



IEEE EAST-WEST DESIGN & TEST SYMPOSIUM 2016

Yerevan, Armenia, October 14 - 17, 2016



14.10 (Friday)		15.10 (Saturday)		16.10 (Sunday)		17.10 (Monday)	
8:30	Registration	Regular Session 2C, Conference Hall Regular Session 2D, Room B		Social Event: City Tour & Etchmiadzin			
9:00							
9:30							
10:00	Opening / Plenary Session (Keynotes), Conference Hall	Coffee Break		Plenary Session (Keynotes), Conference Hall			
10:30							
11:00							
11:30	Coffee Break	Plenary Session (Keynotes), Conference Hall		Regular Session 4C, Conference Hall Regular Session 4D, Room B			
12:00							
12:30							
13:00	Regular Session 1C, Conference Hall	Regular Session 1D, Room B	Lunch				
13:30							
14:00							
14:30	Lunch	Plenary Session (Keynotes), Conference Hall		Regular Session 4E, Conference Hall Regular Session 4F, Room B			
15:00							
15:30							
16:00	Plenary Session (Keynotes), Conference Hall	Coffee Break		Closing Session, Conference Hall			
16:30							
17:00							
17:30	Regular Session 1E, Conference Hall	Regular Session 1F, Room B	Registration				
18:00							
18:30							
19:00	Free Time	Concert: Tatul Altunian Folk Dance Ensemble		Registration			
19:30							
20:00							
20:30	Gala Dinner	Gala Dinner		Registration			
21:00							



FROM THE ORGANIZING COMMITTEE

We have great pleasure to welcome you to 14-th IEEE EAST-WEST DESIGN & TEST SYMPOSIUM, EWDTs 16.

The purpose of this symposium is to exchange experiences between leading scientific organizations and experts from the Eastern and Western Europe, the USA and the rest of the world in the fields of digital system design and test.

An overview of the most important trends, challenges and state-of-the-art solutions in design and test research and practices will be presented by leading technologists and researchers.

We are pleased to see that IEEE EWDTs becoming a world-renown symposium, as the mutual collaboration increases between Eastern and Western technologists and institutions.

This year in particular, we would like to thank our colleagues, who helped organize the symposium in Armenia, including, Yervant Zorian, Samvel Shoukourian, Avetik Yessayan, Gayane Markosyan, Gurgen Harutyunyan and Vazgen Melikyan, for taking an active role in organizing the symposium technical and cultural programs and finances, in support of the preparation and operation of the symposium.

We would like to express great appreciation to the EWDTs 16 sponsors: IEEE, Computer Society, Test Technology Technical Council – TTTC. We would particularly like to thank the Armenian General Benevolent Union (AGBU) for supporting the EWDTs, and through which contributing to the state-of-the-art information technology advancement in Armenia and beyond.

We would also like to thank all the dedicated members of the Organizing and Program Committees, volunteer helpers and the technical reviewers.

We would like welcome all the participants of the symposium and wish them successful interactions and a pleasant stay in Yerevan!



GENERAL CHAIRS

V. Hahanov	Ukraine
Y. Zorian	USA

GENERAL VICE-CHAIRS

R. Ubar	Estonia
P. Prinetto	Italy

PROGRAM CHAIRS

S. Shoukourian	Armenia
A. Ivanov	Canada

PROGRAM VICE-CHAIRS

Z. Navabi	Iran
M. Renovell	France

PUBLICITY CHAIRS

S. Mosin	Russia
G. Markosyan	Armenia

PUBLIC RELATION CHAIR

V. Djigan	Russia
-----------	--------



ORGANIZING COMMITTEE

V. Hahanov	General Chair, Ukraine
Y. Zorian	General Chair, USA
R. Ubar	General Vice-Chair, Estonia
P. Prinetto	General Vice-Chair, Italy
S. Shoukourian	Program Chair, Armenia
Z. Navabi	Program Vice-Chair, Iran
M. Renovell	Program Vice-Chair, France
G. Markosyan	Publicity Chair, Armenia
V. Djigan	Public Relation Chair, Russia
A. Yessayan	Local Arrangement, Armenia
S. Chumachenko	Local Arrangement, Ukraine
E. Litvinova	Local Arrangement, Ukraine

REGISTRATION COMMITTEE

Svetlana Chumachenko, Eugenia Litvinova – Kharkov NU of
Radio Electronics, Ukraine, and Avetik Yessayan, Armenia

STEERING COMMITTEE

V. Hahanov	Ukraine
Y. Zorian	USA
R. Ubar	Estonia



PROGRAM COMMITTEE

J. Abraham	USA
V. Abdullayev	Azerbaijan
M. Adamski	Poland
A.E.Mohamed Mohamed	Egypt
A. Barkalov	Poland
R. Bazylevych	Ukraine
V. Djigan	Russia
A. Drozd	Ukraine
D. Efanov	Russia
E. Evdokimov	Ukraine
A. Chaterjee	USA
E. Gramatova	Slovakia
G. Harutyunyan	Armenia
M. Karavay	Russia
V. Kharchenko	Ukraine
M. Khalvashi	Georgia
K. Kuchukjan	Armenia
W. Kuzmicz	Poland
A. Matrosova	Russia
V. Melikyan	Armenia
S. Mosin	Russia
O. Novak	Czech Republic
A. Orailoglu	USA
Z. Peng	Sweden
A. Petrenko	Ukraine
N. Prokopenko	Russia
D. Puzankov	Russia
J. Raik	Estonia
A. Romankevich	Ukraine
R. Seinauskas	Lithuania
S. Sharshunov	Russia
A. Singh	USA
J. Skobtsov	Ukraine



V. Tverdokhlebov

Russia

V. Vardanian

Armenia

V. Yarmolik

Byelorussia



SPONSORSHIP

The technical sponsor of the 14th IEEE East-West Design & Test Symposium is IEEE, COMPUTER SOCIETY and Test Technology Technical Council (TTTC).

IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity. IEEE will be essential to the global technical community and to technical professionals everywhere, and be universally recognized for the contributions of technology and of technical professionals in improving global conditions. <https://www.ieee.org>

The IEEE Computer Society is the computing professional's single, unmatched source for technology information, inspiration and collaboration. By making the most up-to-date and advanced information in the computing world easily accessible, we are the source that computing professionals trust to provide high quality, state-of-the-art information on an on-demand basis. <http://www.computer.org>

The Test Technology Technical Council is a volunteer professional organization sponsored by IEEE Computer Society. Its mission is to contribute to members' professional development and advancement and to help them solve engineering problems



in electronic test, and help advance the state-of-the-art in test technology. TTTC is a prime source of knowledge about electronic test via its conferences, workshops, standards, tutorials and education programs, web site, newsletters, and electronic broadcasts. All its activities are led by volunteer members. TTTC membership is open to all individuals directly or indirectly involved in test technology at a professional level. You may enroll as TTTC member for 2016 (no dues or fees). To learn more about TTTC offerings and membership benefits, please visit: <http://tab.computer.org/tttc>

IEEE DESIGN & TEST OF COMPUTERS



IEEE D&T is a bimonthly magazine published by the IEEE Computer Society in cooperation with the IEEE Circuits and Systems Society specifically for design and test engineers, and researchers. D&T features peer-reviewed original work describing methods and practices used to design and test electronic product hardware and supportive software. Articles explore current practices and experience in: System Level Design and Test; Embedded Test Technology; Low Power Design; Reconfigurable Systems; Board and System Test; Analog and Mixed Signal Design and Test; System-on-Chip Design and IP Reuse; Embedded Systems and Software; Design and Verification.

