

2025 4th International Conference on New Energy System and Power Engineering (NESP 2025)

**Fuzhou, China
25-27 April 2025**



**IEEE Catalog Number: CFP250F9-POD
ISBN: 979-8-3315-2288-9**

**Copyright © 2025 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:	CFP250F9-POD
ISBN (Print-On-Demand):	979-8-3315-2288-9
ISBN (Online):	979-8-3315-2287-2

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

Wind Power Time Series Simulation Model Based on MCMC Algorithm and Daily Fluctuation Characteristics Yinglan Xu, Yan Pei, Jingyue Wang, Lu Wei, Zheng Qian	1
Dynamic Characteristics of Connectors in Offshore Floating Photovoltaic Arrays of Multiple Modules Weihui Tian, Yi Han, Zhaoguang Qiao, Xiangyu Chen, Zhenlei Cui, Yongjin Tian	6
Research on Path Planning and Energy Efficiency Optimization System for New Energy Vehicles in Telematics Environment Shiping Wu, Hongming Liu, Xingyu Lai	14
Analysis of the influence of the development of new energy users on the forecast of purchasing power by agents (Distributed PV) Shaowa Lin, Xupeng Cheng, Yangjia Lin, Yiru Chen, Yeye Guo	18
Study on Optimal Allocation of Energy Storage in Virtual Power Plants Considering Dynamic Pricing of Carbon-Green Certificate Trading Xiaoxin Chen, Wei Gao, Gengjie Yang	22
Research on BIPVT-Wastewater Source Heat Pump System for Bathroom Hot Water Supply Shengze Shi, Hong Hao	27
Research on the Thermal Performance of Tesla's Channel Liquid Cooling Plate for Lithium-Ion Batteries Liuyang Duan, Zhiwen Zhao	33
Development Layout and Insights of Fusion Energy in the United States Yanan Liu, Maodi Hu, Huanan Wei, Lu Wang, Fu Zhang, Donghuan Song	38
Evaluating the Economic, Security, and Environmental Values of Renewable Energy in the Context of the New Power System Liye Xie, Xiaoliang Dong, Ziyi Lan	50
Impact of traffic peak timing on renewable energy utilization of self-consistent supply system of highway service areas Wentao Wu, Hairong Zou, Xingyu Zhou	55
Numerical Simulation Study on a Localized Environmental Control Device Based on Thermoelectric Cooling Technology Jingqi Liang, Jinhua Chen, Zitong Yang, Maoling Hu	60
Research on Multi-scenario Applications of Self-crosslinked Insulating Photovoltaic Cables Jialong Zhou, Bin Liang, Tianwei Wang, Jixu Jing, Zuxin Song, Yahui Cong, Shengxiang Huang	65
Applicantion of Solar-Air Source Heat Pump Heating System in Oilfield Xiaoke Ji, Yong Mao, Mao Li, Fei Wang, Neng Chen, Siyu Jing	71
Impact of dust accumulation on photovoltaic module power generation at a photovoltaic station in the Zhongwei region Wenyi Shi, Jingyi Yang, Shaoyi Ren	75
Research on Carbon Footprint Analysis and Prediction of New Energy Vehicles with Different Types of Power Batteries Yufan Jiao, Chuan Chen, Dandan Liu, Zidu Yang, Ziliang Wang, Jiansheng Guo	79
Wind condition setting and load extraction technology suitable for China climate environment Zirui Dong, Deyu Cai	84

