

2023 3rd International Conference on Energy, Power and Electrical Engineering (EPEE 2023)

**Wuhan, China
15-17 September 2023**

Pages 1-748



**IEEE Catalog Number: CFP23RZ7-POD
ISBN: 979-8-3503-1819-7**

**Copyright © 2023 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP23RZ7-POD
ISBN (Print-On-Demand):	979-8-3503-1819-7
ISBN (Online):	979-8-3503-1818-0

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

Integrated Energy System Modeling and Collaborative and Optimal Operation of Urban Multi-Energy Coupling	1
Dongni Wei, Panlong Jin, Zelong Zhang, Zhao Yang, Tong Liu	
Energy System State Optimization Control Based on Cyber-physical Fusion	5
Yingjie Qin, Yu Liu, Lu Miao, Jinchang Chen, Qianyufan Zhou, Ping Yang	
Refinement Generation Method of Renewable Energy Scenario Based on Information Maximizing Generative Adversarial Network	13
Zhenyu Zhao, Chuan Zhao, Xiangyong Li, Zongyuan Chen, Zhenning Pan, Shuangquan Liu	
Study on the Performance of Gravity Dual-loop Heat Pipe Air Conditioning System for Data Centers	17
Jun Li, Liang Zhou, Di Jiang	
Development of On-board power supply based on 800V SiC	21
Laifeng Shi, Heng Liu, Xiaolong Yu, Zhenglan Zhao, Heng Yin, Qinjie Huang, Zhicheng Xiao	
Simulation Study on temperature uniformity optimization of electric heat storage boiler	29
Rui Hu	
Thermal Numerical Simulation and Engineering Transformation of Combustion System of 3100t/h Ultra-supercritical Boiler	33
Huan Liu, Yichao Ma, Kun Niu, Jinsong Du, Haojun Cao, Wenjuan Liu, Xiaoguo Liu, Hongwu Wang	
Mechanism Analysis of the Harmonic of Static Frequency Converter in Pumped Storage Power Station	40
Pinzheng Fang, Xulei Zhou, Jianling Zhuang, Guoqing Lin, Junfeng Song, Zhonglong Li, Fei Jiang	
An Impedance Matching Method for the WPT System with Multiple Transmitting Coils	48
Junjie Peng, Yanting Luo, Zhuoyue Dai, Suiyu Chen	
A Revisit to Thermal Performance Enhancement of Sustainable Solar Air Heater	53
Anil Singh Yadav, Nitin Dubey, Mayank Singh, Rajan Kumar, Subhendu Chakroborty, Abhishek Sharma, Yogesh Agrawal	
Efficiency Evaluation of Solar PV Array with Improved Performance	64
Pramod Kumar Patel, Nikhat Raza Khan, Shweta Singh, Neeraj Agrawal, Jaydeep Parmar, Hardik Dahiya, Ashish Raghuwanshi	
Research on Multi-Vehicle Power Distribution Method in Charging and Discharging Station Discharge Mode	70
Xuan Zhao, Hao Yu, Dahai Zhang, Mingzhu Sun, Jing Zhang, Biyu Wang	
Accurate interaction of thermostatically-controlled Load cluster demand response considering incomplete user response	76
Shan He, Junyong Wu, Liang Sun, Pengjie Zhao	
Simulation and Analysis of Solar and Wind Hybrid System for Off-Grid Application using Dig-Silent Power Factory	82
Hardik Dahiya, Danwada Sharanya, Rahul Malviya	

Design, simulation, and analysis of 100kW Commercial Solar PV System in India	90
Jaydeep Parmar	
A Mini Review on MEMS Switches: Design, Fabrication, and Applications	96
Pramod Kumar Patel, P.K. Gurmaita, S.K. Gurmaita, Rajesh Kumar Nema, Rakesh Yadav, Harshit Shrivastav, P. K Chauhan	
Regulation Capacity Margin Evaluation of Power Systems Considering Multiple Flexible Resources	104
Daning You, Song Gao, Siying Chen	
Power Quality Enhancement in Wind-Hydro Based Hybrid Renewable Energy System by Interlocking of UPQC	112
Riaz K. Israni, Renu Yadav, Rahul Singh, B. Rajagopal reddy	
Design and Implementation of Distributed Photovoltaic Power Plant Data Security Protection System Based on Recurrent Neural Networks	124
Yanqun Huang, Yongfeng Miao, Xianglong Meng, Jianan Qu	
A Novel LSTM-XGBoost Model Optimized by SSA for Predicting Short-term Photovoltaic Power	128
Nan Feng, Dongming Song, Zhaoliang Liu, Guangsheng Wu	
Short-term Wind Power Prediction Based on Singular Spectrum Analysis and Gated Recurrent Unit Network	134
Yanguo Huang, Renzheng Yang, Xuan He, Jian Peng	
Energy Management of a DC Microgrid Composed of PV Systems with Battery Energy Systems	138
Md Tarique Anwer, Rahul Singh	
Numerical simulation of ammonia-hydrogen fuel engine emissions based on CONVERGE	146
Ziniu Wu, Xiangming Zeng	
Optimization Study of Wind Power Prediction in Mountainous Wind Farms	150
Junliang He, Zeyu Zhang	
Maximum power point tracking of PV system under partial shading conditions based on TSO-IP&O algorithm	155
Qichao Wang, Xiaoheng Chang	
Energy saving optimization of variable frequency air conditioning based on TYANSYS	160
Huihan Wang, Quanli Guo	
Power Management Controller for Renewable Energy based hybrid AC-DC Microgrid	164
Saurabh Babu, R. Agrawal, A. Kumar, Renuka Mishra	
Collaborative Power Generation Scheduling of Source-load Box-type Substation Considering Uncontrollable Load	168
Liwen Deng, Xingran Chen, Xuanchang Dong, Xiaojian Liu, Xiaofei Zhang	
Ultra Short Term Photovoltaic Power Forecasting Based on Similar Day Theory and BATCN	174
Zhifeng Xie, Jiaming Chen, Yiding Yin, Anbo Meng	
Experimental study on the homogenization performance of flat plate pulsating heat pipe with heat storage type	179
Yang Qin, Lei Su	

