

2021 IEEE 4th International Conference on Automation, Electronics and Electrical Engineering (AUTEEE 2021)

**Shenyang, China
19 – 21 November 2021**



**IEEE Catalog Number: CFP21R27-POD
ISBN: 978-1-6654-2840-8**

**Copyright © 2021 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:	CFP21R27-POD
ISBN (Print-On-Demand):	978-1-6654-2840-8
ISBN (Online):	978-1-6654-2839-2

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

PID	Paper Information	Page
AE510	Application and Development of Tile Digital Sub-array Shuai Ji, Jingdong Wang, Jianling Kang	1
AE511	Forecast of Electric Vehicle Ownership Based on MIFS-AdaBoost Model Xiquan Wang, Zhen Pan, Huancheng Wang, Zengyuan Lu, Jiao Huang, Xiao Yu	4
AE515	Optimization of Vehicle Trajectory Planning for Autonomous High-Speed Overtaking Kai Jiang, Yonghua Zhou	9
AE516	Revealing the power of BERT for text sentiment classification Tingyu Zhang, Ruixia Zhang	14
AE517	GPS and Lidar Fusion Positioning Based on Unscented Kalman Filtering and Long Short-Term Memory Considering GPS Failure Zhe Yang, Hui Jing, Bing Kuang, Shengshi Zhong, Junji Qin, Yuwei Tong	18
AE518	A Short-term Load Forecasting Model Based on Neural Network Considering Weather Features Feifei Xu, Wenjun Xu, Yi Qiu, Mengkai Wu, Ruoyu Wang, Yonghui Li, Peixiao Fan, Jun Yang	24
AE520	Modelling and Experimental Characteristics of Photovoltaic Modules in Typical Days at an Actual Photovoltaic Power Station Ehtisham Lodhi, Pu Yang, Lina Wang, Zeeshan Lodhi, M. Adil Khan, Sijjad Muhammad, Tariku Sinshaw Tamir	28
AE521	Probabilistic Prediction of Wind Power Based on Gaussian Process Regression Yanlong Liu, Junzhou Li, Wanlin Guan, Mingyu Xu, Xinkai Liu, Huanyu Liu	34
AE523	Cellulose Particle Dynamics Tests and Simulation in Mineral Oil under Impulse Voltage Bo Gao, Qingping Zhang, Hairong Luo, Xuefeng Li, Yongliang Li	39
AE524	A fault time detection method for distribution network based on multi-order wavelet function transform Zhi Li, Kai Wang, Yong Li, Shibiao Tang, Shaofeng Yu	43
AE525	An Comprehensive Detection Method for Fault Location and Fire Risk Judgment of Substation Power Equipment Hao Yu, Jian Zhang, Junzhou Li, Yanbo Liu	50
AE526	Research on Remote Diagnosis Model of Metering Point Anomaly of 10kV Distribution Line Based on AMI Data Zhang Hongda, Yuan Jian, Li Xiong, Yao Li, Wang Jiaying, Hu Yingjun	55
AE529	Research on Optimal Motion Decision and Trajectory Generation for Table Tennis Robot Minghao Qiu, Zhijie Wang	61
AE531	Overview on anti-jamming technology in main lobe of radar Yifei Yan, Hao Chen, Junhai Su	67
AE532	Error Compensation for Long Arm Manipulator Based on Deflection Modeling and Neural Network Haoying Li, Chenhao Fang, Jinze Shi, Baocheng Zeng, Chunlin Zhou	72

