

2025 IEEE International Conference on Smart Power and Energy Technologies (SPET 2025)

**Wuhan, China
19-20 September 2025**



**IEEE Catalog Number: CFP251AU-POD
ISBN: 979-8-3315-6820-7**

**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:	CFP251AU-POD
ISBN (Print-On-Demand):	979-8-3315-6820-7
ISBN (Online):	979-8-3315-6819-1

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

2025 IEEE International Conference on Smart Power and Energy Technologies (IEEE SPET 2025) Proceedings

Table of Contents

SPET2025_001	A Self-Learning Meta-Heuristic Algorithm for Virtual Power Plant Optimal Dispatch <i>Yixuan Fan, Pan He, Ling Zhang, and Dongqing Zhang</i>	1
SPET2025_003	Spatio-temporal Attention Mechanism-based Identification Method for Related Power Transmission Sections <i>Kuanlong Qiao, Yichun Wu, and Taiyang Li</i>	10
SPET2025_004	State of Health Estimation of Vanadium Redox Flow Battery Based on Transformer-BiGRU Network <i>Xifeng Lin, Haoji Liu, Xiaojie Liu, Hengshan Mao, Xiao Wang, and Binyu Xiong</i>	16
SPET2025_005	Pipe and Electrical Connection Optimization of Multi-Stack Vanadium Redox Flow Battery <i>Manting Zhang, Jingda Wu, Xinqing Hao, Lu Lu, Chenyan Li, and Binyu Xiong</i>	22
SPET2025_006	Modeling the Impact of Asymmetric Flow Rates on Capacity Degradation in Vanadium Redox Flow Batteries <i>Chengyan Li, Xifeng Lin, Yunhao Qiu, Yu Zhang, Yijia Chen, and Binyu Xiong</i>	27
SPET2025_007	Multi-Agent Deep Reinforcement Learning for Voltage Control in Distribution Systems with High Photovoltaic Penetration <i>Htutzaw Hein, Jiebei Zhu, Lujie Yu, and Yifan Hu</i>	33
SPET2025_008	Research on capacity configuration requirements of multi-energy storage system participating in peak regulation <i>Feng Zhu, Xun Dou, Zhenlan Dou, and Chunyan Zhang</i>	39
SPET2025_009	Hierarchical and Distributed Voltage Optimization Method for AC-DC Hybrid Distribution Networks Based on Analysis Target Cascading <i>Zuhang Hong, Jinglei Deng, Tianhao Li, Yunxin Liu, Liangzhong Yao, Sirui Zhang, and Kaiyuan He</i>	45
SPET2025_010	TCN-LSTM Based Pump Fault Diagnosis Method for Vanadium Redox Flow Battery <i>Lu Lu, Jiahang Jiang, Shaojing Wang, Jingda Wu, Manting Zhang, and Binyu Xiong</i>	51
SPET2025_011	Physics-Informed GraphSAGE for Hybrid AC/DC Power System State Estimation <i>Qizhan Shu, Baolong Liu, Yong Qiao, and Zhong Chen</i>	57
SPET2025_012	Dynamic Ampacity Prediction of Cable Lines Based on Kalman Filter State Space Model <i>Huan Huang, Bo Gong, Wei Niu, Hourong Zhang, Xianyin Mao, Yongli</i>	66

