

2019 IEEE East-West Design & Test Symposium (EWDTS 2019)

**Batumi, Georgia
13 – 16 September 2019**



**IEEE Catalog Number: CFP19DTW-POD
ISBN: 978-1-7281-1004-2**

**Copyright © 2019 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:	CFP19DTW-POD
ISBN (Print-On-Demand):	978-1-7281-1004-2
ISBN (Online):	978-1-7281-1003-5
ISSN:	2373-826X

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

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

MODIFICATION OF U-NET NEURAL NETWORK IN THE TASK OF MULTICHANNEL SATELLITE IMAGES SEGMENTATION	1
<i>Vladimir Khryashchev ; Roman Larionov ; Anna Ostrovskaya ; Alexander Semenov</i>	
POWER SUPPLY NOISE REJECTION IMPROVEMENT METHOD IN MODERN VLSI DESIGN	5
<i>Sh. Melikyan Vazgen ; Kh. Mkhitarian Artur ; T. Kostanyan Hakob ; T. Grigoryan Hayk ; T. Kostanyan Harutyun ; T. Grigoryan Mushegh ; H. Musayelyan Ruben ; V. Margaryan Hayk</i>	
AUTOMATION OF LAYOUT DESIGN OF SPIRAL CONICAL SCANS	9
<i>Marina V. Byrdina ; Lema A. Bekmurzaev ; Mikhail F. Mitsik ; Dmitry B. Kelekhsaev ; Anatoly I. Kondratenko</i>	
THEORETICAL BASES OF THE COURSE MOTION TWO AXLES AGRICULTURE TRANSPORTS VEHICLE ACCORDING WHEELS SLIPPING	13
<i>Maksim A. Litvinov ; Maksim N. Moskovskiy ; Ilya V. Pakhomov ; Anatoly A. Gulyaev</i>	
A SIGNAL PROCESSING APPROACH FOR THE FAILURE ANALYSIS OF ROLLING-ELEMENT BEARING OF VEHICLE BRAKE TESTER USED AT A VEHICLE INSPECTION STATION	17
<i>Selman Kulaç</i>	
A TECHNIQUE FOR THE ACCOUNTING OF SURROUNDING CIRCUITRY DURING GENERATION OF THE SIMPLIFIED MODELS	23
<i>Mark M. Gourary ; Sergey G. Rusakov ; Sergey L. Ulyanov ; Michael M. Zharov</i>	
INTERFACE AND SOFTWARE FOR THE SYSTEM OF AUTOMATIC SEEDING OF GRAIN CROPS	29
<i>Maksim A. Litvinov ; Maksim N. Moskovskiy ; Ilya V. Pakhomov ; Igor G. Smirnov</i>	
CFI: CONTROL FLOW INTEGRITY OR CONTROL FLOW INTERRUPTION?	33
<i>Nicoló Maunero ; Paolo Prinetto ; Gianluca Roascio</i>	
FAST AND EFFICIENT IMPLEMENTATION OF LIGHTWEIGHT CRYPTO ALGORITHM PRESENT ON FPGA THROUGH PROCESSOR INSTRUCTION SET EXTENSION	39
<i>Abdullah Varici ; Gurol Saglam ; Seckin Ipek ; Abdullah Yildiz ; Sezer Gören ; Aydin Aysu ; Deniz Iskender ; T. Baris Aktemur ; H. Fatih Ugurdag</i>	
THE DISCRETE STRUCTURE OF THE ZEROS AND POLES LOCATION IN THE Z-PLANE OF THE ARBITRARY ORDER IIR DIGITAL FILTERS WITH A FINITE WORD LENGTH	44
<i>Vladislav Lesnikov ; Tatiana Naumovich ; Alexander Chastikov ; Alexander Metelyov</i>	