AE533	Development of a Data Acquisition System for a Stainless Steel Pipe Welding Line Zhuoer Shen, Zhizheng Wu, Jingru Chen	77
AE534	Distributed Adaptive Controller for Output-Synchronization of Networked Strict Feedback Systems with Dead-Zone Nonlinearity with Application in the Voltage Equalization Control of Ultra-Capacitor Type Power Source Liming Zhang, Miao Yu	82
AE535	Mathematical modeling of lunar soft landing —Take chang'e-3 as an example Benchao Yang	89
AE536	Research on Quasi-on-line Extraction Method of Junction-case Thermal Resistance of IGBT Module Biao Xiao, Chunming Tu, Liu Long, Fei Jiang, Haoliang Xu, Shuaihu Liu	94
AE540	Research on Energy Management Method of Hybrid Energy Storage System Based on Improved Particle Swarm Optimization Zhe Chen	101
AE541	Research on Optimal Control Operation of Energy Storage System Considering Demand Response Yingjie Li	105
AE543	Research on Electromechanical Transient Hybrid Simulation Based on Electromagnetic Transient of Power System Heping Jia, Rong Zhou	109
AE550	Overview of Data Synchronization and Fault Recovery Technology in Multi Active Data Center Zhengwei Jiang, Huanglong Da, Yuyin Qiu, Jiajia Pan	113
AE551	Analysis and Promotion of Power Quality and Power Control Capability of Wind Farms Yu Liu, Yu Cong, Shuai Yuan, Ke Su, Lifang Miao, Qi Wang	119
AE552	Electric power line patrol operation based on vision and laser SLAM fusion perception Leiqing Ding, Jianjun Wang, Yikai Wu	125
AE553	Research on Electromagnetic Interference of 5G Base Station Antenna in Shared Towers to Power Online Monitoring Equipment Zeyang Tang, Su Lv, Wei Rao, Fei Yu, Yibo Cui, Wenshuo Wang	130
AE554	Suppression and reactive power compensation in power system Jialin Li, Honggang Ding, Ye Sun, Jingming Guo, Jiapeng Wang, Chaonan Dong	134
AE555	Fault Analysis of Metal Expander of 220kV Current Transformer Shuang Qiu, Jiawei Wang, Jialin Li, Lu Liu, Qianqian Li, Chuqi Liu	140
AE556	Cell Image Incremental Classification with Memory-Augmented Convolutional Neural Networks Qi Jin, Kuo-Kun Tseng	144
AE558	A Policy Gradient Path Planning Algorithm for Wireless Rechargeable Sensor Networks Baicai Li, Xiaoqiang Xiao, Shun Tang, Weixun Ning	149
AE559	A Novel Digital watermarking Approach under the DCT and SVM Hui Chen, Ling Zhang	154
AE560	Using Convolution Neural Networks to Build a LightWeight Anomalies Detection Model Jun Chen, Wang Luo, Yunhe Hao, Huarong Xu, Jian Wu, Xiaoming Ju	157

