

JOURNAL OF ELECTRONIC TESTING:
Theory and Applications
(JETTA)

JOURNAL OF ELECTRONIC TESTING

JOURNAL OF
ELECTRONIC
TESTING
Theory and Applications (JETTA)

Editor in Chief: Vishwani Agrawal

Volume 40, Number 1, February 2024

Editorial V.D. Agrawal	1
2023 JETTA Reviewers	3
ANALOG CIRCUIT TESTING	
An End-to-End Mutually Exclusive Autoencoder Method for Analog Circuit Fault Diagnosis Y. Shang · S. Wei · C. Li · X. Ye · L. Zeng · W. Hu · X. He · J. Zhou	5
SINGLE EVENT UPSET (SEU)	
A Quadruple-Node Upsets Hardened Latch Design Based on Cross-Coupled Elements Z. Huang · Z. Li · L. Sun · H. Liang · T. Ni · A. Yan	19
General Fault and Soft-Error Tolerant Phase-Locked Loop by Enhanced TMR using A Synchronization-before-Voting Scheme S.-H. Yang · S.-Y. Huang	31
A High-Performance Quadruple-Node-Upset-Tolerant Latch Design and an Algorithm for Tolerance Verification of Hardened Latches H. Xu · X. Qin · R. Ma · C. Liu · S. Zhu · J. Wang · H. Liang	45
VERIFICATION	
Design and Verification of an Asynchronous NoC Router Architecture for GALS Systems M.N. Saranya · R. Rao	61
MEMORY TESTING	
Failure Probability due to Radiation-Induced Effects in FinFET SRAM Cells under Process Variations V. Champac · H. Villacorta · R. Gomez-Fuentes · F. Vargas · J. Segura	75
MICROFLUIDIC DEVICE TESTING	
Reactant and Waste Minimization during Sample Preparation on Micro-Electrode-Dot-Array Digital Microfluidic Biochips using Splitting Trees C. Dong · X. Chen · Z. Chen	87

PRINTED CIRCUIT BOARD (PCB) TESTING	
Analysis of the Lifecycles of Automotive Resistor Lead in Random Vibration H. Linsen	101
Research on the Reliability of Interconnected Solder Joints of Copper Pillars under Random Vibration S. Yu · J. Dai · J. Li	107
HARDWARE SECURITY	
Non-Invasive Hardware Trojans Modeling and Insertion: A Formal Verification Approach H. Ibrahim · H. Azmi · M.W. El-Kharashi · M. Safar	117

Further articles can be found at link.springer.com

Indexed/abstracted in ACM Digital Library, BFI List, Baidu, CLOCKSS, CNKI, CNPIEC, Current Contents Collections / Electronics & Telecommunications Collection, Current Contents/Engineering, Computing and Technology, DBLP, Dimensions, EBSCO, EI Compendex, Google Scholar, INIS Atomindex, INSPEC, Japanese Science and Technology Agency (JST), Naver, Norwegian Register for Scientific Journals and Series, OCLC WorldCat Discovery Service, Portico, ProQuest, SCImago, SCOPUS, Science Citation Index Expanded (SCIE), TD Net Discovery Service, UGC-CARE List (India), Wanfang

Instructions for Authors for J Electron Test are available at www.springer.com/10836.

Volume 40, Number 1, February 2024 1–136

A journal serving electronic test professionals
in concurrence with the Test Technology Technical Council
(TTTC) of the IEEE Computer Society



Springer



ISSN: 0923-8174