SPET2025_013	<i>Liao, Jinqiang He, Haipeng Zhang, Hao Li, and Zenghao Huang</i> Probability Distribution Characteristics of Multi- Period Current-Carrying Capacity of Overhead Lines Based on Non-Parametric Estimation	73
SPET2025_014	<i>Bo Gong, Wei Niu, Hourong Zhang, Shurong Xu, Hao Li, Yongli Liao, Jinqiang He, Haipeng Zhang, Zenghao Huang, and Dengjie Zhu</i> Trading and Optimized Allocation Mechanism for Photovoltaic Energy Storage Resources via Double- Sided Auctions	80
SPET2025_015	<i>Haojing Wang, Yu Zhang, Jiahao Song, and Chen Fang</i> Research on Internal Short Circuit Diagnosis Method for Lithium-Ion Batteries Based on Electrochemical Impedance Spectroscopy	86
SPET2025_016	<i>Yizeng Wu, Zhenzi Wang, Peng Yu, and Jia Ren</i> A Data-Knowledge Fusion Driven Method for Short-Term Load Forecasting Considering PV- Storage Interaction	94
SPET2025_017	<i>Huangqiang Li, Yijing Huang, Huamin Tong, Qin Yao, Qian Wang, Tongxin Zhao, Shanyang Wei, and Wei Yao</i> Research on Integrated Sensor for Combined Detection of Leakage Current and High-Frequency Pulse Signal	100
SPET2025_018	<i>Jianyong Zhao, Zhihui Wang, Ruoxi Liu, Yuan Gui, and Xingquan Xu</i> Research on Sound Insulation and Noise Reduction Technology for Oil-Immersed Transformers	108
SPET2025_019	<i>Lianhuan Xu, Xiaoyang Zhang, Guangchao Bai, Junwei Cheng, Zhenjie Zhao, Wenjie Li, and Hebin Zhang</i> The Impact of Grid-forming Renewable Energy Integration on Fault Trip Criteria Of Stability Control Devices	113
SPET2025_020	<i>Shifeng Wei, Chi Zhang, Tao Zheng, Longhui Wang , Xin Qi, Jialong Wu, Tong Li, and Zhaoyang Yin</i> Research on Intelligent Operation and Maintenance Strategy of GIS Substation Based on Multi-source Data Fusion	120
SPET2025_021	<i>Shijie Chen, Zhanpeng Ou, Ziyu Wan, Xi Lan, Junyang Wang, and Xixiu Wu</i> CNN-BiLSTM Hybrid Network for Dynamic Voltage Prediction in Vanadium Redox Flow Batteries	125
SPET2025_022	<i>Jingda Wu, Manting Zhang, Lu Lu, Xifeng Lin, Chengyan Li, and Binyu Xiong</i> Evaluation of Flexibility Requirement based on Generative Artificial Intelligence and Production Cost Simulation	130
SPET2025_023	<i>Xian Wang, Yi Sun, Li Ma, and Pei Zhang</i> A Two-Level Capacity Configuration Method for Hybrid Energy Storage System in Renewable Energy Base	136
SPET2025_024	<i>Pengfei He, Lin Cheng, Daniyaer Paizulamu, and Qiang Ji</i> Optimization of Distribution Line Measurement Device Layout Based on Fault Observability	142
SPET2025_025	<i>Benren Pan, Ziyang Zhou, Xiao Zheng, Bin Wang, Guannan Wang, and Tao Zhang</i> Power Load Cycle Identification Method Based on Multi-time Scale Convolutional Neural Networks	148
	<i>Chenhao He, Shaohua Han, Jinian Pang, and Lizi Luo</i>	

