2023 IEEE 17th International Conference on Anti-counterfeiting, Security, and **Identification (ASID 2023)**

Xiamen, China 1-3 December 2023



IEEE Catalog Number: CFP2320C-POD ISBN:

979-8-3503-1962-0

Copyright © 2023 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:
 CFP2320C-POD

 ISBN (Print-On-Demand):
 979-8-3503-1962-0

 ISBN (Online):
 979-8-3503-1961-3

ISSN: 2163-5048

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

Group1: Machine Learning and Recognition Computing

001-1570954326	Prefabricated Construction Supply Chain Management Based on Improved Hierarchical Finite State Machine Yishu Yang, Chenglin Yu, Ray Y Zhong*	1
002-1570956758	A 2nd-Order Noise-Shaping SAR ADC with Reused Dynamic Amplifier Assisted Integrator Zhiyu Wang, Chongfei Shen, Xin Jin, Zhijie Chen, Bingjie Li, Peiyuan Wan*	7
003-1570948866	A Multi-Channel Low-Power LED Driver Circuit for PPG Jianxin Yu, Jianyang Zhou*	12
004-1570956803	Multi-Lable Wafer Defect Pattern Classification Using ResNet-based Convolutional Neural Networks Zihang Wang, Jiehong Fang, Tianrui Tao, Yuqi Pan, Zhenmin Li*	16
005-1570974254	An UVM-Based Verification Platform for Hardware and Software Co-design Shihong Wu, Kairong Zhao, Xulun Wang, Shan He, Donghui Guo*	21
006-1570954246	Residual Dense Network with an Attention Mechanism for Image Dehazing Yizhuo Wang*, Junping Wang, Weitao Pan, Huan Sun	25
007-1570956021	Conceptual Analysis of Information Graphics Design in the Context of Artificial Intelligence Jue Wang*, LinglingHu	30
008-1570974637	Optimization Algorithm Research and Design of Chip Manufacturing Virtual System Based on SECS/GEM Ke Liu, Kairong Zhao, Yaming Gong, Shan He, Donghui Guo*	36
009-1570945250	OWI Controller with FIFO Buffer Function Based on AHB-Lite Bus Zehao Li, Guozheng Wang*, Zhijie Chen, Peiyuan Wan, Xu Liu	41
	Group2: Cryptographic Algorithm and Information Security	46
010-1570952514	Evaluating Side-Channel Attack Vulnerabilities in Post-Quantum CRYSTALS-Kyber Hardware Based on Simple Power Analysis Munkhbaatar Chinbat, Liji Wu*, Xiangmin Zhang, Altantsooj Batsukh, Yifan Yang, Le Wu	46

011-1570956124	Image Robust Watermarking Based on Improved Invariant Feature Matrix and Chaotic Map	50
	Niansheng Liu*, Rongting Xu	
012-1570956744	Design of Tile-based ARGB Image Lossless Compressor and Decompressor Zhengyao Shi, Wenzhi Ma, Guanghong Wu, Yuhui Du, Mingyao Xia, Zhenmin Li*	57
013-1570954232	Design, Implementation, and Research of Non-Linear Boolean Functions in Sequence Cryptography Based on AIC Structure	62
	Zhaoxu Zhou, Zibin Dai*, Zongren Zhang, Yanjiang Liu, Junwei Li, Danping Jiang, Xiaoyu Song	
014-1570952612	Hardware Design of PQC Classic McEliece Finite Field Operations and Encryption Module	67
	Yan Liu, Liji Wu*,Zhenhui Zhang, Xiangmin Zhang,Jing Zhou, Yifan Yang and Le Wu	
015-1570952602	A DCA Attack Scheme and a Genetic Algorithm based Intelligent Fault Injection Algorithm For White Box AES Implementation	72
	Yuyang Pan, Yi Wu, Yulong Shang*, Bo Gao, Yulin Zhao, Zhe Ma, Yanzhao Li, Xin Wang, Zusong Zhang, Chi Wang, Mi Li, Ding Zhou	
016-1570956833	PPM: A Privacy-preserving Framework for Intelligent Medical Diagnosis Systems	77
	Ruidan Xia*, Chaolong Huang, Yining Liu, Ming Peng, Pingxiang Huang	
017-1570953464	Power Analysis based on Deep Learning for Multiple Implementations of Cryptographic Algorithms	82
	Wang MingDeng*, Yan YingJian, Guo PengFei	
	Group3: Network Analysis and Big Data	87
018-1570956240	A New Hybrid Structure for Concatenated Codes Ruonan Cheng*, Lijun Zhang	87
019-1570967434	A Shadow Detection Method Based on Neural Network in PCBA Height Measurement	92
	Xueqin Liu, Shanshan Li, Jiyang Yu, Peng Zheng, Chun Lin*	
020-1570951001	Simulink Modeling and Performance Verification of 2.4-GHz Fractional-N Reference Oversampling PLL with 20-MHz Loop Bandwidth Zijing Yuan, Chongfei Shen, Xin Jin, Yu Xin, Peiyuan Wan, Xu Liu, Zhijie Chen*	97
	υ ο ν ω ν ο ν ο ν ο ν ο ν ο ν ο ο ο ο ο ο	