Discussion on operational strategy planning model of multi-energy complementary distributed energy system	186
Xin Liu, Weijun Zhang, Tianchi Jiang, Yuzhang Ji	
Automatic Generation System for Distributed Photovoltaic Over Limit Regulation Strategy	193
Jiaxing Lei, Dong Xia, Yonghui Jiao, Zenghui Liu, Shuang Li	
Research Review of Hydropower-Wind-Photovoltaic Joint Optimal Scheduling	197
Yanmeng Song, Jun Rui, Yu Zhao, Bing Fang	
Lightning Hazard Risk Assessment and Differentiated Lightning Protection Renovation Scheme for 10kv Typical Lines in Guangxi	203
Weixiang Huang, Xiuqing Lin, Dajian Li, Zhidu Huang, Qianyi Chen, Ying Ling	
Research on Heat Dissipation Optimization Design of Underwater Data Centers	208
Zhengtao Lei, Yirv Wang, Kui Chen, Haoliang Zhang, Yihao Cui, Xue Zhou	
Simulation and Optimization Study on the Dissolved Hydrogen Precipitation Process in the Liquid Phase of Reactor Pressurizer	213
Yanlong Qiao, Liang Gao, Qishu Fang	
Study on Diffusion Coupling Characteristics of Indoor Natural Gas with Double Leaks	217
Jiaqi Zhang, Zifeng Yu	
Research on transmission tower disaster model under typhoon disaster	223
Zehao Zhang, Zhengming Fei, Jingshi Li, Huahui Lou, Fan Yin, Shihao Bao	
Research on the Application of Steam Absorption Heat Pump in Thermal Power Plants	228
Xuli Du, Chunzhen Qiao, Kuifang Wan	
Study of “Fretting Wear” Phenomenon in the Check Valve at the Primary Circuit Boundary of Nuclear Power Plants	232
Jie Wan, Jiabing Lin, Tengfei Zhu	
Parameter identification of proton exchange membrane fuel cell model based on improved grey wolf algorithm	238
Shaoqin Lu, Helin Xiao	
Data-Driven Intelligent Fault Diagnosis Technology for Transmission Lines of Wind Power Renewable Energy System	246
Jingming Zhang, Qi Liu, Qiankun Wang, Rongjiao Tang, Yangyang He, Nengling Tai	
Dispatching characteristics of regional integrated energy system combined with EVI air source heat pump and renewable energy	252
Yuan Zhao, Ke Sun, Chenghao Gao, Dabiao Wang, Peifang Yang, Yunying Hao, Baomin Dai	
The Study on Application and Structural Design of Spray Mixer in Air Conditioning System	257
Wencai Gao	
An Advanced CNN-LSTM-BiLSTM Model Leveraging Attention Mechanisms for Accurate Distributed Photovoltaic Output Prediction	261
Jun Yan, Yuheng Sha, Yuqian Zhang, Tingting Li, Jing Zhang	
Two-Stage Robust Optimal Scheduling of Integrated Energy System with Wind And Photovoltaic Uncertainty and CHP	266
Yangyang Ding, Yang Lv, Bin Wu, Ruihan Diao	

Research on Multi-timescale Optimal Economic Model of Rural Integrated Energy System	271
Hu Tan, Tingting Xu, Xiaoliang Wang, Ke Zhao	
Strategy for decentralized and coordinated optimization and scheduling of regional interconnected energy systems	276
Jiayang Shao, Yunzhe Wang, Linxian Hu	
Microscopic Mechanism of the Stability of Pt Supported on CeO₂ by Regulating the Stoichiometry: First-Principles Insights	280
Jiasi Yan, Wei Xiao, Rong Zeng, Xiaowu Li	
Optimization Method for Energy Storage Location and Capacity Determination of Distribution Network Considering Multiple Interference of New Energy Sources	285
Hanjiang Wu, Kehan Wu, Yi Tang, Cai Chen, Jie Huang	
Research on Wind and Solar Hydrogen Storage Capacity Allocation Considering Conditional Value at Risk	289
Huajian Cao, Fenghua Jin	
Energy Efficiency Optimization of Multi-unit System	293
Fulai Yao, Robert X. Gao	
Benefits of Unit Commitment with Renewable Energy Sources Incorporated in Operational Reserve	300
Xingyu Liu, Yi Yuan, Yuzheng Liu, Wei Xiong, Haiyu Huang, Baofeng Jiang	
Optimal Compensation Strategy for Demand Side Response to Improve the Renewable Energy Consumption	305
Hanbing Zhang, Liaoliao Yang, Shurui Wang, Hua Zheng, Bin Liu, Rui Lou	
Numerical Study on Flow and Blast Heating Characteristics of Low-pressure Cylinder of Steam Turbine Under Deep Peak Regulating Operation	316
Hongwu Wang, Yaowen Wang, Pengcheng Zhai, Huan Liu, Ben Zhang, Rongzu Yang, Tian Xie, Tingshan Ma	
Ozone generation by DC needle-needle discharge at atmospheric pressure	323
Weiye Wang, Mengqi Li, Bingkai Wang, Zilan Xiong	
Numerical simulation study of fluidization of high temperature heat storage media	327
Zezi Peng, Qiming Wang	
Fault Detection and Diagnosis in Grid-connected PV Systems under Irradiance Variations	331
Jincan Li, Tao Han, Jingshun Li, Bintao Li, Peidong Sha, Zongtao Qin, Qiankai Sun	
Optimal Allocation of Hybrid Energy Storage Capacity Based on Improved Variational Mode Decomposition Technique	337
Shikai Liao, Guisong Tao, Houke Zhou, Xiaojun Xiao, Wenliang Hu	
Research and Analysis of Eddy Current Testing Technology	344
Deqing Li, Lina Zhao	
Research on Laser Cleaning of the Contamination on the Bottom Surface of Glass Insulators	349
Yuancheng Qin, Xianqiang Li, Boyu Ren, Rui Huang, Liangchang Fei, Hao Du	
A novel application scenario and research of Electrochemical Energy Storage Device in Low Voltage Power Conditions	354
Zuquan Liang, Chao Ma, Ziwei Li	