AE561	Study on Transient Electric Field of Cable-Joint System under the Influence of Switch Operation Jian Zhang, Tao Xue, Penglong Liu, Binxian Lu	161
AE562	Study on Emergency State Classification of Nuclear Power Plant Based on Cold Source State Yanming Shi, Zhenying Wang, Fan Yu	166
AE563	An improved electrical anomaly detection algorithm based on density peak clustering Gaina Mi, Tao Du, Jin Zhou	172
AE565	Research on the Design of Control Equipment Based on Artificial Intelligence and the Internet of Things Liu Guangqian, Liu Guangxu	177
AE567	Online Defect Elimination Equipment for High Voltage Isolation Switch Based on Laser Cleaning Technology Yunzhao Deng, Yuanpeng Zhang, Kai Lin, Shupeei Wei, Guixing Cui	182
AE569	Detection and Recognition of Evaluation System Based on IPv6 Website Platform Mingxuan Li, Qingrui Guo, Peipei Yan	187
AE570	Data Exchange Algorithm Based on Homomorphic Encryption and Fog Computing Jia Wang, Jingyuan Li, Ke Zhang	191
AE571	Design of Control System for Industrial Spinning Production Line Xu Fei, Xu Na	195
AE573	Research on Edge Resource Allocation Method Based on Vehicle Trajectories Prediction Shenyang Cao, Yongli Zhang, Pan Ding, Xiaocheng Zhai, Wenwei Liu, Xinyuan Chen, Shuxu Zhao	200
AE575	Vector Study of Induced Electromotive Force of a Single Antenna at Any Angle Jiren Xu, Yunhui Guo, Jiang Wang, Weilu Wu	207
AE576	Site selection and capacity determination of substation based on power-weighted <i>K</i> -means Li Wang, Wei Wang, Jun Peng, Chen Luo, Yuxiang Wang	212
AE578	Design and Implementation of Intelligent Auxiliary Decision System of Power Transmission and Transformation Pre-Project Li Wang, Ying Liu, Heng Liu, Shiping Yang, Bin Wang	217
AE581	Design of a High-voltage Successive Approximation Register Analog-to-Digital Converter Zebin Wei, Min Gong, Bo Gao	222
AE583	Dual-Band Impedance Matching Transformer with Loaded Cross-Shaped Structure Obtaining Two Independent Design Parameters Xingbing Ma, Zhanghuo Li	229
AE586	Application of Multimedia Technology in Rotation Simulation of Direction-Finding Antenna Xiangyu Feng, Jiren Xu, Changbao Wang, Yuepei Jiang, Dongsheng Wu, Xiaolan Zhao	234
AE587	Research on Fault Prediction and Diagnosis of Superconducting System Based on Deep Learning Zhang Xize, Xie Wei, Zheng Jian, Zong Xihua, Jiao Ting, Zhang Dayi	238
AE588	Blockchain data anti-counterfeiting sharing model of Power Material Alliance based on attribute-based encryption Yaowei Liu, Zhiwei Wu, Yuchun Liu, Wenbo Fan, Kai Wang, Lei Lin	242

AE589	Design and Implementation of Virtual Simulation Experiment System for Acquisition and Production of UAV Real-scene 3D Data Yuanrong He, Hang Lu, Yongfei Song, Li Liu	249
AE590	Indoor Life Object Monitoring Using UWB Radar Hongming Shen, Jiansu Ma, Hongfang Yin, Xia Wang, Wei Chen, Chen Xu	255
AE592	Design A 65nm CMOS Wideband Low Noise Amplifier Xueyong Zhao, Zhangfa Liu	259
AE593	Current Characteristics of Double-Top-Gated Graphene Field Effect Transistor Bo Su, Jinbao Huang, Jingping Liu	264
AE594	A Speech Enhancement Algorithm combining Spectral Subtraction and Wavelet Transform Yi Yang, Peipei Liu, Huili Zhou, Ye Tian	268
AE596	An Intelligent Dynamic Speed Hump Jie Mei, Jingsheng Wang	274
AE597	Bird Voice Classification and Recognition Based on BA-ELM Ling Chen, Xizhong Shen	278
AE599	4-WFRFT for Physical Layer Security Enhancement Based on MIMO Correlated Channel Jiuning Zhang, Xuanli Wu, Yong Li	283
AE600	Realization of reactive power compensation for urban power grid based on virtual Air Gap controlled reactor Zou Ting, Zhou Dan, Zhu Longpeng, Wan Wenfeng, Song Pan	289
AE601	Magnetic modeling of virtual controllable reactor for reactive power optimization of power grid Zou Ting, Zhou Dan, Zhu Longpeng, Wan Wenfeng, Song Pan	294
AE602	Fatigue driving detection system based on EEG Signal Feng Jingwei	299
AE605	Service Awareness Recovery under N-1 Failure in Power Grid Optical Communication Networks Jiaqi Lv, Yikai Liu, Kaiqiang Gao, Jiye Wang, Xuerang Guo, Xiaosong Yu, Yongli Zhao, Jie Zhang	303
AE607	Engine On-line Detection Data Fusion Technology Based on Fractional Differential Yanhong Zuo, Chengji Zuo, Jigen Fang	307
AE608	Commercial Open Line System Optimization for High Speed Data Center Optical Transmission Hong Zhang, Yonglong Zhao, Chengjiang Liu, Jinjie Xu	312
AE610	Prediction of ROP Method Based on Online Machine Learning and Multi-source Data Preprocessing Technology Yang Yu, Meng Cui, Kai Huang, Lei Luo, Xiuling Zhang, Hui Li	316
AE611	Deep learning based camera and radar fusion for object detection and classification Mohamed Abdalwohab, Weibin Zhang, Abdeldime M. S. Abdelgader, Ibraheem Abdelazeem	322
AE613	Clustering Routing Protocol for Cluster Networks Based on Grey-WNN Zhang Hongmei, Wang Qinfei, Zeng Hang, Wu Jiangnan	327
AE615	Road Target Classification Method Based on GA-BP Neural Network for Event Camera Xuning Mao, Haiqing Liu, Miaomiao Zhang, Guang Liu	333

