2020 IEEE 3rd International Conference on Electronics Technology (ICET 2020)

Chengdu, China
8 – 12 May 2020

IEEE Catalog Number: CFP20P18-POD
ISBN: 978-1-7281-6284-3

Copyright © 2020 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: CFP20P18-POD
ISBN (Print-On-Demand): 978-1-7281-6284-3
ISBN (Online): 978-1-7281-6283-6

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

2020 IEEE 3rd International Conference on Electronics Technology

ICET2020

Table of Contents

Preface xvii

Committees xviii

◆ **Electronic Materials and Performance Analysis**

A Trigger Inspection Platform for sTGC Detector Front-End Electronic Boards 1

Shuang Zhou, Feng Li, Peng Miao, Xinxin Wang, Naijie Zhang, Liang Han, Ge Jin

Design of A 3-D Band-Stop FSS with High Selectivity 6

Jia Shengli, Xu Bingzheng, Zheng Ting

A Novel High Voltage SOI LIGBT with Split Gate and Carrier Stored Layer 11

Jinping Zhang, Yang Zhao, Rui Jin, Jiang Liu, Mingchao Gao, Bo Zhang

Multiple-Relaxation-Time Lattice Boltzmann Model for Squeeze Film Air Damping of Large Knudsen Number in MEMS 15

Pu Li, Chengde Zhu, Yuming Fang

Effects of Drain Doping Profile and Gate Structure on Ambipolar Current of TFET 20

Jie Li, Qian Xie, Anpeng Huang, Zheng Wang

Mechanism and Reduction of Drain Current Drop in InGaZnO Thin Film Transistors 25

Guangmiao Wan, Yuzhi Li, Shimin Ge, Xinnan Lin, Zeke Zheng, Shan Li

Ultra Wide Acoustic Bandgap Detection in Novel Octagonal Phononic Crystal of MEMS Materials 30

Lubna Razia Zafar, Jian Huang, Muhammad Ammar Khan

Improving the Signal Integrity, Impedance Control and Attenuation of the Thin Transmission Lines Printed on Flexible Substrates 34

Zhenhao Liang, Yanpeng Xie, Qiang Chen

Study on Fundamental Impedance of Series Capacitor Controlled by Thyristor.....38
Chongkai Cai, Junmei Weng, Yongjun Yu, Weifeng Xu, Hui Zhao, Ziang Duanmu
A Full-Color Micro LEDs Display Based on IGZO TFT 46
Yang Sun, Jack Fan, Bo He, Min Zhang, Shujhih Chen, Xin Zhang, Chia-En Lee, Qiuyan Fang
The Research of Spectral Response for GaAsP/GaP PIN Photodiode.....50
Xiao Xuefang, Chen Chao

◆ Electronic Component Design and Optimization

Research on the Architecture of Edge Computing SoC with Ultra-Low Power 54
Cui Guoyu, Pang Zhenjiang, Feng Shanggong, Wang Dawei, Cheng Jingwen, Zhou Shengang
Implementation Method of CORDIC Algorithm to Improve DDFS Performance 58
Wenjun Chen, Tianya Wu, Wangwang Tang, Kai Jin, Guangming Huang
An Embedded Tracing Debug Implementation for Crossbar Type Bus in Muti-core SoC.....63
Haixia Duan, Lixin Yu, Haiyang Zhou, Shiyuan Zhang
A Scheduling Algorithm of Maximize the Number of Porosity for the Time-Triggered DIMA System 68
Yang Mi, Jing Qu, Jinbo Zhang, Mingwu Yao
An FPGA-Based Reconfigurable CNN Accelerator for YOLO 74
Shiguang Zhang, Jian Cao, Quan Zhang, Qi Zhang, Ying Zhang, Yuan Wang
A 0.03-3GHz Inductorless Wideband Low Noise Amplifier in 65nm CMOS 79
Huan Deng, Haigang Feng, Ning Zhang
A Low Cost High Performance Polynomial Multiplier Design For FPGA Implementation 83
Liejun Ma, Xingjun Wu, Guoqiang Bai
Design and Verification of Radiation Hardened Scanning D Flip-Flop.....87
Meihui Li, Bei Cao, Fengchang Lai, Nan Zhang
Hardware Implementation of a Cryptographically Secure Pseudo-Random Number Generators Based on Koblitz Elliptic Curves.....91
Xuemei Tian, Ru Ding, Xingjun Wu, Guoqiang Bai