Short-Term Coal Demand Forecasting of Provincial Region Based on GRA-PCA and CNN-BILSTM	358
Xianfu Gong, Yaodong Li, Bo Peng, Tianren Zhang, Xiaohe Yun, Yuping Huang	
Wind power point prediction based on VMD-GWO-LSTM	365
Zhao Jiang, Heng Wang, Rui Xu, Xuanzhou Yu, Shangqing Song, Xiaodong Yu	
Optimal Management of Multi-Area System Incorporating Wind Power across Varied Climatic Conditions using Firefly Optimization Methodology	371
Prince Kumar, Kunal Kumar, Aashish Kumar Bohre, Nabanita Adhikary	
Joint Virtual Power Plant Scheduling Optimization Model Considering Carbon Capture and Wind Power and Charging Stations	378
Rui Ma, Hongmei Luo, Yang Luo, Lijie Pei, Ke Qin	
Studies of Very Fast Transients in A 500kV GIL-GIS Substation	387
Xiaohui Jiang, Xiangyu Yang, Zhen Liu, Han Li, Lei Wang	
Optimization Strategy for Low-carbon Operation of Virtual Power Plant with Carbon Capture Device	392
Chao Huang, Siwei Li, Chao Chai, Zhuo Yang, Shilin Zhao, Zaiyi Zhang, Sicheng Li, Hangyu Zhou	
Optimization of Manufacturing Supervision for Compressed Air Energy Storage System Equipment	397
Ming Zhang, Zhekang Xu, Yanghai Li, Taigao Xing, Jianfei Yu	
Study on the Performance of Supercritical Nitrogen Brayton Cycle Power Generation Using Liquefied Natural Gas as the Cooling Source	402
Li Yan, Wenzhe Sun	
Research on new oil-gas separation technology for transformer	410
Baiquan Chen, Zilan He, Shaohui Liu, Jing Huang	
A Comparative Study on the Eddy Current and Magnetic Flux Leakage Inline Inspection Technology in Long-distance Oil and Gas Pipelines	416
Yaofeng Wu, Hao Xin, Weilin Shao, Jinzhong Chen	
Prediction of drag reduction in crude oil pipeline based on turbulent fluctuation theory	421
Qing Quan, Wenbo Jin, Yong Wang	
Microwave-based Concentration Detection System of Pulverized Coal	425
Cenjie Yuan, Qunli Dong, Shuai Li, Xiongjie Jiang, Feng Gao, Zhenming Song, Bing Tian, Haoyu Tian	
Optimization design of hydraulic manifold based on additive manufacturing	429
Hao Wu, Wanguo Li	
Application of modified model prediction to three-phase cascade systems	436
Weichen Zhang, Qinfang Teng, Xiping Ma	
Optimized Dispatch of Integrated Energy System with Hydrogen Energy and Carbon Capture under Demand Side Response Mechanisms	442
Jiajun Han, Xiaoqing Ji, Junrui Feng, Caopeng Zhang, Payman Dehghanian, Dechang Yang	

Study on the Low-carbon Transition Path of Power System in Developed Coastal Regions of China——Taking Zhejiang Province as an Example	447
Xianfu Zhou, Feng Lu, Zhi Zhang, Xiaoming Fei, Xiaoli Zhao	
Study on the Frequency Characteristics of Electromagnetic Coupled Resonant Radio Energy Transmission System	451
Hongmin Ren, Denan Wang, Jiabin Liu, Guangwei Ren	
Evaluation method of heat pump equipment operation status based on Budagrass fuzzy set-weight transformation	455
Qingpu Wu, Ran Zhang, Wei Ouyang, Jianfen Li, Hongyu Li, Yating Zhai, Fei Jiang	
Mathematical modeling of the thermal behavior of a long lithium-ion battery	460
Qingming Liu, Jinqiu Gong, Wujun Wang, Wen Peng, Jun Zhou	
Revenue distribution method of virtual power plant considering alliance stability	466
Xiao Qian, Bo Zhang, Jiansheng Hou, Yu Li, Junda Ma, Min Xu, Yilin Qiao	
Effects of Microwave and Laser Power on Optical Detection Magnetic Resonance of Diamond Nitrogen Vacancy Center	472
Qiang Song, Lu Yang, Dingqu Zhang, Sanlei Dang, Likun Xing, Jing Liu	
The Application of Infrared Thermal Imaging Technology in State Detection of Porcelain Insulators	476
Xiaolei Li, Mingyan Shao, Xu Dong, Ailan Zhang, Ziyu Zhai, Weifan Zhao, Zhongkui Feng, Yandong Liu	
Review of energy storage technology in the background of carbon neutrality	481
Fangzhou Du, Hanbang Wang, Shuojia Cao, Ziyi Xu, Tingrui Zhang	
Dual Prediction Model and Improvement of Coal Ash Melting Point Based on SMA and Optimal Input Parameters	490
Zhaojin Chen, Yuan Fang, Changgeng Wang, Chunyu Gao, Dongsheng Wei, Wenjing Zhang, Hongyi Guo, Weiting Zhen, Yanhong Cui, Chunyu Zhang, Meng Liang, Junfeng Long	
Optimization design and operation effect verification of large-scale ground source heat pump system in a low-carbon park based on whole process analysis	497
Biao Qiao, Zhukui Tan, Yang Wang, Ji Li, Xiaomei Feng, Jintang Li, Yipeng Qin, Shukui Liang	
Static Electric Field Simulation Analysis of ZW20 Type Pole-Mounted Switch Considering the Influence of Temperature Field	507
Zhiguo Tang, Shiju Liu, Xinyue Li, Chen Zhao	
Research on Load Forecasting Method Based on Building Load Database of Typical Low Carbon Scenarios in Border and Cross border Areas	513
Shumin Chen, Shukui Liang, Hao Zhang, Guangzeng You, Biao Qiao, Yipeng Qin	
Calculation Method of Carbon Emission Reduction Contribution of Energy Storage to Power System Based on Time Series Production Simulation	525
Haibo Zhou, Qiujian Wu, Xinwei Hu, Shurui Wang, Siheng Zhu	
A Dispatching Method for Pumped Storage Power Station Group with Load Smoothness as the Goal	533
Wendong Chen, Fangrong Wu, Gengwei Chen, Bin Zou	
A Two-Level Diagnosis Method for Energy Storage Battery Anomalies Based on Battery Module Reconfiguration	539
Tinghua Wang, Jingyun Wu, Darui He, Bo Yan	