COMPLEMENTARY JFETS INTEGRATED INTO THE MICROWAVE COMPLEMENTARY BIPOLAR DOUBLE SELF-ALIGNED TECHNOLOGY	50
<i>Dmitry G. Drozdov ; Nikolay N. Prokopenko ; Evgeny M. Savchenko ; Andrey I. Grushin ; Pavel A. Dukanov</i>	
DESIGN OF REAL-TIME SYSTEM LOGIC CONTROL ON FPGA	54
<i>Maryna Miroshnyk ; Olexander Shkil ; Elvira Kulak ; Dariia Rakhlis ; Inna Filippenko ; Maksym Hoha ; Mykyta Malakhov ; Vladyslav Sergienko</i>	
TERNARY QUESTIONNAIRES	58
<i>Dmitrii V. Efanov ; Valerii V. Khóroshev</i>	
OPTIMIZED TIME-DELAYED FEEDBACK CONTROL OF FRACTIONAL CHAOTIC OSCILLATOR WITH APPLICATION TO SECURE COMMUNICATIONS	70
<i>Amir Rikhtegar Ghiasi ; Mona Saber Gharamaleki ; Elaheh Mohammadi Asl Khasraghi ; Zahra Sattarzadeh Kalajahi</i>	
DEVELOPMENT OF MODIFIED BLOCK CIPHER ALGORITHM TEA, FREE FROM VULNERABILITY OF “CONNECTED KEYS ATTACK”	76
<i>Sergey A. Klyokta ; Nikita I. Chesnokov ; Irina A. Pilipenko ; Alexander I. Zhukov ; Larissa V. Cherckesova ; Olga A. Safaryan ; Andrey G. Lobodenko ; Vitaliy M. Porksheyev</i>	
SYSTEMS FOR REFLECTOMETRY ANALYSIS OF DEFECTS IN METAL STRUCTURES OF TRANSPORT MOBILE OBJECTS	82
<i>Julia V. Alevedinova</i>	
UNIFIED STIL FLOW: A TEST PATTERN VALIDATION APPROACH FOR COMPRESSED SCAN DESIGNS	88
<i>Slimane Boutobza ; Andrea Costa ; Sorin Popa</i>	
PERMANENT MONITORING SYSTEMS OF THE CONTACT-WIRE OF RAILROAD CATENARY: THE MAIN TASKS OF IMPLEMENTATION	98
<i>Dmitrii V. Efanov ; German V. Osadchy ; Dmitrii V. Barch ; Andrei A. Belyi</i>	

NON-CANONICAL TOPOGRAPHY OF THE Z-PLANE DISCRETIZED DUE TO QUANTIZATION OF THE IIR DIGITAL FILTER COEFFICIENTS	102
<i>Vladislav Lesnikov ; Tatiana Naumovich ; Alexander Chastikov</i>	
PARAMETRIC OPTIMIZATION SUBSYSTEM IN LTSPICE ENVIRONMENT OF ANALOG MICROCIRCUITS FOR OPERATION AT LOW TEMPERATURES	106
<i>Maxim V. Liashov ; Nikolay N. Prokopenko ; Andrei A. Ignashin ; Oleg V. Dvornikov ; Alexey A. Zhuk</i>	
MODIFICATION AND OPTIMIZATION OF SOLOVEY-STRASSEN'S FAST EXPONENTIATION PROBABLISTIC TEST BINARY ALGORITHM.....	110
<i>Nikita Ye. Myzdrikov ; Ivan Ye. Semeonov ; Vasilij I. Yukhnov ; Olga A. Safaryan ; Irina V. Reshetnikova ; Andrey G. Lobodenko ; Larissa V. Cherckesova ; Vitaliy M. Porksheyev</i>	
SIMULATION OF NODES AND BLOCKS OF MATCHING PROCESSOR OF THE PARALLEL DATAFLOW COMPUTING SYSTEM “BURAN”	113
<i>Nikolay Levchenko ; Anatoly Okunev ; Dmitry Zmejev</i>	
IMPLEMENTATION VARIANTS OF THE GLOBAL DISTRIBUTED ASSOCIATIVE COMPUTING ENVIRONMENT FOR THE PARALLEL DATAFLOW COMPUTING SYSTEM “BURAN”.....	118