AE616	Research on intention classification of complaint work order in home broadband based on fusion method Junli Xu, Yiming Qin, Ning Zhao, Chao Xue, Naiyu Tan	340
AE619	Research on data sharing mechanism of power material supply chain based on blockchain Yuchun Liu, Zhiwei Wu, Yaowei Liu, Kai Wang, Wenbo Fan, Lei Lin	345
AE620	Research on Traveling Wave Detection of Electrical Equipment Debugging Fault Based on Wavelet Transform Zhaosheng Teng	351
AE622	Intelligent Optimization Algorithm of Active Distribution Network Based on Load Storage Cooperative Optimization of Source Network Xueli Guo, Qingyan Chen, Wei Liang, Shuang Wang, Ying Wang, Yadong Qin	355
AE625	Construction of coordinated operation control system of distribution network based on electric energy router Tingyu Wang	361
AE626	Inverse control optimization of voltage and temperature parameters of electric vehicle fuel cell based on genetic algorithm Guizhi Sun, Zhenquan Song, Junhong Xi, Liang Zhu	365
AE627	Optimal Dispatching of Wind Storage Combined Power System Based on Particle Swarm Optimization in Low Carbon Economy Kangning Sun	370
AE629	Research on intelligent manufacturing equipment visual inspection control based on machine vision Chunyan Huo, Tianshu Li	374
AE630	Accurate Replacement Technology of Scrapped Watt-hour Meters Based on Internet of Things Technology Shuqing Hu, Xianguang Dong, Wen Zhang, Xin Zhang, Liren Zhou	380
AE632	Research on Wire Lifter of Transmission Line Straight Tower Based on Intelligent Motion Controller Caifa Shi, Guojing Da	385
AE633	Research on Power Dependability of Urban Medium Pressure Distribution Network Based on Uninterrupted Operation Chen Shuiwen, Lu Jizhou, Hu Ran, Cai Mao, Zhu Xuncan	390
AE634	Automatic safety identification method of medium voltage uninterrupted operation equipment based on static coordinate system Rao Jixian, Lu Jizhou, Hu Ran, Chen Jindong, Cai Mao	394
AE635	Research on Key Technology Innovation of Intelligent Transmission Operation and Maintenance Based on Online Monitoring Technology Ning Baifeng, Pang Ning, Zhou Hai	399
AE636	Design and Implementation of Internet of Things+UAV Flight Monitoring and Management System Ning Baifeng, Zhang Ke	404
AE638	Design of intelligent inspection robot system for electrical equipment based on visual recognition Hailin Wan, Guoping Liu, Jianping Wu, Zhimin Zhang, Yiping Yang	409