PAPER SUBMISSION: Authors should use Manuscript Central (<https://mc.manuscriptcentral.com/cs-ieee>) to upload their submissions. The first-time user must create a new account. The site provides detailed instructions on usage. Each submitted paper undergoes at least three technical reviews. All submissions must be original, previously unpublished work.



Scientific and Technical Journal

RADIOELECTRONICS AND INFORMATICS

A Journal serving electronic and test professionals in concurrence with the Test Technology Technical Council (TTTC) of the IEEE Computer Society. The main target is to exchange experiences between the scientists and technologies of the Eastern and Western Europe, as well as North America and other parts of the world, in the field of Computer Engineering (Design automation and test of electronic systems), Computer Science, Radiotechnics (RF Design), Microelectronics, HDTV, and Telecommunications.

The main features of R&I Journal are: 1) English language. 2) IEEE CS (like IEEE Transactions on ...) format of camera-ready. 3) Reviewed by 3 independent and blind reviewers. 4) Covered by IEEE index and included into IEEE library. 5) Publisher – Kharkov National University of Radio Electronics. 6) <http://www.ewdtest.com/ri>

IEEE Xplore® Digital Library



EWDTES 2016 publications are included in the IEEE Conference Publications Program (CPP) and IEEE Xplore Digital Library – powerful resource for discovery and access to scientific and technical content published by IEEE.



№530785-TEMPUS-1-2012-1-PL-TEMPUS-JPCR

"Curricula Development for New Specialization: Master of Engineering in Microsystems Design" (MastMST)



Project Coordinator prof. Zbigniew Lisik, Lodz University of Technology, Lodz, Poland.

Project participants:

- Lviv Politechnical National University, Lviv, Ukraine, Coordinator prof. Mykhailo Lobur.
- Taras Shevchenko National University of Kyiv, Ukraine, Coordinator prof. Valeriy Skryshevsky.
- Kharkiv National University of Radioelectronics, Ukraine, Coordinator prof. Vladimir Hahanov.
- Donetsk National Technical University, Krasnoarmiysk, Coordinator prof. Volodymyr Sviatny.
- Ilmenau University of Technology, Germany, Coordinator prof. Ivo Rangelow.
- Lyon Institute of Applied Sciences, France, Coordinator prof. Alexandra Apostoluk.
- University of Pavia, Italy, Coordinator prof. Paolo Di Barba.

The short results:

1. New Curricula Development for Microsystems Design
Developed basic course programs (typically 120 hours (4 ECTS credits), 32 h -lectures, 32 h - laboratory works).
2. 5 undergraduate studies:
 - Computer Methods in Microsystems Engineering
 - Engineering Design for Complex Objects and Systems
 - Fundamentals of Microsystems Devices
 - Microfabrication of IC and Microsystem Devices
 - Microsystems Testing Techniques



-
3. 7 graduate studies:
 - VLSI Schematic Design and Simulation
 - Statistical design of Microelectromechanical Systems
 - Heat & Mass Transfer in Microsystems
 - Microsystems Reliability and Testability
 - Advanced Materials for Micro and Nano Technologies
 - Advanced Design for Microsystem Devices
 - Application of Microsystems Devices
 4. 2 postgraduate studies
 - Multiscale Design of Microfluidic Microsystems
 - Advanced Nanosystems Design and Fabrication Techniques

EWDTS 2016 IS COORGANIZED BY

Kharkov National University of Radioelectronics

Synopsys Armenia

Yerevan State University (YSU)

State Engineering University of Armenia (SEUA)

Tallinn University of Technology

INFORMATION SUPPORT IS PROVIDED BY

- National Academy of Sciences of Republic of Armenia (NAS RA);
- Yerevan State University (YSU);
- State Engineering University of Armenia (SEUA);
- The American University of Armenia (AUA);
- The European Regional Educational Academy;
- Enterprise Incubator Foundation (EIF) (Erevan, Armenia);
- Yerevan Telecommunication Research Institute. JSC (YeTRI);
- State Engineering University of Armenia;
- Tomsk Polytechnic University (Russia);
- Belarusian State University of Informatics and Radioelectronics (Minsk, Belarus).



GENERAL INFORMATION AND INQUIRIES

Prof. Vladimir Hahanov, General Chair of EWDTES'2016

Kharkov National University of Radio Electronics

14 Lenin Ave.

61166 Kharkov

UKRAINE

Voice/fax: +380 (57) 702 13 26

Cell: +380 (50) 278 21 98

E-mail: hahanov@kture.kharkov.ua

Internet: www.ewdtest.com/conf

Skype: hahanov

BANKING

Generally, everywhere in Armenia you must pay in Armenian dram (AMD).

Foreign currency exchange facilities are available at the airport, at large hotels, banks, as well as in many private "Currency exchange" shops. Approximate currency exchange rate: 1 USD = 473.478 AMD (100 USD = 47347.8 AMD), 1 EURO = 532.046 AMD (100 EURO = 53204.6 AMD)

CREDIT CARDS: Visa and MasterCard are the most common cards. However, other cards are also accepted.

PROGRAM OF THE SYMPOSIUM

The program of IEEE EWDTES'2016 symposium will consist of presentations of contributed keynotes, invited and regular papers. The language of the conference is English, neither translation nor interpretation will be provided.

The presentation time for regular papers is 12 minutes and keynotes/invited talks are 20 minutes.



BASIC REGISTRATION PACKAGE includes participation of all technical sessions for conference program (Plenary Sessions, and Parallel Sessions)

FULL REGISTRATION PACKAGE includes the Basic Registration Package, plus Social Program and Networking Sessions.

WEATHER

October in Yerevan is pleasant. The temperature can be typically 21-23 degrees Centigrade during days. During nights, the temperature can drop to 10-12 degrees Centigrade.

GENERAL INFORMATION

Total number of authors: 384.

Number of submitted papers: 146.

Number of participating countries: 30, including: Algeria, Armenia, Azerbaijan, Belarus, Belgium, Canada, China, Czech Republic, Egypt, Estonia, France, Germany, Georgia, India, Iran, Iraq, Italy, Jordan, Mexico, Oman, Pakistan, Poland, Russia, Romania, Saudi Arabia, Sweden, Turkey, Ukraine, USA, United Arab Emirates, United Kingdom, Yemen.

Number of keynote/invited presentations is 25.

Number of Universities and Companies is 92.

Number of cities is 115.



AGBU CONFERCING FACILITIES



The Armenian General Benevolent Union (AGBU) is the world's largest non-profit organization devoted to upholding the Armenian heritage through educational, cultural and humanitarian programs. Each year, AGBU is committed to making a difference in the lives of 500,000 people across Armenia, Nagorno-Karabakh and the Armenian diaspora.

Through the vision of its leaders and the generous support of devoted donors and members over the years, AGBU has played a significant role in upholding Armenian traditions and values by adapting to the needs of the worldwide community and the demands of the times. Since 1906, AGBU has remained true to one overarching goal: to create a foundation for the prosperity of all Armenians.

AGBU currently operates with an annual budget of over \$46 million, made possible by our countless benefactors. Headquartered in New York City, AGBU has an active presence in 31 countries and 74 cities and addresses the needs of Armenians with traditional and progressive programs worldwide—from schools, scouts, camps and



support for the arts to internships, virtual learning and young professional networks.