Research on a novel high-speed control algorithm for automotive permanent magnet synchronous motors Jie Feng, Jianmei Lei, Renfang Zou, Chong Li	93
Design and Optimization of Dual Darrieus Wind Turbines using Computational Fluid Dynamics and Orthogonal Test Method Leya Lao, Xinde Zhang, Hongjun Wang, Biyi Cheng	98
Optimization of Location Selection and Capacity Allocation for Electric Vehicle Charging Stations Based on Genetic Algorithm Xian Zhang, Yushuo Sun, Peng Ji, Hexiao Liang, Ziming Ma, Xin Chang, Hongyi Zhang, Xinhua Zhang, Shuai Hao	107
Optimization of source-grid-load-storage coordination of power systems based on multiple time scale model Huizhi Wang, Peijie Guo, Guozhong Liu	112
Research on Cost Prediction Model for Wind and Photovoltaic Projects Based on Deep Learning Gang Wu, Xin Luo, Juanjuan Wang, Yujie Xu	117
Heating Performance Analysis of an Integrated Solar-CO ₂ Heat Pump System with Thermal Storage Tank Yuan Chang, Yi Zhang, Kaiyue Han	123
Research on Uninterruptible Maintenance Technology for AC/DC Power Supply Systems Nan Huang, Dailin Li, Yannan Jiao, Qi Yang, Mei Yu	129
Techno-Economic Viability and Business Model Analysis of Offshore Wind-Powered Hydrogen Production Biaobin Huang, Yajuan Wei, Jianrong Wang, Zongyuan He, Shuhang Zheng, Chunlan Cao, Wenguang Zheng, Zhixiang Cui	134
Pilot Protection Based on Energy-Statistics for Series-Compensated Outgoing Lines Connecting Doubly-Fed Wind Farms Chenwei Tian, Xiaoming Wang, Xiaolv He	139
Multi-load and electric vehicle aggregation participate in market scheduling research Ziming Ma, Hongyi Zhang, Xian Zhang, Peng Ji, Hexiao Liang, Xin Chang, Yushuo Sun, Xinhua Zhang, Shuai Hao	145
Numerical investigation on the performance of a conical-tube valveless piezoelectric micropump Shengchuan Cai, Wanxue Sun, Xueying Wen, Zhi Cheng	150
Resource Endowment-Oriented Capacity Configuration of Hybrid Wind-Solar-Storage Systems: A Dynamic Coupling Mechanism and Multi-Scale Spatiotemporal Optimization Xiaojing Zhu, Ping Yuan, Jie Cao, Yinlong Han	155
Adaptive optimization method of photovoltaic power generation model parameters based on CGAPSO algorithm Yifan Wang, Yong Zhao, Xiaojun Xie, Qi Chai	161
Capacity Optimization and Comprehensive Benefit Analysis for Grid-Connected Hydrogen-Production Microgrid Systems Maichao Li, Nan Li, Hailin Mu, Chengwei Jiang	165
Research on dynamic reactive power resource regulation of new power distribution system to enhance new energy carrying capacity Chuanquan Liu, Caiping Ye, Jianbing Xu, Ziming Wang, Siming Wei, Jingru Yang, Pengfei Cheng, Fang Liu	171
Enhancing Renewable Energy Utilization in Microgrids through a Flexible Load Dispatch System Junyi Wang, Guolei Liu, Yang Zhou, Shihui Su	178