AE639	Development and Application of Robot Automatic Inspection System Technology Based on Machine Learning Zhimin Zhang, Wen Yang, Xinfang Ding, Hailin Wan, Yiping Yang	414
AE640	Wind-solar-storage linkage configuration of carbon-neutral energy internet based on fuzzy control algorithm Mingze Xu	418
AE641	Research on Small-scale Defect Identification and Detection of Smart Grid Transmission Lines Based on Image Recognition Gang Cao, Yong Liu, Zhi Fan, Liang Chen, Hao Mei, Shaochuan Zhang, Junyu Wang, Xu Han	423
AE643	Network communication technology of automobile inspection and control system based on embedded system Jinyou Zhang	428
AE644	Implementation of Electromechanical Transient Hybrid Simulation Interface Based on Working Process Wenhao Zhang, Junling Zhang, Liping Sui	433
AE645	Vibration Order Analysis Method Utilizing Keyphsor Signal for Rolling Mill Gearbox Diagnosis Han Liu, Ziqi Wang, Lin Liang	438
AE646	Operation system design of SMA automatic trim machine based on PLC Xiaochuan Yu, Anning Chen, Xingkun Dong, Haijun Zhou, Hongwei Ren, Xin Cheng	444
AE649	Research on Power Knowledge Platform Method Based on Knowledge Graph Yan Zhang, Hongmei Zhang, Ji Zhang, Liangyu Li, Ziyao Zheng, Yu Lu	448
AE650	Architecture and Key Model of SGCC ONLINE Based on Middle-platform Technology Wensheng Tang, Jinzhi Wang, Caijun Zhang, Haifeng Yan	453
AE651	Research on Zero-Trust Based Network Security Protection for Power Internet of Things Peng Gao, Longchuan Yan, Zhiyu Chen, Xingshen Wei, Liang Guo, Rui Shi	458
AE653	Network Security Situation Forecast Model Based on Neural Network Algorithm Development and Verification Weiping Diao	462
AE654	Research on Routing Algorithm of mobile wireless packet switching computer network based on deep learning Zhicong Guan	466
AE655	Study on AC Electro-osmosis Driving Aqueous Solution Qirui Zhao	470
AE656	Research on Intelligent Monitoring Method of Network Communication Information Based on Composite Communication Mode Bai Yong, Yuqin Wang, Mei Zhang, Chunmei Li, Huang Dong	474
AE657	Research on Intelligent Acceleration Algorithm for Big Data Mining in Communication Network Based on Support Vector Machine Li Zeyang	479
AE658	Research on Control Strategy and Configuration Position of Electrochemical Energy Storage in Power Station for Suppressing DC Commutation Failure Sicheng Wang	484

AE659	Data driven robust control of complex Ginzburg-Landau equations for spatial developing flow Yuyang Chen, Chang Liu	490
AE660	Time-series analysis model based on data visualization and entropy weight method Xinrui Huang	501
AE661	Research on Speech Recognition Technology for Smart Home Huang Chenxuan	504
AE663	Design and implementation of digital big data analysis platform based on substation maintenance full link Jianwu Chen, Jiayi Zhu, Lijun Ma, Xin Xu, Jiayi Wu, Hao Shen	508
AE665	Research and design of recommendation system for rehabilitation robots based on machine learning algorithms and Spark computing engine Ding Shiquan	513
AE666	Task and intelligent path planning algorithm for teams of AGVs based on multi-stage method Xiang Huo, Xinkai Wu	517
AE667	Data Analysis and Cloud Computing of Power Grid Infrastructure Projects under the Background of Informatization An Shiyun, Liu Jianning, Li Wenjie, Tian Ye, Jing Peibo, Wang Yinzong	524
AE669	Design and Application of Direct Signal Acquisition Circuit in Fast Terahertz Spectral System Zhaohui Zhang, Hui He, Xinyong Zhu, Yongli Liu	528
AE670	Anti-freezing performances of novel natural draft dry cooling tower with double-layer air-cooled heat exchanger Tongrui Cheng, Zhenning Zhao, Junfu Lv, Han Yu	532
AE672	Characteristic Analysis of Arc Acoustic Signal in Pipeline P-GMAW Automatic Welding Xinghua Liang, Kekuan Wang, Ruibin Duan	541
AE673	Computer intelligent prediction model of internet impulsive reward based on user portrait algorithm Na Wang	545
AE675	Design of Quadrotor Intelligent Rescue UAV Based on UAV Vision Zitan Shi, Zhengjia Wang, Lizhi Li, Junjie Yu, Wang Xie	549
AE677	Theoretical Calculation of Line Loss and Analysis of Loss Reduction Measures of 10kV Line with Small Hydropower Huang Yangqi, Liu Tao	553
AE678	Analysis of over-current protection action of 10kV Hujia power transmission line Huang Yangqi, Liu Tao, Zhao Weizhe	556
AE680	Research on output characteristics of piezoelectric energy harvester with different circuit load Kai Zhang, Li Dong, Yongyong Zhu	560
AE681	Research on environmental energy-driven intelligent unmanned underwater vehicles and their key technologies Zhongyue Lu, Jianzhong Shang, Zirong Luo, Yiming Zhu, Mangkuan Wang, Changlei Wang	564