021-1570956328	Improved Particle Swarm Algorithm on Dynamic Segment of FlexRay Networks Jiahui Xiao*, Shuai Zhou, Yukun Song	101
022-1570975055	Technology Generic Delta-Sigma ADC Design with gm/ID Methodology Xiongbo Zhang, Qingsen Wu, Yuan Wang, Lin Li, Zuochang Ye*	105
023-1570956746	A ECA Fusion Smoke Detection Algorithm and Prototype Based on Improved YOLOv8 Xiaolei Wang*, Yi Bu, Junxing Qiu, Guanci Pang, Tianyi Lu, and Gaoming Du	110
024-1570956238	Unequal Error Protection Coding Scheme in Semantic Communication Zixiao Xu*, Huitao Liu, Lijun Zhang	116
025-1570955999	Classification of Stock Information Disclosure Level Based on SVM and CNN Rui Zeng, Jiangjiao Duan*	121
026-1570956822	A Design of Homogeneous Multi-Core SoC with General-Purpose Floating-Point Processors Qiao Yuan*, Wenlin Pang, Yuhe Shi	126
	Group4: IC Design and System Integration	131
027-1570952011	A 12-bit 1MS/s SAR ADC with Buffers Zhenwei Yu, Jianyang Zhou*	131
028-1570951002	A Second-Order Noise-Shaping SAR ADC With Passive Integrator and Active Amplifier Mingqian Li, Mengqian Jiang, Xu Liu, Peiyuan Wan, Zhijie Chen*	135
029-1570956412	An Energy-Efficient and Area-Saving Capacitor Switching Scheme for SAR ADCs Yi Peng, Zheng Li, Dan Luo, Xu Liu, Bingjie Li, Peiyuan Wan*	139
030-1570944597	Bidirectional Level Shifter with Wide Voltage Range and Low Delay Jingya Yu, Yuchen Lu, Jiyuan Huo, Jianyang Zhou*	143

031-1570956432	A 85/215/430 KHz 3rd-Order Active-RC Low-Pass Filter with a Fast Automatic Frequency Tuning for a Zero-IF Receiver Haozhi Zhang, Kunpeng Xu, Xianhui Wang, Zhijie Chen, Bingjie Li, Zhiqi Shen, Peiyuan Wan*	147
032-1570956783	A SAR-Based Fast Automatic Digital Calibration Circuit of On-Chip Clock Xiaotian Lin, Chongfei Shen, Sihai Qiu, Xu Liu, Bingjie Li, Peiyuan Wan*	152
033-1570938995	A High-Precision Current Sensing Front-End IC Design for Wide-Range Dynamic Current Detection Yunao Chen, Xu Liu*, Qiumeng Fan, Zhijie Chen, Peiyuan Wan	157
034-1570941632	Design of Octal Half-Bridge Motor Driver with Serial Input Control <i>Zhenwei Fu, Jianyang Zhou*</i>	163
035-1570950998	A 10GS/s 7b Time-Interleaved Time-Domain ADC with Speed-Enhanced Bootstrapped Switch Qinghua Yu, Zhihai Wang, Peiyuan Wan, Xu Liu, Xinyu Du, Zhijie Chen*	167