◆ Digital Circuits and Systems

A GOA Circuit Capable of Simultaneously Outputting Positive and Negative Pulses 95
Liuqi Zhang, Gary Chaw, Baixiang Han, Zhibin Han
Performance Analysis of Width and Thickness Tapered Geometries on Electrical Power Harvested from a Unimorph Piezoelectric Cantilever Beam 100
Dauda Sh. Ibrahim, Sun Beibei, Orelaja Adewale Oluseyi, Umer Sharif

A GOA Circuit Composed of a-IGZO TFT with Q-point Precharge Function.....105
Zhibin Han, Shengdong Zhang, Xian Wang, Jianxin Liu, Baixiang Han, Gary Chaw, Xin Zhang
Memristive Hidden Chaotic System and Circuit Based on Sprott-2 System.....110
Licai Liu, Chuanhong Du, Qun Ding, Shuaishuai Shi, Shixue Zhang, Mingfu Zhang
A Negative Pulse GOA Circuit Consisted of a-IGZO TFT.....114
Zhibin Han, Shengdong Zhang, Liuqi Zhang, Jianxin Liu, Baixiang Han, Gary Chaw, Xin Zhang
Laser Simulation of Transient Ionizing Radiation Effects in the Double-Power Integrated Circuit.....118
Weiyi Cao, Yuanfu Zhao, Liang Wang, Tongde Li, Chenglong Sui, Chunqing Yu, Ruilong Han
A New Compensation Pixel Circuit Based on A-Si TFTs.....123
Bin Liu, Quansheng Liu, Jingjing Liu, Feng Zhu, Hang Zhou
Reflection Coefficient between Complex Impedances.....127
Lamin Zhan, Shihao Qi, Baoquan Hu, Yunzhong Wu, Changzhong Chen
Driving Circuit Design of Vibrating Wire Sensor Based on Frequency Sweep Mode.....132
Yong Sang, Zengren Zhang
Design of a High Precision Undervoltage Protection Circuit Based on High Voltage BCD Technology.....137
Jun Pan, Rui Xu, Can Guo, Junan Zhang

◆ Microelectronics and Solid State Electronics

WISERING: Research on Intelligent Motion-Sensing Interactive Software and Hardware Integration System for Multi-finger Collaboration.....142
Zhu Lianda, Zeng Yuntao
Design of a High Precision Low Temperature Drift Oscillation Circuit Based on CMOS Technology.....147
Rui Xu, Jun Pan
A Low Complexity FIR Filter with an Efficient Frequency Response Masking Technique.....152
Huahua Li, Xingyuan Tong, Qinqin Li
Research on Simplification Techniques of a Spur Suppressing Method in DDFS.....156
Yuan Xue, Zhongsong Ma
Research on Phase Current Reconstruction with Single Current Sensor Using Vector Pulse Interpolation Method.....161

Haochen Wang, Yi Zhang, Haifeng Wei, Kai Li, Yuanjiang Li, Weiting Liu

An Automatic Detection Method for Bradykinesia in Parkinson's Disease Based on Inertial Sensor 166

He Juanjuan, Yao Zhiming, Wang Jianguo, Li Bochen, Yang Xianjun

High-Speed SRAM with Flexible Read/Write Data Width Tailored for Convolutional Neural Network 170

Xiaowei Chen, David J Bogacz

An Energy-Efficient Bagged Binary Neural Network Accelerator 174

Songhong Liang, Yingcheng Lin, Wei He, Ling Zhang, Mingmei Wu, Xichuan Zhou

Design and Experiment of Transverse Driving Oscillator for Nuclear Magnetic Resonance Gyroscopes 180

Shu Qiang, Ji Fang, Zhu Mingzhi, Wang Baoxu

◆ **Physical Electronics and Optoelectronics Technology**

Research on Pulsed Laser Induced Single Event Effect for High-Speed Serial Interface.....185