AGBU Armenia

AGBU was side by side with the Republic of Armenia throughout its history. It currently covers:

1. AGBU Centers
2. Cultural projects
3. Educational projects
4. Healthcare projects
5. Cooperation with the Mother See of Holy Etchmiadzin
6. Humanitarian projects
7. Projects in NKR
8. Youth Projects
9. AGBU Internship Program
10. Special Domations

ADDRESS: AGBU Armenia, 2/2 Melik-Adamyan Street, Yerevan 0010, Armenia

Phone: +37460 72 22 22

E-Mail: agbuarm@agbu.am

<http://www.agbu.am/en/217-archive-2012/news/1271-orhnutyan-karg-1#>

SYMPOSIUM PROGRAM

First Day: October 14th, 2016 (Friday)	
08:30 — 09:30	Registration, Conference Hall
09:30 — 09:50	Opening Session, Conference Hall Dr. Yervant Zorian — <i>EWDTTS General Chair, Chief Architect and Fellow at Synopsys, President of Synopsys Armenia</i> Vladimir Hahanov — <i>EWDTTS General Chair, Kharkov National University of Radio Electronics, Ukraine</i>



First Day: October 14th, 2016 (Friday)

Welcoming Messages

09:50 — 11:30 **Plenary Session 1A, Conference Hall**



Autonomous Driving and IOT: combining Functional Safety, Reliability, Availability and Security for a resilient connected world

Dr. Riccardo Mariani, Fellow — *Intel (Italy)*



Hardware Security: Malicious and Counterfeit ICs Detection with Light Emission

Dr. Peilin Song — *IBM Research (USA)*



FPGAs, Markets and Their Implications on Design and Test

Dr. Amit Majumdar — *Xilinx (USA)*



Dependability in the Dark Silicon Era

Prof. Joerg Henkel — *Karlsruhe Institute of Technology (Germany)*



First Day: October 14th, 2016 (Friday)



Functional test in automotive systems: current status, perspectives and challenges

Prof. Matteo Sonza Reorda — *Politecnico di
Torino (Italy)*

11:40 — 11:55 **Coffee Break**

11:55 — 13:30 **Regular Papers Session 1C, Conference Hall**
Moderator: Dmitry Efanov, *Russian Federation*

Methods of organization of totally self- checking concurrent error detection system on the basis of constant-weight «1-out-of-3»- code

Dmitry Efanov, Valery Sapozhnikov and Vladimir Sapozhnikov — *Petersburg State Transport University, “Automation and Remote Control on Railways” department, Russian Federation*

Concurrent error detection of combinational circuits by the method of Boolean complement on the base of «2-out-of-4» code

Dmitry Efanov, Valery Sapozhnikov and Vladimir Sapozhnikov — *Petersburg State Transport University, “Automation and Remote Control on Railways” department, Russian Federation*

Weighted sum code without carries – is an optimum code with detection of any double errors in data vectors

Dmitry Efanov, Valery Sapozhnikov, Vladimir Sapozhnikov and Vyacheslav Dmitriev — *Petersburg State Transport University, “Automation and Remote Control on Railways” department, Russian Federation*



First Day: October 14th, 2016 (Friday)

**Critical-Paths Selection under NBTI/PBTI
Aging for Adaptive Frequency Tuning**

Andrés Felipe Gómez and Victor Champac —
INAOE, Mexico

**Waveform Modulation for the 5G Mobile
Telecommunication Systems**

Martin Ayvazyan, Levon Grigoryan, Hayk
Avetisyan — *NPUA, Armenia*
Arshak Babayan — *MTU, Russian Federation*

**A Novel Approach to Detect Temperature
Variation**

Ararat Khachatryan and Davit Mirzoyan —
Synopsys Armenia CJSC, Armenia

A Novel Process Corner Detection Circuit

Davit Mirzoyan and Ararat Khachatryan —
Synopsys Armenia CJSC, Armenia

**Low Power OpenRISC Processor with Power
Gating, Multi-VTH and Multi-Voltage
Techniques**

Tigran Hakhverdyan, Vazgen Melikyan, Aram
Gevorgyan and Davit Babayan — *Synopsys
Armenia CJSC, Armenia*
Sergey Manukyan — *EGS LLC, Armenia*

**1.9 GHz 1.05V 16-bit RISC Core for High
Density and Low Power Operation in 28nm
Technology**

Davit Babayan, Eduard Babayan, Poghos
Petrosyan — *National polytechnic university of
Armenia/Synopsys Armenia CJSC*
Emil Kagramanyan and Tigran Hakhverdyan —
Synopsys Armenia CJSC, Armenia



First Day: October 14th, 2016 (Friday)	
11:55 — 13:30	Regular Papers Session 1D, Room B Moderator: Alex Drozd, <i>Ukraine</i>
	Methods of Testing Time-Domain Simulators in EDA Packages Alexandr M. Pilipenko, Vadim N. Biryukov and Anastasia B. Fadeeva — <i>Southern Federal University, Russian Federation</i>
	ROBDDs Application for Finding the Shortest Transfer Sequence of Sequential Circuit or Only Revealing Existence of this Sequence without Deriving the Sequence itself Anzhela Matrosova, Valentina Andreeva and Alexey Melnikov — <i>Tomsk State University, Russian Federation</i>
	A Fault-tolerant Sequential Circuit Design for Soft Errors Based on Fault-Secure Circuit Sergei Ostanin, Anzhela Matrosova, Natalia Butorina and Valerii Lavrov — <i>Tomsk State University, Russian Federation</i>
	Hybrid Genetic Algorithm for Cutting Stock and Packaging Problems Anton Orlov, Vladimir Kureichik and Alexander Glushchenko — <i>Southern Federal University, Russian Federation</i>
	Chirp Generator Based on the Binary Optical Structures Iuriy Zachiniaev and Konstantin Rumyantsev — <i>Southern Federal University, Russian Federation</i>
	Pseudo-exhaustive Testing of Sequential Circuits for Multiple Stuck-at Faults Anzhela Matrosova and Evgeny Mitrofanov — <i>Tomsk State University, Russian Federation</i>
	UVM Based Approaches to Functional Verification of Communication Controllers of Microprocessor Systems



First Day: October 14th, 2016 (Friday)

Irina Stotland, Nadezhda Starikovskaya —
MIREA, Russian Federation
Danil Shpagilev — *MCST, Russian Federation*

Objects and Methods of On-line Testing: Main Requirements and Perspectives of Development

Alex Drozd, Julia Drozd, Svetlana Antoshchuk,
Valeria Nikul and Mohammed Al-Dhabi —
Odessa National Polytechnic University, Ukraine

NBTI Mitigation by M-IVC with Input Duty Cycle and Randomness Constraints

Maoxiang Yi — *Hefei University of Technology, China*

13:45 — 14:30 **Lunch**

14:30 — 16:30 **Plenary Session 1B, Conference Hall**



Robustness Challenges in Internet of Things

Dr. Yervant Zorian — Fellow & Chief Architect
of Synopsys, & President of Synopsys (USA)



Brain on Silicon

Dr. Magdy Bayoumi — *University of Louisiana (USA)*



First Day: October 14th, 2016 (Friday)



Why Open Defects Should be the New Target for Test

Prof. Adit Singh — *Auburn University (USA)*



Multi-Level High-Throughput Simulation for Design & Test Validation

Prof. Hans-Joachim Wunderlich — *University of
Stuttgart (Germany)*



Designing Single-Chip Massively-Parallel Processors for Massively-Failing Technologies

