over 10 technical papers.



Zhongdong WANG 王忠东

University of Exeter, UK 英国埃克塞特大学

Report Title: Thermal Performance of Power Network Infrastructure for a Net-Zero Future

报告主题：助力实现零碳电网基础设施热性能的研究

Prof. Wang is a Fellow of the IET and a Fellow of IEEE. She received her BEng degree and MSc degree from the Tsinghua University of Beijing China in 1991 and 1993, respectively, and her Ph.D. degree in Electrical Engineering from UMIST in 1999. She then joined The University of Manchester (then UMIST) in 2000 as a Lecturer and spent the next 20 years there progressing to Senior Lecturer in 2007, Professor in 2009, and the Associate Dean of Internationalization for the Faculty of Science and Engineering in 2016. In 2020 she became the Pro-Vice-Chancellor and Executive Dean for the College of Engineering, Mathematics, and Physical Sciences at the University of Exeter. Her research interests lie in Smart Grids and Low Carbon Electrical Energy Networks, in particular condition monitoring techniques, thermal, electrical transient, and magnetic modeling techniques for power system networks, dielectric insulation aging mechanisms, alternative environmentally friendly liquid insulating materials, and transformer asset management.



Benjamin Marshall

HVDC Technology Manager

Speech Title: Testing and Demonstrating Performance within Converter Dominated networks- De-risking Across the project lifecycle

报告主题：变换器主导的电网测试及演示性能：降低项目全生命周期风险

As the HVDC Technical Manager, Ben oversees the team of Simulation Engineers undertaking detailed HVDC simulation studies in real-time using vendor-supplied replica hardware, to understand multi-infeed, multi-terminal and multi-vendor HVDC operation and interactions, for real schemes in GB; interpreting the results to gain insights to improve the design and operation of HVDC schemes.

Ben previously has had a 23-year-long and varied career within National Grid with a broad range of experience, particularly with respect to the analysis of the operation and design of the AC and DC transmission systems. He has experience in both offline and real-time EMT simulation and in modeling of converters across the battery, solar wind, and HVDC

systems, He has developed deep technical skills relating to the dynamic stability of power systems and the performance specification of HVDC converters. Within the ESO, Ben advised on the specification, validation, and modeling of new HVDC connections supported the compliance connection planning and requirements, and provided technical leadership on AC and DC control systems, System Operability, Smart Grids, and power system simulation, leading complex power system studies.



Dr Xiaoyao ZHOU

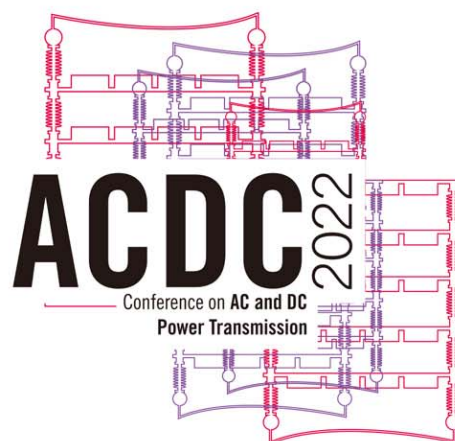
Operability Policy Manager, National Grid Electricity System Operator

Speech Title: Operating Grid in a High IBR Network

报告主题：高 IBR 网络下的电网运行

Dr Xiaoyao Zhou is a chartered engineer with two decades of transmission system operation, planning, and investment experience. Xiaoyao's role is to set out an operability policy for Great Britain's electricity network to enable the net zero operation, specify the technical requirements for new technologies, and define future network needs so that market and network owners can invest in the right solutions at the right time.

IET 第十八届交直流输电 国际会议 (ACDC 2022)



02 July 2022 2022 年 7 月 2 日	
08:00--09:00	Delegate and Speaker Testing 参会人员及演讲嘉宾系统测试
Plenary Session (ALL DELEGATES) 大会邀请报告 (全体参会者)	
Session Host: Professor Jinliang HE, Tsinghua University, China 主持人: 清华大学何金良教授	
09:00 -- 09:10	Chair's welcome and introduction of guests Professor Rong ZENG, Tsinghua University, China 大会主席曾嵘教授致欢迎词
09:10 – 09:20	Welcome speech by the representative from the IET Mr. Paulo Lopes, IET China Country Head 英国工程技术学会中国区总经理龙宝罗先生致辞
09:20 – 09:25	Welcome speech by the representative from State Grid Shandong Electric Power Company Mr. Gang SUN, Chief Engineer of State Grid Shangdong Electric Power Company 国网山东省电力公司总工程师孙岗先生致辞
09:25 – 09:30	Welcome speech by the representative from Xi'an XD Power Systems Co., LTD Mr. Yantao LOU, General Manager, Xi'an XD Power Systems Co., LTD 西安西电电力系统有限公司总经理娄彦涛先生致辞
ACDC 2022 Best Paper Award ACDC 2022 最佳会议论文颁奖	
Group photo 全体合影	
Session Host: Zhanqing YU 主持人: 清华大学余占清副教授	
09:40 – 10:10	Plenary talk by Licheng LI, Academician of Chinese Academy of Engineering, China Southern Power Grid Talk title: New Power System Requires Power Electronics Technology 李立涅 院士 中国南方电网, 进行主旨报告 报告题目: 新型电力系统需要电力电子技术

