

2006 Proceedings of International Conference on Modern Problems of Radio Engineering, Telecommunications and Computer Science

**Lviv, Ukraine
28 February- 4 March 2006**

Volume 1 of 2

IEEE Catalog Number:	CFP06508-PRT
ISBN 10:	966-553-507-2
ISBN 13:	978-966-553-507-2

C O N T E N T S

PLENARY SESSION

Formation in KhNURE of the scientific-educational laboratory of processing and analysis of measuring information of GPS/EGNOS reference stations, navigation and geodetic user receivers	1
Vladimir Shokalo, Alexey Zhalilo, Alexander Dokhov, Georgiy Nesterenko, Dmitry Shelkovenkov, Natalya Sadanova, Eugenia Bondar	
Modern state of algorithms and systems complication theory	5
Mykola Cherkaskyy	
Peculiarities of European Union Countries and Ukraine Approach to Estimation of Technogenic Electromagnetic Fields Influence on Bioecosystems	11
Vitalij Nichoga, Petro Dub, Eugeniusz Grudziński	
Galvanomagnetic instrumentation for tokamak magnetic field diagnostics	14
Inessa Bolshakova, Roman Holyaka, Volodymyr Yerashok, Anatolii Marusenkov	
Influence of Interference Contrast on Function of Fiber – Optic Interferometric Sensors	18
Bogdan Kizlik	
Mathematical Macromodeling Of Dynamic Systems And Examples Of Macromodels	23
Jaroslav Matvijchuk	
Modeling Technology of Functional and Reliable Behavior Algorithms in Electronic Complexes	27
Bohdan Volochiy	

SECTION 1

MATHEMATICAL MODELING IN ELECTRONIC AND RADIOELECTRONICS

1. Heuristic Change Propagation Model Encompassing Ripple Effect (HRE)	28
Ahmad A. Al- Rababah, Mohammad A. AlMaaitah, Mohamad A. Al- Rababah	
2. Monitoring System of the State of Electric Devices	31
Liliana Byczkowska - Lipińska, Agnieszka Wosiak	
3. Applicable Scaling of User Predicate Queries In Given Categorical Strategy and Restrictions System	34
Sheketa V., Bestylny M., Khrabatyn R.	
4. Lifting structure implementation of discrete wavelet transform for filter bank 5/3	38
Irina Hahanova, Irina Pobegenko, Wade Ghribi, Hassan Kteiman	
5. The analytical description of wave indicators of forecasting dynamic series in dealing information systems	41
Boris Shamsha, Vitaliy Stavropolskiy, Vitaliy Ayvazov	
6. H-model of the Algorithm	44
Cherkaskyy M., Mourad Houssein Khalil	
7. Signal Characteristics of the Retransmission Meter during Monitoring a Fluctuating Reflector	46
Vdovychenko Y.I., Velichko A.F., Velichko D.A.	
8. The computer diagnostics of the excitation systems of synchronous generators	49
O.Plakhtyna, A.Kutsyk	
9. Usage of hyperelliptic curves in the digital signature protocol	51
Anna Nelasa, Tatyana Fedoronchak	
10. About the numerical solution of one class of non-linear synthesis problems of radiating systems at presence of restrictions on excitation sources	54
Petro Savenko, Myroslava Tkach	
11. The Analysis of Relative Stability of Systems of Automatic PID-control of Power	58

