CONTENTS

Impact of Process Variations on Read Failures in SRAMs
Harutyunyan G., Shoukourian S., Vardanian V., Zorian Y.

Noise Effect Estimation and Reduction in High-Speed Voltage Controlled Oscillators
Vazgen Melikyan, Abraham Balabanyan, Armen Durgaryan

A Probabilistic Approach for Counterexample Generation to Aid Design Debugging
Payman Behnam, Hossein Sabaghiian-Bidgoli, Bijan Alizadeh, Kamyar Mohajerani,
Zainalabedin Navabi

Functional Fault Model Definition for Bus Testing
Elmira Karimi, Mohamad Hashem Haghbayan, Adele Maleki, Mahmoud Tabandeh

Evolution of von Neumann’s Paradigm: Dependable and Green Computing
Kharchenko V., Gorbenko A.

Quantum Technology for Analysis and Testing Computing Systems
Wajeb Gharibi, Hahanov V.I., Anders Carlsson, Hahanova I.V., Filippenko I.V.

Diversity Assessment of Multi-Version NPP I&C Systems: NUREG7007 and CLB-BASED
Techniques
Kharchenko V., Duzhyi V., Sklyar V., Volkoviy A.

Features of Design, Implementation, and Characterization of On-Chip Antennas for
Microwave Frequencies
Aleksandr Timoshenko, Ksenia Lomovskaya, Mikhail Suslov

Design and Optimization of a Planar UWB Antenna
Eng Gee Lim, Zhao Wang, Gerry Juans, Ka Lok Man, Nan Zhang,
Vladimir Hahanov, Eugenia Litvinova, Svetlana Chumachenko,
Mishchenko Alexander, Dementiev Sergey

Cloud Traffic Control System
Hahanov V.I., Guz O.A., Ziarmand A.N., Ngene Christopher Umerah, Arefjev A.

Cloud Infrastructure for Car Service
Litvinova E.I., Englesy I.P., Miz V.A., Shcherbin D.

Quantum Computing Approach for Shortest Route Finding
Volodymyr Hahanov, Volodymyr Miz

Quantum Modeling and Repairing Digital Systems
Baghdadi Ammar Awni Abbas, Hahanov V.I., Palanichamy Manikandan,
Litvinova E.I., Dementiev S.

Quantum Models for Description of Digital Systems
Hahanov V.I., Hahanova I.V., Litvinova E.I., Priymak A., Elena Fomina,

978-1-4799-2096-9/13/$31.00 ©2013 IEEE
Maksimov M., Tiecoura Yves, Malek Jehad Mohammad Jararweh

Blind Least Mean Square Criterion Algorithms for Communication Adaptive Arrays
Victor I. Djigan

Estimation of structural complexity of IIR digital filters
Vladislav A. Lesnikov, Alexander V. Chastikov, Tatiana V. Naumovich

ASICPlacementAnalyzer: Software Tool for Data Analysis and Visualization of ASIC Placement
Victor M. Kureichik, Maria V. Lisyak

Statistical Characteristics of Envelope Outliers Duration of non-Gaussian Information Processes
Artyushenko V. M., Volovach V. I.

Simulation Features of Diffusion Doping Process by Means of Software Package of Synopsys Company
Lagunovich N.L., Borzdov V.M., Turtsevich A.S.

Microwave Selective RC Amplifiers with Control Parameters
Prokopenko N.N., Krutchinsky S.G., Budyakov P.S.

Methodology to Design-For-Testability Automation for Mixed-Signal Integrated Circuits
Sergey Mosin

Static Analysis of HDL Descriptions: Extracting Models for Verification
Alexander Kamkin, Sergey Smolov, Igor Melnichenko

Fault-Injection Testing: FIT-Ability, Optimal Procedure and Tool for FPGA-Based Systems SIL Certification
Kharchenko V., Sklyar V., Odarushchenko O., Ivasuyk A.