Junze Li, Suge Yue, Maoxin Chen, Xiaojing Song

Study on Beam-shaping Mirrors for Gaussian Beams at Frequency of 170GHz.....190

Guohui Zhao, Qianzhong Xue, Hongfang Yang, Liang Chen

Development of the Control System of High Speed Synchronous Rotating Mirror for Space Laser Ranging 194

Wang Haitao, Cao Yu, Gao Xiong, Zhang Xin, Han Junfeng, Xie Meilin, Liu Peng, Jing Feng

Enhanced Photoelectronic Currents by the Self-Assembled Hybrid Layers of Graphene Oxide Quantum Dot and Liquid Exfoliated Graphene 199

Tingting Jia, Jizhao Zhang, Yunfang Jia, Zhenwu Gong, Qingjie Fan

Color-Tunable Luminescence and Energy Transfer Properties of Dy^{3+}/Eu^{3+} Codoped $Ca_{1.5}Sr_{1.5}(PO_4)_2$ Phosphor for white LED Applications.....203

Xiaofang Yu, Xiaoyun Mi

Airport-Specific Light-Guiding Taxiing Guidance Sign.....207

Ma Xiaodan, Li Tuo, Jiang Li, Yang Xiaolong, Chen Fei

Dynamic Acceleration Compensation for Attitude and Heading Reference System Based on Recurrent Neural Network.....212

Li Xiang, Liu Xiaoqin, Shi Qi

Thermoelastic Damping in the Flexural Vibration of Bilayered Microbeam Resonators with Annular Cross-Section 217

Pu Li, Zhijun Luo, Yuming Fang

A 140 GHz High Extinction Ratio Sandwich Terahertz Polarizer 224

Jianfeng Zhang, Xuetian Wang, Yi Zou

A Multifunction Relaxation Oscillator with Area and Power Consumption Reduced 228
Qinqin Li, Xingyuan Tong
Inspection of Progressive Dark Pixels for Large-Size IJP AMOLED Displays 233
Dongwei Li, Wei Lu, Baixiang Han
A Classification Method of Current Impulse Waveforms for Non-instrusive Load Monitoring 238
Qifeng Huang, Hanmiao Cheng, Kaijie Fang, Yixuan Huang, Shihai Yang, Guofang Xia

◆ Design and Modeling of Smart Appliances

An External Capacitorless Low-Dropout Regulator With 5.58uV Integrated Output Noise From 10 Hz to 100kHz Using Adaptive Bias Technique 242
Xinfa Zheng, Haigang Feng, Ning Zhang
A Realtime Auto-focus Microscope System Based on a Visual Programming Software 247
Yi Zhang, Jianli Wang, Lu Chen
Torque Distribution Strategy of Four-Wheel Independent Drive Electric Vehicle Based on Optimal Energy Consumption 252
Luole Guo, Hongbing Xu, Jianxiao Zou, Hongyu Jie, Gang Zheng
A Full Monolithic 26GHz LNA with Special Transmission Line and Transformer for 5G Applications in 55nm and 65nm CMOS 257
Li Rao, Haigang Feng, Ning Zhang
A Two-Step VCO-Based ADC with PWM Pre-coded Coarse Quantizer 262
Sherif Ghozzy, Hani Fikry Ragai, Mohamed El-Nozahi
A 40nm CMOS Ultra-Wideband Active Power Divider/Combiner Design 266
Tianran Zhao, Zhangfa Liu
Research on Method of Mechanical State Characteristics Diagnosis Based on STFT and RVM for Transformer Winding 271
Zhang Shiling, Ji Yongliang, Jiang Xiping
Numerical Study of Transformer Breathing Based on VOF Model 278
Zilan He, Jing Huang, Hengzhen Li, An Wang, Shuai Yuan

◆ Converter Structural Design and Modeling

A Series Multilevel Converter with Phase DC Bus Voltage Fluctuation Suppression for PMSG in Wind Power System 283
Baiyan Sun, Congzhe Gao, Mingshi Liu
Novel High Efficiency Three-Port Bidirectional Step-up/Step-down DC/DC Converter for Photovoltaic Systems 289
Yu-En Wu