	of the Transmitter in Adaptive Channels of a Radio Communication	
	Vladimir Gostev, Natalya Kunakh	
12.	Adaptive Method of Pursuit Game Problem Solution	62
	Petro Kravets	
13.	Algebra of algorithms	66
	Volodymyr Ovsiak	
14.	Peculiarities of Non-exponential Degradation Kinetics in Topology-disordered Solids	68
	Halyna Klym	
15.	A Mathematical Model of Multipath QoS-based Routing in Multiservice Networks	72
	Olexandr Lemeshko, Olga Drobot	
16.	Theoretical Foundations of the Models and Methods of Information Search for Structured Digital Library	75
	Vasyl Bilokon, Zoya Dudar, Olga Vorochek, Svitlana Vorochek	
17.	Mathematical Model of ThermoElectrical Processes in Resistive Superconducting Fault Current Limiter	77
	Dmytro Fedasyuk, Pavlo Serdyuk	
18.	Modification of Conjuncterms Splitting Method of Boolean Functions Minimization	81
	Vadym Minzyuk	
19.	Definition of a Vector of a Condition Nonlinear Systems by Results of Supervision	83
	Eduard Ushakov	
20.	DC characteristics of the SiC MESFETs	87
	Janusz Zarębski, Damian Bisewski	
21.	Modelling Power Schottky Diodes	90
	Janusz Zarębski, Jacek Dąbrowski	
22.	The Electrothermal Ben-Yaakov Model of the Diode-Transistor Switch for an Electrothermal Analysis of BUCK Converters	94
	Janusz Zarębski and Krzysztof Górecki	
23.	Contrastometric fiber optic elongation sensor	97
	Mieczysław Szustakowski, Norbert Palka, Bogdan Kizlik	
24.	Research of declinations of the states of objects of control on basis LSIM-3	99
	Irina Andrushko	
25.	Modified generalized data structure of the system of set and editing of formulas of abstract algorithms	101
	Andriy Vasyluk	
26.	Ontology modeling and supporting software system implementation for the information sharing processes within labour market'	103
	Tetiana Sakalo	
27.	Energy spectrum of impact casual quasimixed type signals	105
	Andrey Smerdov, Alexandr Brykun, Ivan Polyakov	
28.	Computational Confirmation of Project Synthesis Mathematical Models' Adequacy	106
	Omar Radhi Aqeel Alzubi	
29.	Application of the Bayesian Networks In the Informational Modeling	108
	Tatyana Shatovskaya, Victoria Repka, Anastasia Good	
30.	The Forming Method Of The Equation Of Linear Parametric Circuit	109
	Yuriy Shapovalov, Anatoliy Gulaygrodskiy	
31.	Mathematical modeling of passing connection synchronous telecommunications network in fuzzy conditions	112
	Ivanna Dronjuk, Mychajlo Klymash, Mychajlo Oleksyn	
32.	New hydraulic head with load moment adaptation	114
	Piotr Preibisch, Marek Kuchta, Krzysztof Fokow, Kazimierz Łapiński	
33.	Mathematical model of network microresonator	117

	T. Sviridova, M. Lobur, D. Korpyljov, S.Tkachenko	
34.	Modeling of concentration profiles redistribution of alloying impurity at local oxidation of silicon	120
	Volodymyr Berezhansky	
35.	Tolerable area creation with genetic algorithm	121
	Vladimir Krischuk, Bogdan Artyushenko, Galina Shilo	
36.	Computer Modeling of Transient Processes of Elements with Distributed Parameters	125
	Petro Stakhiv, Andriy Korud, Oksana Hoholyuk	
37.	Simulation Features of electric circuits with components described by discrete parameters	127
	Serhiy Rendzinyak, Andriy Korud	
38.	Parallel Genetic Algorithm of Test Generation For Digital Circuits	129
	Skobtsov Y.A., El-Khatib A.I., Ivanov D.E.	
39.	Mathematical description of graphic facilities of documents defence	132
	Vladimir Pashkevich, Mykola Medykovskiy	
40.	Mathematical Model Of Fluidic Piezoelectric Micropump	136
	P. Denysyuk, V. Tesliuk, M. Pereyma, M. Lobur, I. Khimich	
41.	Research of Stability of Non-Stationary Control Systems	139
	Olena Natalych	
42.	Evaluation of Macromodels of Monolithic Current Mode PWM Controllers	141
	Krzysztof Górecki and Witold J. Stepowicz	
43.	ON-Resistance of Power MOSFETs	145
	Janusz Zarębski, Rafał Zarębski	
44.	Technical research of energy-efficient technologies in the field of compressor technics on the basis of the controlled asynchronous electric drive with the matrix converter	148
	Valeriy Zhuykov, Oleksandr Sobolev, Viktor Spivak	

SECTION 2

INTELLECTUAL METHODS AND MEANS OF INFORMATION MODELLING, ACQUISITION, TRANSFORMATION, PROCESSING AND PROTECTION

1.	Computer Devices Diagnostic Method on the Base of the Information Model	152
	Oksana Pomorova	
2.	Recognition of Multi-Sensor Output Signal Using Modular Neural Networks Approach	155
	Iryna Turchenko, Volodymyr Kochan and Anatoly Sachenko	
3.	Interval Identification of Dynamic Model of Realization of Bakery Produce	159
	Mykola Dyvak, Iryna Kalishchuk, Yevheniya Martsenyuk	
4.	Synthesis of Structure of Genetic Algorithm of Structural Identification of Interval Models of Static Systems	164
	Mykola Dyvak, Volodymyr Manzhula	
5.	Features of Parallel Computing of Task of Parametrical Identification of Static Systems	167
	Horishnyy O., Stakhiv P., Bidlovskyy A.	
6.	Multichannel Mixing of Speech Signals Accordant with the Method of Multistage Mixing	169
	Anatoly Melnyk, Ruslan Shevchuk, Hryhory Sapozhnyk	
7.	Estimation of Efficiency of Adaptive Procedure of Creation of Interval Models for Decisions Support	173
	Mykola Dyvak, Andriy Pukas	
8.	Application Features of Commercial and Open Source Intrusion Detection Systems in the High-speed Corporate Networks	176