Study on Stability Characteristics of Wind-PV-Thermal-Bundled DC Power Transmission System Shichuan Liu, Yue Zhao, Qi Guo, Dandan Li, Ziyu Liu	183
Application of Image Recognition Theory in Concrete Tower Hoisting Construction of Wind Power Projects Yajun Wang, Jiashen Liu, Chang Li, Shibiao Fang	187
Research and development of AI-Enabled Adaptive Imaging System for renewable energy Qianqian Song, Huajian Zhou, Lanbo Liu, Shibiao Fang	191
Charging Dynamics of Multi-stage Reciprocating Compressor for Micro-scale Compressed Air Energy Storage System Le Wang, Maofei Geng, Pengtao Huang, Xiaoming Liu	195
Influence of Cross-Sectional Interface Areas on Interruption Performance in High-Voltage Self-extinguishing Extinguishing SF ₆ Circuit Breakers Peng Xu, Xue Zhang, Zhengyong Hu, Junqiu Geng, Chao Geng, Bin Xiang, Yixuan Li, Shulei Zhao, Zhiyuan Liu	199
Ship pollution emission prediction based on GRU-Attention neural network Yuanjing Xiao, Jingxian Liu	204
Research on Grid-Connected Photovoltaic Charging Piles Yiqi Cai, Zhiqiang Xu	208
Characterization of harmonic frequency response of Capacitive voltage transformer Xiong Xiao, Chun Li, Bingyuan Tan, Jixiang Liu, Wenhao Lu, Can Xu	212
Stability analysis of optical storage micro-grid system Yuanyu Liu, Zhiqiang Xu, Shirong Liang	218
Research on Frequency Modulation of Grid connected Photovoltaic Power Generation System Xiaohui Zheng	223
Enhancing Flow Energy Harvesting Efficiency through Hybrid Deep Learning Models Ying Gong, Yuanhang Xie, Wenhua Zhang, Yongzheng Wang	229
Analysis of capacitance dielectric loss factor under different environmental simulation Xin Zhi, Hongwei Li, Shuaibing Li	235
A adaptive supraharmonic grouping method based on iterative threshold searching Yaqiong Li, Dongxu Wu, Hao Luo, Minxuan Shen	239
Off-grid Hybrid Renewable Energy System Design and Optimization for Belt and Road cities: A case study in Afghanistan Yijia Zhang, Mingyang Zhou, Shiqi Sun	243
Distributed model predictive control for load frequency control in multi-region power systems Yuwen Hu	250
Fractional-Order Two-Degree-of-Freedom PID Control for Permanent Magnet Synchronous Motor Shen Zhao, Mingda Li, Di Yu	256
A Reverse Droop Control for More Adjustable Grid-following Inverters Under Weak Grid Xuan Lin, Zhijie Li, Zhengtong Yang, Jinyu Wang, Junzheng Cao, Shuangmian Yang	261

Optimal Construction and Operation Analysis of Fast Charging Stations Based on Time-of-Use Electricity Price Flexible Control Shu Liu, Yaxuan Xiang, Bing Shen, Shanshan Shi, Ruirui Chen	267
Global Dispatching of Distributed Cluster Flow Based on Dijkstra and Multi-strategy in Power Grid Huanyu Zhang, Wenbin Cai, Daokui Wang, Zhilong Chen, Bo Lin, Long Zhang	271
Incentive Bidding Strategies for the Participation of Battery Energy Storage in the Electricity Market Mingbo Wu, Yadong Wen, Jie Liu, Li Xin, Haili Wang, Jianping Zhao, Yuhao Duan, Tian Yan	275
Extended State Observer-Driven Deadbeat Predictive Current Control Strategy for Current Loops in Five-Phase Permanent Magnet Synchronous Motor Drives Lianqing Miao, Zhaokun Yang, Yue Li, Xuyue Wen, Xinlei Zhang, Zhenxiang Wang, Licun Fang	285
Sensorless control of permanent magnet synchronous motor based on fuzzy super-twisting algorithm sliding mode observer Xuyue Wen, Zhaokun Yang, Yue Li, Lianqing Miao, Xinlei Zhang, Zhenxiang Wang, Licun Fang	289
Research on Predictive Control Algorithm of Optimization Model for a Five-Phase Permanent Magnet Synchronous Motor Based on Synthetic Voltage Vector Selection Xinlei Zhang, Zhaokun Yang, Yue Li, Lianqing Miao, Xuyue Wen, Zhenxiang Wang, Licun Fang	296
A study on the correlation between battery SOH and the peak temperature rise during charging Yijia Dai, Jiewei Yi, Xinyi Dong, Tianguan Xu, Zaiguo Fu	304
Improved Electrochemical Performance and Thermal Stability of Ni-Rich LiNi _{0.90} Co _{0.05} Mn _{0.05} O ₂ Cathode Material by WO ₃ Coating Chen Liang, Huiqi Sun, Juncheng Jiang	309
Dynamic Accounting Method and System Research on Carbon Emissions During Ultra-high Voltage Projects Construction Process Wentao Li, Zhenhua Wang, Yan Zheng, Huijuan Huo, Liqun Zhang, Gang Wang	314
Battery State of Charge Prediction Based on Conformer Architecture Liqin Su, Zirun Jia, Chongwen Wang	319
Joint Estimation of State of Health and Remaining Useful Life for Lithium-ion Batteries Using Real-World Vehicle Operation Data Zhijun Deng, Zeming Ren, Ruichao Wei, Jingjing Zhou	324
Optimal scheduling study of microgrid based on multi-objective hare algorithm Zhiyu Zhang, Lanxin Wei	330
Numerical Simulation of Low-Temperature Gasification of Biomass in Bubbling Fluidized Bed Using Mesoscale Model Zifeng Luo, Ying Lin, Baosheng Jin, Liye Wang	336
Research on hierarchical equalization of lithium battery packs based on bidirectional Cuk converter Lele Mu, Hanyan Li	341
Hierarchical Optimal Peaking of Large Grids Considering Energy Storage Lifetime Losses and Demand Side Response Jun Wu, Mutao Huang, Jingshu Zhang, Chaoyi Peng, Daiyu Xie, Xingbang Chen, Senlin Ran	345
An Evaluation Method for Aggregated Response Capability of Distributed Resources in Virtual Power Plants Weiguo Li, Chengyu Wang, Lei Ye, Qian Hu, Xiaolian Yang	354
Evaluation of 5G base station energy storage adjustable potential based on MF-LSTM Xuecai Wang, Xianping Lin, Kegang Cui, Yalong Liu, Xudong Zhang, Xinlei Bai	359