AE682	Research on adaptive target tracking algorithm Hu Jiaming	572
AE685	Infrared image feature analysis and application in the field of image encryption Congli Wang, Xiong Li	578
AE686	Practical application of pedestrian intelligent detection technology based on computer vision Mingjing Liu	584
AE688	Research on Architecture of Power Big Data High-Speed Storage System for Energy Interconnection Shiwen Dong, Menghan Xu, Aihua Zhou, Lipeng Zhu, Junfeng Qiao, Sun Bo	588
AE689	Research and application of line switching based on distribution network topology analysis Pei Yang, Menghan Xu, Sen Pan, Junfeng Qiao, Kai Liu	593
AE690	Multi-target defect intelligent recognition of transmission line based on improved Faster-RCNN Zhu Zhouhua, Miao Shixia, Zhang Tianyi	597
AE693	A Multi-index Network Application System Deployment Method on Genetic Algorithm and Subjective Logic Wu Danyang, Zhou Hongwei, Wang Zhengwei	604
AE694	Research on forward scattering visibility sensor Yushang Wu, Keke Zhang, Yingdong Yang, Xianglong Yang, Shizhe Chen, Bo Wang	609
AE696	Research on Quasi-zero Stiffness Vibration Isolation Technology of Distribution Transformer Hao Cao, Tao Huang, Ling Lu, Ziyin Xie	613
AE697	Intelligent driving trajectory tracking control algorithm based on deep learning Yuzhe Shang, Wei Qiao	618
AE699	Research on the mechanism of aeolian vibration suppression and piezoelectric energy capture of transmission line based on nonlinear energy sink Gao Xin, Pei Sheng, Lin Tao, Fu Junjie	622
AE700	DMPC-based AGC of an Interconnected Multi-Area Power System with CWES System Integration Zhaoyu Jin, Bo Peng, Rui Ding, Chen Wang, Xin Lu	626
AE702	A Study on Target Recognition Algorithm Based on 3D Point Cloud and Feature Fusion Wang Jisen	630
AE704	Research on Six Degree of Freedom Robot Trajectory Planning Method Based on Improved Ant Colony Algorithm Wang Jisen	634
AE707	The Design of a Auxiliary System for the PSD-BPA Power Simulation Software Li Jing, Li Juan, Hu Jianyu, Yu Hu, Liu Xiaoshi	638
AE708	Cable Protection Caused by Grounding Cause Analysis of Generator Stator 3I ₀ Protection Malfunction Xian Zhang, Xiaoming Jin, Huipeng Gao, Jun Qiao, Dong Wei, Kaijie Xing, Peiyuan Yang, Gang Wang, Ming Zheng, Xianbo Li	642
AE709	Single Frequency Ionosphere Correction Algorithm Based on Weighted Least Squares Huang Wei, Wang Yi, Zhang Yuxing, Li Rui, Zhang Long	645