SPET2025_026	Smart Digital Project Management Platform for the Construction Process: A Case of Distributed Photovoltaic Power Generation Projects <i>Yingying Wang, Fujie Wang, and Ming Huang</i>	154
SPET2025_027	Research on Fault Location Method for Phase-to-Phase Short-Circuit in Multi-Branch Complex Distribution Lines <i>Xiao Zheng, Guannan Wang, Bin Wang, Benren Pan, Quan Shi, and Gege Chen</i>	159
SPET2025_028	A Two-Stage Stochastic Optimization Framework for Market Bidding of a Large-Scale Renewable Energy Base <i>Shisheng Chen, Minglei Bao, Chao Guo, Lingyang Li, Jiguang Zhang, and Wenbin Zhu</i>	165
SPET2025_029	Distributed Voltage Control for Primary-Secondary Distribution Networks Using ADMM <i>Yiqun Kang, Bingyang Feng, Yuxuan Hu, Daojun Tan, Yuqi Ao, and Hui Xiong</i>	171
SPET2025_032	A comparative study on the metrological performance of sophisticated gateway electric energy meters <i>Chunyu Wang, Helong Li, Da Lu, Bo Gao, Xiaodong Wang, and Chun Xiao</i>	176
SPET2025_033	Energy Integral based Q-axis Current Differential Protection for Active Distribution Networks <i>Haiyong Li, Chao Huang, Zizheng Shen, Pengfei Huang, Junyang Tian, Xincheng Zheng, and Guibin Zou</i>	181
SPET2025_034	EV Charging Pattern Identification via Dimensionality Reduction-Based Hybrid Clustering <i>Siqi Wang, Xin Zhang, Lijia Duan, and Wei Pei</i>	186
SPET2025_035	Transient Voltage Stability Evaluation Method for Grid-Connected Wind Power Generation Systems Based on Improved Thevenin Equivalent <i>Zhiyi Wang, Jilong Ke, Lin Cui, Yongcheng Ming, Linsong Li, and Jun Yao</i>	192
SPET2025_038	Building Energy Consumption Prediction Based on Clustering and Privacy Preserving Federated Learning <i>Hongbin Jian, Jichao Leng, Lulu Li, and Xiaolin Zhou</i>	198
SPET2025_039	A flexible interconnected device planning method for AC interconnected systems based on two-stage robust optimization <i>Yangqing Dan, Xin Tong, Jun Wang, and Pengfei Hu</i>	205
SPET2025_040	New Energy Cloud Digitalization Business Process for Improving the Efficiency of China's Power Grid Services <i>Jinsong Liu, Xu Han, Chongjian Zhang, Chengzhen Lin, Hanyun Wang, Pengfei Guo, Jun Du, Xun Liu, Yang Yu, and Yahui Wang</i>	211
SPET2025_042	Line Parameter Identification Method Based on Adaptive Parzen Estimator Under Sequence Model Optimization <i>Qinglong Liao, Yongfu Li, Shanshan Kuang, Hong Xiang, Zhuoheng Wang, Kewen Pei, Qiushi Cui, and Jie Gao</i>	215
SPET2025_043	Series Flexible Interconnection Device with Fault Current Limiting Feature Based on Series-Parallel Transformer Structure <i>Jiayang Fei, Han Yan, Jianhua Wang, and Shi Chen</i>	221
SPET2025_044	FDIA Localization in Large-scale Power Systems via KEN-	227

	FL Spatio-Temporal Learning	
	<i>Haoqin Li, Shijie Li, Zijun Su, Xin Lei, Jiesheng Huang, and Huaiguang Jiang</i>	
SPET2025_045	Optimized Operation Strategy of Cooperative Game for Multi- Communities Integrated Energy Systems Considering Energy Mutual Aid Contribution Index	235
	<i>Weicheng Xu, Jiahao Wang, Peng Li, and Zishang Ma</i>	
SPET2025_046	A Novel Analytic Approach to Calculating Thermal Resistance of the Power Device in Power Systems	241
	<i>Yi Liu, Xiaobo Dong, Shuoxun Yuan, Xiang Zhou, Ning Guo, and Laili Wang</i>	
SPET2025_047	GFM and GFL Hybrid Synchronous Control and Small-Signal Stability Analysis of Grid-Connected Inverter for Renewable Energy Generation Systems	246
	<i>Xiaotong Zhang, Ruisheng Xu, Jie Chen, and Xin Chen</i>	
SPET2025_048	Research on Black Start Scheme of Offshore Wind Farm with LCC-MMC Hybrid HVDC Transmission System	252
	<i>Ruanming Huang, Yaoliang Zhu, Chenhao Mo, Rongyu Jin, Wei Xie, and Jun Yao</i>	
SPET2025_049	Optimization Method and Device of Interface Exchange-Coupled Magnetic Moment in Iron-Based Dual-Phase Magnetic Materials Based on First- Principles	258
	<i>Daixue Zhang, Fuyao Yang, Yang Liu, Cong Wang, Tao Ma, Xinping Guo, Xiaobing Ma, and Xuxuan Chen</i>	
SPET2025_050	Study of Spin Properties of Fe2O3-NdFeB Dual-Phase Magnetic Materials Based on First-Principles	263
	<i>Daixue Zhang, Cong Wang, Yang Liu, Fuyao Yang, Tao Ma, Xinping Guo, Xiaobing Ma, and Xuxuan Chen</i>	
SPET2025_051	Explicit Frequency Nadir Security-Constrained Unit Commitment	268
	<i>Jianxin Zhang, Shiyang Li, Zining Liu, Huanbin Yan, Tuo Jiang, Yuming Liu, and Siting Zhu</i>	
SPET2025_052	A Virtual Power Plant-based Electric Vehicle Charging Guidance Strategy Considering User Willingness	274
	<i>Haonan Wu, Lunshu Chen, and Wei Feng</i>	
SPET2025_053	Capacity Optimization of Large Renewable Energy Bases Considering Ammonia Co-Firing and DC Export Scheduling	280
	<i>Jinghao Yan, Siyang Liu, Longcan Li, and Yuehui Huang</i>	
SPET2025_054	The Calculation Method of Ill-conditioned Power Flow in Urban Power Grids with Multi-terminal Flexible DC Transmission System	286
	<i>Kaiyuan Zheng, Yidi Yao, Liping Yang, Yuxuan Zhang, Zaichi Zhang, Zhenwen Xuan, Junyang Luo, and Chongru Liu</i>	
SPET2025_055	Meta Spatiotemporal Multimodal Fusion Network for Net Load Forecasting in Power Distribution Systems under High Renewable Penetration	291
	<i>Ruican Hu, Shijie Li, Haoqin Li, Xin Lei, Jiesheng Huang, and Huaiguang Jiang</i>	
SPET2025_057	Topology and Parameter Estimation for Distribution Network without Phase Measurement Units	298
	<i>Yun Zhang, Tianlu Gao, Yuyan Bai, and Jun Zhang</i>	
SPET2025_058	A Single Wind Farm Localization Method for Sub- /Super-	303