Degradation and State of Health Estimation of Lithium-Ion Batteries under Different Cycling Conditions Siqing Shen, Yanxiang Yang, Tao Fan, Hui Qian	368
Research on Energy Storage Business Model and Optimized Operation Based on the Electricity Spot Market Environment Cong Duan, Hua Zheng, Li Xie, Jiali Zhang, Yuefeng Wang, Shaofei Lu, Ruixuan Zhang, Zihang Wang	372
Research on Parameter Tuning of Adaptive Luenberger Sensorless Vector Control for Permanent Magnet Synchronous Motor Yuhang Liu, Youchi Hu, Zhilong Shan, Xin Cheng	377
Precise Detection and Control of the Opening Degree of Electrically Controlled EGR Valves Based on Non-contact Magnetic Field Sensing Wenkai Ren, Xin Cheng	382
Optimization of Heat Storage Devices of Stepped Phase Change Packed Bed at Different Cut-off Temperatures Xiaohui Yang	386
Research on the Multi-Mechanism Coordinated Conduction Path of Shared Energy Storage in Different Stages Run Tang, Yishun Zhu, Ying Zhao, Xiaoyun Liu, Yuhang Ou	390
Online Monitoring of Overhead Ground Wire Corrosion via Ultrasonic Guided Wave Zhimin Ding, Yifang Yuan, Guangrong Gu, Xuanyang Tang, Cheng Chen, Chunming Yang	395
Modeling and Simulation of Five Phase Permanent Magnet Synchronous Motor Jianqun Han	400
Research on Dynamic Compensation Control of Bidirectional DC Charging Piles in DC Microgrid Systems Based on Disturbance Observer Mingcai Wang, Qi Jia, Liang Zhu, Xueying Yan, Jiran Zhu, Yu Zhao, Fan Wu	404
Research on Steady-state Thermal Impedance Calculation and Junction Temperature Prediction of Welded IGBT Bingqiang Wang, Chunyang Zhang, Hongchun Liu, Wenkou Xu	410
Sensorless control based on PMSM linear state observer Bihui Wang, Haiyan Zhang	416
Optimal Allocation of Energy Storage in Distribution Network Based on Improved Parrot Algorithm Yuchun Sun, Cheng Li	420
Optimization Method of Energy Storage Power Station Capacity Configuration Based on Electricity Spot Joint Market Revenue Yan Liu, Mingyang Liu	425
Research on Electrical Capacitance Tomography Lubricating Oil Monitoring Based on elastic net method optimized by the relaxed Alternating Direction Method of Multipliers Min Ma, Limin Liu	431
Zero carbon park carbon emission prediction method based on deep reinforcement learning of carbon data Yafeng Xin, Hanling Deng	437
Inhibition mechanism of perfluorohexanone on cables combustion: A ReaxFF-MD study Shaoming Pan, Yi Su, Rui Li, Wei Huang, Liangyuan Chen, Jian Zhao, Xiaoxing Zhang	441
Edge-Device Collaborative Semantic Communication Service for Distribution Network Jingzhi Liu, Hongyi Yang, Quanlei Qu, Zhidong Liu, Geng Li, Jianming Zhang	446