	Taras Dutkevych, Andrian Piskozub	
9.	Integral Nonlinearity of ADC's Conversion Characteristic Identification	178
	Roman Kochan, Orest Kochan	
10.	Specialized program module for forming the program models of behavior algorithms of information systems	181
	Bohdan Volochiy, Oleksandr Matichyn, Leonid Ozirkovskyy	
11.	Grid System for Satellite Data Processing	183
	Andriy Shelestov	
12.	Improved Method of Face Detection Using Color Images	186
	Vasyl Koval, Yuriy Kurylyak, Ihor Paliy, Anatoly Sachenko	
13.	Modeling Of Fault-Tolerant System With Mixed Structural Redundance On The Basis Of Iterative Principle Of Construction	189
	Bogdan Volochiy, Leonid Ozirkovskyy, Andriy Makhovskyy	
14.	Network Safety Monitoring System with Suspicious Hosts Early Localization	191
	Vadim Mukhin, Artem Volokita	
15.	Neural-Based Vehicle Travel Time Prediction Noised by Different Influence Factors	195
	Volodymyr Turchenko, Viktor Demchuk	
16.	Development of Web-based instrumentation	199
	Volodymyr Hrusha, Olexander Osolinskiy, Roman Kochan, Grigoriy Sapojnyk	
17.	Model of Periodical Thermal Chemical Processes with Fuzzy Parameters	202
	Yuriy Pigovsky	
18.	The system organisation and basic algorithms of the Simulation- and Servicecentre for the coal industry	205
	Oleksiy Cheptsov	
19.	Fine-Grain Parallelization of Recurrent Neural Networks Training	208
	Volodymyr Turchenko	
20.	An Agent Approach for Providing Security in Distributed Systems	212
	Serhiy Skakun, Nataliya Kussul	
21.	Consumption Control at Local Objects Using Delaying m-Filters	216
	Valery Zhuikov, Julia Petergerya	

SECTION 3 SIGNAL AND IMAGE PROCESSING IN RADIOELECTRONIC AND TELECOMMUNICATION SYSTEMS

1.	Neuro-fuzzy Model for Image Processing in Electro-optical Applications	218
	Petrosyuk Iryna	
2.	Synthesis Of Control Units With Transformation Of The Object Codes For Telecommunication Systems	222
	Aleksander Barkalov, Larysa Titarenko	
3.	A novel approach to weight matrix generation for gamma-ray tomography	226
	Slawomir Lewandowski	
4.	Filtering of Frequency Modulated Signals Embedded in α-Stable Noise Using Robust DFT Forms	228
	Oleksiy Roenko, Volodymyr Lukin, Igor Djurović, Andriy Kurekin, Oleksandr Zelensky	
5.	Joint estimation of additive and impulsive noise parameters in remote sensing images with fractal structure	232
	Mikhail Uss, Vladimir Lukin, Igor Baryshev, Benoit Vozel, Kacem Chehdi	
6.	The Method Of Image Contour Segmentation Based On Wavelet Transform And Mathematical Morphology	236
	Victor Krylov, Marina Polyakova	
7.	Inner Product Determining in Spread Spectrum Signals Representation and Detection	239

