2021 IEEE International Conference on Electrical Engineering and Mechatronics Technology (ICEEMT 2021)

Qingdao, China
2-4 July 2021

IEEE Catalog Number: CFP21AF3-POD
ISBN: 978-1-6654-3099-9

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: CFP21AF3-POD
ISBN (Print-On-Demand): 978-1-6654-3099-9
ISBN (Online): 978-1-6654-4128-5

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

Table of Contents

Optimal Design and Research of Thermal Junction Parameters for Thin Film Thermocouples for Spacecraft 1

Xi Zhu, Tao Wang, Yue Zheng, Hao Zhang, Xiaoyuan Yang, Ye Li

Design and Selection of Power Coupling Device of Electro-mechanical Continuously Variable Transmission for Tractor 5

Shenghui Lei, Mengnan Liu, Liyou Xu, Wei Wang

Design of AC machine speed control system based on CFPWM 10

Xiaopeng Huang, Zhengyu Chen, Benke Li, Yangpeng Yuan, Xintong Peng, Yanlong Li, Langqin Yu

Design of a Tri-band Antenna Using Artificial Magnetic Conductor Ground Characterized With Three Zero-Phases of Reflection Coefficient 14

Weiqi Pan, Xi Lu, Ziqi Zhang, Fei Liu, Wei Gan, Jia Yang, Shuhui Yang

Study on distribution characteristics of metro stray current 19

Yanru Ni, Kun Yu, Chao Zhuo, Xiangjun Zeng, Fangyu He, Yang Leng, Wei Han

Simulation Study on the Influence of Drilling Parameters on the Temperature of Skull Drilling 26

Wenyu Jiang, Zhenzhong Liu

Simulation and Research of Solenoid Inductors with Different Magnetic Medium Structures 30

Tao Zhang, Haoran Wang, Chongmei Peng, Zhaohui Chen

Simulation Research on Breaking Performance of 12KV Vacuum Interrupter 35

Fangshuai Zhao, Shibai Liu, Fengjuan Gu, Xinyue Liu, Xinyi Wang, Huajun Dong

Design of a Motor Driven Variable Valve Actuator 39

Qingya Zhou, Liang Liu, Longxin Jiang, Zhaoping Xu

Simulation study on Torque Vector Control for Wheel e-motor Driving light Duty Vehicle 45

Qingbo Liu, Hao Sun, Jianlin Wei, Dechun Liu, Yuanze Lin, Shengzhong Xu

The novel bifurcation of the buck converter with a smooth carrier signal 51

Baiming Zhu, Qiuhua Fan, Jie Zhou, Dongqing Wang

Bidirectional LSTM RNN for precise predict remaining useful life of supercapacitors 56

Chunli Liu, Jianrui Sun, Kun Zhao, Kai Wang

Planning research on leg movement of a wheel terrain vehicle 60

Dan Wu, Xiaojun Xu, Chengliang Sun, Yue Jiang

Research on Three-Shaft Ring-Plate Permanent Magnetic Gear Variable Speed Transmission Device 66

Yanjun Ge, Dongning Liu, Daming Wang

Design and implementation of wearable oxygen saturation monitoring system 71
Jincheng Zhao, Yanfei Li, Boyuan Zhang, Kai Wang

Machining surface extraction method for shaft gear parts based on Mask R-CNN 75
Yancheng Shi, Ping Yan, Yingtao Su, Dayuan Wu, You Guo, Runzhong Yi, Guilong Hu

Performance Evaluation of Two Area LFC for Power System Based on ADRC Approach 80
Mohammed.A. Abdalla, Guotian Yang, Congzhi Huang

Application of Equivalent Moving Load Method in the Optimization of Main Girder Structure of Bridge Crane 86
Jian Yin, Shengfang Zhang, Yu Liu, Zhihua Sha, Fujian Ma, Wei Li

Application of Python-based Secondary Development in the Simulation of 3D Profile Stretch Bending Forming 90
Shengfang Zhang, Xiuming Wang, Guangming Lv, Jing Li, Yu Liu

Experimental studies of beetle-inspired flapping hind wing in hovering flight 94
Lily Yang, Daxin Xu, Huichao Deng

Research on Master-Slave Protection Scheme of Distribution Network based on Multi-point Information 98
Shuai Jiang, Bo Li, Zhongqing Li, Yulan Zhu, Yuchen Qi