	Synchronous Oscillation of Direct-Drive Wind Farm Based on Meta-Learning	
	<i>Lingran Kong, Chongru Liu, Chenbo Su, Jiashu Fang, Le Zheng, Haoyun Dong, Yida Fan, and Peinan Wang</i>	
SPET2025_059	Emergency Accident Handling Strategy for Photovoltaic-Storage-Charging Systems Based on Deep Reinforcement Learning	308
	<i>Jianzhou Zhang, Wentao Lu, Sheng Dou, and Liangliang Chen</i>	
SPET2025_060	A Novel Gate Driver Circuit for 15kV SiC MOSFET Crosstalk Suppression based on Low Impedance Path	316
	<i>Jiaze Xu, Xiaobo Dong, Haoyuan Jin, Gan Wang, Yong Wang, Zhewen Ni, Laili Wang, Yunqing Pei, and Xuefeng Ge</i>	
SPET2025_061	Enhancing Regional Load Forecasting via Federated Spatio-Temporal Learning and Personalized Modeling	323
	<i>Yufeng Wang, Haoqin Li, Shijie Li, Jiesheng Huang, Xin Lei, and Huaiguang Jiang</i>	
SPET2025_066	Learning Regional Frequency Security Constraints via Input Convex Neural Networks	329
	<i>Yi Wang, Aimon Mirza Baig, and Goran Strbac</i>	
SPET2025_067	A Novel Two-Stage Deep Reinforcement Learning Approach: for Optimal Scheduling of Island Microgrids	335
	<i>Zhibo Zhang, Bowen Zhou, Guangdi Li, and Zhaoxia Xiao</i>	
SPET2025_069	Coordinated Optimal Strategy of Microgrid Clusters Based on Asynchronous Iteration Algorithm	341
	<i>Jingjing Wang, Liangzhong Yao, Jun Wang, Siyang Liao, Wei Hu, and Huaidong Min</i>	
SPET2025_070	Research and analysis on fault control strategy of large impeller wind turbine based on PSD-BPA simulation software	347
	<i>Zhentao Zhou, Ruanxiang Li, Zhensheng Liu, Xinyu Mei, Ding Zhou, and Qiang Zhang</i>	
SPET2025_071	A Multi-agent Framework for Photovoltaic Module Defect Detection	354
	<i>Junjian Wu, Yiwei Chen, Jinhui Zhou, Bo Wang, Ming Chen, and Jiaxin Zhang</i>	
SPET2025_072	Adaptive Inertia Control Strategies for Virtual Synchronous Generators: A Comparative Study of Alternating Inertia and Linear Control Methods	360
	<i>Xuelin Chen, Xingshuo Li, and Shuye Ding</i>	
SPET2025_073	MDTST: A Multi-Scale Two-Stream Transformer for Time-Series Forecasting in Power Systems	365
	<i>Xiaojing Li, Haoqin Li, Shijie Li, Jiesheng Huang, Xin Lei, and Huaiguang Jiang</i>	
SPET2025_074	A Harmonic Suppression Strategy Based on Inter-Line DC Power Flow Controller	371
	<i>Lianzheng Ding, Yingzong Jiao, Binbin Li, and Shaoze Zhou</i>	
SPET2025_076	A method for improving the stability of grid-forming converter based on phase correction and power decoupling	376
	<i>Guihua Liu, Huanyu Yang, Mingjun Sheng, and Zhilong He</i>	
SPET2025_077	Interaction Stability Analysis and Control Strategy of Grid Forming and Grid Following Converters	381