<i>Nikolay Levchenko ; Anatoly Okunev ; Dmitry Zmejev</i>	
CROSS-PLATFORMING WEB-APPLICATION OF ELECTRONIC ON-LINE VOTING SYSTEM ON THE ELECTIONS OF ANY LEVEL	122
<i>Evgeniy V. Palekha ; Irina S. Trubchik ; Olga N. Manaenkova ; Olga A. Safaryan ; Vitaliy M. Porksheyev ; Sergey A. Morozov ; Larissa V. Cherckesova ; Boris A. Akishin</i>	
MODIFIED MODULAR UNIT BITS SUM CODES WITH ARBITRARY ACCOUNT MODULES	126
<i>Dmitrii V. Efanov ; Anna O. Filippochkina ; Mariia V. Ivanova</i>	
THE USING OF ELECTRONIC DOCUMENT MANAGEMENT TOOLS OF TECHNICAL DOCUMENTATION FOR THE ASSESSMENT OF THE LIFE OF THE TRAIN TRAFFIC CONTROL DEVICES	133
<i>Dmitry V. Sedykh ; Denis V. Zuyev ; Michael N. Vasilenko ; Michael A. Gordon ; Andrei Belyi</i>	
MULTIDIMENSIONAL HIERARCHICAL MODEL OF BEHAVIORAL TESTING OF DISTRIBUTED INFORMATION SYSTEMS.....	137
<i>Oleksandr Martynyuk ; Oleksandr Drozd ; Hanna Suhak ; Dmitry Martynyuk ; Lyudmila Sugak</i>	
DERIVING ADAPTIVE HOMING SEQUENCES FOR WEAKLY INITIALIZED NONDETERMINISTIC FSMs	143
<i>Evgenii Vinarskii ; Aleksandr Tvardovskii ; Larisa Evtushenko ; Nina Yevtushenko</i>	
RESEARCH OF THE EFFECT OF DISCRETE LIGHT SOURCES ON SEEDS OF VEGETABLE AND GREEN CULTURES AND THE POSSIBILITY OF THEIR APPROXIMATION TO MODIFIED SUNLIGHT	148
<i>Danila Yu. Donskoy ; Alexander D. Lukyanov ; Eugenia P. Kluchka ; Marko Petkovic</i>	
MODIFICATION AND OPTIMIZATION OF POLLARDS'S FACTORIZATION ?-METHOD BY MEANS OF RECURSIVE ALGORITHM OF NUMBER CALCULATION FACTORIZATION	152
<i>Ivan A. Smirnov ; Pavel V. Razumov ; Nickolay V. Boldyrikhin ; Larissa V. Cherckesova ; Yelena A. Revyakina ; Vitaliy M. Porksheyev ; Olga A. Safaryan ; Andrey G. Lobodenko</i>	
BOOSTING MODEL OF BIOINSPIRED ALGORITHMS FOR SOLVING THE CLASSIFICATION AND CLUSTERING PROBLEMS	158
<i>Itona Kursityis ; Alexander Natskevich ; Elvira Tsyruelnikova</i>	
MODELING TECHNIQUE OF LARGE SIGNAL DYNAMICS FOR ELECTROMAGNETIC LEVITATION MELTING SYSTEM	164
<i>Idan Sassonker ; Moria Elkayam ; Alon Kuperman</i>	
VOLTAGE REGULATION ANALYSIS IN ENERGY TRANSMISSION SYSTEMS USING STATCOM.....	169
<i>Hamza Feza Carlak ; Ergin Kayar</i>	
DEVELOPMENT OF METHOD FOR AUTOMATION OF SPICE MODELS GENERATION	176
<i>Sh. Melikyan Vazgen ; K. Martirosyan Meruzhan ; A. Virabyan Diana ; T. Kostanyan Hakob</i>	
AN ANALYSIS OF SAMPLING EFFECT ON THE ABSOLUTE STABILITY OF DISCRETE-TIME BILATERAL TELEOPERATION SYSTEMS	180
<i>Amir Aminzadeh Ghavifekr ; Seyedsahab Chehraghi ; Giacomo De Rossi</i>	