A Soft-switching Step Down Converter for Point of Load Applications 297
Qiang Tong
A 92%-Efficiency Hybrid Envelope Tracking Modulator Based on 3-Level Hysteresis-Controlled Buck Converter with Capacitor Current Integration Sensor 303
Zhehan Zhuang, Zheng Wang, Qian Xie
Design of a Synchronous Rectifier Flyback DC-DC Converter Using GaN FETs for Commercial Aerospace Applications 308
Qiang Tong
A Model Reference Voltage Mode Control for Ripple Cancellation Buck Converter of Wide-Operation Range 314
He Liu, Donglai Zhang, Zicai Wang, Xinbin Hou, Hua Zhang, Zili Liu
The Design of NCO Built in Ultra High-Speed Data Converter 319
Zehua Zhu, Haiyang Quan, Ling Tian, Tieliang Zhang, Xinmang Peng, Lei Zhang
Design and Optimization of a Current-Driven Phase-Shift Full-Bridge Converter with GaN Devices and Large Conversion Ratio 324
Kaimin Shi, Xinbin Hou, Zili Liu, Qin Liu, Donglai Zhang, Zicai Wang, Hua Zhang
A High-Voltage Dynamic Level Shifter with Current Mirror and Augmented Cross-Coupling Structure for High-Side NMOS Gate Driver 330
Kai Luo, Jingcheng Xiao
Current-Sharing Active-Clamped Forward Power Converter with Self-driven Synchronous Rectifier 334
Zhang Di, Zhang Donglai, Wang Zicai, Zhang Hua, Zhang Ying

◆ Smart Grid and Micro Grid Technology

Planning of PV-ESS System for Distribution Network Considering PV Penetration 339
Gangjin Ye, Xiao Qian, Xuan Yang, Lebing Zhao, Jiayi Shang, Mengyao Wu, Tianyu Zhao
State Channel Based Energy Trading Scheme in Smart Grid 344
Guofang Dong, Man Yang
A New Method of Intelligent Maintenance of Smart Girds via Mean-Shift-Tracking Image Collaborative Displays 348
Zhengrui Peng, Chen Zhang
A Comprehensive Evaluation Method of Reactive Voltage Coordination Control Strategy in Active Distribution Network 352
Xu Yunfei, Yao Yanxiang, Li Yujiang, Li Changqi
New Suppression Strategy for Low Frequency Oscillation between Interconnected Power Grids 358
Hu Jinhao, Li Xin, Liu Yun

An Automatical Parameter Droop Control for HESS in Hybrid AC/DC Microgrid 363
Yihong Zhang, Di Zhu, Yijin Yang, Zihao Liu, Sen Wu, Qian Chen
Research and Design of Shore Power Cloud Network System Based on Cloud Platform..... 367
Hao Liu, Xian Yu, Kun Wang, Haitao Tian

◆ Electrical Fault Diagnosis and Analysis

Typical Ice-Wind Fault Analysis Based on Correlation Analysis and Naive Bayesian Method..... 372
Gu Kaikai, Chen Kai, Gu Ran, Wang Ruoyue, Peng Zhonghan, Song You
Fault Location Method for DC Distribution Network Based on Impedance Parameters Identification..... 378
Xu Yan, Cheng Shu, Xue Yanjing
Research of Windage Fault Early Warning Technology for Overhead Transmission Lines Based on Multi Parameters 382
Liu Hui, Liu Chuanbin, Jia Ran, Zhang Yang, Zhou Chao, Liu Rong
Wall Interference Assessment of Two-Dimensional Wind Tunnel Test Using Panel Method..... 386
Yi Xie, Guangyuan Liu, Dehua Chen
A Fault Location Method for DC Micro-Grid Based on the Improved Analytical Method..... 392
Xu Yan, Xue Yanjing, Cheng Shu
Engineering Practice of On-Line Monitoring and Intelligent Diagnosis System for Secondary Equipment in Smart Substation 397
Tao Jun, Zhong Ming, Wang Jiangping, Dong Jinzhao, Wang Zhihua, Jiang Zhuoyan