	<i>Zhijie Liu, Feng Tan, Cuidi Qin, Bo Yin, Zhixian Hou, Weidong Liu, and Ruohan Leng</i>	
SPET2025_078	Adaptive Power Regulation Strategy for Grid Connected Hybrid Energy Storage System Based on SOC Feedback	387
	<i>Guihua Liu, Jianping Jiang, Wei Jiang, and Zhilong He</i>	
SPET2025_079	Study on fault traversal strategy and performance of doubly-fed fan based on electromagnetic simulation	392
	<i>Qiang Zhang, Ruanxiang Li, Lianmei Zhang, Ding Zhou, Xingyu Chen, and Xinyu Mei</i>	
SPET2025_080	Short-term Photovoltaic Power Forecasting Based on Multi-site Numerical Weather Prediction and STGCN-Transformer	398
	<i>Qinggui Chen, Zhao Zhen, Fei Wang, Xiqiang Chang, and Guoqing Li</i>	
SPET2025_082	Data-Driven Intelligent Decision-Making Model for Power System Emergency Control	404
	<i>Bailin Zhang, Shenghong Liu, Jiexiang Han, Bo Wei, Weiwei Wang, Yu Xia, Jiacheng Liu, and Jun Liu</i>	
SPET2025_083	PSD-BPA Power System Simulation Data Management and Analysis System Integrated with Intelligent Report Generation	410
	<i>Chao Wang, Hengxu Zhang, and Wei Li</i>	
SPET2025_084	Equivalent Inertia Identification of Power System Based on GNN-LSTM	416
	<i>Rui Cao, Weidong Liu, Wenjuan Xue, Tianjing Zhao, Yichen Zhou, and Yonggang Li</i>	
SPET2025_085	Stochastic Scenario Generation for Wind-PV-Hydro Inflow Based on PCA-Enhanced Vine Copula	422
	<i>Ming Cheng, Hui Lu, and Jinping Zhang</i>	
SPET2025_086	An Accelerated Approach to Time-Sequential Production Simulation for Integrated Generation- Grid-Storage Systems Combining Benders Decomposition and Data-Driven Methods	428
	<i>Jifan Zhang, Hengxu Zhang, and Wei Li</i>	
SPET2025_087	Large Language Model-Based Speech Recognition Optimization Method for Power Dispatching Scenarios	434
	<i>Wei Zhang, Lihong Zhang, Hao Wang, Yuyang Bai, and Tianlu Gao</i>	
SPET2025_089	Chain-of-Thought Reasoning for Substation Switch Operation Ticket Generation	440
	<i>Shuaishuai Li, Yuyang Bai, Hao Wang, Qi Chen, Tianlu Gao, and Shuo Huang</i>	
SPET2025_090	Primary frequency regulation strategy optimization for supercritical units under high penetration of renewable energy	446
	<i>Bingqian Yang, Xinyi Wu, and Yue Cao</i>	
SPET2025_091	Method of Flexible Interconnected Device Planning in AC Interconnected Systems for High Proportion of New Energy Access	454
	<i>Yangqing Dan, Xin Tong, Jun Wang, and Pengfei Hu</i>	
SPET2025_092	Advanced Artificial Intelligence Approaches in Power Flow Analysis	459
	<i>Baoliang Li, Hengxu Zhang, and Wei Li</i>	