	Yaroslav Dragan, Bohdan Yavorsky	
8.	Binary cyclic M-sequences decoding by positional key convergence method	243
	Stepan Melnychuk	
9.	Methods of random signals recognition	246
	Valery Bezruk	
10.	Application for an electronic Administrative Office	248
	Jacek Kotek, Wojciech Zabierowski, Andrzej Napieralski	
11.	Quantitative Analysis of Metallographic Images	251
	V. Korniy, B. Rusyn, Y. Lysak, O. Lutsyk	
12.	The Hierarchical Objects Analysis on Images of Cutting Tool Wear Zones	253
	Svetlana Antoshchuk, Alexandr Derevianchenko, Elena Tkachenko	
13.	Identification of Plane Layered Structure from Specified Angular Characteristic of Reflectivity	256
	Andriy Synyavskyy, Jozef Modelski	
14.	Modern digital matched filters and correlators for active radar	260
	Bychkov V.E. Mrachkovsky O.D. Pravda	
15.	Protection noiseproof device on radiating cables	262
	Ivan Prudyus, Roman Prots, Volodymyr Storozh	
16.	Texture defect detection with non-supervised clustering	266
	Lukasz Tomczak, Volodymyr Mosorov, Dominik Sankowski	
17.	Multiphase Recurrent Signals Systems V	269
	M. Symyk, I. Prudyus, M. Ficac	
18.	Image processing in the complex monitoring system radiometric channel	271
	Ivan Prudyus, Oleksandr Denisov, Leonid Lazko	
19.	Integrated Two Spectral Active- Passive System of Radiomonitoring Millimetric Range	273
	Anatoliy Zubkov, Olexander Denysov, Ivan Prudyus, Lubomir Smerklo , Roman Andruschak	
20.	The synthesis of adaptive consecutive procedures in the conditions of non-stationary interferences	274
	Eugene Krotukov	
21.	Processing The Signals In User Radioaccess Systems	275
	Yulia Kolyadenko	
22.	Methods for Lossy Compression of Images Corrupted by Multiplicative Noise	278
	Nikolay Ponomarenko, Vladimir Lukin, Mikhail Zriakhov, Oleksiy Pogrebnyak	
23.	Real-Time Measuring Of Engine Operation Periodograms Spectral Estimates	282
	V. Kychak, Yu. Martsenyuk, Yu. Yushchenko	
24.	Probing efficiency algorithms nonlinear single-channel processing gauss signals on a background gauss interferences	284
	Dennis Davidov	
25.	Method of Nonlinear Digital Filtration on the Basis of Data Randomization	285
	I. Pylypenko, I. Drevnytska, N. Kachan	
26.	Short-Pulse Imaging System	288
	Marek Bury, Yevhen Yashchyshyn, Józef Modelski	
27.	Research of Amplitude – Time Characteristic of Television Signal Reflected From a Meteoric Trail in Spaced Radar System	291
	A.N. Oleynikov, D.M. Sosnovchik	
28.	Parametrical Recognition Algorithm Synthesis Based on the Sequential Analysis	294
	Borys Kapustiy, Bohdan Rusyn, Vitaliy Tayanov	
29.	Methods of the metal surface reconstruction from images	297
	M. Kobasyar, V. Kozhan, B. Rusyn	
30.	Neural Network Models Of The Generalized Fast Trigonometric Transformations	301
	Mykhailo Yatsymirskyy, Oleh Liskevych	

31. **Spline-Fourier transformation for solving radio-locating signals processing problems** 303
Kolganova H.O., Fischuk A.L., Shutko V.N.
32. **Nondirectional Antenna With Rotating Polarization** 305
L. Ya. Ilitskiy, Turabi Osama

SECTION 4

METHODS AND DEVICES FOR INFORMATION CONVERSION, PROCESSING AND STORAGE

1. **DFA Countermeasure Method for LFSR-based Stream Ciphers and Fault Detection Circuit** 309
Valery Shyrochyn, Ihor Vasyltsov, Bohdan Karpinskij, Volodymyr Kurtjak
2. **Determination of the Soil Parameters from Multichannel Remote Sensing Data** 313
Gennady Kulemin
3. **Factors restricting accuracy of CCD camera images founded high temperature measurements** 317
Krzysztof Strzecha, Anna Fabijańska
4. **Physical aspects of Photonic Crystal Fibers** 320
Mieczysław Szustakowski, Norbert Palka, Wiesław Ciurapinski
5. **Features of Digital Data Processing in Power Objects Monitoring Devices** 324
Olga Doronina, Victor Tkachenko, Serhiy Khomych
6. **Operation peculiarities of the fluxgate sensor in non-uniform compensation magnetic field** 327
Andriy Marusenko
7. **Radiothermometric Control of Tissue Metabolism at Infrared (IR) Exposure** 330
Olexandr Azarkhov, Vitaliy Bulgakov, Sergiy Sakalo
8. **A Television System for Gap Visualization, Measurement and Adjustment** 333
Zenon Hrytskiv, Anatoliy Pedan, Gennadiy Turkinov and Volodymyr Shkliarskyi
9. **Investigation of the Block-Stream Code and the Analysis of Its Properties** 336
Gennady Nikulishchev, Anton Govorov, Galina Kozina
10. **Application recognizing the pitch of human voice and presenting the outcome in music notation** 338
Maciej Dybowski, Wojciech Zabierowski, Andrzej Napieralski
11. **Realization of Programmable Switched-Current Differentiating Matrix for Signal Filtration Purposes** 341
Mariusz Jankowski, Adrian Romiński
12. **Modern Trends of Data Stream Generation of Audio-Video Content** 345
Volodymyr Shvaichenko
13. **Comparative Analysis of Secret Information Leakage Risk during Timing Analysis of General Modular Exponentiation Methods** 347
Mykola Karpinskyy, Ihor Vasyltsov, Lesya Vasylkiv
14. **All-Wave TV Antenna** 351
Boris Pavlov, Oleg Samsonyuk
15. **Efficiency of Risk Assessment Methods** 353
Denys Ponomaryov
16. **The Study of Requirements for the System of Automatic Measurement of Vegetation Cover in River Catchments** 355
Wojciech Bieniecki and Edyta Kiedrzyńska
17. **Information Encoding Method of Combinatorial Optimization** 357
Volodymyr Riznyk, Oleh Riznyk, Bohdan Balych, Volodymyr Parubchak
18. **Analysis of Peculiarities of Determination of the Electromagnetic Field Parameters near Radiation Sources** 358
Eugeniusz Grudziński, Vitalij Nichoga, Petro Dub