◆ New Energy Power Generation and Energy Storage Technology

Analysis and Design of a C-type Filter for a Wind or Solar Power Plant 404
Sheng-Kuan Wang, Chemg-Ying Lu
Research on Evaluation of Comprehensive Energy Measurement Business Based on Fuzzy Analytic Hierarchy Process..... 409
Mouhai Liu, Rui Huang, Jun Lu, Weiwei Lin
System Reserve Optimization Considering Uncertainties of Wind Power and Load Forecasting 413
Gangjin Ye, Qiang Xu, Haibo Lu, Weiting Qian, Shenglan Xu, Xuan Yang, Mengyao Wu
Wind Power Interval Prediction Based on Kernel Density Estimation with Optimal Bandwidth .. 420
Hanjun Zhang, Si Chen, Weifeng Duan
Prediction of Direct Normal Irradiance Based on Ensemble Deep Learning Models..... 425
Chengying Zhang, Zhen Yan, Chao Ma, Xiaoli Xu
State of Charge Estimation of Lithium Battery Based on FFRLS-SRUKF Algorithm 433
Tianle Zhang, Siyuan Yang, Jieyu Hu, Jianlong Gao, Dong Liu

The System Value Analysis of Wind Power under the Context of Considering Externality 438
Shun Ma, Ming Chen, Lei Yang, Ganggang Liu, Chun Han, Yan Wu
SOC Estimation of Lithium Battery Based on Improved Unscented Kalman Filter 443
YiYang Wang, YuDi Guo, JieYu Hu, Fan Lu, ChengXi Li, Dong Liu
Investigating the MgAl-Doping n-Type ZnO(MgAlZnO) Metal Oxide Film Used as the ITO Cathode Buffer Layer in the Inverted Polymer Solar Cell 448
Jinxiang Chen, Hang Zhou

◆ Photovoltaic System and Energy Engineering

Using Hardware-in-the-Loop Simulation Platform for Empirical Testing of Photovoltaic System 452
Zhixing Liu, Tianyu Li, Mengyao Shu, Yaojie Sun, Lei Ma
Research on Grid-Connected/Islanded Control Strategy of PV and Battery Storage Systems as Emergency Power Supply of Pumping Storage Power Station 457
Zhaohui Kan, Zilong Li, Shuaixuan Li, Tong Zhang, Dang Zhu, Ming Yi, Yunhui Huang
MPPT Test Based on Hardware-in-the-Loop Simulation Platform of Photovoltaic Systems 463
Wenchong Huang, Mengyao Shu, Tianyu Li, Yaojie Sun, Lei Ma
Multi-Objective Optimized Configuration of Electric Vehicle Fast Charging Station Combined with PV Generation and Energy Storage 467
Jing Liu, Congzhe Gao, Yecong Cao
Analysis of Photovoltaic Agriculture Model Based on the Single Axis Tracking System 474
Rui Zhang, Mingxin Wang, Yaojie Sun, Lei Ma
Stability Analysis of Photovoltaic and Battery Energy Storage Systems Integrated to Weak Grid 480
Chuangxin Fang, Ying Liu, Zhiping Hu, Lan Ai, Ming Yi, Dang Zhu, Yunhui Huang

◆ Modern Power System Operation and Control

Analysis and Comparison of SP and S/SP Compensated Wireless Power Transfer System for AGV Charging 485
Wang Yi, Li Ming, Yang Zhongping, Lin Fei
Inductive Electricity Experiment of Buildings under High Voltage Transmission Lines 489
Hui Liu, Zhihao Chen, Chuanbin Liu, Guoqing Ma, Jinxia Yao, Zhao Qi
Optimization Design of Coupling Mechanism of Wireless Power Transfer System Based on LCC / S Topology 497
Nan Liu, Xinfang Gao, Zhongping Yang, Fei Lin, Yi Wang, Yuyu Geng
Development and Application of Numerical Control High-Voltage Pulsed Electric Field Treatment System with Super-Low-Frequency 503

Hualu Song, Yinfa Yan, Zhanhua Song, Fuyang Tian, Yudao Li, Fade Li

Research on the Shortest Variable-Slip Mode DC-Side Voltage Control of APF Command Current 508