Integrated Simulation of AC Contactor Based on Resonant Pole Inverter 106
Youwan Xu, Rui Li, Xiang Rong, Yao Gao, Xianming Sui

Digital Control Based Design of Buck Converter for Travelling-Wave Tube Amplifier 113
Shanshan Zuo, Chunyu Xu, Yi Yang, Gang Wang

Propagation characteristics of acoustic and electromagnetic waves under partial discharge in transformers 117
Min Li, Wei Yao, Sheng Yang

Optimum Design of a Novel 40.5kV Three-poles in Common Fast Vacuum Circuit Breaker 122
Jun Zhang, Xiaofei Yao, Jiaming Zheng, Zhiyuan Liu, Jianhua Wang, Yingsan Geng

Scheme research and device application for fire prevention of valve hall 127
Hongyue Zhang, Zhiwen Liu, Xiaofeng Wang, Pengyuan Zhang

Design and Simulation of One Practical Hybrid Active Power Filter 133
Yan Shi, Qingfeng Zhang, Mingyi Gang, Juan Liu

Prediction and analysis of material removal mode of hollow thin-walled aluminum alloy components in cutting process based on matrix perturbation method 137
Yongcheng Mu, Shengfang Zhang, Fujian Ma, Ziguang Wang, Zhihua Sha

Research on transformer Partial discharge monitoring and positioning based on spatial spectra 141
Sheng Yang, Wei Yao, Min Li

Design and Implementation of Hardware Platform for Bearingless Induction Motor Control System 147
Jun Yue Yang, Da Ming Wang, Yan Jun Ge

Design of built-in PLC Object File in CNC system N/A
Qinghua Wang, Renxuan Fu, Yanhua Hu, Junyong He

Finite Element Analysis of Eight-pole Homopolar Hybrid Magnetic Bearing 156
Chao Wu, Hongkai Zhang

Miniaturized high-gain multi-band wearable hairpin antenna for human body communication 161
Jiaqi Zhao, Shuhui Yang, Xi Lu, Xiaoyi Bian

Design of wireless anti-theft alarm for transformer 165
Li Li, Shabab Iftikhar, Peng Li

Analysis of leakage reason of fire resistant oil pipe in a subcritical unit N/A
Gen Li, Yang Li

Composite sensor design for transformer partial discharge location monitoring 174
Wei Yao, Min Li, Sheng Yang

The preliminary study of gradient AlSi alloy fabricated by 3D printing technology 179
Shaoxin Huo, Qihai Chen, Yingqiao Zhou, Dawei Xing, Bin Wang

A Tuning Method of Double-sided LCC Compensated WPT System to Realize Constant Current and Constant Voltage 184
Chunyang An, Junhong Zhang, Wei Gao, Da Li

Design and Simulation of Dynamic Coupling System for Hybrid Electric Tractor 190
Jianjian Kang, Mengnan Liu, Liyou Xu

Multi-physics Coupling Simulation Study in EDM Discharge Process 196
Yu Liu, Bo Li, Huadong Yang, Jiawei Qu, Dapeng Yang, Shengfang Zhang

Elementary Introduction to Research and Application of Defect Management of Distribution Network Master Station N/A
Zhongyuan Xu, yaosong Guo, jiaxing Lei, dashi Luo

Design of Signal Generator Module for High and Low Voltage Composite Ejecting-explosion EDM Power Supply 207
Yu Liu, Hanzhong Zhang, Huadong Yang, Jiawei Qu, Ziguang Wang, Shengfang Zhang

Backup Protection for Tie Lines in a Double-Petal-mode Distribution Network 212
Jingkai Kong, Yuejia Li, Wujiapin Yao, Yi Zhao, Jiaxing Zhou, Tao Zheng

A New Removing Device of Bearing Seal Covers 216
Jiaqi Chen, Xiujuan Zhang, Dashun Yang, Chong Zhang

Layered Service Scheme For Electric Vehicle Charging System 220
Lingang Li, Mei Shen

Design and Control of Hoverable Bionic Flapping Wing Micro Air Vehicle 224
Shengjie Xiao, Huichao Deng, Kai Hu, Shutong Zhang

Design of a Compact Five-band Button-like Antenna with Defected Ground Structure 228
Xiaoyi Bian, Shuhui Yang, Jia Yang, Jiaqi Zhao