10:10 – 10:40	Plenary talk by Weijiang CHEN, Academician of Chinese Academy of Sciences, State Grid Talk title: Flexible Low-Frequency AC Transmission 陈维江 院士 国家电网, 进行主旨报告 报告题目: 柔性低频交流输电
10:40 – 11:10	Plenary talk by Kuang SHENG, Zhejiang University Talk title: The Development of Power Semiconductor Devices for Power Transmission 盛况 浙江大学, 教授, 进行主旨报告 报告题目: 输电用电力电子器件的发展
11:10 – 11:40	Plenary talk by Jinjun LIU, Xi'an Jiaotong University Talk title: Power electronics driving transmission and distribution systems to a new era 刘进军 西安交通大学, 教授, 进行主旨报告 报告题目: 电力电子技术正在推动输配电系统迈入新时代
11:40 – 14:00	Poster Display and Lunch Break 海报展示及午餐
14:00 – 14:30	Plenary talk by Jinliang HE, Tsinghua University Talk title: Micro Current and Voltage Sensors for Intelligent Power Transmission Systems 何金良 清华大学, 教授, 进行主旨报告 报告题目: 智能输电系统用微型电流电压传感器
14:30 – 15:00	Plenary talk by Mr. Yantao LOU, Xi'an XD Power Systems Co., LTD Title of talk: Application of IGCT in future high-power electronic equipments 娄彦涛 西安西电电力系统有限公司, 正高级工程师, 进行主旨报告 报告题目: IGCT 在大功率电力电子设备中的应用
15:00 – 15:30	Plenary talk by Zhongdong WANG, University of Exeter, UK Title of talk: Thermal Performance of Power Network Infrastructure for a Net-Zero Future 王忠东 英国埃克塞特大学, 教授, 进行主旨报告 报告题目: 助力实现零碳电网基础设施热性能的研究
15:30 – 16:00	Plenary talk by Benjamin Marshall, HVDC Technology Manager at The National HVDC Centre, UK Title of talk: Testing and Demonstrating Performance within Converter Dominated Networks: De-risking across the Project Lifecycle 报告题目: 变换器主导的电网测试及演示性能: 降低项目全生命周期风险
16:00 – 16:30	Plenary talk by Dr Xiaoyao Zhou, Operability Policy Manager, National Grid Electricity System Operator Title of talk: Operating Grid in a High IBR Network 报告题目: 高 IBR 网络下的电网运行
End of Conference Day 1 大会第一天结束	

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03 July 2022 2022年7月3日						
08:00-- 09:00	Author Testing 报告作者系统测试					
Location 地点 Time 时间	Room 1 汇报厅 1	Room 2 汇报厅 2	Room 3 汇报厅 3	Room 4 汇报厅 4	Room 5 汇报厅 5	Room 6 汇报厅 6
09:00-12:00	Invited Session1_New DC Technology 【Jinpeng WU 吴锦鹏】	Session A1.1_AC transmission and distribution 【Chijie ZHUANG 庄池 杰】	Session B1.1_DC transmission and distribution 【Zhichang YUAN 袁志昌】	Session C1.1_Cable and switchgear 【Yao ZHOU 周 垚】	Session D1.3_Power conversion technology 【Biao ZHAO 赵 彪】 【Bin CUI 崔 彬】	Session F1.1_Power electronic devices 【Jiapeng LIU 刘佳鹏】
		Session A1.2_AC transmission and distribution 【Yongliang LIANG 梁永亮】 【Yang LIU 刘 洋】	Session B1.2_DC transmission and distribution 【Zhanqing YU 余占清】 【Zipan NIE 聂 子攀】	Session C1.2_Cable and switchgear 【Chao YUAN 袁 超】	Session E1.1_New energy and energy storage 【Jian SHI 施 健】	Session G1.3_New technology 【Zhikang YUAN 袁之 康】
12:00--13:30	Poster Session and Lunch Break 海报展示及午餐					
13:30--17:00	Invited Session2_New DC Technology 【Biao ZHAO 赵彪】	SessionA1.3_AC transmission and distribution 【Jun HU 胡 军】	Session B1.3_DC transmission and distribution 【Lu QU 屈 鲁】	Session D1.1_Power conversion technology 【Qiang SONG 宋 强】	Session E1.2_New energy and energy storage 【Shunliang WANG 王顺 亮】	
		Session G1.1_New technology 【Bo ZHANG 张 波】	Session G1.2_New technology 【Pengfei MENG 孟鹏 飞】	Session D1.2_Power conversion technology 【Liangliang HAO 郝亮 亮】 【Zhenning ZI 訾振宁】	Session E1.3_New energy and energy storage 【Xiangyu ZHANG 张翔 宇】	
End of Conference Day 2 ACDC 2022 大会闭幕						

【Room 1】

Time: 09:00-12:00

Invited Session1_#Sensors, Devices and Equipment for New-type Power System

新型电力系统建设基础传感、器件及装备

Session Chair: 【Jinpeng WU 清华大学吴锦鹏副教授】

1. Jun HU, Tsinghua University Topic: Monitoring and identifying the open phase fault of auxiliary power supply lines in nuclear power plant based on magnetoresistance current sensors
胡军 清华大学副教授
题目：基于磁阻电流传感器的核电站辅助供电线路断线故障监测与辨识
2. Feng WANG, Xi'an Jiaotong University
王丰 西安交通大学副教授
题目：直流配网电能路由器研究
3. Shunliang WANG, Sichuan University Topic: Research on control and modulation strategy of cascaded H-bridge converters for high-speed trains
王顺亮 四川大学副教授
题目：高速列车级联 H 桥变流器控制与调制策略研究
4. Xinran ZHANG, Beihang University Topic: Ambient signals based power system composite demand side modeling
张欣然 北京航空航天大学副教授
题目：基于类噪声信号的电力系统综合需求侧建模
5. Xiangyu ZHANG, North China Electric Power University Topic: High-capacity power electronic switch technology for DC interruption
张翔宇 华北电力大学讲师
题目：面向直流开断的大容量电力电子开关技术
6. Rui LI, Shanghai Jiaotong University Topic: Design and Evaluation of High Capacity Lithium-ion Battery Energy Storage Systems
李睿 上海交通大学教授
题目：大容量锂离子电池储能系统的设计和评价