Energy Storage Planning Considering Its Life for Low-Carbon Electric Power System	546
Hanyue Zhou, Yuyou Ge, Jing Bu	
Multi-objective Low-carbon Optimization Model of UHVDC System Considering Carbon Transaction Cost	556
Lei Luo, Xiong Xiao, Jun Yang, Yizhou Chen, Bingyuan Tan, Jicheng Yu	
Study on the Influence of Installing Low Pressure Economizer on Turbine Exhaust	561
Zhihong Sun, Zhengfeng Wu	
A review of the research on Remaining Useful Life prediction methods for Lithium-ion batteries	565
Can Feng, Haoweng Huang, Guosheng Lu, Jianpang Zhai, Zhigang Zhao	
Dynamic Evolution Characteristics of Thermal-Hydraulic-Mechanical Multiple Physical Fields In Enhanced Geothermal System	572
Leiming Shi, Liangliang Guo, Xiang Zhang, Yingxia Zheng, Yuan Zhao, Jun Gao	
Characterization of discharge shock wave flow field in GIS	578
Chenglong Jia, Wenbin Zhao, Feng Li, Zhong Tang	
Typical Defects Analysis of Hydro-turbine Generator Units in a large hydropower station	583
Shuai Lu, Liang Zhang, Yuheng Guo	
Substation Relay Protection Drive Circuit Breaker Abnormal Identification Method	588
Xuecheng Wang, Xiaoming Wang, Jiangtao Liu, Qingyu Ran, Cong Zhu, Xiao Liang	
Emergency automatic dispatching method for EHV transmission network based on a rule base and wolf swarm algorithm	592
Dunlin Zhu, Binbin Chen, Xinling Chen, Yangtian Ning, Sheng Yang, Guangming Li	
Maximum power point tracking algorithm for slope comparison based on perturbation observation method	596
Longyu Liu	
Study on the transmission characteristics of current transformer based on the improved J-A hysteresis model based on Brillouin function	600
Lu Yang, Dingqu Zhang, Shanshan Hu, Qiang Song, Yan Wang, Zhikun Huang, Qingliang Meng	
A Control Strategy of DC Microgrid Power Router	605
Qiang Li, Di Liu, Shen Chen, Zhu Liu, Wenjing Li, Lvchao Huang, Jinguo Fang, Yuqiang Zhuang	
Research on Composite Error Test Method of Current Sensor for Distribution Network	611
Junjun Xiong, Xiaojing Mu, Bin Liu, Yongxi Huang, Yong Liu, Gang Wan	
Sensitivity Analysis of Distribution Network Losses to Power Quality Disturbances	616
Yu Fu, Zhiyao Zheng, Zilun Shen, Zhongdong Yin	
Transmission line running status analysis based on Monte Carlo simulation	622
Xiulong Wang, Jialun Yang, Bin Liu, Danyu Li	
A Uni-Stage Isolated Charging System for Electric Vehicles Employing SEPIC and Buck-Boost Converter for Different Supply Voltage Semi-Cycles	628
Tanmay Shukla, N.P. Patidar, Sonali Nandanwar, Pankaj Kumar	

A Strategy for Unbalanced Voltage Suppression in Bipolar DC Distribution Systems Based on Flexible ZIP Load Regulation	633
Hongbin Wang, Qianggang Wang, Niancheng Zhou, Jianquan Liao, Xuefei Zhang	
Ternary Half Adder Using DGFET Technology for Low Power Applications	641
Vrishali Singh, Ashish Raghuvanshi, Sugandh Singh, Neha Shrivastava, Pramod Patel, Preeti Verma	
Research on Design Method of High Current Transmission Busbar for Superconducting Magnet Power Supply of Fusion Device	646
Hong Lei, Ge Gao, Li Jiang, Ya Huang	
A study of the effect of phase shifting transformers on line longitudinal differential protection	654
Pinghao Ni, Jianguo Zhang, Junming Liang, Xudong Li, Zongye Liu	
Power Quality Improvement using Modeling & Simulation of using, Fuzzy logic system with Synchronous Reference Frame strategy	661
Virendra Singh Solanki, Piyush Agrawal, Vikash Kumar Mali	
Power Quality Improvement by Using a Custom Power Device UPQC	666
Vikash Kumar Mali, Sonali Nandanwar	
A PFI Bridgeless Canonical Cell Switched Converter based SRM Drive for Battery Driven Vehicle Applications	672
Tanmay Shukla, Abdur Rahman, Sonali Nandanwar, N.P. Patidar	
Research on Voltage Characteristics at Low-Voltage side of Single-Phase Fault under Different Grounding systems	677
Yingchun Guan, Wen Wang, Jun He, Xianman Chen, Meng Zhou, Qingchun Meng, Yu Jiang, Zhenxing Huang, Wenhai Zhang	
Development of a Three-Phase LCC Resonant Converter with a High-Voltage Rise Ratio for the Power Processing Unit	682
Zhijian Liu, Wenguang Chen, Li Peng, Liang Zheng	
Ultra-low-frequency oscillation analysis of hydroelectric units based on Nyquist method	687
Bozhi Sun, Zhijie Ma, Yao Li	
Study on Numerical Calculations for Surface Charge Decay Characteristics of Insulation Material	694
Fan Yi, Naifa Gong, Dazhao Zhang, Xiaoshan Yao, Wenli Xu	
Transient analysis of capacitor switching and breakdown	701
Yunping Zhong, Ming Ma, Long Zhang, Bi Hu, Wenhai Zhang, Wen Xiao	
Fault Diagnosis and State of Charge Estimation of Battery for Electric Vehicle Applications	712
Suwarna Shete, Pranjali Jog, R. K. Kumawat, Sonali Nandanwar, N.P. Patidar, D. K. Palwalia	
Research on Closed-Loop TMR Current Sensor with Temperature Compensation Based on Reference Magnetic Field	720
Chenyu Liu, Xia Xiao, Yifan Gu, Yihong Li	
Multi-loop Mathematical Model of Nuclear Power TKJ-Type Multiphase Brushless Exciter	726
Wenhao Yang, Zhong Chen	