Dr. Michael Nicolaidis — *iROC Technologies
(France)*

16:30—16:45 **Coffee Break**

16:45 —18:45 **Regular Papers Session 1E, Conference Hall**

Moderator: Maksim Jenihhin, *Estonia*

An EFSM-Driven and Model Checking-Based Approach to Functional Test Generation for Hardware Designs

Mikhail Lebedev, Alexander Kamkin and Sergey
Smolov — *ISP RAS, Russian Federation*

Testing Logic Circuits at Different Abstraction Levels: An Experimental Evaluation

Sergey Smolov, Alexander Kamkin, Mikhail



First Day: October 14th, 2016 (Friday)	
	Chupilko — <i>ISP RAS, Russian Federation</i> Jorge Lopez — <i>CNRS, Télécom SudParis, Université Paris-Saclay, France</i> Natalia Kushik, Nina Yevtushenko — <i>Tomsk State University, Russian Federation</i>
	A Quality Characteristics Estimation Methodology for the Hierarchy of RTL Compilers Lusine Martirosyan — <i>Synopsys, Armenia</i>
	Extension of the Corner Stitching Data Structure for Arbitrary Layout Shapes Wieslaw Kuzmicz — <i>Warsaw University of Technology, Poland</i>
	Universal Mitigation of NBTI-Induced Aging by Design Randomization Maksim Jenihhin — <i>Tallinn University of Technology, Estonia</i> Alexander Kamkin — <i>ISP RAS, Russian Federation</i> Zainalabedin Navabi and Somayeh Sadeghi-Kohan — <i>University of Tehran, Iran</i>
	ESL Design with RTL-Verified Predesigned Abstract Communication Channels Hamed Najafi Haghi, Zainalabedin Navabi — <i>University of Tehran, Iran</i> Mikhail Chupilko, Alexander Kamkin — <i>ISP RAS, Russian Federation</i>
	Analysis of the Impact of Metastability Phenomenon on the Latency and Power Consumption of Synchronizer Circuits Vazgen Melikyan, Tigran Khazhaky, Eduard Babayan — <i>Synopsys Armenia CJSC</i> Sergey Manukyan — <i>EGS LLC, Armenia</i>
	An Ultra-Fast Multi-Objective Optimization Algorithm for VLIW Architecture



First Day: October 14th, 2016 (Friday)	
	Samira Nazari, Maryam Hassani and Ali Azarpeyvand — <i>University of Zanjan, Iran</i>
	Dynamic FPGA-Accelerator Sharing among Concurrently Running Virtual Machines Hamid Nasiri and Maziar Goudarzi — <i>Sharif University of Technology</i>
16:45 — 18:45	Regular Papers Session 1F, Room B Moderator:
	5G goes to Massive MIMO Hrayr Hovsepyan — <i>Armenia</i>
	Application of maximum principle for circuit optimization Alexander Zemliak and Tatiana Markina — <i>National Technical University of Ukraine</i>
	Smart Devices Require Smarter Test Systems Arsen Arustamyan — <i>National Instruments, Armenia</i>
	Fast One- and Two-Pick Fixed-Priority Selection and Muxing Circuit Mustafa Tosun, M. Akif Özkan, Aydın Emre Güzel and H. Fatih Ugurdag — <i>Özyeğin University, Turkey</i>
	Using High-Level Synthesis for Rapid Design of Video Processing Pipes Aydın Emre Güzel, Vecdi Emre Levent, Mustafa Tosun, M. Akif Özkan, H. Fatih Ugurdag — <i>Özyeğin University, Turkey</i> Toygar Akgün, Duygu Büyükkaydin — <i>Aselsan, Turkey</i> Cengiz Erbas — <i>Consultant, USA</i>
	On optimization of multi-cycle tests for test quality and application time Cemil Cem Gursoy, Abdullah Yildiz and Sezer Goren — <i>Yeditepe University, Turkey</i>
	Differential Clock Cross-Point Correction Method for Pipeline ADCs



First Day: October 14th, 2016 (Friday)

Arsen Hekimyan — *National Research University of Electronic Technology, Russian Federation*
Sergey Gavrilov — *Research Institute for Design Problems in Microelectronics (IPPM RAS), Russian Federation*
Davit Trdatyan, Arman Trdatyan — *Synopsys Armenia CJSC*

Secure Scan-based Design Using Blum Blum Shub Algorithm

Elnaz Koopahi and Shahram Etemadi Borujeni — *University of Isfahan, Iran*

High Output Hamming-Distance Achievement by a Greedy Logic Masking Approach

Mohammad Saleh Samimi, Ehsan Aerabi, Mahdi Fazeli — *Iran University of Science and Technology, Iran*

Arash Nejat, David Hely and Vincent Beroulle — *Université Grenoble Alpes, LCIS: Laboratoire de Conception et d'Intégration des Systèmes, France*

Second Day: October 15th, 2016 (Saturday)

9:00—11:00 **Regular Papers Session 2C, Conference Hall**
Moderator: Alexander Kamkin, *Russian Federation*

Speed-Independent Fused Multiply Add and Subtract Unit

Yuri Stepchenkov, Victor Zakharov, Yuri Rogdestvenski, Yuri Diachenko, Nikolai Morozov and Dmitri Stepchenkov — *Institute of Informatics Problems, Federal Research Center "Computer Science and Control" of the RAS, Russian Federation*

Testing of software and hardware simulations of dataflow recurrent digital signal processor



Second Day: October 15th, 2016 (Saturday)

Yuri Stepchenkov, Dmitry Khilko, Yuri Diachenko,
Yury Shikunov and Dmitry Shikunov — *Institute of
Informatics Problems, Russian Academy of
Sciences, Russian Federation*

Securing Test Infrastructure of System-on-Chips

Grigor Tshagharyan, Gurgen Harutyunyan,
Samvel Shoukourian and Yervant Zorian —
Synopsys, Armenia

Applying Parameterized Model Checking to Real-Life Cache Coherence Protocols

Vladimir Burenkov — *MCST*,
Alexander Kamkin — *ISP RAS, Russian
Federation*

Quantum-Cryptographic Network

Anton Pljonkin and Konstantin Rumyantsev —
SFEDU, Russian Federation

Automated Solution for Preventing Design Rules Violations at Abutment Stage for Standard Cells Synthesis Flow

Sergey Bykov, Nikolai Ryzhenko and Anton
Sorokin — *Intel Corporation, Russian Federation*

Monitoring system of vibration impacts on the structure of overhead catenary of high-speed railway lines

Dmitry Efanov — *Petersburg State Transport
University, Russian Federation*

German Osadchy — *RSC “Monitoring of
Bridges”, Russian Federation*

Dmitry Sedykh, Dmitry Pristensky — *“Bridge
Bureau” Ltd., Russian Federation*

Dmitry Barch — *JCS “Russian Railways”,
Russian Federation*



Second Day: October 15th, 2016 (Saturday)

Methodological aspects of detection and resolution of conflicts of protection software for systems train control

Anatoly Kornienko, Mark Polyanichko —
Petersburg State Transport University
Dmitry Efanov — *Petersburg State Transport University, Russian Federation*

Determination Jump Monitored Parameter Using a Neural Network

Sergey Klevtsov — *Southern Federal University, Russian Federation*

Dedicated Chip for Pulse Oximetry Measurements

Cezary Kolacinski, Jerzy Wasowski, Andrzej Szymanski, Adam Jarosz, Ewa Kurjata-Pfützner —
Institute of Electron Technology, Poland
Tomasz Borejko, Krzysztof Siwiec and Witold Pleskacz — *Warsaw University of Technology, Poland*