Time: 13:30-17:00

Invited Session2_#DC System Supporting for New-type Power System Construction

支撑新型电力系统建设的直流系统

Session Chair: 【Biao ZHAO 清华大学赵彪副教授】

1. Likun YIN, Institution of Science and Technology of China Three Gorges Project Corporation Topic: Development and demonstration application of key equipment for "source-network-load-storage" power routers
尹立坤 三峡集团科学技术研究院综合能源中心主任
题目：“源网荷储”功率路由器关键装备研制与示范应用
2. Lisheng LI, Shandong Electric Power Research Institute of State Grid
李立生 国网山东省电力公司电力科学研究院配电技术中心主任
题目：高比例分布式光伏低压配电网柔性治理技术研究
3. Kailiang WANG, Dongguan Power Supply Bureau of China Southern Power Grid Topic: Key technologies and demonstration applications of AC/DC hybrid distribution network for high-quality power supply in power-dominated area
王凯亮#广东电网公司东莞供电局技术专家#
题目：面向电能主导型园区优质供电的交直流混合配电网关键技术与示范应用
4. Peng QIU, Zhejiang Electric Power Research Institute of State Grid Topic: Application of flexible low frequency transmission technology in Zhejiang Province
裘鹏 国网浙江省电力有限公司电力科学研究院高级工程师
题目：柔性低频输电技术在浙江的应用
5. Dong LIU, State Grid Smart Grid Research Institute Co., LTD
刘栋 国网智能电网研究院新型电网仿真中心 主任
题目：大型柔性直流电网的故障演化实时仿真技术
6. Chongru LIU, North China Electric Power University Topic: Precise control of high-frequency oscillations caused by MMC
刘崇茹 华北电力大学教授
题目：MMC 高频振荡的精确控制
7. Bin HAO, Shenzhen Building Research Institute
郝斌 深圳市建筑科学研究院副总工、教授级高工
题目：民用建筑直流配电设计与实践

【Room 2】

Time: 09:00-10:30

Session A1.1_AC transmission and distribution

Session Chair: 【Chijie ZHUANG 庄池杰】

16	Online Localization Method for Local Defects in Power Cables Based on Electromagnetic Coupling Injection
17	Influence of instantaneous heavy rain on outdoor insulation of AC and DC stations and the preventive solution
26	Fault-tolerant method for fault location of active distribution network based on matrix algorithm
27	The fault of distribution network based on genetic algorithm optimized BP neural network
66	Modal Resonance Index-enabled Resonance Area Based Dynamic Interaction Analysis and Parameter Optimization for PMSGs in Multi-machine Power System
131	Research on low frequency side short circuit fault of low frequency AC transmission (LFAC) system based on modular multilevel matrix converter(M3C)
147	Time Sequence Probabilistic Influence of Traction Load with Small Sample of Newly High-speed Railway on Power Grid

Time: 10:30-12:00

Session A1.2_AC transmission and distribution

Session Chair: 【Yongliang LIANG 梁永亮】 , 【Yang LIU 刘洋】

253	A simplified plasma model to calculate leader discharge channel temperature
258	Study on Applicability of Metal Oxide Arrester Simulation Model Considering Residual Voltage and Energy Characteristics
261	Voltage and Current Control of Microgrid under Unbalanced Load
277	DISTRIBUTED AUTONOMOUS CONTROL OF MICROGRID BASED ON FINITE-TIME ALGORITHM
283	DETECTION ALGORITHM OF MULTI-TASK TRANSMISSION LINE HIDDEN TROUBLE BASED ON SHARED FEATURES
296	Energy Efficiency Evaluation and Economic Analysis of Agricultural Electric Power Substitute Equipment in Rural Facilities

Time: 13:30-15:15

SessionA1.3_AC transmission and distribution

Session Chair: 【Jun HU 胡军】

307	Research on corrosion effect of buried steel under leakage current of AC transmission line
311	ANALYSIS OF HARMONIC CURRENT CHARACTERISTICS INJECTED INTO UNILITY GRID BY UREAN RAIL TRANSIT
318	Analysis of Infrared General Measurement Results of Composite Insulators in Operation on 220 kV Transmission Line
319	Study on Fracture Cause of Porcelain Insulator of 220kv Transmission Line
342	Analysis and Simulation of the Whole Failure Process of 35kV Metal Oxide Varistor at Outlet of Main Transformer
349	Application of Straddling Frame Technology in Overhead Transmission Line Construction without Power Outage
361	LIGHTNING IMPULSE CHARACTERISTICS OF POSITIVE POLARITY OF 110-500kV COMPOSITE INSULATOR AND COMPARATIVE ANALYSIS OF U50%

Time: 15:15-17:00

Session G1.1_New technology

Session Chair: 【Bo ZHANG 张波】

18	Research on Snow Removal of Energized UHV DC Wall Bushing
81	An Efficient Switching Ripple Communication Method Based on Non-Orthogonal FSK Modulation
151	Performance analysis of silicone rubber cleaning and repairing agent and its application in maintenance of composite external insulation equipment
163	A PDE constrained optimization based approach to evaluate the effect of the floating conductor transmission lines
208	Optimal scheduling of electric thermal integrated energy system considering dynamic characteristics
282	RESEARCH AND APPLICATION OF ARRAY SILICONE RUBBER ANTI-BIRD BAFFLE
297	Climbing behavior design and obstacle surmounting algorithm of caterpillar-imitation robot for transmission rope delivery

【Room 3】

Time: 09:00-10:30

Session B1.1_DC transmission and distribution

Session Chair: 【Zhichang YUAN 袁志昌】

21	Voltage Stability Control of DC Microgrid for Off-road Hybrid Electric Vehicles
22	Fault Interaction Analysis Approach For Hybrid AC/DC Power Grids
23	Research on Volt-ampere Temperature Characteristics of Metal Oxide Surge Arrester on DC Line
24	Single-Pole Break Fault Characteristic Analysis for Ring Flexible DC Distribution Grids
25	RESEARCH ON SUBSYNCHRONOUS OSCILLATION RISK OF NEW ENERGY POWER GENERATION IN AC/DC HYBRID SYSTEM
34	Offshore-DC-Breaker less MTDC for Wind Power Transmission with Diode Rectifier
85	Impedance-Based Sub-synchronous Torsional Stability Analysis in a HVDC System Connected to Multiple thermal power plants