SECTION 5

COMPUTER TECHNOLOGIES IN INFOCOMMUNICATION SYSTEMS

1.	Fault Coverage Improving for SoC Based on IEEE1500 SECT standard	362
	Kulak Elvira, Kaminska Maryna, Guz Olesia, Parfentiy Alexander	
2.	Estimation's Method at Most Attainable of Lengths a Symmetrical Digital Subscriber Line on xDSL-technologies: Engineering-Maintenance Methods of the Calculation	365
	Victor V. Panteleev	
3.	The Analysis of Modern FSM Description Languages	370
	Gennadiy Krivulya, Eugene Kovalyov, Olga Korobko, Mikhail Laptev	
4.	CAD Tools for CORDIC IP Cores Generation	375
	Vladimir Hahanov, Olga Melnikova, Dmitriy Melnik, Philat Levchenko	
5.	Intellectual analysis of data at development of the expert systems	379
	Valeriy Dubrovin, Larisa Deynaga	
6.	Methods of multicriteria optimization in telecommunication networks planning and controlling	381
	Valery Bezruk, Iren Svid, Igor Korsun	
7.	Hardware/Software Method of Digital SoC Verification	384
	Vladimir Hahanov, Anna Kiyaschenko, Alexander Parfeniy, Hassan Ktiaman	
8.	Hierarchical Clustering Algorithms for Large Datasets	388
	Yuri Stekh, Andriy Kernytsky, Mykhaylo Lobur	
9.	Synthesizing and designing of associative adder of residual number system in the Galua code basis	391
	Nazar Krutskevych, Yaroslav Nykolajchuk	
10.	Architecture and system characteristic of distributed computer network with autonomous sensors equipment	394
	Zastavniy O.M., Krytskevych N.D., Nykolaychuk Y.M.	
11.	Distributed Applications Testing Methods	399
	Jan Olszewski, Bartosz Sakowicz, Andrzej Napieralski	
12.	Update and Modification Application for WWW templates	406
	Jacek Słomczewski, Wojciech Zabierowski, Andrzej Napieralski	
13.	About one approach to the classification of program agents	410
	Valentin Filatov	
14.	Software Simulation of Digital Treatment of Signals in Computer Networks with the Opened Optical Channel	412
	Taras Grynchyshyn	
15.	Theoretical aspects of synthesis of the distributed database it is information-training environments on the basis of technology a client-server	414
	Bogush O.S	
16.	Integration and communication of Web-systems information and computing resources	417
	Nikolay Alekseyev, Mihail Tyutin	
17.	Modified Fuzzy Intelligence System	420
	Maxim Ternovoy	
18.	The approaches for designing data-processing resource	423
	L.S. Globa, T.M. Kot	
19.	Hierarchical Testing of Complex Digital Systems	426
	Vladimir Hahanov, Volodymyr Obrizan, Vladimir Yeliseev, Wade Ghribi	
20.	Logic Net Hardware Synthesis	430
	Olga Lukashenko	
21.	Information Technology of Construction of Instant and Integral Data Movement Economic Epurs on the Basis of Computer Networks Matrix Models Cycles	432
	Igor Pitukh	