9:00—11:00

Regular Papers Session 2D, Room B

Moderator: Virendra Singh, *India*

ROBDD Based Path Delay Fault Testable Combinational Circuit Synthesis

Toral Shah, Virendra Singh — *Indian Institute of Technology (IIT), Bombay, India*
Anzhela Matrosova — *Tomsk State University, Russian Federation*

System on Chip for Comparison of Precise Time Sources

Jiri Dostal — *CTU in Prague, Czech Republic*
Vladimir Smotlacha — *CESNET, Czech Republic*



Second Day: October 15th, 2016 (Saturday)
Research of Metastability Timing Characteristics for Threshold Voltage and Process-Voltage-Temperature Variations Tigran Khazhakyan — <i>Synopsys Armenia CJSC</i>
Testing Components of Interacting Timed Finite State Machines Maxim Gromov, Aleksandr Tvardovskii and Nina Yevtushenko — <i>Tomsk State University, Russian Federation</i>
Towards parallel composition of partial finite state machines: checking safety property step-by-step Natalia Shabaldina and Ekatherina Darusenkova — <i>Tomsk State University, Russian Federation</i>
A Trace Signal Selection Algorithm for Improved Post-Silicon Debug Binod Kumar, Ankit Jindal and Virendra Singh — <i>Indian Institute of Technology (IIT), Bombay, India</i>
A Technique for Low Power, Stuck-at Fault Diagnosable and Reconfigurable Scan Architecture Binod Kumar, Boda Nehru, Brajesh Pandey, Virendra Singh — <i>IIT Bombay, India</i> Jaynarayan Tudu — <i>IISC Bangalore, India</i>
Performance Modelling of Heterogeneous ISA Multicore Architecture Nirmal Kumar Boran, Rameshwar Prasad Meghwal, Kuldeep Sharma, Binod Kumar and Virendra Singh — <i>IIT Bombay, India</i>
Enabling LOS Delay Test with Slow Scan Enable Satyadev Ahlawat, Darshit Vaghani, Rohini Gulve and Virendra Singh — <i>IIT Bombay, India</i>



Second Day: October 15th, 2016 (Saturday)

ILP Based Don't Care Bits Filling Technique For Capture Power Reduction

Rohini Gulve and Virendra Singh — *IIT Bombay, India*

11:00 — 11:15 **Coffee Break**

11:15 — 13:15 **Plenary Session 2A, Conference Hall**



From Self-Testing to Self-Discovery

Dr. Vinod K. Agarwal, Chairman — *Applied Solar Technologies (AST, India)*



Approximate Computing for Energy-efficient Error-resilient Systems

Prof. Kaushik Roy — *Purdue University (USA)*



Managing Wear-out and Variability

Monitors: 1687 to the Rescue

Prof. Lorena Anghel — *Grenoble Institute of Technology (INPG, France)*



Second Day: October 15th, 2016 (Saturday)



BIFT: Built-in Intelligence for Fault-Tolerance

Prof. Xiaowei Li — *Chinese Academy of Sciences (China)*



Molecular Dynamics study of NBTI aging in MOSFETs

Prof. Andre Ivanov — *University of British Columbia (Canada)*

Third Day: October 16th, 2016 (Sunday)

14:30—16:30 **Plenary Session 3B, Conference Hall**



How correct-by-construction EDA design methodology has enabled the mobile revolution

Dr. Patrick Groeneveld — *Synopsys (USA)*



Third Day: October 16th, 2016 (Sunday)



Toward Autonomous Analytics in Test Engineering

Prof. Li C Wang — *University of California, Santa Barbara (USA)*



Self-Aware Real-Time Circuits and Systems: Adapting to Operating Environment and Failure Conditions

Prof. Abhijit Chatterjee — *Georgia Tech (USA)*



Faster-than-at-Speed-Test - A Remedy for Early Life Failure?!

Prof. Sybille Hellebrand — *University of Paderborn (Germany)*



Test and Verification in the Presence of Unknowns

Prof. Bernd Becker — *University of Freiburg (Germany)*

16:30 — 16:45 **Coffee Break**



Third Day: October 16th, 2016 (Sunday)	
16:45—18:45	Regular Papers Session 3E, Conference Hall Moderator: Victor Djigan
	CORDIC rotator for frequency translation Anton Smekalov and Victor Djigan — <i>National Research University of Electronic Technology, Russian Federation</i>
	Verification of Sampling Theorem Validity and Features for Specific Cases of Transformed Samples Number Gamlet S. Khanyan — <i>Central Institute of Aviation Motors, Russian Federation</i>
	Research of local dynamics of the Phase-locked loop Y.A. Gelozhe, P.P. Klimenko and A.V. Maksimov — <i>Southern Federal University, Russian Federation</i>
	Approximation of the Central Chi-squared Distribution for On-line Computation of the Threshold for Energy Detector Vladislav Lesnikov, Tatiana Naumovich, Alexander Chastikov and Dmitriy Dubovcev — <i>Vyatka State University, Russian Federation</i>
	The Use of Redundancy in the Structural Synthesis of IIR Digital Filters Vladislav Lesnikov, Tatiana Naumovich and Alexander Chastikov — <i>Vyatka State University, Russian Federation</i>
	No-Reference Image Quality Assessment based on Local Binary Patterns Ilya Nenakhov, Vladimir Khryashchev and Andrew Priorov — <i>P.G. Demidov Yaroslavl</i>



Third Day: October 16th, 2016 (Sunday)
<i>State University, Russian Federation</i>
Robust Algorithm for Detection of Image Features Dmitry Petrov and Konstantin Rumyantsev — <i>Southern Federal University, Russian Federation</i>
Demodulation Signal under the Influence of Additive and Multiplicative non-Gaussian Noise Vladimir M. Artyushenko — <i>Technological University, Russian Federation</i> Vladimir I. Volovach — <i>Volga Region State University of Service, Russian Federation</i> Maxim Shakurskiy — <i>Samara State Technical University, Russian Federation</i>
The Determination of Measurement Error the Instantaneous Frequency of the Deep Fading Signals Vladimir M. Artyushenko — <i>Technological University, Russian Federation</i> Vladimir I. Volovach and Victor N. Budilov — <i>Volga Region State University of Service, Russian Federation</i>
Influence of Correlated Additive non-Gaussian Noise on Accuracy of Signal Parameters Measurement during Continuous Processing Vladimir M. Artyushenko, Boris A. Kuchеров — <i>Technological University, Russian Federation</i> Vladimir I. Volovach — <i>Volga Region State University of Service, Russian Federation</i>
On one method of formation of optimum sum code for technical diagnostics



Third Day: October 16th, 2016 (Sunday)	
	systems Dmitry Efanov, Valery Sapozhnikov and Vladimir Sapozhnikov — <i>Petersburg State Transport University, “Automation and Remote Control on Railways” department, Russian Federation</i>
	Generic two-modulus sum codes for technical diagnostics of discrete systems problems Dmitry Efanov, Valery Sapozhnikov and Vladimir Sapozhnikov — <i>Petersburg State Transport University, Russian Federation</i>
16:45—18:45	Regular Papers Session 3F, Room B Moderator:
	Spectral efficiency of channel for wireless communication systems with MIMO technology Natalya Kisel, Hamed Mahyoub — <i>Southern Federal University, Institute of Radio Engineering Systems and Control, Russian Federation</i> Sergey Grishchenko — <i>Joint Stock Company «Scientific Design Bureau of Computing Systems», Russian Federation</i>
	The modeling of characteristics of the patch antenna with non-uniform substrate metamaterial Natalya Kisel, Vitaliy Cheremisov and Dmitry Derachitc — <i>Southern Federal University, Russian Federation</i>
	An Approach to Instruction Stream Generation for Functional Verification of Microprocessor Designs Andrei Tatarnikov — <i>ISP RAS, Russian</i>