Semantics-Oriented Cloud-Edge-End Collaborative Power Allocation in Smart Grids Tao Du, Mingkai Yang, Rukuo Ma, Jingzhi Liu, Hao Liu	450
The Topology Identification and Line Length Measurement Method for Low-Voltage Distribution Networks Based on Carrier Communication Technology Fangxu Chen, Moufa Guo, Yulin Zheng, Xiankai Zeng, Jiahao Lin	454
Simulation of High-Field-Side and Low-Field-Side Helicon Wave Current Drive Cui Yu, Dan Du, Sheng Deng, Xiaohui Gao	459
Analysis of Measurement Errors in Smart Electricity Meters under High-Humidity, High-Heat, and High-Salt Fog Conditions Wenjing Wang, Ying Zhang, Tianfu Huang, Xiaoxu Hu, Zilin Chen, Chengxin Tong	463
A MLSTM-FCN+SEB based open circuit fault diagnosis method for power inverter Wenke Liu, Xiaomei Chen	470
Experimental Analysis On Nonlinear Conducting Impedance of Steel Conductors Xiang Ren, Zhuohong Pan, Bo Zhang, Jiannan Yu	476
Data-Driven Evolutionary Game-Based Model Predictive Control for Hybrid Renewable Energy Dispatch in Autonomous Ships Yaoze Liu, Zhen Tian, Jinming Yang, Zhihao Lin	482
Research and Practice on Charging and Battery Swapping Systems Centered on Vehicle-to-Grid Interaction Ning Liu, Xueyun Li, Mengqi Liu, Xin Su, Hao Wang, Andi Liu, Nan Chen	491
Robust Dynamic Modeling and Optimal Scheduling of Wind-Solar-Storage Systems via Multi-Modal Data Fusion under Uncertainty Yuhan Dong	495
Study on the Influence of Secondary Electron Emission on Sheath Development in Vacuum Circuit Breakers Guochao Zhang, Ming Zhang, Shuang Leng, Dongrui Song, Dandan Mu, Shuang Liu	500
Data-Driven Voltage Stability Assessment for Power Systems with Renewable Energy Integration Haifeng Zhang, Xiangyu Lv, Guanqun Zhuang, Jiajun Zhang, Baoju Li, Shuyu Zhou	504
Research on the control strategy of vehicle fuel cell thermal management system Yi Tian, Yuhong Chen	509
Enhancing AEMEC Performance via Anode GDL Wettability Control Yushuo Sun, Lingjun Song, Yuwei Song	514
Co-optimized Operation of Multi-integrated Energy Microgrids-Shared Energy Storage Plants Based on Mixed Game Theory Yongsheng Zhu, Wenhao Gu, Qiuyan Li, Yanhong Meng, Kun Zhang, Pengyang Liu	518
Causal-Oriented Machine Learning for Industrial Load Forecasting in Integrated Energy Systems Mingyue He, Zhengxiang Song, Jun Yang, Shaohua Zhang	525
Fault Diagnosis of Protection Systems in Intelligent Substations Based on Machine Learning Algorithms Han Guo, Shaocong Chang, Guangqiang Han, Rui Ding, Lijia Guo, Yibo Wang	530
Research on Key Technologies and Design Applications of 220kV Intelligent substation Xuewu Zhang, Qinglan Gao, Zhen Liu, Yunpeng Li, Qicong Wu, Fengrui Yang	535