Query Optimization Based on Time Scheduling Approach
Wajeb Gharibi, Ayman Mousa

Analysis of Error-Detection Possibilities of CED Circuits Based on Hamming and Berger Codes
Valery Sapozhnikov, Vladimir Sapozhnikov, Dmitry Efanov, Anton Blyudov

Low-Power Design of Combinational CMOS Networks
Dmitry Cheremisinov, Liudmila Cheremisinova

IGBT on SOI. Technology and Construction Investigation
Ivan Lovshenko, Vladislav Nelayev, Sergey Shvedov, Vitaly Solodukha, Arkady Turtsevich

Generating Pipeline Integrated Circuits Using C2HDL Converter
Denis Dubrov, Alexander Roshal
An Approach to Estimate the Error of Oscillator Time-Domain Analysis  
Vadim N. Biryukov, Alexandr M. Pilipenko

Sampling Theorem Applied to Data Interpolation Problem  
Gamlet S. Khanyan

Design Automation Tool to Generate EDIF and VHDL Descriptions of Circuit by Extraction of FPGA Configuration  
Cheremisinov D.I.

Object-Oriented Approach to Software Implementation of Virtual Laboratory Workshop  
Gubsky D.S., Zemlyakov V.V., Mamay I.V., Sinyavsky G.P.

Schematic Design of HF and UHF Op-Amp for SiGe Technology  
Sergei G. Krutchinsky, Evgeniy A. Zhebrun, Victor A. Soviev

Improvement of Common-Mode Rejection Ratio in Symmetrical Differential Stages with Dynamic Load  
Sergei G. Krutchinsky, G.A. Soviev, Alexey E. Titov

Testable Combinational Circuit Design Based on Free ZDD-implementation of Irredundant SOP of Boolean Function  
Ostanin S.

On the Problem of Selection of Code with Summation for Combinational Circuit Test Organization  
Dmitry Efanov, Valery Sapozhnikov, Vladimir Sapozhnikov, Anton Blyudov

A 6-bit CMOS Inverter Based Pseudo-Flash ADC with Low Power Consumption  
Morozov D.V., Pilipko M.M., Piatak I.M.

A List Decoding Algorithm for Practical Reed-Solomon codes  
Sergey Egorov

On Stability of Optimization Process for Analog Circuits  
Markina T., Zemliak A.

Analysis of Converters with Heterogeneous Three-Pole Chain Structure  
Zhanna Sukhinet, Artur Gulin

Delay Testable Sequential Circuit Designs  
Matrosova A., Mitrofanov E., Singh V.

Supervision in Airborne Systems with Antenna Array  
Klochko V.K., Nguyen Tr.T.

Coupled TCAD-SPICE Simulation of Parasitic BJT Effect on SOI CMOS SRAM SEU  
Petrosyants K.O., Kharitonov I.A., Popov D.A.

Digital Converter of Frequency Deviation Based on Three Frequency Generator
Comparative Analysis of Coding Effectiveness in Telecommunication Systems with ARQ

Nonlinear Filtering of Pseudonoise Signals Using High-Order Markov Chain Model

Automated Measurement of Digital Video Cameras Exposure Time

Hybrid Pareto-Evolutionary Algorithm for Solving Mathematical Models of High Dimensional Electronic Circuits (HPEA)

Finite State Machine Synthesis for Evolutionary Hardware

Increasing Efficiency of Information Transmission with Interference Influence by the Use of Multi-parameter Adaptation

Analysis of Ferromagnetic Structures Fast-Acting Under the Influence of External Magnetic Fields of Various Intensity

Identification Discrete Fractional Order Linear Dynamic Systems with Errors-in-Variables

Self-Calibration Method for Capacitor Mismatch Elimination

Low-Voltage Compatible Linear Voltage Ramp Generator for Zero-Crossing-Based Integrators

High Accuracy Equalization Method for Receiver Active Equalizer

Semiconductor Electronic Parts Testing Efficiency

An Approach to Accelerated Life Tests of Electronic Components

High-level Test Program Generation Strategies for Processors
Fault Tolerance of the Distributed Structure of Object Controllers for Automation of Transport
Sergey Rodzin, Lada Rodzina

Smart Road Infrastructure
Artur Ziarmand

The Hardware Architecture and Device for Accurate Time Signal Processing
Jiří Dostál, Vladimír Smotlacha

Method of Coding Bitmap Transformant to Improve Image Compression while Maintaining a Predetermined Quality Image to be Transmitted in Infocommunication Real Time Systems
Krasnorutskyi A.A., Hahanova A.V., Demedetskiy A.O.