USE OF NATURAL INFORMATION REDUNDANCY IN ON-LINE TESTING OF COMPUTER SYSTEMS AND THEIR COMPONENTS.....	186
<i>Oleksandr Drozd ; Anatolij Sachenko ; Svetlana Antoshchuk ; Julia Drozd ; Mykola Kuznietsov</i>	
NEURAL NET AS PSEUDO-INVERSE FILTER IN SPEECH CODING PROBLEM	191
<i>Rustam Latypov ; Evgeni Stolov</i>	

SUM CODES OF WEIGHTED DATA BITS FOR OBJECTIVES OF AUTOMATION LOGICAL DEVICES TECHNICAL DIAGNOSTICS.....	195
<i>Dmitry Efanov ; Valery Sapozhnikov ; Vladimir Sapozhnikov ; German Osadchy ; Teng Teng</i>	
DEVELOPMENT OF A SIMULATION TOOL TO ESTIMATE ELECTRICITY CONSUMPTION AND DETERMINE THE OPTIMUM COOLING SYSTEM FOR DATA CENTERS	205
<i>Beyzanur Toprak ; Beyza Nur Bora ; Gül Nihal Gügül</i>	
THE FAULT TOLERANT CMOS LOGICAL C-ELEMENT FOR DIGITAL DEVICES RESISTANT TO SINGLE NUCLEAR PARTICLES.....	211
<i>Yuri V. Katunin ; Vladimir Ya. Stenin</i>	
ALGORITHM FOR EXTRACTION OF THE IRIS REGION IN AN EYE IMAGE	215
<i>Sh. Kh. Fazilov ; O. R. Yusupov</i>	
TECHNOLOGICAL FOUNDATIONS OF TRAFFIC CONTROLLER DATA SUPPORT AUTOMATION.....	220
<i>Joseph M. Kokurin ; Dmitrii V. Efanov</i>	
SILICON PHOTOMULTIPLIERS' ANALOG INTERFACE WITH WIDE DYNAMIC RANGE.....	225
<i>Oleg V. Dvornikov ; Nikolay N. Prokopenko ; Vladimir A. Tchekhovski ; Yaroslav D. Galkin ; Alexey E. Titov ; Anna V. Bugakova</i>	
DIAGNOSTICS OF AUDIO-FREQUENCY TRACK CIRCUITS IN CONTINUOUS MONITORING SYSTEMS FOR REMOTE CONTROL DEVICES: SOME ASPECTS	229
<i>Dmitrii V. Efanov ; German V. Osadchy ; Valerii V. Khóroshev ; Dmitrii A. Shestovitskiy</i>	
LENGTH LIMITING OF QUANTUM KEY DISTRIBUTION AT TWO-STAGE SYNCHRONIZATION	238
<i>K. E. Rumyantsev ; H. H. Sh. Shakir</i>	
ALL-PASS SECOND-ORDER ACTIVE RC-FILTER WITH POLE Q-FACTOR'S INDEPENDENT ADJUSTMENT ON DIFFERENTIAL DIFFERENCE AMPLIFIERS.....	243
<i>Darya Yu. Denisenko ; Nikolay N. Prokopenko ; Nikolay V. Butyrlagin</i>	
MAIN SOLUTIONS OF STRUCTURAL HEALTH MONITORING IN MANAGING THE TECHNICAL CONDITION OF TRANSPORT OBJECTS	247
<i>Andrei Belyi ; Dmitrii Shestovitskii ; Eduard Karapetov ; Dmitrii Sedykh ; Vladimir Linkov</i>	
TECHNIQUE TO SIMULATE OSCILLATOR CIRCUITS WITH THE DEGRADATION MODELS.....	253
<i>Mark M. Gourary ; Sergey G. Rusakov ; Sergey L. Ulyanov ; Michael M. Zharov</i>	
SELF-DUAL COMPLEMENT METHOD UP TO CONSTANT-WEIGHT CODES FOR ARRANGEMENT OF COMBINATIONAL LOGICAL CIRCUITS CONCURRENT ERROR-DETECTION SYSTEMS.....	257
<i>Dmitry Efanov ; Valery Sapozhnikov ; Vladimir Sapozhnikov ; German Osadchy ; Dmitry Pivovarov</i>	