Vibration Analysis on Six-wheel Landing Gear Induced by Anti-skid Brake 232
Dongming Liao, Zongxia Jiao, Zhuangzhuang Wang, Pengyuan Qi, Xiaochao Liu

Design of the Recovery and Release Structure for the Unmanned Aerial Vehicle Carrier System 237
Lyuyan Wang, Baijian Chen, XinLong Yu, Shuhui Yang

Correlation Analysis of Reradiation Interference Resonance Impact Factors for Power Lines at Short-Wave Frequency 241
Zheyuan Gan, Jiaqi Yao, Jiangong Zhang, Zhibin Zhao, Bo Tang

Effectiveness Analysis of AC/DC Hybrid Distribution System with High Frequency Bus Electric Energy Router under Different Operting Conditions 245
Yang Liu, Lisheng Li, Yong Li, Hejin Liu, Mingyang Li, Feng Wang, Guoqiang Su, Xinhong You

Comprehensive Evaluation of Power Quality of Coal Mine Power Grid Based on Combination Weighting and TOPSIS Grey Relational Projection Method N/A
Xiucai Guo, Pengfei Xu, Xiaoping Shao

Fatigue Failure of Vacuum Interrupter Bellows in Vacuum-type Metal-enclosed Gas-insulated Switchgear 254
Jun Fan, Xiaofei Yao, Jun Zhang, Xinggui Chen, Zhiyuan Liu, Jianhua Wang, Yingsan Geng

Research on Design Task Decomposition System for Collaborative Development of Complex Customized Products 258
Xiaofei Tao, Ping Yan, Longfan Liu

Design and performance analysis of a single-axis ultrasonic levitation device driven by piezoelectric ceramics 264
Liang Yang, Hengli Zhuo

Design of three-stage power electronic transformer for smart grid 269
Jiaqi Li

Application of Magnetic Tube in Suppressing Passive Interference of Overhead Transmission Lines 276
Zheyuan Gan, Xinyi Zheng, Jiangong Zhang, Bo Tang, Zhibin Zhao, Li Huang

Research on Lightweight Design Method Based on Biological Knowledge Acquisition **N/A**
Zhimin Zha, Hui Zhang

Research on the Influence of Electric Vehicle Charging Station on Power Quality of Distribution Network 286
Qi Gu, Yulan Zhu, Huadong Zeng, Derong Zeng, Yibo Guo

Research on power supply ratio scheme of source network charging and storage project under the dual carbon target 294

Xing Wang, Hang Cheng, Weikang Li, Ming Zeng, Bo Zeng, Xichao Zhou

Mechanism Design and Motion Simulation of Mobile Robot with Compound Motion Mode 301

Yanan Shi, Yuwei Yang, Zhenzhong Liu, Haiming Zhang

Civil Aircraft Brake System Architecture Design

Based-on System Engineering 305

Hong Yang, Bing Li, Ning Bai, Xiaochao Liu

Sensitivity Analysis of Power Generation System and Preventive Measures for Power Paralysis 309

Wanchen Li

Research on Fault Diagnosis and Analysis Method of Converter Transformer 314

Haitao Dai, Ningrui Li, Wei Han, Zhenji Song, Yongxin Zhang

Analysis of the Influence of Various Factors on the Ultraviolet Discharge Detection of 110kV Contaminated Insulators 318

Yunpeng Liu, Jiajun Yang, Ziru Ma, Yonglin Li, Jiashuo Liu, Tingyu Lai

Coupling Analysis of Turbocharger Compressor Blade Vibration and Blade Profile Optimization 322

Yuanzhe Li, Minghai Li

Fault analysis of an explosion caused by circuit breaker closing not in place **N/A**

Xuefei Yang, Yang Song, Shaoyuan Yang, Shunjian Yang

The hybrid energy storage system for smoothing the fluctuation of wind power output 330

Xin Jin, Lichao Wang, Jingyi Gao, Yisu Yan, Kai Wang

State of Health Estimation of Lithium-ion Battery

Based on Ant Lion Optimization and Support Vector Regression 334

Qianglong Li, Xiaowei Zhang, Kun Zhao, Jianrui Sun, Kai Wang

An Improved VSG control strategy for Microgrid 338

Fangying Zhu, Zishun Peng, Wen Hu, Huan Wang, Chun Zhang, Zhenxing Zhao, Yuxing Dai