Third Day: October 16th, 2016 (Sunday)	
<i>Federation</i>	
The Method of Speeding of the Operational Amplifiers Based on the Folded Cascode Nikolai. N. Prokopenko, Ilya. V. Pakhomov, Anna V. Bugakova and Nikolai. V. Butyrlagin — <i>Don State Technical University, Russian Federation</i>	
The Multifunctional Current Logical Element for Digital Computing Devices, Operating on the Principles of Linear (Not Boolean) Algebra Nikolai. N. Prokopenko, V. Butyrlagin — <i>Don State Technical University, Russian Federation</i> Nikolai. I. Chernov, Vladislav Yugai — <i>Southern Federal University, Russian Federation</i>	
The Analog Array Chip AC-1.3 for the Tasks of Tool Engineering in Conditions of Cryogenic Temperature, Neutron Flux and Cumulative Radiation Dose Effects Oleg V. Dvornikov — <i>Minsk Research Instrument-Making Institute, Russian Federation</i> Nikolai. N. Prokopenko, Ilya. V. Pakhomov and Anna. V. Bugakova — <i>Don State Technical University, Russian Federation</i>	
The Radiation-Hardened Differential Difference Operational Amplifiers for Operation in the Low-Temperature Analog Interfaces of Sensors Nikolai N. Prokopenko, Anna. V. Bugakova and Ilya. V. Pakhomov — <i>Don State Technical University, Russian Federation</i>	



Third Day: October 16th, 2016 (Sunday)

The Drivers of the Differential Communication Lines based on Radiation-Hardened Structured Array MH2XA010

Oleg V. Dvornikov — Minsk Research Instrument-Making Institute, *Russian Federation*

Nikolai N. Prokopenko, Ilya V. Pakhomov and Anna V. Bugakova — *Don State Technical University, Russian Federation*

Electrodynamic Characteristics Estimation for Aperiodic Random Composite Media

Larissa V. Cherckesova, Nikolay N. Prokopenko, Marina Yu. Zvezdina, Julia A. Shokova — *Don State Technical University, Russian Federation*

Dmitry A. Bezuglov — *Rostov-on-Don Branch of Russian Customs Academy, Russian Federation*

Gennady P. Sinyavsky, Olga N. Manaenkova — *Southern Federal University, Russian Federation*

George N. Shalamov — *Rostov Research Institute of Radio Communication, Russian Federation*

Composite Media on the Base of Chiral Elements and Their Combinations with Ferromagnetic Structures

Larissa V. Cherckesova, Nikolay N. Prokopenko, Marina Yu. Zvezdina, Julia A. Shokova — *Don State Technical University, Russian Federation*

Dmitry A. Bezuglov — *Rostov-on-Don Branch of Russian Customs Academy, Russian Federation*

Gennady P. Sinyavsky, Olga N.



Third Day: October 16th, 2016 (Sunday)

Manaenkova — *Southern Federal University, Russian Federation*
George N. Shalamov — *Rostov Research Institute of Radio Communication, Russian Federation*

Use of Ferromagnetic Materials with Properties Set On Nanolevel at Making of Resonant Circuits of SHF (Microwave) and EHF Bands

Larissa V. Cherckesova, Nikolay N. Prokopenko, Marina Yu. Zvezdina, Julia A. Shokova — *Don State Technical University, Russian Federation*
Dmitry A. Bezuglov — *Rostov-on-Don Branch of Russian Customs Academy, Russian Federation*
Gennady P. Sinyavsky, Olga N. Manaenkova — *Southern Federal University, Russian Federation*
George N. Shalamov — *Rostov Research Institute of Radio Communication, Russian Federation*

Algebraic Models of Digital System Design Debugging Decomposition

Alexander Ivannikov — *Institute for Design Problems in Microelectronics of Russian Academy of Sciences, Russian Federation*
Vladimir Kulagin, Aleksandr Romanov — *National Research University Higher School of Economics, Russian Federation*
Boris Pozdneev — *Moscow State University of Technology "STANKIN", Russian Federation*



Fourth Day: October 17th, 2016 (Monday)

09:00 — 11:00 **Plenary Session 4A, Conference Hall**



SoC Design Industry Complexity Overview

Mr. Kevork Kechichian — *Qualcomm (USA)*



Design of Reliable Cyber-Physical Systems: Challenges and Emerging Solutions

Prof. Zebo Peng — *Linköping University
(Sweden)*



Dependability of Cyber-Physical Systems. Case study: SCADA Federation, Collaborative Instrument for Water Management

Prof. Liviu Miclea — *Technical University of
Cluj-Napoca (Romania)*



Design & Test Challenges in FinFET Based Circuits

Dr. Victor Champac — *National Institute for
Astrophysics, Optics and Electronics (INAOE-
Mexico)*



Fourth Day: October 17th, 2016 (Monday)



Secure Test and Debug For Lifetime Security of SoCs

Dr. David Hély — *Esisar Grenoble (France)*

11:00 — 11:15 **Coffee Break**

11:15 — 13:15 **Regular Papers Session 4C, Conference Hall**

Moderator:

Power specification, simulation and verification of SystemC designs

Kirill Gagarski, Maxim Petrov — *St. Petersburg Polytechnic University, Russian Federation*
Mikhail Moiseev and Ilya Klotchkov — *Intel Corporation, Russian Federation*

Optimizing Network Utilization through Source Code State Model Representation

Jorge López, Natalia Kushik, Ana Cavalli — *Télécom SudParis / Université Paris-Saclay, France*
Nina Yevtushenko — *Tomsk State University, Russian Federation*

Bandpass RC Filters of the Second-Order Based on the Micropower Two-Component Differential Stages

Andrey A. Ignashin, Alexander I. Serebryakov, Dmitry V. Medvedev and Petr S. Budyakov — *Don State Technical University, Russian Federation*

Information-Measuring Control System of Active Vibration Protection RED

Alexey Lysenko, Nikolay Yurkov, Nikolay Goryachev, Alexey Telegin and Vasilii Trusov —



Fourth Day: October 17th, 2016 (Monday)
<i>Penza State University, Russian Federation</i>
Monochrome Multitone Image Approximation with Low-dimensional Palette Albert Aghajanyan, Rudolf Neydorf — <i>Don State Technical University, Russian Federation</i> Dean Vucinic — <i>Vrije Universiteit Brussel, Belgium</i>
The PDCS "Buran" Operating Efficiency Improvement Ways Arkady Klimov, Nikolay Levchenko, Anatoly Okunev, Alexander Stempkovsky and Dmitry Zmejev — <i>IPPM RAS, Russian Federation</i>
Research of Asynchronous Algorithm for Molecular Dynamics Task on the PDCS "Buran" Models Lev Khodosh, Arkady Klimov, Nikolay Levchenko, Anatoly Okunev and Dmitry Zmejev — <i>IPPM RAS, Russian Federation</i>
I/O Processor as the Device for Computing Process Management in the PDCS "Buran" Nikolay Levchenko, Anatoly Okunev, Alexander Stempkovsky and Dmitry Zmejev — <i>IPPM RAS, Russian Federation</i>
Development Tools for High-Performance Computing Systems Using Associative Environment for Computing Process Organization Dmitry Zmejev, Nikolay Levchenko — <i>IPPM RAS, Russian Federation</i> Anatoly Okunev — <i>Institute for Design Problems in Microelectronics, Russian Federation</i>
Cloud Incident Response Model Alexander Adamov — <i>Kharkiv National University of Radio Electronics, NioGuard Security Lab, Ukraine</i>