DEVELOPMENT OF AUTOMATION SYSTEMS AT TRANSPORT OBJECTS OF MEGACITY.....	265
<i>Andrei Belyi ; Dmitrii Shestovitskii ; Valerii Myachin ; Dmitrii Sedykh</i>	
ADVANCED INDICATION OF THE SELF-TIMED CIRCUITS	271
<i>Yury Stepchenkov ; Yury Diachenko ; Yury Rogdestvenski ; Yury Shikunov ; Denis Diachenko</i>	
A TEMPLATE MODEL OF JUNCTION FIELD-EFFECT TRANSISTORS FOR A WIDE TEMPERATURE RANGE	277
<i>Alexandr M. Pilipenko ; Vadim N. Biryukov ; Nikolay N. Prokopenko</i>	
POLYNOMIAL CODE WITH DETECTING THE SYMMETRIC AND ASYMMETRIC ERRORS IN THE DATA VECTORS.....	281
<i>Ruslan B. Abdullaev ; Dmitrii V. Efanov ; Valerii V. Sapozhnikov ; Vladimir V. Sapozhnikov</i>	
TERMS OF ARRANGEMENT RECKONING SELF-CHECKING EMBEDDED CHECK CIRCUITS BASED ON BOOLEAN COMPLEMENT UP TO CONSTANT-WEIGHT CODE '1-OUT-OF-3'	286
<i>Dmitry Efanov ; Valery Sapozhnikov ; Vladimir Sapozhnikov ; German Osadchy ; Dmitry Pivovarov</i>	
A TECHNIQUE FOR SEMICONDUCTOR DEVICES MODELING USING PHYSICAL TEMPLATES	292
<i>Alexandr M. Pilipenko ; Vadim N. Biryukov ; Alexander I. Serebryakov</i>	
ACCURATE SOFT ERROR RATE REDUCTION USING MODIFIED RESOLUTION METHOD	296
<i>Alexander Stempkovskiy ; Dmitry Telpukhov ; Vladislav Nadolenko</i>	
THE IMPLEMENTATION OF THE GENETIC ALGORITHM USING CLOUD-BASED COMPUTING ON THE INTERNET	302
<i>V. M. Kureichik ; J. A. Logunova</i>	
INTELLIGENT FLOW METER ON ACOUSTIC MULTIVIBRATOR	306
<i>Zh. A. Sukhinets ; A. I. Gulin ; O. I. Bureneva ; N. N. Prokopenko ; O. O. Valiamova</i>	
SYNTHESIS OF SIGNAL QUADRATURE PROCESSING ALGORITHMS UNDER THE INFLUENCE OF BAND-LIMITED NON-GAUSSIAN NOISE	311
<i>Vladimir Mikhaylovich Artyushenko ; Vladimir Ivanovich Volovach</i>	

PROTOGRAPH SIEVING METHOD FOR CONSTRUCTION MODERATE LENGTH MULTI-EDGE TYPE QC-LDPC CODES	315
<i>Svistunov German ; Usatyuk Vasily ; Egorov Sergey</i>	
STATISTICAL ANALYSIS OF DISCRIMINATORS UNDER THE INFLUENCE OF ADDITIVE CORRELATED NON-GAUSSIAN NOISE DESCRIBED BY MARKOV PROCESSES	319
<i>Vladimir Mikhaylovich Artyushenko ; Vladimir Ivanovich Volovach</i>	
PROCESSING AN EFFECTIVE METHOD FOR CLOCK TREE SYNTHESIS	325
<i>Narek Avdalyan ; Kamo Petrosyan</i>	
DECISION MAKING IN VLSI COMPONENTS PLACEMENT PROBLEM BASED ON GREY WOLF OPTIMIZATION	330
<i>Elmar V. Kuliev ; Vladimir Vl. Kureichik ; Ilona O. Kursity</i>	
UNIT REGRESSION TEST SELECTION MECHANISM BASED ON HASHING ALGORITHM	334
<i>Sh. Melikyan Vazgen ; H. Hakobyan Hovhannes ; K. Kaplanyan Taron ; M. Momjyan Arsen</i>	