Application of Ensemble Learning Method Based on Wavelet Packet Decomposition in Bearing Fault Diagnosis 343

Zejun Ren, Chuan Xiang, Jiahui Zhou

110 kV insulator contamination diagnosis method based on UV imaging 347

Yunpeng Liu, Tingyu Lai, Jiashuo Liu, Yonglin Li, Jiajun Yang, Shaotong Pei

Study on Stability Test Method of Aeroelastic Machinery of Bearingless Rotorcraft 351

Yan Zhu, Yuhui Lu, Fengnan Sun, Feng Qian, Weixing Chen, Huan Chen

Research on Cybersecurity Strategy and Key Technology of the Wind Farms' Industrial Control System 357

Peng Hu, Baihua Yang, Dong Wang, Qile Wang, Kaifeng Meng, Yinsheng Wang, Zhen Chen

Research on Harmonic Detection Based on Improved Kalman Filter and Wavelet Packet Transform 362

Tao Sui, Mengtao Zhang, Xiuzhi Liu, Wenqiang Ma

Analysis of the influence of grid fault and dynamic load on the stability of microgrid system 368

Tianyi Ma, Lu Jin

Research on improvement path of power system regulation capability under dual carbon target **N/A**

Xing Wang, Weikang Li, Jiaxin Zhao, Yaohua Wang, Shengyu Wu, Ming Zeng, Yongli Wang, Bo Zeng

Adaptive backstepping control for the synchronous generator with unknown nonlinearities 381

Gang Xu, Honghong Wang, Boqiang Yuan

Anomaly Detection Based on Edge Computing Framework for AMI 385

Haolan Liang, Chunxiao Ye, Yuangao Zhou, Hongzhao Yang

Modbus TCP protocol in industrial control system

Research on anomaly detection method 391

Yinsheng Wang, Yuning Wang, Zhicheng Zhu, Qile Wang

Hierarchical Optimal Scheduling of Photovoltaic Community Considering Electric Vehicle (EV) Battery Life 396

Yu Ma, Yanqing Wang, Yinuo Huang, Xiao Wang

Lightweight Bird's Nest Location Recognition Method Based on YOLOv4-tiny 402

Qifan Yang, Ziqiang Zhang, Liang Yan, Wenzhuo Wang, Yugang Zhang, Chi Zhang

A Weak Travelling Wave Signals Extraction Method of High Independence Grounding Fault Based on TMR 406

Yanxia Chen, Zhiyong Wang, Xijuan Yu, Tao Lin, Kun Yu, Ying Zhang

Investigation on Hydrodynamic Evaluation of an Amphibious Transport Vehicle 412

Chengliang Sun, Xiaojun Xu, Lei Zhang, Yuanjiang Tang

Research on control strategy of double terminal converter station in UHVDC transmission system based on virtual synchronous generator 417

Xiaolong Guo, Feng Zhang, Yiqian Sun, jiangfei Zhang, Tiejiang Yuan Yong Liu

A dv/dt Control Strategy of SiC MOSFET for Turn-off Loss Reduction within Entire Operational Power Range 424

Zebing Wu, Huaping Jiang, Xiaowei Qi, Hua Mao, Shuai Niu, Xiaohan Zhong, Lei Tang, Li Ran

Voltage sag detection method based on dq transform and complex wavelet transform 429

Xiu Ji, guangye Xue, Xiangping Meng, guilin Dong

Simulation Analysis of Mechatronics Nutation Transmission with Movable Teeth 435

Lili Zhu, Jiayu Wang, Dan Li

Path Planning for a Cable-Driven Parallel Waist Rehabilitation Robot Based on Discriminant Analysis Model 439

Yuan Li, Zhengmeng Yang, Meng Jiang, Bin Zi

Research and implementation of optimal operation method of island integrated energy system 445

Feng-Rui Liu, Hao-Tian Guo, Hang Ji, Hou-Hua Zhu, Zhi-Qiang Liu, Li Yuan, Ming-Chen Yan

Structure and control system design of mobile shooting hexapod robots 450

Chong Zhang, Baoliang Li, Linsong Deng, Jiaqi Chen

Research on Combating Flight Control

Process of UCAV 454

Peibei Ma, Jun Ji, Jiangbo Sui, Lei Meng

Design of Highly Deterministic and Reliable Aircraft Electronic-Mechanical Actuator Servo Control System 459