Time: 10:30-12:00

Session B1.2_DC transmission and distribution

Session Chair: 【Zhanqing YU 余占清】 【Zipan NIE 聂子攀】

	Session Chair Report: Topology Modeling and Design of a Novel Magnetic Coupling Fault Current Limiter for VSC DC Grids
129	Parameter Adaptive Control of Virtual DC Machine Based DC Microgrid
160	Research on optimal grouping of passive filters based on back-to-back DC transmission system
181	A Novel Frequency Based Voltage Droop Control Method for VSC-DC Segmentation Systems
211	Energy Topology and Grid-Forming Control Scheme for Inertia Emulation in HVDC-VSC
221	Study on transient over-voltage mechanism at sending end of wind power via DC system dominated by high-proportion power electronic equipment
260	STUDY ON THE OPTIMAL CAPACITY ALLOCATION OF CONVERTER STATIONS FOR FLEXIBLE DC INTERCONNECTION SYSTEMS IN MULTI-DISTRIBUTION AREAS
265	REVIEW OF TYPICAL TECHNICAL SCHEMES FOR MEDIUM AND LOW VOLTAGE DC DISTRIBUTION

Time: 13:30-15:15

Session B1.3_DC transmission and distribution

Session Chair: 【Lu QU 屈鲁】

286	Line to line DC fault protection strategy of AC/DC hybrid transmission system containing MMC-HVDC
292	Research on Impedance Scan Acceleration Method of VSC-HVDC Grid-connected System
303	Fault Location Method for MMC-HVDC Transmission Line Based on Adaptive Optimal Feature Reconstruction
317	Key Technology of Hybrid Cascaded UHVDC Transmission System
341	An optimal configuration method of DC reactor in LVDC microgrid
359	Seismic Vulnerability Analysis of The 500kV Suspended DC Filter Circuit System
373	Pre-Acceleration Protection Strategy for Medium Voltage DC Distribution Network Based on Superconducting Fault Current Limiter

Time: 15:15-17:00

Session G1.2_New technology

Session Chair: 【Pengfei MENG 孟鹏飞】

304	Influence of Magnetic Materials on the Misalignment Tolerance of IPT Systems with High-Frequency Supply
308	A Capacity Configuration Planning Method for Regional Integrated Energy System Based on Bi-level Optimization
326	A novel partial discharge pattern recognition for GIS with unbalanced sample based on conditional variational autoencoder
328	Analysis of system stability as affected by under-excitation limiter under a brushless high initial response excitation system
339	Dynamic modeling and simulation of the alkaline electrolytic hydrogen production system
355	RESEARCH ON HYDROGEN-OXYGEN FUEL CELL MODEL

【Room 4】

Time: 09:00-10:30

Session C1.1_Cable and switchgear

Session Chair: 【Yao ZHOU 周 焱】

	Session Chair Report: Polypropylene insulation materials for recyclable HVDC cables
69	Research on ablation characteristics of XLPE cable buffer layer based on electrothermal coupling method
73	Experimental study on the effect of trace elements in copper-chromium contacts on the current cut-off level of vacuum switches
86	Simulation and experimental comparison of VFTO transient interference based on logic judgment arc model
108	The Study on the Aging Characteristics of XLPE under AC and DC Conditions
109	Effect of Nozzle Ablation Amount on the Generation Amount of Decomposition Products for SF6 Circuit Breaker
162	Research on surficial electric field of HVDC transmission lines based on the inversion method
172	Research on rapid simulation of temperature field of GIS equipment digital twin

Time: 10:30-12:00

Session C1.2_Cable and switchgear

Session Chair: 【Chao YUAN 袁 超】

	Session Chair Report: Superior high-temperature electrical properties of polymeric material by grafting modification
203	Dynamic Characteristics of Partial Discharge from Typical Defects of High Voltage Cables
204	FAST VERIFICATION OF REMOTE BACKUP CAPABILITY OF TRANSMISSION LINE PHASE-TO-PHASE DISTANCE PROTECTION BASED ON IMPEDANCE MATRIX
234	NATURAL POLLUTION DEPOSITING CHARACTERISTICS OF SUSPENSION INSULATORS FOR TRANSMISSION LINES UNDER DIFFERENT OPERATING ENVIRONMENTS
243	Cantilever PAS Detection for C2H6 decomposition
313	Development of Four-Terminals DC Circuit Breaker based on Commutating Path Multiplexing
384	Study on Contact Degradation of Arc Contact of SF6 Circuit Breaker for Reactive Switching
387	A Multi-Port Hybrid DC Circuit Breaker based on controllable active oscillation circuit

Time: 13:30-15:15

Session D1.1_Power conversion technology

Session Chair: 【Qiang SONG 宋强】

6	Abnormal analysis of DC voltage measurement in HVDC inverter station
48	Assessment of Energy Storage and Dynamic Response of Modular Multilevel Converters for Frequency Support Control Actions
65	Control of Series-Connected Diode Rectifier and MMC for Three-Wire-Bipolar-Structure Based HVDC
124	Capacitor Voltage Ripple Suppression Strategy of MMC Submodule based on High Harmonic Injection
125	Energy Tapping from Modular Multilevel Converters for Improvement of Frequency Events

Time: 15:15-17:00

Session D1.2_Power conversion technology

Session Chair: 【Liangliang HAO 郝亮亮】 【Zhenning ZI 訾振宁】

135	DYNAMIC FAULT RECONFIGURATION OF MULTI-PORT ACTIVE BRIDGE CONVERTER FOR RELIABLE SHIPBOARD BIPOLAR DC SYSTEM
167	Behavior level simulation of DC-DC power module and application in satellite power supply and distribution system
176	A novel topology to improve commutation failure immunity of HVDC based semi-controlled LC oscillator sub-module
196	ENERGY CONTROL TECHNOLOGY FOR MMC DURING FAULT RIDE THROUGH
230	The Active and Reactive Power Characteristic Analysis and Decoupling Control of Current Source PWM Rectifier
251	ANALYSIS, DESIGN AND EXPERIMENT OF MMC BASED ON 6500V IGCT-PLUS DEVICE
254	A New IGCT-based Converter-breaker Integrated Line-Commutated Converter and its Clamping Operation Strategy
262	Current Predictive Control of Quasi-Z Source Three-Phase Four-Leg Direct Matrix Converter
270	Optimized Isolation and Restarting Strategy for UHVDC Converter Faults