CALCULATING THE PARAMETERS OF THE SHORT-RANGE MICROWAVE INFORMATION CHANNEL RESISTANT TO SIGNAL FADING	339
<i>Vladimir Mikhaylovich Artyushenko ; Vladimir Ivanovich Volovach</i>	
CAUTION: GALS-IFICATION AS A MEANS AGAINST SCA ATTACKS	344
<i>Zoya Dyka ; Ievgen Kabin ; Dan Klann ; Frank Vater ; Peter Langendoerfer</i>	
SURFACE VISUALIZATION OF FLEXIBLE ELASTIC SHELLS	350
<i>Marina V. Byrdina ; Mikhail F. Mitsik ; Lema A. Bekmurzaev ; Svetlana V. Rubtsova</i>	
MASKING ROBUST TESTABLE PDFS	354
<i>Anzhela Matrosova ; Sergei Ostanin ; Semen Chernyshov</i>	
MODELING AND DEBUGGING TOOLS DEVELOPMENT FOR RECURRENT ARCHITECTURE	358
<i>Dmitry Khilko ; Yury Stepchenkov ; Yury Shikunov ; George Orlov</i>	
CONSTRUCTION OF LENGTH AND RATE ADAPTIVE MET QC-LDPC CODES BY CYCLIC GROUP DECOMPOSITION	363
<i>Usatyuk Vasily ; Egorov Sergey ; German Svistunov</i>	
MASKING INTERNAL NODE FAULTS AND TROJAN CIRCUITS IN LOGICAL CIRCUITS	368
<i>A. Matrosova ; V. Provkina ; E. Nikolaeva</i>	
AUTOMATING OF HUMAN RESOURCES MANAGEMENT USING GENETIC ALGORITHMS	372
<i>Agata V. Markevich ; Valentina G. Sidorenko</i>	
QUBIT TEST SYNTHESIS PROCESSOR FOR SOC LOGIC	381
<i>Wajeb Gharibi ; David Devadze ; Vladimir Hahanov ; Eugenia Litvinova ; Ivan Hahanov</i>	
SCOAP-BASED DIRECTED RANDOM TEST GENERATION FOR COMBINATIONAL CIRCUITS	386
<i>Seyyede Maryam Ghasemy ; Maryam Rajabalipanah ; Saeideh Sarmadi ; Zainalabedin Navabi</i>	
REMOTE ADMINISTRATION OF INFORMATION SYSTEMS VIA E-MAIL	391
<i>Zaza Davitadze ; Gregory Kakhiani ; George Beria</i>	
THE SOFTWARE PLATFORM FOR EVALUATION OF EFFECTIVENESS OF NETWORK SYSTEMS ANALYSIS TECHNOLOGIES	396
<i>Olha Ponomarenko ; Valeriy Gorbachov ; Abdulrahman Kataeba Batiaa ; Oksana Kotkova</i>	
FROM ABSTRACT MODELING OF ADAS APPLICATIONS TO AN ACCELERATOR-BASED HARDWARE REALIZATION	400
<i>Samira Ahmadi Farsani ; Katayoon Basharkhah ; Amin Mohaghegh ; Zainalabedin Navabi</i>	
OR2-NOC: OFFLINE ROBUST ROUTING ALGORITHM FOR 2-D MESH NOCS ARCHITECTURES	406
<i>Arezoo Beheshti ; Mina Zolfy Lighvan ; Zahra Eghbali</i>	
EVALUATING THE LENGTH OF DISTINGUISHING SEQUENCES FOR NONDETERMINISTIC INPUT/OUTPUT AUTOMATA	411
<i>Igor Burdonov ; Alexandr Kossachev ; Nina Yevtushenko ; Alexey Demakov</i>	
ELABORATION OF THE FUNCTIONING ALGORITHM OF THREE - DIMENSIONAL MODEL OF COMPUTER SYSTEM SAFETY	416
<i>Victor V. Zhilin ; Irina I. Drozdova ; Ivan A. Sakharov ; Larissa V. Cherckesova ; Vitaliy M. Porksheyev ; Olga A. Safaryan ; Andrey G. Lobodenko ; Sergey A. Morozov</i>	