Mingliang Hu, Erjun Yu, Wen Yan

Exploration of Regional Centralized Control Mode of Pumped Storage Power Station Group 464

Yuanlin Luo, Yuechao Wu, Bo Zheng, Jiong Lu

Optimal Exploitation of Mobile Emergency Generator and Distributed Energy Resource for Improving the Resilience of Incremental Power Distribution System under Extreme Grid Faults 470

Yuying Zhang, Pinduan Hu

Study on improving the efficiency of abrasive water jet machining 477

Fenglian Zhang

Review of autonomous inspection technology for power lines using UAVs 481

Shuangchun Sun, Yanlei Li, Zhenxiao Yi, Kai Wang, Ping Yu, Kun Zhao, Tao Yang

Artificial Immune Technology Architecture for Electric Power Equipment Embedded System 485

Dongqi Liu, Zhou Wang, Haolan Liang, Xiangjun Zeng

Load Curve Clustering Method Based on HP Filter and Rescaled range analysis 491

Tao Ma, Xiangfeng Zhang

A method for identifying specific load state of distribution network 497

Peidong Hu, Zhiguo Liu, Zhi Ye, Xiaoping Liu, Xiong Xie, Zhi Wang, Weijie Zeng

A Novel Method for High Resistance Grounding Faulty Feeder Detection in Distribution Network 502

Yu Zhou, Tao Tang, Chunhui Luo, Zhongyi Yang

Finite element simulation of micro cutting process of ultrasonic assisted magnetic abrasive finishing 507

Fujian Ma, Qichao Luo, Yunpeng Liu, Shao Chen

A Grid-Load-Storage Coordinated Planning Model Considering Flexibility Resources under High Wind Power Penetration 511

Shuai Liu, Mingqiang Wang, Yuxi Hu, Xiaoyang Lian

Automatic fault current detection method for distribution network based on current transformer 517

Guojie Xu, Xingyu Zhou

Study on the Influence Law of Friction-Thermal Interaction on Coated Surface 521

Zhihua Sha, Shangnan Sun, Qiang Hao, Jian Yin, Yu Liu, Shengfang Zhang

The design and implementation of a vending machine based on state machine, FPGA and microcontroller 525

Junyi Guo, Yu Liu

Optimisation of Motor Loads in Short-Circuit Current Calculation 529

Tong Jiang, Haifeng Yu, Chunjing Lu, Xinran Li, Jingyi Tu, Zehong Chen

Research on Secondary Radiation Suppression Method of UHV Transmission Line Tower in Medium Wave Frequency Band 534

Jiangong Zhang, Xiaofeng Yang, Bo Tang, Zhibin Zhao, Fating Yuan, Bin Chen

A Joint Planning of DG and Distribution Network Considering Network Loss Based on MIQCP 538

Xiaoyang Lian, Mingqiang Wang, Shuai Liu, Yuxi Hu, Qiang Zhang

Method for reducing power loss of power grid based on reactive power of PQ node 543

Zhun Li Qian

Fault Location in Distribution Networks Using Zero-Mode Traveling Wave Mutation of Reclosing 549

Yi Zhao, Yuejia Li, Jingkai Kong, Jiaxing Zhou, Tao Zheng

Control and Analysis of Primate Bionic Mechanical Limbs 553

Guangxin Wang, Jiuyue Li, Kang Jing

Active power sharing control strategy of microgrid inverter based on parameter filtering and adaptive virtual resistance 557

Guangnan Wang, Chuanbo Wen

Magnetic field radiation model of ultra-low frequency mechanical antenna array based on rotating permanent magnet 562

Xiaoyu Wang, Xin Zhou, Wenhou Zhang, Xijie Yang, Xiangchen Zhao, Boyan Zhang

Simulation study on e-diffential function for dual motor hybrid heavy duty truck 568

Hao Sun, Jianlin Wei, Qingbo Liu, Dechun Liu, Yuanze Lin

Research on the Path Planning of the Construction Robot Based on BIM 574
Fenghao Zhu, Zhenzhong Liu

The step curing method decided by curing kinetics equation and isothermal viscosity curve for electrical epoxy packaging materials N/A
Kun Wang, Wei Yang, Yun Chen, Chong Zhang, Li Yin, Xin Chen, Jinfeng He, Bingyue Yan, Yu He