Research on the mechanism of extra fast transient overvoltage of Gas Insulated Switchgear equipment based on the tripping event of 500kV Huangping plant station Xin Wang, Yunfeng Long, Shan Wang, Zhaoyu Peng, Pengfeng Qiu, Dewei Zhou	539
Research on Heating Characteristics of Radiant and Fresh Air Composite Systems Based on Frequency-Domain Resistance-Capacitance Model Maoling Hu, Yang Pan, Jinhua Chen, Jingqi Liang	543
Single-phase chopper-controlled AC voltage regulator circuit design Zijian Zhang, Yixin Lin, Zenggong Lei, Siyuan Fu, Weixuan Gao	549
An Adaptive Localization Algorithm Integrating Reporting Probability and Positional Information Wenbo Gao, Ke Zhu	554
Determining Method for the Position of Bus Transfer Disconnectors in Substations Based on Current Change Rates and Three-Phase Unbalance Degree Xiaotian Zheng, Ziquan Liu, Dahan Yan, Xiaowu Pan, Linjia Xie, Yukai Yuan, Zhiqi Guo, Sitong Li, Yanli Xin	558
Assessment Model for the Adjustable Potential of Silicon Carbide Enterprises Based on Dynamic Electricity Pricing and Demand Response Chuanbo Tian, Yuan Jiang, Min Qiu, Suoyue Wang, Yijuan Liu	563
Research on fault diagnosis and emergency repair methods for distribution networks based on graph computing topology analysis Jun Chen, Wang Luo, Meizhao Liu, Kai Liu	568
Simulation analysis of operational factors affecting alkaline electrolysis hydrogen production systems Chenxi Ding, Peng Li, Zhiyong Zhao, Yingshuang Yan	574
Load forecasting of purchasing agent customers based on dynamic adjustment mechanism of TOU price Xue Bai, Xuefeng Bai, Yufan Shi, Yajie Wu, Haijing Zhang	579
Multi-factor coupling analysis of short-gap SF ₆ /N ₂ gas discharge process Yingli Wang, Qiming Lu, Chengjie Lu, Geng Li	584
Research on Quantitative Model of Power System Flexibility Demand Based on Polyhedron Delian Gao, Ling Li, Zilan Zhao, Lei Zhu, Xiaoyu Han	589
Research on EV Demand Response Pricing Mechanism Based on Capacity-Energy Dual-Dimensional Compensation Lili Li, Xiaonan Liu, Rui He, Qi Tian	594
Optimal Operation of New Coastal Power Systems Considering Source-Load Uncertainty and CCS Shucan Zhou, Guanzhen Wang, Yining Zhang, Yixin Li, Xianfu Gong, Suhua Lou	599
Simulation of the drying process of the catalyst layer in a proton exchange membrane fuel cell (PEMFC) Zhiwu Song, Cheng Yan, Junliang Zhang, Fan Yang	606
A Bi-Level Optimization Model for Bidding Strategies in Inter-Provincial Electricity Spot Markets Based on an Improved Quantum Genetic Algorithm Zongrui Wang, Dabo Zhang, Zhuangzhuang Cao	611
Model Oriented to Electricity Spot Market Clearing Price Forecasting Yang Li, Ziyang Chen, Chunhai Guo, Junwei Yang, Zhiqiang Liu	616
Safety detection and fault diagnosis of primary equipment in substations based on intelligent monitoring Jingyao Gao, Mengze Liu, Yuqing Xing, Peilin Lv, Zihan Zhao	621