22.	Classification of methods of approximate calculation for the decision of tasks of large dimensional	434
	Nina Terenteva	
23.	Improvement of method of the silicic compiling through discrete optimization of topology and structurally-technological limitations of the integrated circuit	436
	Roman Atamanyuk	
24.	Verification of topology and «radial» algorithms in submicron technology of IS	438
	Oksana Atamanyuk	
25.	Digitization of a copper cable of a primary network	440
	Vladimir Pedyash	
26.	MEMS testing: goals and needs	442
	T. Sviridova, M. Lobur, U. Marikutsa, D Korpyljov	
27.	Problems in creation of information systems of legal knowledge and estimation of entropy of legal information	444
	Lyubov Nykolaychuk, Oksana Chehodar	
28.	Prospects of use of data motion models for the analysis of documentation flows in administrative-management systems	446
	Halyna Korniychuk, Yaroslav Nykolaychuk	
29.	Methodology of formalization system objects of interactive computers models	449
	Novhorodskij A.M., Nykolaychuk Y.M.	
30.	Harmonic Balance Technique in Context of Functional Hardware Verification	450
	Gennady Serdyuk, Boris Shelkovnikov	
31.	The Meteor Burst Radio Channel Using Prospects	453
	Ivan Antipov, Yury Koval', Veronika Obel'chenko	
32.	Offered structure of uninterruptible power supply systems	454
	Roman Hirnyak	
33.	Distributed reporting system based on Java 2 Micro Edition	456
	Rafal Markiewicz, Bartosz Sakowicz, Andrzej Napieralski	
34.	Configurable Client Email Application Working as Web Page	460
	Krzysztof Ratecki, Bartosz Sakowicz, Marcin Wojtowski, Andrzej Napieralski	
35.	Web positioning	464
	Wojciech Zabierowski, Krzysztof Łysiak	
36.	Efficiency Increasing of Electro- and Acousto-Optical Light Modulators as Main Component of Fiber-Optical Systems for Information Transmission	466
	Anatoliy Andrushchak	
37.	Loading Calculation and Modernization of Synchronous Metropolitan Area Networks	469
	Taras Andryhiv, Mychailo Klymash, Vasyl Romanchuk, Mychailo Oleksin	
38.	Research of Differential Group Delay and Design of Scheme for Polarization Mode Dispersion System Minimization	471
	Evgen Chernykhivsky, Mykhailo Klymash	
39.	Problems of dissimilar clients functioning as components of integrated wireless network	474
	Volodymyr Yankevych, Grygoriy Vaskiv	
40.	Method for Calculation of the Reception Capacity of Leased Telecommunication Channel	475
	Ivan Gorbatyy, Alexander Tymchenko	
41.	Automats of intercourse of man with a computer	477
	Tatyana Korniychuk	
42.	Methods transformation and protection information which transmit by communication lines	481
	Sergei Zybin, Vladimir Khoroshko	
43.	Theoretical and Methodological Aspects of Intensive-Converter Systems of Telecommunicational Complex Organization	482

	Vladimir Smyrnov, Alexander Samkov, Tatiana Bulgach	
44.	Information Struggle	483
	Alina Gorobets	
45.	Corporate Networks: Information Security	483
	Maria Kapustyan	
46.	Information wars in computer communication system	484
	Vladimir Bogush, Nicolay Brailovskyy, Dmitriy Chirkov	
47.	Factors To Efficiency Of The Systems Of Protection Information Resource Systems Of The Special Purpose	485
	Volodimir Khoroshko, Viktoria Orlenko	

SECTION 6 RADIO ELECTRONIC EQUIPMENT AND TELECOMMUNICATION DEVICES

1.	Discontinuities Effect Compensation in the Narrowband Matching Circuits, Based on Transmission-Line Transformers	486
	Valeriy Oborzhytskyy	
2.	Synthesis Of Microprogram Control Units For Telecommunication Systems	488
	Marian Adamski, Larysa Titarenko, Remigiusz Wisniewski	
3.	Radiomeasurement Transducer to Magnetic Induction with Frequency Output	490
	Vladimir Osadchuk, Alexander Osadchuk	
4.	Comparison of tolerances in constructions of microstrip filters on coupled lines	493
	L.M. Karpukov, R.D. Pulov, A.Y. Farafonov	
5.	Time characterization versus classical antenna parameters in Ultra-Wide Frequency Bands	497
	Yevhen Yashchyshyn, Marek Bury	
6.	Strategic approach to providing QoS in the NGN networks	499
	Irina Solovskaya	
7.	Implementation of the Block Diagrams of the Microwave Parametric Interference Transducers	502
	Yuri Gimpilevich, Yunus Smailov, Aleksey Savchuk	
8.	Frequency-dependent Synthesis of Waveguide Antennas According to the Amplitude Characteristics	504
	Mykhaylo Andriychuk, Olga Zamorska	
9.	Decreasing of Phase Locked Loop Noise Threshold	508
	Andriy Bondarev	
10.	New research results of nonlinear effects and spectral efficiency in the radio channels of the modern communication systems	510
	Shokalo V.M., Luchaninov A.I., Gavva D.S., Gretsikh D.V., Lihograj V.G., Strelnytskyi A.E., Sukhomlinov D.V., Strelnytskyi A.A., Babanskaya E.V., Krikun E.V.	
11.	Liquid Crystal Glasses for Coloured Television Stereoreceiver	512
	Zoja Dutchak, Larisa Rakobovchuk, Bogdan Yavorsky	
12.	Electromagnetic Cavity Resonator Excited by Thin Radiator	515
	Yosyp Zakharia	
13.	Hierarchical Decomposition of Petri Nets for Digital Microsystems Design	518
	Andrei Karatkevich, Grzegorz Andrzejewski	
14.	Concerning an Advantage of Television Optical Scanning Microscopy	522
	Zenon Hrytskiv, Anatolii Pedan	
15.	Analysis of Kurtosis Distribution of Synchronization Error	524
	Andriy Bondarev, Oxana Lazko, Leonid Nedostup	
16.	Device for Subsurface Resistance Measurement	527
	Valeriy Korepanov, Volodymyr Glemba, Oxana Lazko, Mychaylo Terleckyy	
17.	Synthesis Of Fast Control Units For Telecommunication System	530
	Aleksander Barkalov, Marek Węgrzyn, Arkadiusz Bukowiec	