Risk Analysis of Increased Summer Power Load after COVID-19 for Shaanxi Colleges and Universities N/A
Wenjun Liu, Ming Dong, Wenyu Yang

A Calculation Method of Wind Power Penetration Limit Considering Wind Speed Fluctuation and Frequency Constraint 592
Yangwu Shen, Dingwen Lu, Min Wang

Research on wind power prediction method based on CEEMDAN-SSA-GRU 597
Rongbin Cao, Sanming Liu

Research on Online Calculation Method of Partial Discharge of Power Cable 602
Kai Huang, Tao Wang, Jianxun Wang, Hongmin Hao, Wenan Liu, Renfei Che

A Hybrid Multi-group Co-evolution Intelligent Optimization Algorithm: PSO-GWO 607
Ziheng Li, Jiankai Zuo, Rongxin Lv, Zeyuan Liu, Ye Wang

A new method of short-term load forecasting based on the selection of compound variables 612
Yu Xiao, Wei Zou, Zhi Ye, Xiaoping Liu, Taoming Zeng, Huang Rui, Wenwei Zeng, Weijie Zeng

Cluster Division in Wind Farm Based on Ensemble Modeling of Machine Learning 619
Yi-Kun Yin, Yun-Lian Liu, Song-Yuan Li, Xiang-Yun Bing, Zhuo-Long Li, Hui-Yang Xie, Feng-Rui Liu

A Reduced Disjunctive Model for Transmission Expansion Planning Considering Unit Commitment and Optimal Transmission Switching 623
Yuxi Hu, Mingqiang Wang, Xiaoyang Lian, Shuai Liu, Qiang Zhang

Research on Data Transmission and Storage Methods in FPGA-based DMD Devices 628
Lin Zhang, Danfeng Hu, Jie Xu

Insulator UV Image Fault Detection Based on Deep Learning 632
Wenjie Yang, Yunpeng Liu, Yonglin Li

Coal Flow Volume Measurement of Belt Conveyor Based on Binocular Vision and Line Structured Light 636
Jiacheng Li, Junsheng Zhang, Honglei Wang, Baozhong Feng

A Vertical Semantic Search Engine In Electric Power Metering Domain 640
Sheng Li, Kaihong Zheng, Jinfeng Yang, Xin Wang, Lukun Zeng, Qihang Gong, Geng Yang, Zhixi Yu, Yongjie Liang

Application of Prony algorithm in identification of short-circuit fault current parameters 645
Jiaojiao Duan, Chun'en Fang, Wei Li, Sisi Li, Junping Chen, Xiaoxu Yin

Optimal Configuration of Microgrid with Gravity Energy Storage based on Improved Whale Algorithm 650

Guoqing Yang, Yuan Chai, Deyi Wang, Kai Yan, Xu He

Research on the Frequency Coexistence of 24 GHz Millimeter Wave Radar and 5G Communication 656

Xu Zhang, Lei Chen, Yue Zhang, Yan Fan, Dandan Wu

Optimization of Robot Hopping Mechanism Based on Parametric Model Method 661

Yanan Shi, Yuwei Yang, Zhenzhong Liu, Haiming Zhang

Sound Source Localization Methods Based on Lagrange-Galerkin Spherical Grid 665

Duxin Liu, Xichang Cai, Dongchi Yu, Ziling Qiao, Hongxia Dong, Menglong Wu

A damage detection algorithm for aluminum workpiece based on improved segmentation and decision network 671

Surui Jiang, Jianfeng Yang, Haicheng Xie, Wenkai Zhang, Binbin Wu, Xinwei Yang

Classification Method for Motor Imagery EEG Signals **N/A**

Yanli Yuan

Dynamics Modeling of Spraying Robot using Lagrangian Method with Co-simulation Analysis 679

Jingfeng Pan, Jiarui Wan, Zhengyu Wang, Lei Zheng, Lijun Jiang

Study on the Mapping Relationship between Discharge Signal Parameters of External Insulation Equipment and Quantization Parameters of Ultraviolet Detection 684

Yunpeng Liu, Jiajun Yang, Jiashuo Liu, Tingyu Lai, Ziru Ma, Yonglin Li

Electric Intelligent Safety Monitoring Identification Based on YOLOv4 688

Xiaolu Cheng, Chao Gao, Xiaoqi Ye, Rong Si, Xin Song, Hao Ren

Non-intrusive load monitoring method based on LMD and KNN algorithm 692

Pengfei Yang, Xianbo Sun, Li Zhu, Yuhan Wu, Zhihao Wang

Deep Learning based Nonlinear Equalization for DCO-OFDM Systems 699

Pu Miao, Weibang Yin, Hui Peng, Yu Yao

A CNN Based Q-learning Algorithm for Path Planning of Automated Guided Vehicle 704