Algorithm for Automated Custom Network-on-Chip Topologies Design
Bykov S. O.

An Efficient Fault Diagnosis and Localization Algorithm for Successive-Approximation Analog to Digital Converters
Melkumyan T., Harutyunyan G., Shoukourian S., Vardanian V., Zorian Y.

Application of Defect Injection Flow for Fault Validation in Memories
Amirkhanyan K., Davtyan A., Harutyunyan G., Melkumyan T., Shoukourian S., Vardanian V., Zorian Y.

Self Compensating Low Noise Low Power PLL design
Vazgen Melikyan, Armen Durgaryan, Ararat Khachatryan, Manukyan Hayk, Eduard Musaelyan

Implementation of Address-Based Data Sorting on Different FPGA Platforms
Dmitri Mihailov, Alexander Sudnitson, Valery Sklyarov, Iouliia Skliarova

Comparison of Model-Based Error Localization Algorithms for C Designs
Urmas Repinski, Jaan Raik

Synthesis of Clock Trees for Sampled-Data Analog IC Blocks
Bilgiday Yuce, Seyrani Korkmaz, Vahap Baris Esen, Fatih Temizkan, Cihan Tunc, Gokhan Guner, I. Faik Baskaya, Iskender Agi, Gunhan Dundar, H. Fatih Ugurdag

Experiences on the road from EDA Developer to Designer to Educator
H. Fatih Ugurdag

Multi-Beam Constant Modulus Adaptive Arrays in Real-Valued Arithmetic
Victor I. Djigan

Simulation of Total Dose Influence on Analog-Digital SOI/SOS CMOS Circuits with EKV-RAD macromodel
Petrosyants K. O., Kharitonov I. A., Sambursky L. M., Bogatyrev V. N., Povarnitcyna Z. M., Drozdenko E. S.
Models for Embedded Repairing Logic Blocks
Hahanov V.I., Litvinova E.I., Frolov A., Tiecoura Yves

Real-time Interconnection Network for Single-Chip Many-Core Computers
Harald Richter

Invariant-Oriented Verification of HDL-Based Safety Critical Systems
Kharchenko V., Konorev B., Sklyar V., Reva L.

A WSN Approach to Unmanned Aerial Surveillance of Traffic Anomalies:
Some Challenges and Potential Solutions
David Afolabi, Ka Lok Man, Hai-Ning Liang, Eng Gee Lim, Zhun Shen, Chi-Un Lei, Tomas Krilavičius, Yue Yang, Lixin Cheng, Vladimir Hahanov, and Igor Yemelyanov

Synthesis of Qubit Models for Logic Circuits

Theory of Optimal Nonlinear Filtering in Infocommunication's Problems
Victor V. Panteleev

Verification of Specifications in the Language L with respect to Temporal Properties Expressible by GR(1) Formulas
Anatoly Chebotarev

Properties of code with summation for logical circuit test organization
Anton Blyudov, Dmitry Efanov, Valery Sapozhnikov, Vladimir Sapozhnikov

Loop Nests Parallelization for Digital System Synthesis
Alexander Chemeris, Julia Gorunova, Dmiry Lazorenko

Decreasing the Power Consumption of Content-Addressable Memory in the Dataflow Parallel Computing System
Levchenko N.N., Okunev A.S., Yakhontov D.E., Zmejev D.N.

Malfunctions Modeling of Converters and Homogeneous-chain Distributed Structure Devices
Artur Gulin, Zhanna Sukhinets

On structure of quasi optimal algorithm of analogue circuit designing
Zemliak A., Michua A., Markina T.

A Neuro-Fuzzy Edge Based Spectrum Sensing Processor for Cognitive Radios
Mohammadreza Baharani, Mohammad Aliasgari, Mohammadreza {Najafi, Jamali}, Hamid Noori

Qubit Model for Solving the Coverage Problem
Hahanov V.I., Litvinova E.I., Chumachenko S.V., Baghdadi Ammar Awni Abbas, Esthetie Abebech Mandefro
PDF testability of the circuits derived by special covering ROBDDs with gates
Matrosova A., Nikolaeva E., Kudin D., Singh V.