18.	Alternating current converter	533
	Anatoliy Druzhinin, Ihor Ostrovskii, Iurii Kogut	
19.	Increasing of order astatism in amplifiers of D class with combined control	534
	Anatoly Andreev, Alexander Kochetkov, Artem Kupratsevich	
20.	DWDM – Technology: a Noise Immunity and Qualitative Analysis of Operation	535
	Mykhailo Klymash, Ivan Demydov, Victor Turupalov	
21.	Methods for Results Presentation of Velocity Vector Measurement in Television Scanning Optical Microscopy	539
	Anatolii Pedan, Yuriy Matiieshyn	
22.	Expansion of the Range of Velocities Measurement for High-velocity Micro Objects in Television Scanning Optical Microscope	542
	Zenon Hrytskiv, Volodymyr Shkliarskyi	
23.	Definition of the Contiguous Frames Signals Difference in the Thermovision Camera Processor	545
	Igor Bozhenko, Petro Kondratov	
24.	Analytical method of periodical controls of slave synchronization devices of telecommunication networks concerning objects having the transfer function with real poles	547
	Valentin Borsch, Oleg Ghelchin, Valeriy Koval, Evgeniy Korshun, Mikhailo Oleksin	
25.	The law of a switching surface of the periodical controlling excitations in terms of optimum speed of response of a movement in a three-dimensional phase space of synchronization of telecommunication networks	549
	Igor Sheremet	
26.	Interference filters: tree-component dielectric systems	551
	Volodimir Fitio, Irina Yaremchuk, Yaroslav Bobitski	
27.	Strategy of flanged radiators design	554
	Nikolay Gaponenko, Eugeny Ogrenich	
28.	Research of design methods of antennas based on curvilinear transmission slotline	557
	Oleksiy Liske	
29.	The analysis of power transformations in oscillatory devices with control that is optimum on speed of response	559
	Kolomiets M.V.	
30.	Uhf Transceiver	561
	Lubomyr Smerklo, Yaroslav Kempa, Yaroslav Rybak, Volodymyr Rybak, Zenovij Dufanets, Vasiliy Hnativ	
31.	Functional decomposition algorithm of Boolean functions with the use of q-Partition method	562
	Bohdan Rytsar , Adrian Shvaj	
32.	The mathematical model of the analog-digital converter	564
	Vasyl Kychak, Gennadiy Bortnik, Sergiy Bortnik	

SECTION 7

ENSURING OF QUALITY AND RELIABILITY OF RADIO ELECTRONIC AND TELECOMMUNICATION DEVICES

1.	Multichannel systems with analytic nonlinearities synthesis	566
	Boris Kuznetsov, Valerij Kolomiets, Ludmila Kuznetsova, Tatyana Nikitina	
2.	Compressible placing of dummy elements in nano-scale VLSI layout	568
	Victor Holota	
3.	Hdl-models verification strategy	570
	Gennadij Krivulya, Yevgeniya Syrevitch, Andrey Karasev, Anastasiya Krasovskaya	
4.	The Feature Selection Method Based on the Evolutionary Approach With a Fixation of a Search Space	574