【Room 5】

Time: 09:00-10:30

Session D1.3_Power conversion technology

Session Chair: 【Biao ZHAO 赵彪】 【Bin CUI 崔彬】

310	DESIGN, ANALYSIS AND OPTIMIZATION FOR TRANSFORMER WINDINGS IN MEGAWATT MEDIUM FREQUENCY DC TRANSFORMER
320	Power Loss Comparison of IGBT Based H7-CSI and H6-CSI
332	Continuous Regulation Strategy of DC Voltage for Full-Bridge Modular Multilevel Converter
358	Research on Topology and Control of Capacitor Multiplexing Modular Multilevel Converter
370	Research on Passivity-Based Control with Active Damping Control of Three-Phase Converter in Weak Grid Condition
372	A Multiplexing Alternate Arm Multilevel Converter with High Submodule Utilization
397	Research on Fault-Tolerant Control Strategies of Single-Phase Cascaded H-bridge Rectifier

Time: 10:30-12:00

Session E1.1_New energy and energy storage

Session Chair: 【Jian SHI 施健】

10	Dual-Mode Frequency Control of PV Systems Based on Large Disturbance Identification
12	Research on operation and control of low-voltage photovoltaic-energy storage DC building system
20	Design, Development and Test of a Novel DC Chopper for Offshore Wind Power HVDC System
90	Optimal Configuration and Operation Strategy of Hybrid Energy Storage System for Assisting Renewable Energy Grid Integration
128	Small Signal Stability Analysis of LADRC based DFIG Driven Wind Turbines during Weak AC Grid
165	Review of electric vehicles charging and swapping facilities planning

Time: 13:30-15:15

Session E1.2_New energy and energy storage

Session Chair: 【Shunliang WANG 王顺亮】

180	Low frequency oscillation suppression of combined hydropower and wind power generation system
193	A Novel Frequency Support Strategy for VSC-HVDC system with Large Wind Power Integration
216	System Topologies, Key Operation and Control Technologies for Offshore Wind Power Transmission Based on HVDC
232	DESIGN OF A REAL-TIME SIMULATION PLATFORM TO SUPPORT LARGE-SCALED RENEWABLE ENERGY ACCESS TO POWER GRID
250	Research on Optimal Planning and Configuration Strategy of Battery Energy Storage Power Station for Disaster Prevention of Urban Secure Power Grid considering economic and reliability analysis
257	A Simple Boost Converter For Renewable Energy System
295	Black-Start Strategy of the HVDC System based on Series-Connected Hybrid Converter for Offshore Wind Farms

Time: 15:15-17:00

Session E1.3_New energy and energy storage

Session Chair: 【Xiangyu ZHANG 张翔宇】

298	ORDERLY CHARGING STRATEGY OF ELECTRIC VEHICLES IN RESPONSE TO CHARGING PRICE IN RESIDENTIAL SUBDIVISIONS
299	ORDERLY CHARGING STRATEGY OF CHARGING STATIONS BASED ON DYNAMIC TIME-SHARING CHARGING PRICE RESPONSE
302	LOAD-SOURCE OPTIMIZATION MODEL FOR THE PARTICIPATION OF MULTIPLE TYPES OF AGGREGATED FLEXIBLE LOADS IN WIND POWER CONSUMPTION
356	Refined Modeling and Real-Time Simulation of Grid-connected DFIG
374	Droop Control Strategy with Amplitude Limiting Function for Microgrid Energy Storage System
389	Research on integrated development and complementary operation model and application of water and wind and photovoltaic power generation
392	ANALYSIS OF THE MULTI-MODE OSCILLATIONS OF OFFSHORE WIND FARMS

【Room 6】

Time: 09:00-10:30

Session F1.1_Power electronic devices

Session Chair: 【Jiapeng LIU 刘佳鹏】

19	New Low loss 4.5kV-1800A IGBT4 module and its system benefits in PTD applications
75	Research on the reliability theory and lifetime prediction model of IGCT gate driver
157	Comparison of Power Semiconductor Solutions for the next generation offshore VSC-HVDC System
364	Reverse Blocking IGCT Optimized for Medium-Voltage Solid State Current Breaker by Proton Irradiation
402	RESEARCH ON SERIES AND PARALLEL CHARACTERISTICS OF INTERGRATED GATE COMMUTATED THYRISTORS

Time: 10:30-12:00

Session G1.3_New technology

Session Chair: 【Zhikang YUAN 袁之康】

380	INVESTIGATION ON DIELECTRIC PROPERTIES OF EPOXY RESIN IMPREGNATED PAPER COMPOSITES FOR UHV DC WALL BUSHING
388	On-line Monitoring Scheme of High Voltage Arrester Based on TMR Sensor Current Measurement
391	Multi-tone Morlet wavelet-based high-frequency resonance parameter estimation
399	Passive filter design research in hybrid active filter design
400	Fault location method based on edge detection
401	Applications of Integrated Optical Electric Field Sensor