SPET2025_093	Power Optimization Dispatch Model for Wind Farms Based on Minimizing Fatigue Damage <i>Zheng Guo, Hengxu Zhang, and Wei Li</i>	465
SPET2025_094	Trust Quantification Methods and Enhancement Strategies for Full-Chain Operations in Virtual Power Plants <i>Zhouyue Hu, Hengxu Zhang, and Wei Li</i>	471
SPET2025_095	Research on the Comprehensive Process Analysis and Fault Diagnosis Technology of Lightning Strike Trip Events in Transmission Lines <i>Hantao Tao, Dawei Wu, Jie Tu, Yingpu Xie, Yuangen Xu, and Wang Li</i>	477
SPET2025_096	Time Stamp Alignment Method for Distribution Terminals with Power Frequency and Phase Angle Joint Correction <i>Zhaoru Han, Xinghua Huang, Xiaobin Wang, and Yuanliang Fan</i>	484
SPET2025_097	Key factors of Frequency Stability in Future Renewable Energy High Penetration Power System <i>Huanhuan Yang, Jianxin Zhang, He Huang, Chunxiao Liu, Tuo Jiang, Qin Gao, Guagnhu Xu, Hongxuan Zhang, and Zhe Zhang</i>	488
SPET2025_098	Peak Regulation under TDM Coordination: A Comprehensive Survey on Potentials and Challenges <i>Peiyuan Zhong, Zihao Qi, Xuekai Hu, and Shiwei Xue</i>	494
SPET2025_099	The Impacts of Grid-Forming Inverter Placement on the Small-Signal Stability of Distribution Networks <i>Shiwang Gu, Yitong Li, Shaoze Zhou, and Zheng Wei</i>	502
SPET2025_101	An Intelligent Method for Extracting Maintenance Strategies of Power Equipment Based on Metal-Monitoring Texts <i>Yue Li, Wenjing Xiao, Zhengyu Liu, Jinpin Liu, Chengqi Hong, Jizhou Yu, and Jun Zhang</i>	507
SPET2025_102	Maximum Power Point Tracking and Coupled Oscillation Mitigating for Large-Scale Wind Turbine <i>Yinghan Liu, Jiaqi Li, Hua Geng, and Guangming Yu</i>	513
SPET2025_103	A Review of Reliability Technology of Power Chips <i>Tuo Li, Changhong Wang, Chao Cheng, Kang Su, and Mingjian Cui</i>	520
SPET2025_104	Impact of Parasitic Capacitors on Common-Mode Leakage Current in Non-Isolated Flexible Interconnection Devices <i>Beiyu Jiao, Jiaxing Lei, Shuang Feng, Guoju Zhang, Zhanhao Xue, and Liyuan Sheng</i>	525
SPET2025_106	Multi-time scale rolling optimization scheduling framework of micro energy network based on virtual energy storage of electric vehicle cluster <i>Hengyu Liu, Haifeng Li, Yingxuan Yang, Bo Zhao, Jiayu Wang, Jiazheng Sun, and Yanhong Luo</i>	531
SPET2025_107	Comparative Research on Variable Frequency Transformer and Rotary Power Flow Controller Power Flow Characteristics <i>Baiyan Sun, Zehao Xu, Fanqiang Gao, and Hang Zhang</i>	537
SPET2025_108	Research on Early Warning Mechanisms and Prevention Strategies for Large-Scale Galloping in Transmission Lines <i>Hui Fu, Jun Jia, Shuangwei Li, and Rushan Wang</i>	542
SPET2025_109	Design of Main Circuit Parameters for Sparse AC/AC Modular Multilevel Converter	548