Fourth Day: October 17th, 2016 (Monday)	
	Anders Carlsson — <i>Blekinge Institute of Technology, Sweden</i>
11:15—13:15	Regular Papers Session 4D, Room B Moderator:
	A multi-criteria method for noise reduction Evgeny Semenishchev, Vladimir Marchuk, Igor Shraifel, Sergei Makov — <i>Don State Technical University, Russian Federation</i> Ilya Svirin — <i>CJSC Nordavind, Russian Federation</i>
	Method of Additional Information Encapsulation into Digital Audio Channel with Minimal Loss of Original Signal Quality Sergey Makov, Anton Nikitin, Alexandr Minaev, Viacheslav Voronin and Ilya Svirin — <i>Don State Technical University, Russian Federation</i>
	Removing of Systematic Measurement Errors Caused by Asymmetric Distribution Law of the Noise Component Vladimir Marchuk, Sergey Makov, Alexandr Minaev, Viacheslav Voronin and Dmitry Chernyshov — <i>Don State Technical University, Russian Federation</i>
	Studying of Accuracy of the New Desired Signal Extraction Method by Residuals in a Priory Indeterminacy Conditions Vladimir Marchuk, Sergey Makov, Alexandr Minaev, Sergey Stradanchenko — <i>Don State Technical University, Russian Federation</i> Gennady Galustov — <i>South Federal University, Russian Federation</i>



Fourth Day: October 17th, 2016 (Monday)	
	Graphical visualization of data measurements of programmable microcontroller Zaza Davitadze, Guladi Phartenadze and Elza Djincharadze — <i>Batumi Rustaveli State University, Georgia</i>
	A novel technique to detect Aging in Analog/Mixed-signal circuits Mehrnaz Ahmadi and Rasoul Jafari — <i>Tehran University, Iran</i>
	Gyroscope Explorer Terrain Angles Classification Christofer Yalung, Salah Al Majeed, Cid Mathew Adolfo — <i>MTC, Oman</i> Jalal Karam — <i>Emirates College for Advanced Education, United Arab Emirates</i> Lela Mirtskhulava — <i>International Black Sea University, Georgia</i>
	Client-Server Based Wireless Networked Control System Mehdi J. Marie, Ghaida A. Al-Suhail — <i>University of Basrah, Iraq</i> Salah Al-Majeed — <i>Military Technological College, Oman</i>
	Extending Fault Periodicity Table for Testing External Memory Faults Gurgen Harutyunyan — <i>Synopsys, Armenia</i>
	Automated Generation of Core Test Description File for Hierarchical Test Hayk Chukhajyan — <i>Synopsys, Armenia</i>
13:15 — 13:50	Lunch



Fourth Day: October 17th, 2016 (Monday)	
14:00 — 15:45	Regular Papers Session 4E, Conference Hall Moderator: Tetiana Soklakova, <i>Ukraine</i>
	Digital beamforming in MIMO-radar with frequency diversity Vladimir Lobach, Alexandr Kasyanov and Michael Potipak — <i>Southern Federal University, Russian Federation</i>
	Functional Organization and Hardware Means of Network Interconnection of Modules in Computer Cluster Based on «Elbrus» Microprocessors Igor Belyanin, Pavel Petrakov and Vladimir Feldman — <i>MCST, Russian Federation</i>
	Qubit Description of the Functions and Structures for Computing Vladimir Hahanov, Svetlana Chumachenko, Eugenia Litvinova and Mykhailo Liubarskyi — <i>Kharkiv National University of Radio Electronics, Ukraine</i>
	Cloud Service for University E-government Vladimir Hahanov, Oleksandr Mishchenko, Svetlana Chumachenko, Eugenia Litvinova, Anastasya Hahanova — <i>Kharkiv National University of Radio Electronics, Ukraine</i> Vugar Abdullayev — <i>Azerbaijan State Oil Academy, Azerbaijan National Academy of Sciences, Institute of Control Systems</i>
	Big Data Visualization in Smart Cyber University Tetiana Soklakova, Artur Ziarmand and Svitlana Osadchyieva — <i>Kharkiv National University of Radio Electronics, Ukraine</i>
	Transport Monitoring and Control Systems Artur Ziarmand, Dariya Kucherenko and Tetiana



Fourth Day: October 17th, 2016 (Monday)	
	Soklakova — <i>Kharkiv National University of Radio Electronics, Ukraine</i>
	Feedback Cloud Service for the Smart Cyber University Anastasia Makarevich — <i>Kharkiv National University of Radio Electronics, Ukraine</i>
	Multiversion Parallel Synthesis of Digital Structures Based on SystemC Specification Vladimir Obrizan and Tetiana Soklakova — <i>Kharkiv National University of Radio Electronics, Ukraine</i>
	Multi-Interval Static Timing Analysis Accounting Logic Compatibility Sergey Gavrilov, Galina Ivanova, Daria Ryzhova — <i>The Institute for Design Problems in Microelectronics Russian Academy of Science, Russian Federation</i> Pavel Volobuev — <i>SMC "Technological Centre", Russian Federation</i>
	Three-Dimensional Model of Surrounding Space Around Flight Simulator Cabin Ekaterina Asmolova and Vladimir Roganov — <i>Penza State Technological University, Russian Federation</i>
14:00 — 15:45	Regular Papers Session 4F, Room B Moderator:
	Frequency Method of Measurement of Average High Temperature in Inhomogeneous Media Zhanna Sukhinets — <i>Ufa State Aviation Technical University, Russian Federation</i> Artur Gulin — <i>Ufa State Petroleum Technical University, Russian Federation</i>



Fourth Day: October 17th, 2016 (Monday)	
	Anton Sukhinets — <i>Saint Petersburg National Research University of Information Technologies, Mechanics and Optics, Russian Federation</i>
A Comparative Analysis of Mutation Testing Tools for Java	Mariya Forostyanova and Barkhas Dongak — <i>Tomsk State University, Russian Federation</i>
Dual Band Microstrip Patch Antenna Using DGS For Mobile Applications & Communication System	Mehre Munir and Shahryar Shafique Qureshi — <i>Iqra National University, Pakistan</i>
Adaptation of Discrete Estimation Algorithms According State Model and Shaping Noise Parameters Based on the Combined Maximum Principle	Sergey Lazarenko, Igor Pugachev — <i>Don State Technical University, Russian Federation</i> Andrey Kostoglotov, Igor Deryabkin — <i>Rostov State Transport University, Russian Federation</i> Anton Kuznetsov — <i>Air Force Military Training and Research Center "Air Force Academy named after Professor N.E. Zhukovsky and Yu.A. Gagarin", Russian Federation</i>
Generalized Structural Models of Complex Distributed Objects	Mikhail Mikheev, Alexandr Shcherban, Tatyana Zhashkova — <i>Penza State Technological University, Russian Federation</i> Alexey Grishko, Ilya Rybakov — <i>Penza State University, Russian Federation</i>
Imitation modelling for the subsystem of identification and structuring data of signal sensors	Mikhail Mikheev, Elena Meshcheryakova,