Poster Presentation

PO_AC Grid Technology

2	Three-dimensional reconstruction of transmission channel hidden trouble distance measurement based on multi-eye monitoring equipment
5	Method of Identification of Transient Instability Mode based on the Ratio of Generators Transmission Power Limitations to Rated Capacities
28	Stability Characteristics Analysis and Transmission Capacity Improvement of Large-Scale New Energy Base UHVAC Sending System
32	Research on the key parameters of UHV Half-wavelength AC arresters
39	Failure Analysis of Fuse for External Protection of Capacitor Bank
43	Analysis of Disturbance to Secondary Cable Caused by Single-phase Grounding Fault in Typical 10kV Distribution network
44	Research on Intelligent Station Site Selection Method Based on Multi-source and Heterogeneous Data
59	Research on the Noise Field Characteristics of Amorphous Alloy Transformer Cabinet Based on Modal Analysis
63	The Structure Design Of Electromechanical Hybrid Switch Control System
76	Influence of Equipotential Bonding on the Lightning Transient Characteristics of High-speed Railway Grounding System
80	Parameter Selection and Experimental Study of AC Line Arrester with External Series Gap at High Altitude Area
82	Research on arc extinguishing chamber electric field optimization and breaking characteristics of 252kV high-speed circuit breaker
99	Transient dynamic analysis of 550kV high-speed breaking circuit breaker transmission system
106	Influence of breaking current and arc energy on SF6 decomposition products under arcing conditions in high voltage switchgear
107	Study on the difference of fault detection effect of AC leakage current live test technology under operating voltage on different insulating parts of MOA
140	Simulation of Reactance of Built-in Reactor in Power Transformer with Field-Circuit Coupling Method
148	Flashover Characteristics of Contaminated Porcelain Post Insulators Covered With Snow
149	THE STUDY OF TRANSMISSION LINE FAULT PROBABILITY FUZZY MODEL BASED ON THE ICE DISASTER CLIMATE
166	A calculation method of electric field near corner tower of high voltage transmission line using unilateral periodic boundary
174	Evaluation Method of the State of UHV Transformer Bushing Based on Multi Parameter Information
187	Calculation and Study on the influence of insulator surface pollution on its insulation performance
191	SIMULATION RESEARCH OF ATTENUATION CHARACTERISTIC OF 220KV POWER CABLE IN DIFFERENT LIFE STAGE
201	Transient Voltage Measurement for UHV AC Substation Using Non-Contact Electro-Optic Field Sensor
207	Power Grid Partitioning Methods Based On Improved GN Splitting Algorithm
210	Single-Ended Time-Domain Transmission Line Fault Location Method Considering Line Shunt Capacitance
213	Modelling and harmonic analysis of metro traction power supply system
220	FEM CALCULATION OF THE SHEATH CURRENTS IN 110kV CABLES
223	Transformer Fault Identification Method Based on Multi-Source Data
224	Research on a new space vector modulation strategy of the improved Quasi-Z Source Four-leg Matrix Converter
225	Research on Reactive Power Optimization Method of Distributed Wind Farm Based on Harmony Search Algorithm
231	Optimization Design of Amorphous Metal Distribution Transformer Based on Improved Quantum Particle Swarm Optimization Algorithm

233	Bidirectional load modelling method for ten thousand nodes power grid EMT simulation
237	AN IMPROVED PHASOR ESTIMATION METHOD BASED ON MATRIX PENCIL AND WEIGHTED LEAST SQUARE
241	Practical Research on On-Line Monitoring and Control Function Module of Relay Protection in Smart Substation
246	A Robust Estimation Method of Exponentially Decaying DC Component
264	Approach of Breaker Topology Error Identification Based on Power Station
267	Frequency selection method of multi-terminal interconnected system of urban power grid based on low frequency AC
268	STEPWISE ESTIMATION OF HARMONIC STATE BASED ON HYBRID MEASUREMENT
272	INJECTION PRINCIPLE BASED MONITORING METHOD OF SECONDARY CIRCUIT OF ZERO-SEQUENCE CURRENT TRANSFORMER IN UNGROUNDED DISTRIBUTION NETWORK
273	Variable spark gap detection system for suspension porcelain insulator string
280	Comparative study on pollution characteristics of post insulator and suspension insulator
291	Research on overvoltage protection of adjacent distribution network by lightning striking plant grounding network dissipation
293	Wide-area Stability Control Strategy Based on A Novel Branch Transient Transfer Capability (BTTC) Index
316	ANALYSIS OF ABNORMAL DISCHARGE PHENOMENON OF PORCELAIN INSULATOR OF TRANSMISSION LINE IN OFFSHORE AREA
324	Research on Grounding Mode of AC-AC Converter System
327	A Load-Carrying Capacity Development method Based on Economy and Security Coordination and Optimization
331	Typical scenario analysis of low-voltage distribution network with distributed photovoltaic
348	High Voltage Transmission Line Live Working Risk Early Warning Method Based on Big Data Frequent Itemset Mining
352	Design of spanning frame used for bearing network of UHV transmission line
357	A Novel Architecture of Digital MLV Substation SCADA Mobility Infrastructure
378	SIMULATION OF ELECTRIC-THERMAL COUPLED FIELD OF POWER CABLE TERMINALS AND A FAILURE CASE STUDY
394	Development of an Impedance Model Identification Device for Renewable Generators
396	Problems Caused by Insulated Overhead Transmission Line in Medium-voltage System and the Prevention Methods

PO_DC Grid Technology

4	Control Strategy Overview and Analysis for UHVDC System with Parallel Converters
30	Research on the standardization of lightning arresters layout at AC side of $\pm 800\text{kV}$ UHVDC converter station
31	Lightning protection on the large crossing section of single circuit $\pm 800\text{kV}$ UHVDC and double circuit of 500kV transmission lines erected on the same tower
36	Optimized Distribution Method for Power Device Conduction Loss in Hybrid Modular Multilevel Converter
38	Analysis of Fault-induced Inrush Current of Converter Transformers in MMC-HVDC Systems
40	Analysis of the Unbalanced Current among Paralleled MMCs Caused by Commutation Failure in Hybrid Cascaded UHVDC System
64	Application of genetic algorithm in path planning of high-voltage transmission lines
67	Design and optimization of three-winding planar transformer for three-port high-frequency resonant converter
91	Influence Analysis and Countermeasure Research of Dynamic Characteristics of Measurement System on Bridge Arm Current Differential Protection in MMC-HVDC System
96	Analysis of AC line Single-phase Reclosing Strategy which Connecting with MMC-HVDC
103	Development of a new hybrid DC circuit breaker