	<i>Runcheng Gan, Boyang Zhao, Jing Li, Peng Zhang, Xiuli Wang, and Xifan Wang</i>	
SPET2025_110	Data-Efficient Fault Diagnosis of Photovoltaic Systems Using I-V Curves and Similarity Learning	554
	<i>Bo Ren, Qianggang Wang, and Niancheng Zhou</i>	
SPET2025_111	Research on the Load Simulation Model for Copper Mining and Processing Flow	560
	<i>Cheng Peng, Wei Cao, Haobin Zhu, Suqing Kuang, Man Zhang, Jianchun Li, and Fei Hao</i>	
SPET2025_112	Informer-GAT-Based Fault Identification for Distribution Lines	565
	<i>Haixiang Peng, Mingyu Zhan, Yujia Wang, Zhanglin Liu, and Chenhao Sun</i>	
SPET2025_113	Distributed Adaptive Backstepping Control Strategy for Microgrids Under Integrated Satellite-Terrestrial Networks	571
	<i>Huijie Yu, Zhijie Lian, Zhiwei Xie, and Yandong Chen</i>	
SPET2025_114	Fault Section Location Method for Distribution Network Based on Multi-domain Features and Matrix Transformation	577
	<i>Mingming Xu, Ruirui Xie, Xiaobin Wang, Zhaoru Han, and Xuan Dong</i>	
SPET2025_115	Large Language Model Agent-Based Load Transfer Strategy Generation Method for Urban Distribution Networks	583
	<i>Yong Cao, Lihong Zhang, Guangtao Liang, Hao Wang, Yuchao Wu, and Tianlu Gao</i>	
SPET2025_116	A Novel Load Redistribution Attack Model Based on Line Overflow	589
	<i>Yigu Liu, Jian Shi, and Xiaoguang Wei</i>	
SPET2025_117	Large Language Model Driven Auxiliary Decision System for Substation Equipment Status Assessment and Technical Retrofit	593
	<i>Jinxing Li, Xu Bai, Lina Du, Yun Zhang, Xiangnan Li, Yan Li, Libing Zhang, Haijiang Gu, Jiahui Chen, Yang Zhou, Shuaishuai Li, and Yuchao Wu</i>	
SPET2025_118	Power Network Node Vulnerability Analysis under Cyber Attacks Using the GraphGPS Graph Embedding Algorithm	598
	<i>Wei Wang, Fanrong Shi, Zhihang Zhao, Qiushi Cui, and Ying Luo</i>	
SPET2025_119	A Bi-level Optimal Dispatch for Distribution Network-Microgrid Group Based on Stackelberg Game	604
	<i>Xiangying Zhang, Liangzhong Yao, Wenchao Zhai, Yunxin Liu, Wanxing Sheng, and Keyan Liu</i>	
SPET2025_120	Collaborative optimization and configuration model for distribution of IoT resources under a cloud-edge- device three-tier architecture	611
	<i>Guoxiang Sun, Yanfei Song, Dongao Li, and Yanhong Luo</i>	
SPET2025_121	A Fault Ride-Through Control Strategy for a Distribution Network Flexible Interconnection Device Based on Parallel GFL/GFM Inverters	616
	<i>Tianhao Li, Liangzhong Yao, Shuai Liang, Zuhang Hong, Zilu Zhang, Xiong Xiong, and Yubo Yuan</i>	
SPET2025_123	A Fault Ride-Through Strategy for Grid-Forming	623