Transient Stability Analysis of Paralleled Grid-Forming Converters	732
Kexin Yang, Yanhong Bao, Feng Wu, Xiancheng Ren, Jinlong Zhang	
Design and research of adjustable auxiliary device for TPMS EMC test	739
Lusha Zhou, Ziqian Wu, Zhe Liu, Haijun She	
A Reactive Power Coordination-based Voltage Fluctuation Suppression Strategy for Photovoltaic Power DC Sending System	745
Yijiang Dong, Minxiao Han, Wenhao Du, Shibo Wang	
Analysis of the impact of complex terrain in Northwest China on the lightning risk of 750 kV typical transmission lines	749
Zhaohui Song, Shitao Yan, Yejiang Deng, Yu Wang, Haochen Zhang, Yuzhe Chen	
Coordination and Control Strategies of a Hybrid AC/DC Microgrid	754
Abdur Rahman, Sonali Nandanwar	
Advances in Power Quality Enhancement: A Comprehensive Review of Custom Power Devices and Mitigation Strategies	761
Purvi Namdev, Rahul Singh	
Research on aviation solid state power distribution technology and SSPC circuit design	766
Yingjie Sun, Yuan Tian, Chunhong Hu	
Research on the characteristics of matrix pulsed eddy current sensor based on finite element simulation	770
Wenguang Hu, Yanli Zeng, Ge Jiang, Zhe Liu, Xiaoting Guo, Huadong Song, Quanbo Cheng, Yizhong Xu	
Method for Short Circuit and Overcurrent Turn-off Test of MMC Valves Based on Equivalent Current Source	775
Jiangyong Wang, Baokui Sun, Fuyue Wen, Jianbo Zhou, Kefeng Wang	
Preparation of Porous V₂O₅ Microspheres-based Cathode Materials for High Performance Aqueous Zinc-ion Batteries	780
Gaopeng Li, Dongtao Liu, Shuhui Lv, Xinlu Wang, Jinxian Wang, Wensheng Yu, Xiangting Dong	
Flexible power control method for AC-DC hybrid power distribution system using multidimensional data	785
Jiahao Gao, Shuzhi Zhao, Nan An, Shanshan He, Zhigang Wang	
Pressure and UHF Variation Characteristics of Oil-paper Insulated Bushing Capacitor Core with Impurity Defect	789
Yi Su, Xiajin Rao, Yufeng Lu, Lei Zhang, Wei Huang	
Design and application of a new low and lower limit differential pressure flow rate sensor	793
Yong Wan	
Rectifier Soft Start and Half-Bridge Inverter for Medium-Frequency Induction Heating Applications	798
Faliang Gao, Guoxing Wen, Baojie Zhang	
Strategies for the PAMS Control of Module-combined DC/DC Converters Available for All-DC Wind Farms	806
Dongxu Xuan, Yanfang Fan, Yao Sun, Yaqiang Wang, Xiaolong Li	

Calibration System of SOC Characteristics Curve of Satellite Battery Array Simulator	814
Nan Zhou, Ruolin Zhang, Shuo Cheng, Fuqiang Wang, Yan Liu, Zhenhai Zhang	
Influence of low frequency oscillation on the fuse of potential transformer	819
Hongtao Ren, Ying Zhang	
Investigating DC faults in DC distribution system with converter centre grounding	824
Hongtao Ren, Ying Zhang	
Influence of Air Gap Width and Shape on Current Transformer Energy Extraction	829
Tao Tao, Yingchun Lv, Baifu Zhang, Xu Zhang, Wentao Xu, Junyan Liu	
Disturbance Preview Approach based on Enhanced Reduced-Order GPI Observer for DC-DC Buck Converters	833
Wenxuan Li	
Stress simulation analysis of GIS basin-type insulators considering working conditions	841
Zhiguo Tang, Chen Zhao, Dong Li, Shiju Liu	
Sensorless Brushless DC Motor Commutation Method Based on Angular Acceleration	848
Jiahao Shen, Zhiduan Cai, Chenwei Qin, Chengao Wu	
Research on Optimal Site Selection Method for Substation Considering DC Bias Risk	854
Renbin Su, Jianming Zou, Wei Wang, Hailiang Lu, Zhihui Zheng, Xishan Wen	
Dual Layer Programming Model for Distributed Power Generation Considering Optimization of Relay Protection Configuration	859
Sun Li, Haojing Ge, Guocheng Sun, Qun Yu	
Design of Magnetic Element Parameters for Optimizing Current Stress in Dual Active Bridge DC-DC Converters	865
Qinglong Wang, Peng Yuan, Lingcheng Kong, Changzhou Yu, Haizhen Xu, Jingang Ding	
Research on Inter Phase Breakdown Characteristics of 10kv and 35 Kv Bus Bars with Wrapped Insulation and Sheath Under Typical Fault Condition	872
Jiajia Du, Yuanpeng Liang, Feixiang Cao, Mimi Xu, Xinhong Yang, Leilei Fu, Wei Shi, Changhong Xia	
A Study of Risk Assessment and Suppression Measures for Oscillations in Hybrid Cascaded DC Systems	878
Kuan Zheng, Zheng Zhao, Qichen Chen, Tan Li	
Impact of feed-forward filters on VSC instability with variable PLL bandwidths	883
Xiangyu Li, Naiyue Zhang, Jiarui Li, Shichen Xie, Shengyu Zhang, Xiaopeng Jin	
Simulation Analysis of Current Loop Response Characteristics of Voltage Source Converter	888
Rui Zhu	
Thermal Circuit Analysis of Permanent Magnet Motor	894
Boxu Peng	
Comparison of Fault Identification Methods for Analyzing Transformer Dissolved Gas	902
Neha Hirkaney, Sweta Lall	