Observability Calculation of State Variable Oriented to Robust PDFs and LOC or LOS Techniques
Matrosova A., Ostanin S., Melnikov A., Singh V.

Engineering-Maintenance Methods of the Calculation Service Area Fixed BWA-paths
Sergey I. Myshlyakov, Victor V. Panteleev

Analyses of two run march tests with address decimation for BIST procedure
Ireneusz Mrozek, Svetlana V. Yarmolik

System-on-Chip FPGA-Based GNSS Receiver
Alexander Fridman, Serguey Semenov

Artificial Neural Network for Software Quality Evaluation Based on the Metric Analysis
Oksana Pomorova, Tetyana Havorushchenko

Universal technique of the analysis of round-off noise in digital filters with arbitrary structure described by topological matrixes
Vladislav A. Lesnikov, Alexander V. Chastikov, Tatiana V. Naumovich, Sergey V. Armishev

Hardware Reduction for Compositional Microprogram Control Unit Dedicated for CPLD Systems
Barkalov A., Titarenko L., Smolinski L.

Conservative Finite-difference Scheme for the Problem of Laser Pulse Propagation in a Medium with Third-order Dispersion
Vyacheslav A. Trofimov, Anton D. Denisov

Matrix Implementation of Moore FSM with Nonstandard Presentation of State Codes
Titarenko L., Hebda O.

A low power 1.2GS/s 4-bit flash ADC in 0.18m CMOS
Mohammad Chahardori, Mohammad Sharifkhani, Sirous Sadughi

Lower Bound of Error in AOA Based Passive Source Localization Using Single Moving Platform
Hejazi F., Norouzi Y., Nayebi M.M.

A Design for Testability Technique for Quantum Reversible Circuits
Joyati Mondal, Debesh K. Das, Dipak K. Kole, Hafizur Rahaman

Models for Quality Analysis of Computer Structures
Murad Ali Abbas, Chumachenko S.V., Hahanova A.V., Gorobets A.A., Priymak A.

Expanding Wireless Bandwidth in a Power-Efficient Way:
Developing a Viable mm-Wave Radio Technology
Daniel Foty, Bruce Smith, Saurabh Sinha, Michael Schröter
Sampling Theorem for Finite Duration Signal in Limited Frequency Band
Gamlet S. Khanyan

The Use of Natural Resources for Increasing a Checkability of the Digital Components in Safety-Critical Systems
Drozd A., Kharchenko V., Antoshchuk S., Drozd J., Lobachev M., Sulima J.

New version of Automated Electro-Thermal Analysis in Mentor Graphics PCB Design System

An Approach to Testing of Planar Integrated Antennas in Frequency Range of 5–7 GHz
Aleksandr Timoshenko, Ksenia Lomovskaya, Victor Barinov, Andrey Tikhomirov

Optimal project solution decision making in telecommunication systems using multicriteria optimization methods
Valery Bezruk, Alexander Bukhanko

Architecture of Built-In Self-Test and Recovery Memory Chips
Andrienko V.A., Moamar Diaa, Ryabtsev V.G., Utkina T.Yu.

The methods of exclusion of variables in symbolic time models of linear periodically time-variable circuit
Yuriy Shapovalov, Dariya Smal

Development of parameterized cell using Cadence Virtuoso
Vadim Borisov

Simulation Methods of Diffusion Alloying Process by Means of Taurus TSUPREM-4 Programme
Lagunovich N.L., Borzdov V.M.

Features of the Transfer of Information with Different Reliability in a Single Channel
Alexander Bakhtin, Leonid Pertsev, Olga Timofeeva

A New Structure for Interconnect Offline Testing
Somayeh Sadeghi-Kohan, Shahrzad Keshavarz, Farzaneh Zokaee, Farimah Farahmandi, Zainalabedin Navabi

Researching of Mathematical Models Based on Optimal Control Approaches for Congestion Control in Telecommunication Network
Lemeshko A.V., Semenyaka M.V.

Scheduling Tests for 3D SoCs with Temperature Constraints
Indira Rawat, Gupta M.K., Virendra Singh

MIMO Radar with Phase-coded waveforms
Amirsadegh Roshanzamir, Bastani M. H.