AE710	Thermal Analysis of IGBT Module of Motor Controller Zhao Weijian, Cao Jing, Jing Jun	649
AE711	Research on Stator/Rotor Pole Combinations of Doubly Salient Electromagnetic Machine Rushu Zhou, Weili Dai, Boyan Jiang	653
AE712	Mixed integer linear programming method for active distribution network reconfiguration considering ZIP load model Zhang Linna, Le Jian, Li Haojiong, Liao Xiaobing	657
AE715	Research on longitudinal control algorithm for intelligent automatic driving Rong Xie, Xiaosen Tian, Qingyu Zhang, Xia Pan	664
AE716	Research on Feature Extraction Method of Underwater Acoustic Passive Target Feng Xu, Yinjing Guo	668
AE718	Intelligent pneumonia image recognition and classification method based on improved convolutional neural network Liu Jiahang, Zhao Wenkang, Li Zongyi, Song Zeyang, Teoh Teik Toe	672
AE721	Research on Control Strategy of Power Battery Compound Power Supply Based on MATLAB Simulation Jingxia Sun	678
AE723	Noise and vibration measurement and analysis of amorphous alloy transformer in semi-anechoic environment Guoyong Li, Hao Cao, Ling Lu, Sheng Hu, Xiaowen Wu	683
AE724	Simulation Research of Optical Fiber Communication System Based on LED Yuan Qingmin, Zhang Qi	688
AE726	Simulation Analysis of Electromagnetic Force of Winding of UHV Shunt Reactor Ling Lu, Hao Cao, Xiaowen Wu, Yanzhao Wang, Jingzhu Hu, Chuanmin Chen	693
AE727	Simulation Calculation of Magnetostrictive Vibration of 10kV Distribution Transformer Hao Cao, Ling Lu, Jiwen Peng, Ziyin Xie	699
AE729	Multi Target Selection Method Based on Target Matching Degree Wu Di, Xue Anxiang, Ma Rui	704
AE730	Analysis of Aerodynamic Loads on Wind Turbine Blades Based on Blade Element Momentum Theory and Machine Learning Yuhang Guo	708
AE731	Design and Typical Gait Realization of a Wheeled-Foot Integrated Hexapod Robot Songlin Yang	715
AE733	A Novel Underwater Single Target Tracking Algorithm based on Siamese Convolutional Neural Network Ying Chen, Zongsheng, Wang, Pingping Lin	719
AE736	Research on Power System Dynamic Stability in Smart Grid Yuhan Chen	724
AE737	Research on fault diagnosis of marine diesel engine based on probabilistic neural network optimized by quantum genetic algorithm Jingtao Zhang, Defu Zhang, Guohua Shen, Jiankun Yang	729
AE739	Design of Speech Emotion Recognition Algorithm Based on Deep Learning Xie Ying, Zhang Yizhe	734
AE740	Research on deviation assessment regulation of load aggregator participating in power grid dynamic balance Zhang Jing, Wang Jianguo, Liu Chang, Che Quan, Lin Jingyi, Xu Ruilin	738

AE742	Research on Autonomy of UAV System Huang Jinke, Feng Guoqiang, Zhao Boxin	745
AE745	Modeling and Simulation of Optimal Configuration of Virtual Power Plant Oriented to Power Internet of Things Shuo Yin, Man Jin, Xing Chen, Xingwu Guo, Jiabin Feng	751
AE750	Fault diagnosis and warning design of wind turbines based on expert system Zhu Guangwei, Chen Sifan, Ren Na, Fu Shaonan	755
AE751	Research on Input Control Method of Ultra-high Voltage Current Limiter Based on Improved Least Square Algorithm Xiuming Hu, Jin Li, Dan Xu, Yuqiong An, Yi Zhang, Mei Li, Yuan Li, Situo Zhou, Xiong Huang	759
AE753	Cluster Regulation Architecture and Control Strategy of Fast Charging Stations with Energy Storage System Xuecui Jia, Xiangjun Li, Hui Quan, Yuyang Li, Lizhi Dong, Guocheng Wu	762