A Regional Voltage Control Strategy for Distribution Network Based on Multi-Agents He Li, Lei Chen, Yang Liu, Lei Mu, Nan Dong, Daixin Zhang	625
Research on Power Insulator Defect Detection Based on Improved YOLOv8 Zhitao Zheng, Yan Zhang	630
NaBH ₄ -assisted Preparation of NiMn Sulfides for Efficient Electrochemical Conversion of 5-hydroxymethylfurfural to 2,5-furandicarboxylic Acid Jian Du, Laihong Shen, Rui Jiang	634
Research on the Operation Mechanism and Clearing Model of Spot Electricity Market in Receiving Provinces of Power System Songxu Xin, Hua Zheng, Li Xie, Cong Duan, Yuefeng Wang, Shaofei Lu, Ruixuan Zhang, Ge Wang	638
Electric Vehicle Charging Station Investment Benefit Evaluation Model Based on Monte Carlo Simulation Xian Zhang, Yushuo Sun, Peng Ji, Hexiao Liang, Ziming Ma, Xin Chang, Shuai Hao, Xinhua Zhang, Hongyi Zhang	643
A High-performance Aqueous Zinc-Thiocyanogen-Iodine Battery with High Capacity and Dual Platforms Shidi Ju, Shaohua Zhang, Qian Zhang, Zhipan Zhang	647
A method to construct the functional mechanism model for Substation Monitoring System Xiang Zheng, Shaoyu Chen, Jiayi Wu, Qi Peng, Min Zhang, Yikang Zhang, Yiting Yu, Ancheng Xue	654
Short-term power load forecasting based on CNN-LSTM-Attention modeling Xiangwu Yan, Zehua Wang, Junda Lu, Jiaoxin Jia	658
Research on power supply technology of coal shearer sensor based on thermoelectric power generation Zhihua Cai, Xiao Lv	662
Energy storage capacity optimization model considering transferable load characteristics of rural distribution network Haowen Chen, Yongzhi Min, Hao Li, Shunqun Chen, Liang Liu	666
Constructing Researchers' Profile in Power domain Based on Knowledge Graph Yushi Liu, Yuanyang Chen, Xin Huang, Dongdong Zhang, Hailiang Yu, Lin Lu, Bing Wu, Tipeng Wang, Tao Peng, Zhiwei Zhang	671
Voltage-frequency interaction mechanism under short-circuit faults in a high proportion of new energy-receiving grids Mingheng Zhang, Yazhou Lv, Feng Xue, Zhaowei Li, Ling Zhu	679
Mechanistic Study of External Electric Field Effects on Insulating Oil in Power Capacitors Based on Molecular Simulation Xuefei Yang, Yan Zhao, Zhixu Liao, Fanchao Huang, Shunjian Yang, Haisheng Li	687
Analysis and Experimental Study of an Internal Discharge Fault in a 220kV GIS Shaowu Li, Xuran Yu, Hate Wang, Yibin Chen, Daopei Yang, Chunlei Yu	691
Optimized operation of hydrogen pipeline networks considering thermal safety of hydrogen storage tanks Rui Chen, Wendi Zheng, Youzhe Zhu, Jianing Pan, Yonghai Wu	697
An Optimization Method for Switch Angle Storage in SHEPWM Modulation Yanqiang Lin, Xielin Shen, Jingling Cheng, Dongdong Chen	703

Sensorless control of PMSM based on superhelical sliding mode observer Jiaxin Cao, Haiyan Zhang	708
Research on a Multi-Agent Stackelberg Game Model for Electric Vehicle Aggregation Participation in Electricity Markets Peng Ji, Xinhua Zhang, Xian Zhang, Shuai Hao, Hongyi Zhang, Yushuo Sun	712
Optimized Estimation of Future Power Losses in Low Voltage Distribution Systems Based on Particle Swarm Optimization and Genetic Algorithm Zirui Zhuang, Mianzhi Wu	716
Factors Influencing Energy-Saving Behavior in University Dormitories Patrick X.W. Zou, Ziqi Jiang	722
A Refined Analytical Approach for Precise Estimation of Parasitic Capacitance in Current Sensors With Powder Cores Ximing Gao, She Wang, Jiguang Zhao, Bing Tian, Qiancheng Lv, Liang Zhao, Zhenliang Ye, Zhiming Gu, Haiqian Chen, Qian Zhang	726
Author Index	730