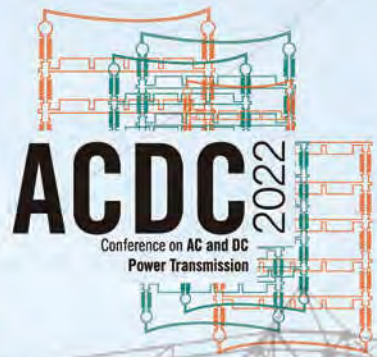
104	Application of DC switch in intelligent distribution network
114	Electromagnetic Transient Modeling and Simulation of Distributed Synchronous Condenser
126	Research on Prediction Method of Harmonic Impact of Large-scale New Energy Integration on DC Converter Station
132	Analyzing and tuning the time scale characteristics of the short circuit current of the synchronous condenser in the UHVDC inverter station of the heavy load center
137	Study on Transient Recovery Voltage Characteristics of On-load Tap Charger during Switching Process
156	Research on control strategy of reducing the action times of tap changer at rectifier and inverter
173	Influence of Excessive Contact Resistance on Electrothermal Characteristics of Conductive Connection Structure
177	Heat dissipation improvement and experimental verification of converter transformer valve side bushing based on water cooling technology
178	Redundancy Based VSC-DC Segmentation System for Urban Power Grid
179	COORDINATE CONTROL STRATEGY FOR HYBRID HVDC SYSTEM BASED ON DR-MMC WITH OFFSHORE WIND FARM INTEGRATION
182	Statistics and Analysis of Typical Insulation Faults in Factory Test of Converter Transformer in HVDC Transmission Project
183	A Capacitive Energy Transfer High Voltage DC/DC Converter with Active Filtering Arms
186	A Multi-port Interline DC Power Flow Controller
192	Research on Fault Characteristics and Protection Strategy of LCC-VSC Cascade Hybrid HVDC System on Receiving End
194	Characteristics of Overvoltage and Approaches to Encounter Overvoltage Suppression for DC submarine Cable of VSC-HVDC Transmission System Powered by Large-scale Offshore Wind
200	Study on the evaluation index strategy for the security and stability of receiving power grids integrated with multi-terminal flexible direct-current transmission systems
202	The hidden dangers analysis of the control logic on HSGS switch in Guizhong Station
205	A Method of Voltage Level Selection for Offshore Wind Power VSC-HVDC Transmission Project
215	Swelling Mechanism of Silicone Coating on Insulation of Cable Accessories
222	Internal dynamic simulation analysis of new dc load switch arc chamber
227	COMPARATIVE STUDY ON ELECTRICAL AND MECHANICAL PROPERTIES OF UHV GIS POST INSULATORS
228	Prediction of Direct Power Control Strategy Based on Dual Vector Vienna Rectifier Model
235	Research on Soft Start Strategy of Converters Applied in Photovoltaic Power Generation
236	Design of Polar Coordinate Vector Current Control Strategy for VSC Connected to Weak Power Grid
239	PACKAGING AND MODELLING METHOD OF RENEWABLE ENERGY EQUIPMENT BASED ON UNIDIED INTERFACE
240	Research on harmonic interaction based on Ningxia Power Grid
248	Study on the Fault Inversion of Large-scale EMT Digital-Analog Hybrid Simulation and Test Based on ADPSS
263	Research on AC/DC hybrid power supply system for easy access of distributed generation
276	Improvement of commutation failure predictive control considering AC voltage disturbance
288	RESEARCH ON INVESTMENT BENEFIT QUANTITATIVE EVALUATION SYSTEM OF REGIONAL AC/DC HYBRID DISTRIBUTION SYSTEM BASED ON ANALYTIC HIERARCHY PROCESS
290	SELECTION METHOD OF VOLTAGE LEVEL SEQUENCE FOR REGIONAL AC/DC HYBRID POWER DISTRIBUTION SYSTEM
301	A NOVEL FAULT RIDE THROUGH EQUIVALENT TEST METHOD FOR SUBMODULE WITH INTEGRATED ENERGY DISSIPATION EQUIPMENT
305	EFFECT OF SPACE CHARGE ACCUMULATION ON ELECTRIC FIELD DISTRIBUTION OF HIGH VOLTAGE CABLE
325	Economic Dispatch for Interconnected Power Network Considering Optimal Transmission Switching
330	Analysis of Optimal Operation Interval of Electric Energy Router with Common High-frequency Bus

333	L/HVRT scheme of offshore permanent magnet synchronous wind turbine
334	Voltage Fluctuation and Ripple Analysis Method for DC Grid Connected PV Converter
340	A Synchronous Rectification Control Method of Bidirectional Full-bridge LLC Resonant Converter with SiC MOSFETs
360	Optimal allocation of dynamic reactive power of LCC-HVDC receiving-end power grid with dynamic load
362	Steady-state Distribution Characteristics of Moisture in Oil-pressboard Insulation for Converter Transformer
365	Application and Analysis of Reactive Power Regulation of Synchronous Synchronous Condenser in Weak Power Network
367	Overvoltage and Insulation Coordination Study for UHVDC Transmission System That is Hierarchically Connected to 500 kV and 1000 kV AC Grids on Line Side
368	Non Intrusive Current Measurement Method for Multi Conductor in DC Distribution Network
369	A Fast Fault Ride-Through Strategy for MMC Based on Negative DC Voltage Control
371	Research on the Converter Transformer Voltage Regulator Based on IGBTs for HVDC system and Coordination Control Strategy
375	Power surplus mechanism and fault ride-through strategies of the hybrid cascaded UHVDC system
377	A Hybrid Ride-through Strategy for DC Short-circuit Fault in MMC-MTDC System
385	A Multi-port DC Circuit Breaker with Fault-current Limiting Capability
386	A multi-port hybrid DC circuit breaker based on Current Injection
395	A Novel Hybrid DC Circuit Breaker Based on Double Mechanical Switch

PO_New Technology

13	High-power Electric Propulsion Wide-voltage Power Processing Unit Technology
15	Analysis Method of Cable Body Defects Based on Broadband Impedance
35	Current-Controlled Offshore Wind Turbines Connected With DRU-HVDC
37	Research on Capacity-increasing and Transformation Plan of Port's Shore-based Power Distribution Network System
47	An Open-Source Platform for Modeling, Simulation, and Performance Analysis of Multi-Converter, Mixed-Generation Power Systems
52	Research on Fuzzy Control Technology of Virtual Synchronous Generator Based on Three-level NPC Inverter Structure
53	A Novel On-line IGBT Junction Temperature Estimation Method Based on the Peak Value of Electromagnetic Radiation Signal at IGBT Turn-OFF
56	Safe Distance Test and Altitude Correction for Live Working with Helicopter Sling Method on $\pm 400\text{kV}$ DC Transmission Line
58	Research on Energy System Design and Energy Management Technology of Solar Airship
61	PHYSICAL MODELING AND SIMULATION ANALYSIS OF DYNAMIC CHARACTERISTICS OF PIN POWER DIODE
70	Electrical Properties of PI Films with High Thermal Conductivity
72	GROUNDING CURRENT DISTRIBUTION MODEL AND CALCULATION OF MULTI-LOOP HIGH VOLTAGE CABLE
84	A Refined Model of Turboprop Regional Aircraft On-board Electric Power System for Fault Reconstruction Simulation
88	Stability Analysis of Three-phase PWM Rectifier
101	Coordinated control strategy of multi-type power coupling system participating in primary frequency regulation of AC-DC hybrid power grid
139	Economic and technical analysis of reusing second-life EV batteries in energy storage system
150	A Scalable FPGA Hardware Architecture Based on Crossbar for Power Electronics Controller
153	ON THE TRANSIENT SHORT-CIRCUIT OF RCD SNUBBER IN HIGH POWER THREE-LEVEL IGBT INVERTER
198	Research and Application of Ice Melting Power Supply for OPGW