PLANAR COMPACT DIRECTIONAL COUPLER ON ARTIFICIAL TRANSMISSION LINES	420
<i>Denis A. Letavin</i>	
FAST AND SECURE UNIFIED FIELD MULTIPLIER FOR ECC BASED ON THE 4-SEGMENT KARATSUBA MULTIPLICATION	423
<i>Ievgen Kabin ; Zoya Dyka ; Dan Klann ; Peter Langendoerfer</i>	

APPLICATION OF MODERN MICROELECTRONIC TECHNOLOGY IN MARSHALLING PROCESS OF RAILWAY STATIONS.....	429
<i>Michael A. Gordon ; Anton A. Movshin ; Alexey N. Kovkin ; Oleg A. Abramov ; Dmitry V. Sedykh</i>	
PLANAR BUTLER MATRIX BASED ON COMPACT TAPS	435
<i>Denis A. Letavin</i>	
ON A METHOD FOR SEGMENTATION OF MEMORY INSTANCES WITH ROW REDUNDANCIES	438
<i>Karen Amirkhanyan ; Valery Vardanian</i>	
COMPARISON OF GRAPHEME-TO-PHONEME CONVERSIONS FOR SPOKEN DOCUMENT RETRIEVAL	443
<i>Dmitriy Prozorov ; Alexandra Tatarinova</i>	
INCREASING THE EFFECTIVE VOLUME OF DIGITAL WATERMARK USED IN MONITORING THE PROGRAM CODE INTEGRITY OF FPGA-BASED SYSTEMS	447
<i>Kostiانتyn Zashcholkin ; Oleksandr Drozd ; Ruslan Shaporin ; Olena Ivanova ; Yulian Sulima</i>	
AN ANALYSIS OF LOCKERGOGA RANSOMWARE.....	453
<i>Alexander Adamov ; Anders Carlsson ; Tomasz Surmacz</i>	
INTELLIGENT TRANSPORT SYSTEMS AS A WAY TO IMPROVE THE QUALITY OF THE RAIL-TRUCK MULTIMODAL FREIGHT TRANSPORTATION	458
<i>Natalia Goncharova</i>	
FOREST AREAS SEGMENTATION ON AERIAL IMAGES BY DEEP LEARNING.....	465
<i>Vladimir Khryashchev ; Vladimir Paylov ; Anna Ostrovskaya ; Roman Larionov</i>	
NON-INVASIVE SYSTEM FOR DETERMINING THE LEVEL OF IRON IN THE BLOOD	470
<i>Andrey Azarov ; Elena Shirokova ; Igor Shirokov</i>	
DESCRIPTION OF THE SPATIAL SHAPE SURFACE OF AN AIR SUPPORTED DYNAMIC FIGURE	474
<i>Mikhail F. Mitsik ; Lema A. Bekmurzaev ; Marina V. Byrdina ; Olga A. Aleynikova ; Victor N. Kokhanenko</i>	
A NOVEL TECHNIQUE FOR ATOMIC INSTRUCTIONS FUNCTIONAL VERIFICATION USING LOCK CONTENTION ANALYSIS.....	478
<i>Chibisov Peter ; Grevtsev Nikita</i>	
TERNARY PARITY CODES: FEATURES	485
<i>Dmitrii V. Efanov</i>	
RELIABILITY ISSUES IN THE PARALLEL DATAFLOW COMPUTING SYSTEM	490
<i>Nikolay Levchenko ; Anatoly Okunev ; Dmitry Znejev</i>	
DERIVING LOW POWER TEST SEQUENCES DETECTING ROBUST TESTABLE PDFS.....	495
<i>A. Matrosova ; V. Andreeva ; V. Tychinskiy</i>	
HARMONIC DISTORTIONS IN ANALOG INTERFACES BASED ON DIFFERENTIAL DIFFERENCE AMPLIFIERS	499
<i>Nikolay V. Butyrlagin ; Anna V. Bugakova ; Nikolay N. Prokopenko ; Mikhail F. Mitsik ; Alexey E. Titov</i>	