BBN-based Approach For Assessment of Smart Grid And Nuclear Power Plant Interaction
Eugene Brezhnev, Vyacheslav Kharchenko
The Evaluation of Statistical Characteristics of the Retransmission Meter Signal Frequency and Initial Phase on the Basis of VHDL-model
Dmitry A. Velychko, Iegor I. Vdovychenko

A Research of Heuristic Optimization Approaches to the Test Set Compaction Procedure Based On a Decomposition Tree for Combinational Circuits
Valentina Andreeva, Kirill A. Sorudeykin

Power Reduction of 7T Dual-Vt SRAM Cell Using Forward Body Biasing
Sahba Sabetghadam Jahromi, Raziyeh Bounik

VLSI: An Investigation into Electromagnetic Signatures (EMS) for Non-Invasive Testing and Signal-integrity Verification
Kadim HJ, Coulibaly L. M.

Secure Data over GSM based on Algebraic Codebooks
Kazemi R., Nashtaali D., Boloursaz M., Behnia F.

Extracting Complete Set of Equations to Analyze VHDL-AMS Descriptions
Arezoo Kamran, Vahid Jafanza, and Zainalabedin Navabi

A Data Modem for GSM Adaptive Multi Rate Voice Channel
Boloursaz M., Hadavi A. H., Kazemi R., Behnia F.

Design of Nonvolatile Memory Based on Magnetic Tunnel Junction for Special Electronic Systems
Aleksandr Kostrov, Vladislav Nelayev, Viktor Stempitsky, Anatoly Belous, Arkady Turtsevich

Cyber Security Lifecycle and Assessment Technique for FPGA-based I&C Systems
Iliashenko Oleg, Kharchenko Vyacheslav, Kovalenko Andriy

FPGA Technologies in Medical Equipment: Electrical Impedance Tomography
Perepelitsyn Artem, Shulga Dmitry

Synchronous Rectifiers Enable High Efficiency for Buck-Boost Converter
Yuri Shynkarenko and Igor Klyuchnyk

Test Data Compression Strategy While Using Hybrid-BIST methodology
Elmira Karimi, Mohammad Hashem Haghbayan and Mahmood Tabandeh

Self-Adaptive Mobile Wireless Hotspot Zones
Yanovsky M., Kharchenko V., Gordenko A.

Assertion Based Method of Functional Defects for Diagnosing and Testing Multimedia Devices
Vladimir Hahanov, Karyna Mostova, Oleksandr Paschenko

Improved Scaling-Free CORDIC algorithm
Leonid Moroz, Taras Mykytiv, Martyn Herasym
Coding Tangible Component of Transforms to Provide Accessibility and Integrity of Video Data
Barannik V.V., Hahanova A.V., Krivonos V.N.

Internet of Things: A Practical Implementation based on a Wireless Sensor Network Approach
Michele Mercaldi, Andrea D’Oria, Davide Murru, Hai-Ning Liang, Ka Lok Man,
Eng Gee Lim, Vladimir Hahanov, Mischenko Alexander

Investigation of EM Wave Propagation of the Wireless Capsule in Human Body
Eng Gee Lim, Zhao Wang, Jin Hui Chen, Tammam Tillo, Ka Lok Man

Transaction Level Model of Embedded Processor for Vector-Logical Analysis
Irina V. Hahanova, Volodymyr Obrizan, Alexander Adamov, Dmitry Shcherbin

The Positional Structural-Weight Coding of the Binary View of Transformants
Barannik V., Krasnoruckiy A., Hahanova A.

Models for SoC Infrastructure of Radio Frequency Identification with Code-Division Multiple
Filippenko I.V., Hahanova I.V., Filippenko I.O, Maksimov M., Chugurov I.

Logi-Thermal Analysis of Digital Circuits Using Mixed-Signal Simulator Questa ADMS
Petrosyants K.O., Rjabov N.I.

RTL IP Abstraction into Optimized Embedded Software
Bombieri N., Forrini D., Fummi F., Laurenzi M., Vinco S.................................................................

Keynotes Speeches and Invited Reports

AUTHORS INDEX