Dedong Zhou, Danyang Zhao

Study on Cross-Voltage Grade Interaction of Fusion Power Source Power Quality Control Device 513

Bang' an Wu

Research on Classification Method of Voltage Sag Based on Scenario Analysis 518

Yunzhao Wang, Yuzhen Zhao

Integrated Energy Monitoring and Management Platform Based on Ubiquitous Power Internet of Things 523

Yan Xu, Jianhao Zhang

Development and Application of Numerical Control Dc Superimposed Lowfrequency High-Voltage Pulse Generating Device 531

Hualu Song, Yinfa Yan, Zhanhua Song, Fuyang Tian, Yudao Li, Fade Li

Research on Control Strategy of Multi-distributed Power System Based on Improved Droop Control 536

Yuanbo Dang, Kaibo Mai, Tongmiao Cao

Coordination Control of Synchronous Condenser and Reactive Power Compensation Equipment in UHVDC Converter Station 541

Qipin Xu, Lili Liu, Hongchao Zhu, Chunjian Xu, Shaoxing Zhao

◆ Mechatronics and Intelligent Control System

Online Monitoring of Self-elevating Leveling Ship Based on Edge Computing 546

Gang Li, Jian Lan, Qin Li

A Study on the Path Planning Algorithm of the Unmanned Aerial Vehicle 552

Deyu Zhang, Yue Gu, Yanhui Lv, Haolei Sun

Permanent Magnet Synchronous Motor Control Algorithm Based on Mathematical Model Considering Time Delay Link 557

Hongyu Jie, Hongbing Xu, Xiaoshuai Xin, Gang Zheng, Luole Guo

Coordinated Charge and Discharge Strategy for Electric Vehicles Based on Chance Constraints 562

Yan Xu, Chenguang Wang

A High Performance Parallel Negative Voltage Charge Pump 567

Bo Li, Lichao Hao, Dengyun Lei

Integrated Topological Optimization Design Method for Solid Rocket Motor 572

Xianglin Cai, Yang Liu, Yangyang Luo, Gaofei Wei

The Archiving Data Pool Research of Intelligent Manufacturing Oriented to Impeller Design... 577
Guangrong Li, Yuanguo Cao, Yongqiang Bao, Sufang Zhao, Qiyuan Bian, Xingwang Wang
Investigation of Supercritical Fluid Treatment for SiN/SiON/AlGaN/GaN MISHEMTs 582
Shuhao Xiong, Xinnan Lin
Distributed Adaptive Tracking Control of Nonlinear Multi-agent Systems with Input Saturation 586
Boxian-Lin, Weihao-Li, Kaiyu-Qin, Xi Chen
The Hardware In-Loop Simulation System Based on SUMO for Autonomous Optimization Control Algorithm at Intersection 592
Min Peng, Pengfei Feng, Zijun Liang, Yun Xiao
Method for Realizing on Line Condition Monitoring of Protective Device Based on Data of Information Processing System 597
Luo Kun, Shi Yongxiao, Liu Li, Li Zhengxin, Zhou Kun, Hao Dongfang

◆ Signal Analysis and Processing

Feature Extraction and Classification Method of Mine Microseismic Signals Based on CEEMDAN_SE 602
Qiwen Yi, Tiedong Cheng, Yiwen Wu, Zhizhao Zhang
Research on Baseband Signal Processing Transceiver Module 607
Chun-mei Liu, Hong-min Gao, Zhong-jie Zhao
Real-time SAR-CORDIC Algorithm and Application in Signal Generation and Scene Simulation 612
Zhao Wenda, Chen DeCheng, Han Song, Wang Yanfei
Modeling and Simulation of Anti-ship Missile Passive Jamming Signal 620
Yi Zou, Xuetian Wang, Dan Rao, Jianfeng Zhang
Research on Detection of Spoofing Signal with Small Delay Based on KNN 625
Junzhi Li, Wanqing Li, Shaofeng He, Zhiqiang Dai, Qixiang Fu
Research on Radar Signal Recognition Technology Based on Deep Learning..... 630
Yuze Wu, Yan Mao, Xu Chen
Direction-of-Arrival Estimation for Coprime Array via Covariance Matrix Reconstruction..... 634
Bing Sun, Chen-xi Wu, Huai-lin Ruan, Hua Zhong
A Reconfigurable Mixed Signal CMOS Design for Multiple STDP Learning Rules 639
Chongyang Huan, Yuan Wang, Xiaoxin Cui, Xing Zhang
Analysis on the Effect of Multi-path Propagation on Multilateration (MLAT) System in Airport Apron 644
Wei Wang, ChenMengjiao, ZengLili, XuZili, HuaWei, ZhangLu