SWIELD: AN IN SITU APPROACH FOR ADAPTIVE LOW POWER AND ERROR-RESILIENT OPERATION.....	503
<i>Mitko Veleski ; Rolf Kraemer ; Milos Krstic</i>	
UNIT REGRESSION TEST SELECTION ACCORDING TO DIFFERENT HASHING ALGORITHMS	509
<i>H. Hakobyan Hovhannes ; V. Vardumyan Arman ; T. Kostanyan Harutyun</i>	
QUBIT FAULT DETECTION IN SOC LOGIC	513
<i>Mikhail Karavay ; Vladimir Hahanov ; Eugenia Litvinova ; Hanna Khakhanova ; Irina Hahanova</i>	
AN ACCELERATOR-BASED ARCHITECTURE UTILIZING AN EFFICIENT MEMORY LINK FOR MODERN COMPUTATIONAL REQUIREMENTS	520
<i>Saba Yousefzadeh ; Katayoon Basharkhah ; Nooshin Nosrati ; Rezar Sadeghi ; Jaan Raik ; Maksim Jenihhin ; Zainalabedin Navabi</i>	
EMERGING CULTURE OF SOCIAL COMPUTING.....	526
<i>Anastasia Hahanova ; Svetlana Chumachenko ; Vladimir Hahanov ; Abdullayev Vugar Hacimahmud ; Ka Lok Man ; Alexander Mishchenko</i>	
SOLUTION OF THE DYNAMIC PROBLEM FOR OPTIMAL DESIGN OF ELECTRONIC DEVICES BASED ON THE GRAVITY CENTER METHOD.....	531
<i>M. V. Donadze ; Z. Meskhidze</i>	
SECURE COMMUNICATION USING THE SYNCHRONIZATION OF TIME-VARYING COMPLEX NETWORKS BY FUZZY IMPULSIVE METHOD	536
<i>Reza Behinfaraz ; Sehraneh Ghaemi ; Sohrab Khanmohammadi ; Mohammad Ali Badamchizadeh</i>	
ASSOCIATIVE PROCESSORS: APPLICATION, OPERATION, IMPLEMENTATION PROBLEMS.....	540
<i>Egor Kuzmin ; Nikolay Levchenko ; Anatoly Okunev</i>	

RESEARCHING RESILIENCE A HOLISTIC APPROACH	546
<i>Zoya Dyka ; Ievgen Kabin ; Peter Langendörfer</i>	
METHOD OF CALCULATING THE SPARE PARTS SYSTEM AVAILABILITY FOR ELECTRONIC MEANS	550
<i>Bogdan Evgenyevich Pankovsky ; Sergey Nikolaevich Polesskiy</i>	
CALCULATION OF PHASE CENTER OF ARBITRARY ELECTROMAGNETIC RADIATION SOURCES IN NEAR FIELD ZONE	554
<i>Nikolay Anyutin ; Ivan Malay ; Alexey Malyshev</i>	
INTELLIGENT SENSOR MEASUREMENT OF GTE GAS TEMPERATURE WITH THERMISTORS	558
<i>Zh. A. Sukhinets ; A. I. Gulin ; N. M. Safyannikov ; N. N. Prokopenko ; O. O. Valiamova ; O. I. Bureneva</i>	
FORMALIZED METHODS OF ANALYSIS AND SYNTHESIS OF ELECTRONIC DOCUMENT MANAGEMENT OF TECHNICAL DOCUMENTATION	562
<i>Dilshod K. Baratov ; Nazirjon M. Aripov ; Davron Kh. Ruziev</i>	
ANTENNA ARRAY CALIBRATION ALGORITHM BASED ON PHASE PERTURBATION	571
<i>Victor Djigan ; Vladislav Kurganov</i>	
MAKING SYSTEM LEVEL TEST POSSIBLE BY A MIXED-MODE, MULTI-LEVEL, INTEGRATED MODELING ENVIRONMENT	576
<i>Nooshin Nosrati ; Katayoon Basharkhah ; Rezgar Sadeghi ; Carna Zivkovic ; Christoph Grimm ; Zainalabedin Navabi</i>	
Author Index	