Fourth Day: October 17th, 2016 (Monday)

Tatyana Zhashkova, Kirill Gudkov — *Penza State Technological University, Russian Federation*

Alexey Grishko — *Penza State University, Russian Federation*

Synthesis of Algorithms for Estimation of Parameters and State Of Dynamic Systems Using Additional Invariants

Andrey Kostoglotov, Igor Deryabkin — *Rostov State Transport University, Russian Federation*

Sergey Lazarenko, Igor Pugachev — *Don State Technical University, Russian Federation*

Dima Andrashitov — *Moscow Vitte University, Russian Federation*

QuaSim – Cloud Service for Digital Circuits Simulation

Ivan Hahanov, Wajeb Gharibi, Igor Iemelianov and Tamer Bani Amer — *Kharkiv National University of Radio Electronics, Ukraine*

Cosmological Computing and Genome-Algorithm of the Universe

Vladimir Hahanov, Eugenia Litvinova, Svetlana Chumachenko — *Kharkiv National University of Radio Electronics, Ukraine*

Wajeb Gharibi — *Jazan University, KSA*

Cyber Physical Computing

Vladimir Hahanov, Mazen Abdelrahman

Abdelaziz Hussein, Anna Hahanova — *Kharkiv National University of Radio Electronics, Ukraine*

Ka Lok Man — *Xian Jiaotong-Liverpool University, China*



Fourth Day: October 17th, 2016 (Monday)	
09:00—18:00	Poster Session, Conference Hall
	The Application for Internal Restructuring the Data in the Entropy Coding Process to Enhance the Information Resource Security Vladimir Barannik, Ivan Tupitsya, Sergii Shulgin, Sergii Sidchenko and Vladimir Larin — <i>Kharkiv National Air Force University, Ukraine</i>
	Estimate of the Capacity of the Closed Video Channel for the Method Based on the Selection of Relevant Structural Units Dmitry Komolov, Roman Tarnopolov, Tanya Belikova and Vladimir Krivonos — <i>Kharkiv National Air Force University, Ukraine</i>
	The Ensuring the Integrity of Information Streams Under the Cyberattacks Action Vladimir Barannik, Andrei Krasnorutskyi, Sergey Podlesny, Alexsandr Musienko and Viktoriya Himenko — <i>Kharkiv National Air Force University, Ukraine</i>
	The Development Method for Evaluating the Saturation of Video Frame Blocks to Reduce the Processing Time of the Video Stream Oleg Kulitsa, Anna Hahanova, Vitaliy Tverdokhleby and Dmitry Okladnoy — <i>Kharkiv National Air Force University, Ukraine</i>
	The New Method of Secure Data Transmission on the Indirect Steganography Basis Dmitriy Barannik, Oleg Frolov, Ali Bekirov and Oleh Suprun — <i>Kharkiv National Air Force University, Ukraine</i>
	The processing of the diagnostic data in a medical information-analytical system using a network of adaptive neuromodule Nikolay Fedorenko, Vyacheslav Kharchenko,



Fourth Day: October 17th, 2016 (Monday)	
	Lyudmila Lutay and Yevheniya Yehorova — <i>National Aerospace University KhAI, Ukraine</i>
	Approaches to Selection of Combinatorial Algorithm for Optimization in Network Traffic Control of Safety-Critical Systems Georgiy Kuchuk, Vyacheslav Kharchenko — <i>National Aerospace University “KhAI”, Ukraine</i> Andriy Kovalenko — <i>Kharkiv National University of Radio Electronics, Centre for Safety Infrastructure-Oriented Research and Analysis, Ukraine</i> Eugen Ruchkov — <i>Research and Production Corporation Radiy, Ukraine</i>
	Internet portal of NGN platforms Aleksandr Roslyakov — <i>Povolzhskiy State University of Telecommunications and Informatics, Russian Federation</i>
	Genetic Artificial bee colony for mapping onto Network on chip Bougherara Maamar and Kadri Nassima — <i>Laboratory of LMCS, (ESI ex INI), Algeria</i>
	Contactless Amplitude Measurement Technique of the Vibrational Displacement of the Test Material Point Alexey Grigoriev, Nikolay Yurkov and Igor Kochegarov — <i>Penza State University, Russian Federation</i>
	Expert diagnosis of computer systems using neuro-fuzzy knowledge base Gennadiy Krivoulya, Aleksey Lipchansky and Yevgeniy Sheremet — <i>Kharkiv National University of Radio Electronics, Ukraine</i>
	Simulation of a hierarchical routing protocol for MANET Dmitry Prozorov, Anton Chistyakov, Alexander



Fourth Day: October 17th, 2016 (Monday)
Metelyov — <i>Vyatka State University</i> Sergey Romanov — <i>Open Society «Research Institute of Computer Aids», Russian Federation</i>
The Use of Petri Nets as the Basis of Algorithm for Gate Level Digital Circuits Simulation Alexander Lapin, Dmitry Bulakh, Andrey Korshunov and Gennady Kazennov — <i>National Research University of Electronic Technology (MIET), Russian Federation</i>
Estimation of the Measurement Accuracy of the Informative Parameters of the Signal on the Background of Correlated Additive non-Gaussian Noise Vladimir M. Artyushenko — <i>Technological University</i> Vladimir I. Volovach — <i>Volga Region State University of Service, Russian Federation</i>
Synthesis of combinational circuits from the truth tables in “Kovcheg” CAD design flow Valentina Aleshina, Maria Makarceva and Alexandr Golenkevich — <i>SMC Tecnological Centre, Russian Federation</i>
Computer model of steganographic system based on contraction mapping with stream audio container Maxim Shakurskiy — <i>Samara State Technical University, Russian Federation</i> Viktor Shakurskiy — <i>Togliatti State University, Russian Federation</i> Vladimir Volovach — <i>Volga Region State University of Service, Russian Federation</i>



Fourth Day: October 17th, 2016 (Monday)

An Improved Scheme for Pre-computed Patterns in Core-based SoC Architecture

Elaheh Sadredini — *University of Virginia, USA*

Radiophysical Processes in Thin-Film Structures

Larissa V. Cherckesova — *Don State Technical University, Russian Federation, Russian Federation*

Dmitry A. Bezuglov — *Rostov-on-Don Branch of Russian Customs Academy, Russian Federation*

George N. Shalamov — *Rostov-on-Don Research Institute of Radio Communication, Russian Federation*

Gennady P. Sinyavsky, Alexander N. Zaichenko, Olga N. Manaenkova — *Southern Federal University, Russian Federation*

Alexander G. Shein — *Volgograd State Technical University, Russian Federation*

On Simplification of Timed Automata

Maxim Gromov — *Tomsk State University, Russian Federation*

Analysis and Design of Planar Flexible Antenna Prototype

Ksenia Lomovskaya, Aleksandr Timoshenko, Egor Belousov, Egor Borodulin and Aleksandr Levanov — *National Research University of Electronic Technology (MIET), Russian Federation*

Structural CDC Analysis Methods

Sergiy Zaychenko, Pavlo Leshtaev, Bogdan Gureev and Maksym Shliakhtun — *Aldec-KTC Ltd, Ukraine*

15:45 — 16:15 **Symposium Closing – Conference Hall**