A Passive Detection Method of Divers Based on Deep Learning 650
Bo Jin, Gaofeng Xu
Study on Intelligent Diagnosis of Sleep Apnea Syndrome 656
Wei Chen
Modeling Partial Pulse Overlap Probability between Two Periodic Pulse Signals 661
Guofeng Jiang, Hongbo Yuan

◆ Communication Principle and Technology

A Method for Predicting the Bit Error Rate of Wireless Digital Communication Equipment 665
Biao Wang, Xue-tian Wang, Hang Li, Hong-min Gao, Yong-wei Sun
Characteristics Assessment of GNSS Observations on Smart Devices 670
Wanqing Li, Junzhi Li, Zhiqiang Dai, Qixiang Fu
Narrowband Interference Cancellation Technology of OFDM System based on Artificial Neural Network 675
Xiangfei Wang, Yahui Hou, Xianghui Shen
A Novel Cooperative MIMO Transmission Scheme Based on STBC for Event-Driven WSNs 679
Li Jun, Xie Wujun
A Joint Time-Frequency Domain Frequency Offset Estimation Algorithm for Busrt Communication 683
Shuofeng Wang, Qin Zhang
Secure Transmission in Cognitive Relaying Networks with Full-Duplex Technique 688
Zhihui Shang, Tao Zhang, Xiaohua Wang, Weiwei Yang, Liwei Tao, Ruiqian Ma
A Time Domain Simulation Method for SLED Pulse Compression System 695
Zili Jiang, Tao Jiang, Zhengfeng Xiong, Chen Yan, Weida Bai
Radar Adaptive Waveform Selection Behavior Recognition Based on Neural Network 699
Kaiyuan Zhang, Junpeng Yu, Xiaoyan Peng, Yifei Hao
Radar Seeker Anti-jamming Performance Prediction and Evaluation Method Based on the Improved Grey Wolf Optimizer Algorithm and Support Vector Machine 704
Fankang Bu, Jun He, Haorun Li, Qiang Fu
Automatic Calibration of Detectors under Pulsed Microwave 711
Wang Mingcai, Hao Wenxi, Fan Qiuhu, Liu Yingjun, Miao Yunling

◆ Antenna Theory and Technology

Amelioration of Coaxial Cavity Antenna 715
Men Gao, Duoli Cao, Qingli Lv
A Low Pass and Wide Angle Frequency Selective Surface with Miniaturized Elements 720
Xu Bingzheng, Jia Shengli, Zheng Ting

A Slotted Frequency Selective Surface with its Application in Microstrip Antenna RCS Reduction 724
Xujing Huang, Zhiying Zhao, Guobin Wan
A Water-Loaded Pattern Reconfigurable Antenna 729
Qingyuan Fang, Mengzhe Jin, Tong Wang
Design of a Novel Planar HF Antenna for Airborne Communications 733
Changlong Qiu, Gao Wei, Kangkang Han, Xianlei Li
Research on the Topological Characteristics of Truss Structure for Large Space Modular Deployable Truss Antenna 737
Dake Tian, Lu Jin, Rongqiang Liu, Zhaojing Liu, Ke Zhang, Xiaodong Fan
An S-Band Beam-Shaping Array Antenna Based on Pyramidal Horn 742
Bai Weida, Jiang Tao, Yan Chen, Jiang Zili, Zong Zijian, Yan Feng