Zhuo Ma, Dongqing Wang

Research on AGV path planning based on PSO-IACO algorithm 709

Xingmin Li, Bin Zhang, Dongqing Wang

Research on Day-ahead Peak Load Regulation Strategy of Fused Magnesium Load Based on Genetic Algorithm 714

Liaoyi Ning, Ao Sun, Kai Liang, Huan He, Zhen Jiao, Chuang Liu, Yibo Wang, Hailiang Zhang

The prediction of energy and optimal structure of gold clusters under PSO-BP neural network model and GA algorithm 720

Weizheng Sun, Wenxiang Wei

A Machining Feature Recognition Method Based on Transition Feature Simplification 724
Hongxiang Yan, Ping Yan

Location and Capacity of Distributed Power Sources Based on Evolutionary Bacterial Foraging Algorithm 729
Xinping Geng, Xia Wang, Xiaoyu Hong, Shuang Gao, Hui Han, Xiangjun Liu

Research on UAV Fully Automatic Hangar Based on Airborne Ultraviolet Imager 734
Shaotong Pei, Rui Yang, Yunpeng Liu, Jiajun Yang, Ziru Ma, Yonglin Li

Improved Harmony Search Algorithm and Application in Optimal Scheduling of Hospital Transport AGV 739
Huiying Zhu, Jicheng Liu

Automatic evaluation model of relay protection equipment reliability based on BP algorithm 744
Xiaoyu Li, Jing Xu

A Deep Learning Reconstruction Method for
Fast Assembly Line Computed Tomography 748
Changsheng Zhang, Guogang Zhu, Jian Fu

The promotion method and path of energy big data service business N/A
Jiaxin Zhao, Huiqiang Ji, Jingcheng Chen, Xudong Wang, Yi Gao, Yongli Wang, Ming Zeng

A maritime emergency search and rescue system based on unmanned aerial vehicle and its landing platform 758
Mingzhang Chen, Fanfei Zeng, Xiaoshuang Xiong, Xuancheng Zhang, Zhongbao Chen

Intelligent Assistance System for the Lost Alzheimer's Patients N/A
Xiaoxiao Yang

Research on Multi-parameter Automatic Test System of Cultural Complex Internal Environment N/A
Hui Ren, Bo Zhao, Jing Peng

An improved A* algorithm for UAV path planning 772
Fengxiao Gao, Jiafeng Ding, Zhengchun Liu, Zongze Du

Weakly Supervised Localization with Patch Detector for Fine-Grained Image Retrieval 777
Rong Wang, Wei Zou, Jiacheng Pu, Jiajun Wang

Feature Recognition and Analysis Method for Cyber Security Assets of Intelligent Connected Vehicles N/A
Hao Zhao, Yanan Zhang, Chao Ma, Tianyu Liu

Algorithms Based On Correlation Filter In Target Tracking: A Survey 786
Zhengdao Yuan, Dongri Shan

Location and Identification of Insulator and Bushing Based on YOLOv3-spp Algorithm 791
Shaotong Pei, Dewang Liu, Ziru Ma, Yunpeng Liu, Yonglin Li

Wireless power transmission based on neural network predictive control 795

Chengye Qi, Dongqing Wang

Overview of NC Machining Tool Path Optimization Based on Digital Twin Technology 800

Zhe Cui, Zhibin Miao, Yongling He, Xiaohong Cong

A Text Matching-based Knowledge Fusion Method For Power Metering Domain 805

Jinfeng Yang, Kaihong Zheng, Sheng Li, Xin Wang, Lukun Zeng, Qihang Gong, Geng Yang, Ke Zong

Discussion on the Method of Measuring and Calculating the Information Capacity and Load of the Big Data Center of the Electric Power Enterprise N/A

Kaifeng Meng, Zhicheng Zhu, Qile Wang

Pneumatic flexible manipulator with highly integrated electromechanical system and the control method 815

Ke Wang, YuWei Wang, Siyu Yang, Yan Ge, Jing Wang

Author Index 820