Research on the Method of Preventing Misoperation in Measuring the Voltage of the Pressure Plate at the Exit of Substation Protection	908
Lipeng Ling, Chaohong Man, Qiuyu Yi	
An novel technique for accurate measurement of transient fault signal in distribution network based on TMR sensor	913
Haoming Wu	
Economic Optimal Dispatch of Multi-Agent Microgrids Based on Analytical Target Cascading	918
Qiaofeng Wu, Zhaoyu Liu, Manying Zhang, Lanxin Shao, Yikai Sun	
A data-driven approach to super-real-time simulation of city power grids	923
Ying Zhang, Xinyu Tong, Bingjie Li, Jiahao Zhang, Sheng Xu, Zhile Yang, Yuanjun Guo	
Reactive Power Optimization of UPFC System Based on Particle Swarm Optimization	927
Peng Wu, Yaping Wang, Yuan Hu, Penghui Zhao, Ming Gao, Shuai Zhang, Yan Li	
Application of artificial intelligence technology in the event analysis of substation monitoring information	931
Nan Yao, Qing Fan, Ziquan Liu, Hai Xue, Zhen Wang	
Optimal design of distribution networks and optimization of control parameters based on the intelligent flexible switch	935
Le Dong, Feng Song, Xueqing Zhang, Dang Xiong, Yaoheng Du	
Research and application of intelligent flexible switch control ability considering economic operation of distribution network	939
Lin Wang, Ya Hong, Liangzhi Sun, Le Zhang	
Research on optimal hydroelectric power generation balance problem based on particle swarm optimization	944
Xinyu Zhang	
Research on centralized line protection of distribution network with distributed generation	948
Na Wu, Wencheng Liu, Shuxian Fan	
Distribution Network Security Assessment Based on Maximum Entropy and Weight Self-Learning	955
Hao Liu, Yun Su, Haoran Zhang, Yingjie Tian, Ji Qiao, Fan Yang, Peidong Xu	
A Load Forecasting Method Based on Principal Component Analysis and Gated Recurrent Unit Neural Network	961
Xin Tian, Xiangguo Guo, Qingchun Zhu, Jinrui Tang, Binyu Xiong, Junzhe Fan	
Decentralized Coordinated Control for Large-Signal Transients in DC Microgrids	967
Hong Zhu, Xiaobo Pan	
Research on customer side flexible load resource interaction operation business and operation system architecture design method	977
Rundan Zhang, Jieyu Liu, Wenyu Cheng	
Reliability based Performance analysis of Distribution Network with Dispersed Generation using Optimization	982
Hemant Patel, Anurag Kumar, Aashish Kumar Bohre, Omkar Yadav	

A Bi-level Planning of Distribution Network with High Proportion of Distributed Photovoltaic Considering Source-Load-Storage Interaction	989
Yixin Niu, Junyong Wu, Yi Wang	
Resilience Analysis through Observation on Grid Parameters in Indian Grid during COVID-19 Pandemic	995
Akshay Sharma, Sonali Nandanwar, N.P. Patidar, M L Kolhe	
Measurement Data Complement of Power Distribution System Based on Clustering-BayesLSTM Combined Model	999
Zhi Li, Xu Huang, Guoqiang Zu, Qi Ding, Jiawen Sun, Yu Wu, Pan Huang, Wei Wei	
Study on voltage control and orderly planning of energy storage in active distribution networks	1010
Pinghao Ni, Junming Liang, Jianguo Zhang, Jinghan He, Qiyue Ma	
Research on Life Prediction of Underground Cables based on BP Neural Network	1018
Jian Yu, Ting Chen, Chunlin Zhao, Tianjian Zhao, Jinbo Huang, Guoping Zou	
Heat Transfer Prediction of Supercritical R134a in Horizontal Pipe by Artificial Neural Network	1022
Dabiao Wang, Weijie Wu, Sichong Li	
Small Signal Stability Analysis of VSC-MTDC with Hybrid Wind/Photovoltaic/Energy Storage System	1027
Miao Long, Li Zhang, Bingzheng Li, Yuchao Ma, Xiaoqin Zhang	
Research and Application of Efficient Dual-flowmeter Testing and Adjusting Technique	1036
Qian Lin	
Research on Service-oriented Architecture for Automatic Drawing of Dispatching System in Power Grid	1041
Zijian Yan, Duxi Zhang	
Risk Assessment of Active Distribution Network Considering Wind-PV-EVs Temporal Correlation	1046
Bingchen Pu, Wei Liu, Wei Gu, Xuan Ren, Tao Da	
Multi-period Topology Optimization of Active Distribution Network Considering Source-load Uncertainty	1052
Nuo Chen, Wei Liu, Xuan Ren, Tao Da	
Implementation of Microgrid for Rural Electrification to cater on Side Load Demand	1058
Nagendra Singh, Anuprita Mishra, Manju Gupta, Kaustubh Dwivedi, Mamta Swarnkar	
R2I: A Deep Fault Diagnosis Semantic Segmentation System based on Knowledge Distillation in Photovoltaic Panels	1062
Xiaoyanghao Lei, Kai Ma, Junyi Zhao	
Digital Twin Technology for State Monitoring of Power Transformers Based on Supercomputing Platforms	1067
Yujiang Long, Xun Li, Rundong Gan, Zhiwei Luo, Haibin Su	
Entropy-Based Method for Fault Line Selection in Coal Mine Power Grid	1072
Weijian Cheng, Weiqiang Lu, Yanxiang Mu, Xiang Rong	

Decision Tree Detection Method for Overload Fault of Distribution Network Lines under Load Disturbance	1078
Juncheng Duan, Runzhen Liu, Xueming Hu, Junnan Hao, Jian Luo	
Data anomaly traceability strategy for low-voltage distribution network based on time series-causality learning	1082
Zhiqing Sun, Yi Xuan, Qifeng Wang, Libo Fan, Chuang Ma, Rongjie Han, Yibo Lai, Ya Li	
Analysis of the discharge characteristics of ground fault arc in a distribution network	1086
Gege Ban, Heng Zhang, Youxiang Wang, Xiaodong Yuan	
Digital Substation Security Monitoring Network Intrusion Detection Based on Deep Learning	1091
Xin Wu, Gang Qu, Haochun Jin, Liang Zhang	
Research on Defect Identification Algorithm of Power Network Telesignaling and Telemetry Data Based on Dynamic programming	1095
Di Huang, Chaoyue Zhu, Junliang Qiu, Xixing Hu, Weiyan Zheng, Shaojie Luo	
Research on the Security Verification and Evaluation System of Distribution Network Dispatching Instructions in Telephone Mode	1100
Chaoyue Zhu, Di Huang, Hongwei Liu, Panxia Chen, Shaojie Luo, Weiyan Zheng	
Distribution network weak link identification considering load shedding and reconfiguration	1106
Jie Han, Wei Yu, Jian Shen, Jian Yu, Yifang Su, Zhihai Yang	
Evaluation of Photovoltaic Grid Connection Capacity of Power Grid Considering Seasonal Characteristics of Small Hydropower	1113
Kehao Yang, Hanping Zhang, Jichao Ye, Yongzhi Zhou	
A Method of Faulted Section Location in Distribution Network Based on Siamese Network Under Small Sample	1118
Wei Wang, Qingzhu Shao, Boyang Shang, Feng Zhang, Jun Zhang, Yuanbo Ye, Guomin Luo	
Research on grid-connected technology of inverter based on phase lock	1124
Shi Yin, Hao Chen	
Hysteresis loop modelling of piezoelectric cantilevered actuators based on LSTM Neural Network	1128
Yazhou Yang	
Research on current differential protection under weak synchronization condition of wind power access to distribution network	1132
Xinghua Mu, Huaiyu Guo, Baiyue Song, Xince Zhao, Jianxin Qu, Hao Lu, Jianxin Qu, Zhiyang Liu	
Smart Distribution Grid Reconfiguration Based on Network Encoding Loop and Cut Set Methods	1136
Xiangyong Ruan, Jian Zhu, Zhenbiao Qi, Zhangbin Zhou, Tao Cao, Daowei Cheng	
Research on Unbalance Control Method of Distribution Network Based on Cascaded Single Phase Converter	1141
Hao Xue, Baifu Zhang, Yanbing Jia	
A Distributed Static Series Compensator System for Impedance Regulation of Transmission Lines	1145
Zhichao Yan, Yanbing Jia, Lei Wang, Jiaqi Ma	