	Converters in Flexible Interconnection Device Based on Virtual Impedance and Power Control <i>Zilu Zhang, Liangzhong Yao, Tao Lin, Shuai Liang, and Tianhao Li</i>	
SPET2025_124	DYNAMICS SIMULATION STUDY ON NON-TORQUE LOADING DEVICE WITH MWORKS <i>Lipan Xin, Chuanwei Li, Feng Xiao, Zhiyong Wang, Shiyao Qin, Chuandi Zhou, and Zhijie Zeng</i>	629
SPET2025_125	Clustering-Based Envelope Method for Complex Loads of Large-Scale Offshore Wind Turbines <i>Le Tao, Lin'An Li, Wei Bian, Shengya Liu, Chuanwei Li, and Yantao Zeng</i>	634
SPET2025_126	Research on Key Technologies of Artificial Intelligence-Oriented Coordinated Control for Microgrids <i>Ming Wu, Nanchun Zhang, Haitao Liu, and Guangwei Li</i>	639
SPET2025_127	Methods for Enhancing the Carrying Capacity of Distributed Photovoltaic in Distribution Networks <i>Shumin Sun, Song Yang, Peng Yu, Yan Cheng, Jiawei Xing, Yuejiao Wang, Yu Yi, and Zhanyang Hu</i>	645
SPET2025_128	Reliability Calculation of Transmission Lines Based on Improved Convolutional Neural Network <i>Yuan Li, Zhenghong Bao, Zibing Li, Yongfu Ma, Xudong Ma, Zile Wang, and Fudong Yue</i>	652
SPET2025_129	Analysis of Motor Control in Copper Ore Flotation Process <i>Qinghui Lou, Kexuan Wang, Siyang Liao, Zhangcheng Li, Tianhua Deng, Xiangjian Shi, and Hao Zhang</i>	658
SPET2025_133	Research on Power Control of Photovoltaic Grid-Forming Inverter Based on Complex Variable <i>Ruining He, Jian Du, Dale Li, and Xiangjun Quan</i>	663
SPET2025_134	A Chain-of-Thought-Based Method for Automatic Report Generation in Electricity Trading Data Analysis <i>Bo Chen, Lihong Zhang, Yuchao Wu, Yuyang Bai, Hao Wang, and Tianlu Gao</i>	668
SPET2025_135	Coordinated Control of Three-Terminal Hybrid HVDC System and Adjacent Hydropower Units <i>Xingyu Li, Yushu Li, Youhan Deng, and Chengxi Liu</i>	674
SPET2025_136	Research on Risk Prediction Algorithm for Transmission Line Asset Wall Based on K-M-Prophet Method <i>Yanqin Ge, Yiming Yang, Yinghua Chen, Yinghan Jiang, and Tianmi Zhang</i>	680
SPET2025_137	Design and Cooperative Control of Gravity-Compressed Air Energy Storage System <i>Yueshi Li, Liangzhong Yao, Wenchao Zhai, Yifei Fan, Yan Li, and Darui He</i>	687
SPET2025_140	Electricity Flexibility Evaluation of Pharmaceutical Enterprises Considering Scheduling and Carbon Emissions <i>Junyao Gao, Yuming Zhao, Jinfei Meng, Xiao Wang, Yuhan Liu, and Xiandong Xu</i>	695
SPET2025_141	Design and testing of high-voltage ground wire repair robot based on adaptive sliding mode control strategy <i>Daguang Xu, Hongxing Ma, Huan Liu, Huijuan Ran, and Congjiu Xie</i>	700
SPET2025_142	Intelligent Fault Diagnosis System for Power Transformers Based on Acoustic Spectral Features and	709

	Multi-Information Fusion	
	<i>Yuwen Li, Jingyu Yi, Yue Wang, Mingzheng Xiong, Jian Zhou, Pai Xu, Ziyang Zuo, and Zhihao Xu</i>	
SPET2025_143	Analysis of Communication Impact and Retrofit for Control System Equipment Offlining During Nuclear Power Localization Implementation	714
	<i>Hui Hui, Geng Liang, Changying Zhai, Guofu Li, Hanying Cai, and Qiubin Gu</i>	
SPET2025_144	Automatic Diagnosis System for WorldFIP Network Communication Faults and Its Application in Nuclear Power Plants	722
	<i>Xuping Hong, Changying zhai, Qiubin Gu, Liang Geng, Jingxuan Xu, and Junyan Chen</i>	
SPET2025_146	Analysis of Power Oscillations Caused by PSS Defects in Nuclear Power Plants	729
	<i>Changying Zhai, Wei Jiang, Xiangyu Tao, Jianghan Zhao, Qiubin Gu, and Jianqing Yang</i>	
SPET2025_148	Peak Current Control With Feed-Forward Compensation of DAB Under Single Phase-Shift Control	735
	<i>Jiahang Dong, Hao Dong, Liangzhong Yao, and Shangzhi Pan</i>	