◆ Mobile Communication and Wireless Technology

Fortified Network Security Perception: A Decentralized Multiagent Coordination Perspective 746
Ming Liu, Lu Ma, Chao Li, Ruiguang Li
A Genetic Algorithm Based Scheduling Scheme for WRSN 751
Fanxing Liu
Design of Dual-Band Frequency Selective Surface with Large Band Ratio for 5G Communication 756
Zhiying Zhao, Guobin Wan, Xujing Huang
Topology Control of Wireless Sensor Networks Based on Layered Sleep Scheduling 760
Haisheng Cheng, Haiqin Xu, Zhouyi Xu, Yang Liu
Wireless Communication Jamming Recognition Based on Lightweight Residual Network 765
Xiaole Yang, Tianhui Fu, Yongbin Wang
Precision Time and Frequency Joint Synchronization Protocol for Wireless Ad Hoc Networks 770
Yanchao Qiu, Qin Zhang, Siyu Gao
A Method to Improve the Positioning Accuracy of the Intersection of two Planes 776
Xuezheng Lian, Meilin Xie

◆ Internet of Things and Satellite Communications

A Hierarchical Modeling Method for Intelligent Satellite Application Software 781
Wang Xueyan, Guo Xiye, Yang Jun, Qu Zhi
Requirement on the Timing Accuracy of Satellite-Ground Joint Positioning and Inter-Node Time Synchronization 787
Chao Ma, Jun Yang, Sili Liu, Chao Zhou

Research on a Method of Two Aircraft Intersection Measurement Based on INS/CNS Integrated Navigation 793
Xie Meilin, Cao Yu, Hao Wei, Huang Wei, Lian Xuezheng, Liu Kai, Jing Feng, Liu Peng, Feng Xubin
A Novel Adaptive Rate Matching Algorithm Based on LDPC for Satellite Communication 799
Zhongliang Deng, Yanyue Yang, Ke Wang, Wenliang Lin, Ruiliang Song, Xiaotian Zhou
Achieving a Heterogeneous Software-Defined Networks with CamoVisor 804
Qi Wu, Hongchang Chen
A Stability-Based Clustering Scheme for Vehicular Networks 809
Dengyin Zhang, MinZhang, Fei Ding, Shengbo Eben Li, Keqiang Li
Performance Analysis of FHRP in a VLAN Network with STP 814
Faisal Shahriar, Jiancun Fan
Unmanned Shop Laboratory: An Extensible and Scalable Research, Teaching and Learning Smart Space System 819
Peter ChunYu Yau, Woo Hok Luen, Dennis Wong, Joe Wai Kin Kan
A Design of Intelligent Wearable Health Monitoring System Based on IoT 823
Yuntao Zeng, Lianda Zhu
Research on Distributed Automatic Test System for Secondary Loop of Substation that Based on Wireless Communication 828
Zhou Di, Zhong Youping, Wang Zizhan, Yang Wei, Peng Shuming, Han Minchou

◆ Computer and Information Science

Feature-Based Discrimination of Thyroid Cancer on Ultrasound Images 834
Xi Yang, Shupeng Qiu, Qiong Luo
GS-RNN: A Novel RNN Optimization Method based on Vanishing Gradient Mitigation for HRRP Sequence Estimation and Recognition 840
ZhangYifan, QianFengchen, XiaoFei
Anonymous Bitcoin Mixing Scheme Based on Semi-Trusted Supervisor 845
Tianlong Fei, Yuan Chang, Jiaqi Wang, Ning Lu, Wenbo Shi
Spawned Target Tracking Algorithm Based on GLMB Model in RFS Theory 851
Lin Yi-fu, Liu Ze-ping, Liu Deng-kun, Liu Ji-ying
Application of Hamming Code Based Error Correction Algorithm in Quantum Key Distribution System 857
Xiaodong Zhong, Ge Jin
Single Space Object Image Super Resolution Reconstructing Using Convolutional Networks in Wavelet Transform Domain 862

Xubin Feng, Xiuqin Su, Zhengpu Xu, Meilin Xie, Peng Liu, Xuezheng Lian, Feng Jing, Yu Cao
Research on Modular Inductive Wireless Power Transmission System in Parallel..... 867
Xinyi Song, Jianchao Xu, Jun Sun, Qiao Xiong