Research on Radar Emitter Identification Algorithm Based on Multi-Sensor Data Fusion	1149
Kang Liu, Fuqun Zhang, Tao Jian, Zheng Li, Sha Zeng, Junjie Wu	
Adaptive Switching Scheme for Multi-channel in Dual-mode Heterogeneous Field Network of Power Distribution Grid	1157
Kai Wang, Xu Xu, Jian Li, Hanbo Tang, Cong Zheng	
Design and Implementation of Integrated Desktop GIS and Web GIS for Power Grid Dispatching and Control System	1163
Yuan He, Yuan Zhang, Yaowei Zhang, Caishen Fang, Yan Zhen, Xiao Han	
A Study of Microgrid Scheduling Methods for Bidirectional LSTM Networks Under Constraints	1169
Ying Fan, Xiaochuan Wei, Xuehao Wei, Yingshuang Cao, Qin Xu, Ling Luo, Chun Song, Ke Lin, Zhisong Qin	
A novel harmonic resonance quantification evaluation index based on measured data	1174
Yihong You, Fengguang He, Zhimin Hu, Haitao Hu	
A Improved NonIntrusive Load Monitoing Method with Loads Multi-State Characterization	1179
Jiaqi Ma, Xiaoqing Han, Lei Wang, Zhichao Yan, Shaokai Xue, Yuxiang Luo, Xin Zhou	
Grid-Connected Topology Design of Urban Rail Photovoltaic-Energy Storage Based on Multi-Port Energy Router	1183
Zheng Liu, Fei Lin, Zhongping Yang, Xiaochun Fang	
Economic Scheduling of Microgrids Based on Improved Sparrow Search Algorithm	1189
Yangbin Wu, Jin Shen	
Optimization Strategies for Power System Load Forecasting: Enhancing RBF Neural Networks with Genetic Algorithms	1195
Rui Ma, Yue Chen, Xixi Ceng, Fengyun Chen	
Multi objective optimization design of pure electric MPV transmission system based on Multi Island Genetic	1199
Naifa Gong, Jing Lei, Peng Hang, Keren Chen, Yingjie Liu, Haishan Chen	
Isolation Transformer-based Zero-sequence Current Suppression Method for Microgrid Diesel Generator Systems	1205
Junhan Huang, Lihong Ma, Yanyan Li, Jinzhi Shi, Jinquan Zhao	
Application of Adaptive Data Fusion and Fuzzy Control in Correcting Geometric Parameters of Pantograph Catenaries	1210
Zhixin Ou, Jixia Li, Chunlan Deng	
Power line fault identification based on artificial intelligence technology	1217
Lingzhi Xia, Chao Zhen, Yang Cheng, Yushun Liu, Senlin Li	
Research on automatic obstacle avoidance path planning of overhead transmission line inspection robot	1221
Ming Wei, Yushun Liu, Songyuan Cao, Zhenwei Zhang, Xiande Tong, Hao Zhou, Wenli Huang	
Energy Management Strategy for Hybrid Electric Vehicles Based on Whale Optimization Algorithm	1226
Shaopeng Tian, Wen Cai	

Research on Model prediction System of Permanent magnet synchronous Motor based on parameter recognition	1232
Bowen Duan, Haiyan Zhang	
Research on control method of heat release rate for high power-density marine diesel engine	1237
Yan Peng, Long Liu, Hongmei Li	
Research the Optimization Dispatch method of New Power Systems with Wind-Solar-Hydro Storage	1242
Zhenbin Wang, Xixiu Wu, Zheng Fang, Lingyu Xia, Li Li	
Design of a robust and fast fault diagnosis strategy of a stand-alone LVDCMG using Gaussian SVM & Weighted KNN algorithms	1247
Anindita Deb, Arvind Kumar Jain	
Research and application of the simulation model of the turbine and its governing system in a Pumped-storage hydroelectricity	1254
Changya Xie, Longfei Zhu, Teng Zhang, Paiyou Si, Shuangbai Liu, Long Mei	
Equivalent consumption minimization energy management strategy based on frequency decoupling for Unmanned surface Vehicle	1261
Yingjie Li, Yi Guo, Yongbiao Zhang	
Research on Short-Term Electricity Load Forecasting Model Based on SWT-ResNet-LSTM	1268
Yi Wang, Yimin Qian, Jian Zheng, Zhuang Hu, Qiao Chen, Kai Ding, Shuqian Tian	
A Cross-Chain Transaction Model for Power Blockchain Based on Hash-Locking Mechanism	1273
Jinzhong Li, Xiangjun Duan, Wangjie Qiu, Panan Cao, Zhen Wang, Yunshuo Li	
Analytical Model of Air-gap Flux Density of Permanent Magnet Synchronous Motor Based on Frozen Permeability Method	1279
Wenzhi Zheng, Peng Yi, Dongliang Zhang, Xianglin Li	
Stacking Model for Short-Term Electrical Load Forecasting	1285
Mohit Choubey, J S Yadav, Rahul Kumar Chaurasiya	
Equilibrium Optimizer Tuned TID Controller Based Automatic Voltage Regulator	1291
Hiramani Shukla, More Raju, N.P. Patidar	
Optimal Load Frequency Management of an Interconnected Power System Considering Geothermal Power Plant and Electric Vehicle	1296
Hiramani Shukla, More Raju, N.P. Patidar, Sonali Nandanwar	
SAOA-HKELM pantograph-catenary sliding electrical contact failure diagnosis based on SmoteTomek	1301
Yiming Dong, Zhonghua Chen, Duo Li, Binghong Li	
Surface Charge Inversion Calculation Method for Curved Surface Structure	1309
Fan Yi, Naifa Gong, Xiaoshan Yao, Wenli Xu, Guangming Yang	
Maximum power point tracking of photovoltaic array under partial shaded conditions based on improved grey wolf algorithm	1316
Yu Wang, Xiaoheng Chang	
Output Power Based Optimum Phase Shift Control of Dual Active Bridge Converter	1321
Anupam Kumar, Arun Rathore	