214	Latent fault identification method of circuit breaker operating based on acoustic signals
229	Exploration and practice of key technologies for frequency modulation parameter optimization of large-scale centralized access to renewable energy power generation
238	Quantitative Detection of SF6 Decomposition Components Based on 7.46 μ m Quantum Cascade Laser
242	Control and Simulation of STATCOM Integrated Energy Storage System
244	Active Power Control Optimization Strategy of Photovoltaic Assisted Frequency Modulation Considering LVRT
245	The detection of ethylene gas based on cantilever-enhanced photoacoustic spectroscopy
247	Influence of distributed photovoltaic access on power quality of distribution network and countermeasures in new power system
255	Damping Control Strategy of MMC-HVDC Connecting to the PMSM-Based Wind Farm for Subsynchronous Resonance Suppression
256	Application of three-phase voltage source PWM converter in mine electric vehicle
271	Study on pressure spread characteristics of arc fault in critical area of UHV oil-filled equipment
278	Comparison of heat resistance of silicone products used for encapsulant in power modules
279	Resistivity of Silicone Gel/Ceramic Substrate Interface in Power Modules
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公司是中国主要的传统高压直流输电和柔性直流输电工程的系统研究、工程成套及换流阀设备研发、制造和试验检测基地是国家认定的“国家级企业技术中心”、国家能源电力电子技术与装备研发中心、陕西省和西安市分布式微电网工程技术研究中心、陕西省认定企业技术中心。



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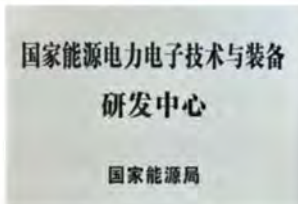
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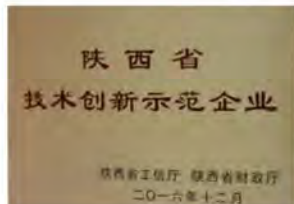
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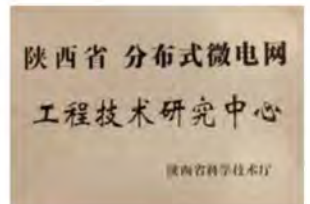
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IGBT换流阀



融冰电源



电力电子变压器



SVG



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山东泰开直流技术有限公司

SHANDONG TAIKAI DC TECHNOLOGY CO., LTD.



公司简介

COMPANY PROFILE

山东泰开直流技术有限公司坐落在雄伟的泰山脚下,是泰开集团的全资子公司。公司面向直流领域,开展了直流断路器、直流负荷开关、换流阀、电力电子变压器、电能路由器、直流变压器、直流楼宇电源、能量控制系统等关键技术研究,在直流开断技术上,技术团队同时掌握混合式、机械式和固态式三种直流开断拓扑方案并全部实现了工程应用,可以根据用户不同需求进行产品差异化设计;面向交流领域,开展了快速开关、双电源快速切换装置、智能故障限流器等关键产品研制,致力于传统交流电网的升级改造,提高电网的运行安全性。

公司研制的产品成功应用到多项国家重点示范工程,包括国网张北500kV直流电网示范工程、南网珠海“互联网+”智慧能源示范工程、南网东莞交直流混合的分布式可再生能源示范工程、三峡乌兰察布“源网荷储一体化”关键技术与示范应用、国网苏州中低压直流配用电示范工程中,取得了良好的业绩。



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售后服务热线:400-7567-999

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电能变换 系列产品



电力电子变压器



换流阀



直流楼宇电源

电能质量治理 系列产品



快切开关



故障电流控制器

工程案例

-ENGINEERING CASE-



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公司立足于“清洁能源、智能电网、节能环保”领域，以培育新兴产业和升级现有传统产业为载体，坚持高新技术产业重点培植和传统优势产业整体推进相结合，全心致力打造研发、设计、制造、服务一体化的国际能源装备公司，以开放的心态放眼全球，致力于为客户提供优质产品和服务。公司以大型电站辅机设备、特高压电网装备、工程总包成套服务、备品配件与检修维护服务为主业，形成了“发电、电网、冶金、建材、化工”并举的产品格局和一批拥有自主知识产权的重大技术装备产品，产品销售和服务范围遍布国内所有省市自治区和行政特区，遍及世界五大洲90多个国家和地区。公司设有省市级技术中心，是世界级磨煤机研制基地，是特高压电网装备、百万级核电机组国产化研制骨干企业之一；是国务院科技进步特等奖获得者企业，国家高新技术企业，中国机械工业百强企业，中国工业排头兵企业，荣获中国工业大奖提名奖。

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公司与清华大学开展合作，采用基于耦合负压电路的直流断路器拓扑方案，成功研制世界首台535kV耦合负压式直流断路器，顺利通过产品鉴定，实现了超高压直流电网装备的重大技术突破，产品技术性能处于国际领先水平，已正式投运于张北柔性直流电网试验示范工程中。



直流耗能装置

公司研制的160kV直流耗能装置，采用无水冷设计和国产化、高性能、已工程应用的大容量电力电子器件，具有占地面积小、技术经济性好、可靠性高等特点。



三端口直流变压器

公司研制的10kV三端口直流变压器，作为张家口崇礼区10千伏多能互补智能电网综合示范新建工程核心设备，已成功投入使用，运行情况良好。



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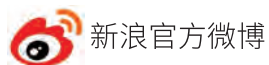




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