Research on optimal management and flexible control method of reactive power voltage for distributed PV users in distribution station area	1325
Bo Zhang, Jie Lei, Xinzhen Feng, Yunhao Xu, Lingshuang Xu	
Impact of Large-Scale PV-BESS on Dynamics of Power System Oscillatory Modes	1333
Balakrushna Sahu, Bibhu Prasad Padhy	
A Data-Driven Reliability Assessment Method for Composite Power Systems	1339
Zeyu Liu, Bingchen Zhang, Qiang Li, Feng Zhao, Di Liu, Kai Hou	
Behavioral Study of Three-Phase Stand-alone Asynchronous Generator for Single-Phase Power Supply	1344
Sambaran Ray, Himadri Sekhar Chatterjee, Sankar Narayan Mahato, Nirmal Kumar Roy	
Improved Active Disturbance Rejection Controlled Interleaved Parallel DC/DC Converter Based on Gray Wolf Optimization Algorithm	1351
Fang Wu, Yongming Li	
DRL-based Active and Reactive Power Coordinated Control for Flexible Interconnected Power Distribution Systems with Soft Open Points	1357
Wenlin Wang, Yongbiao Ling, Dongyue Zhang, Jie Zhang, Zhengli Hu, Shanjing Wan, Jixuan Wang, Qibing Wang, Jin Huang, Xiaodong Yang	
A parametric based approach to Wireless Power Transfer with Inductive Coupling	1362
Pranjal Jog, Suwarna Shete, R. K. Kumawat, Rakhee Oka, Sonali Nandanwar, D. K. Palwalia	
Research on Improving Accuracy of Machine Learning Power Prediction System based on semi-supervised strategy	1374
Desheng Wen, Denglong Lu, Lifeng Fan, Jinghui Zhang, Yahua Wang	
False Data Injection Attack Diminishing the Performance of Controllable Devices in Active Distribution Networks	1379
Xu Tang, Jing Wang, Xiaohong Ran, Kaipei Liu, Liang Qin	
Research on S-type clip of self-locking gun for live operation in substation	1385
Xin Wang, Jingjing Guo, Guofeng Chen, Quan Fang, Jian Zhao	
Support Vector Machine Transformer Fault Diagnosis Based on Rough Sets and Cuckoo Search Algorithm	1390
Yao Liu, Xihuai Wang	
Peer-to-peer electricity trading strategy considering dynamic network fee	1395
Xiang Gao, Tianyang Zhang	
Adaptive VSG Control with Coefficient Optimization via Improved Particle Swarm Algorithm	1399
Jie Chen, Muiyang Liu, Junru Chen, Kamran Zeb, Hassaan Khaliq Qureshi	
Design of CEDnet Coverage Optimization Algorithm Based on Grey Clustering	1405
Huichen Xu, Weitao Hua, Dayang Wang, Muxin He, Yang Bai	
Simulation of CEDnet Reliability Evaluation Model Based on Improved PSO Algorithm	1412
Jincheng Zhao, Huichen Xu, Zengyang Mei, Pei Li, Junjie Yin	
Regenerative Braking System of FSAE Racing Car Based on Simulink	1418
Yue Cui	

Improvement of Sliding Mode Control for Boost Converters Based on Disturbance Observer Feng Ding, Shilin Liu, Zhaoqian Li	1422
Design of stepping motor driver based on electric cylinder application Hongqiang Zhang, Chunhong Wang, Guimin Sheng, Chengfeng Li, Yangwei Zhang, Huailiang Li	1427
Research on Configuration Free Technology for the Reconstruction and Expansion of Autonomous and Controllable New Generation Substation Shuiyao Chen, Yutao Qiu, Yudong Fang, Sheng Jin, Yibo Wang, Qiang Tang	1432
Optimal scheduling method of virtual power plant based on model predictive control Hong Ye, Honghui Huang, Yan He, Min Xu, Yantian Yang, Yilin Qiao	1439
Research on PID Parameter Self-Tuning Speed Control System Based on Grasshopper Optimazation Algorithm-Optimized BP Neural Network Yifan Huang, Yonghong Huang	1444
Constant Current Charging and Maximum System Efficiency Tracking Control Scheme for AUV Wireless Charging Yu Wang, Jianzhong Tang	1451
A Defect Diagnosis Method of Power Meter Inspection Image Quality Based on Multi-scale Feature Fusion Attention ResNet Lingji Kong, Huadong Zhang, Shuren Liu, Keshun Zhang, Xiaoguang Yi, Sijia Chen, Yuankai Han	1461
Identification of Rotor System Parameters of Maglev Motor Based on Gaussian Modulation Function Bo Wang, Chunhua Jiang	1466
An Active Parallel Filter Using PI Control Dazhao Zhang, Yawei Song, Min Shi, Hao Tu, Zehao Ye, Pei Zhu	1472
Trading Mechanism and Clearing Method of Day-Ahead and in-day Deep Peak Shaving Markets Kai Zheng, Feng Xu, Nianming Xue, Honghai Li, Jun Zhao, Shangbin Wang	1476
Research on Transient Voltage Disturbance Monitoring Techniques in Power Systems Dandan Zhao, Lin He, Haoxin Yang, Xingxing Zhou, Ruoyu Wang	1483
Study on Cylindrical FPSO hydrodynamic performance and main scale sensitivitivity Xueqin Liu, Chaoyue Guang, Fujian Li, Wei Yang, Fangxin Hu	1487
Power Tracking Improvement Control Method for AA-CAES on Generation Side Zhimei Zheng, Zhengtang Sun, Geyu Zhong, Laijun Chen, Ningning Xie, Shengwei Mei, Xiaochi Liu, Sen Cui	1492
Optimized Control Strategy for Distributed Electric Heating System Considering User Comfort Level Feng Zhou, Yunhui Li, Jie Zhu, Ting Hao, Jun Qiao, Yang Peng, Heng Hu	1500

Author Index