	Sergey Subbotin, Andrey Oleynik	
5.	Usage of the Analytic Hierarchy Process for Production Optimization	576
	Valeriy Dubrovin, Natali Mironova	
6.	The analysis of noiseproof circuits of digital electronic equipment	578
	Volodymyr Krischuk, Ravil Kudermetov, Anatoly Pritula	
7.	Forming Logical Deduction Technique of Repeated Software Testing System	580
	Tetyana Govoruschenko	
8.	The Methodology of Determination of SDH-Network Structural Reliability. Mathematical and Imitating Models	582
	Mykhailo Klymash, Roman Pavlyuk	
9.	Diagnosing of Radio-Electronic Equipment With the Help of Traditional CAD Systems	585
	Konstantin Kasyan, Nikolay Kasyan	
10.	Calculating tolerances by correlation tangent method	588
	Galina Shilo, Darja Kovalenko, Mykola Gaponenko	
11.	Evaluation of the metrological reliability of the means of measuring techniques of the aircraft radio systems	591
	Maxim Yakovlev, Anatoliy Volobuyev	
12.	Mathematical models of reliability of components parametrical synthesis	593
	Yuriy Bobalo, Leonid Nedostup, Oxana Lazko, Volodymyr Glemba	
13.	Electronic Devices Components Parameters Long-term Investigation Automation	597
	Yuriy Bobalo, Volodymyr Glemba, Oxana Lazko, Leonid Lazko, Leonid Nedostup	
14.	Genetic Algorithms Application for Components Parametric Synthesis Optimization	599
	Oxana Lazko	
15.	Research of nonlinear properties of systems, based on means of methods of numbers by Volterr	600
	Tatyana Doroshenko	
16.	Modeling Reliability of Unsymmetrical Ramified Systems	602
	Dariya Marunchak, Andriy Sydor	
17.	Silicic compiling as instrument of planning of topology of large-scale arrays and providing its reliability at algorithmic level	604
	Atamanyuk R.B., Novosiadly S.P.	
18.	Research of influencing of alloying additions on heatproof, heat transfer and welded of the nickel coat corps IS	606
	S.P.Novosjadly, R.M.Ivanjuk	
19.	Interval tolerances assignment for non-monotone output functions	608
	Olexiy Voropay	
20.	Interval External Action Coefficients in Element Selection Problem	611
	Anton Namlynsky	
21.	The problem of highly effective cleaning of air from dust	614
	Batluk V.A., Batluk V.K.Paranyak N.M.	
22.	Design of algorithms of working of information about the state of objects	617
	Mykola Medykovskiy, Lubomyr Sikora	
23.	Using Derivative Free Approaches for Building Technological Process Optimization Software	618
	Leonid Nedostup, Myroslaw Kiselychnyk, Bohdan Mandziy, Andriy Bench	

24. **The Effect Of Structural Parameters On Electrical Resitance Of Microcontact Connections In Integrated Circuits** 619
Lubomyr Smerklo, Dmytro Dyachok, Mykhaylo Hladun

SECTION 8
COMPONENTS AND DEVICES OF ELECTRONIC TECHNIQUE
ELECTRONIC AND COMPUTER DEVICES IN BIOMEDICAL ENGINEERING

1. **Dental prosthesis' experimental measurements of the mechanical response for a numerical simulation** 620
Wojciech Michalski , Marek Kuchta , Krzysztof Fokow
2. **Electromechanical actuators in a biomedical apparatus** 623
Valentin Abakumov, Kirill Trapezon
3. **Probability Integral Parameters Identification at Heart Rate Variability Type Detection by Neyman - Pearson Criterion** 628
Yury Leschyshyn, Bohdan Yavorsky, Taras Rafa, Galina Shadrina
4. **Computer model rhythmic the cardiogram for research of characteristics heart rate variability** 630
Eugenia Yavorska, Olena Pyeh, Zoya Bondarenko
5. **The modernized complex of pulse diagnostics** 633
Eugen Storchun, Konstantin Yangurski, Larisa Glinenko, Irina Atamanova
6. **Determination of recognition signs of linguistic signals in biometric systems** 635
Fadi Al-Kalani, Andriy Kernytsky, Mamoun S. Al Rababaa
7. **Determination of Parameters of Heart Rate Variability by a Filter Method** 638
Bohdan Yavorsky, Mykhailo Bachynsky, Yuriy Leshchyshyn, Volodymyr Falendysh
8. **Operational analysis of the demodulator of derivative bioimpedance meter** 640
Andrey Smerdov, Tatyana Smerdova, Tatyana Ruzhkova
9. **Algorithm Of Determination Of Image Contours Of Biological Nature** 642
Oleg Berezsky, Yuri Bat'ko
10. **Illuminated devices for biomedicine** 645
Alexander Kozhuchar
11. **Web-oriented system for biomedical applications** 647
O.Z.Hotra, R.T.Hasko, M.Yu Baran
12. **Liquid crystal mixtures for feedback lasers** 649
Zenoviy Mykytyuk, Andriy Fechan, Vitaly Gural, Dmytro Volynjuk
13. **Modelling and macromodelling of biomedical dynamical systems in ELCAD environment using ELBASIC build-in language interpreter** 651
O.Z.Hotra, R.T.Hasko
14. **Computational model of a skeletal dental prosthesis's mechanic work** 653
Wojciech Michalski , Zbigniew Michniowski , Marek Kuchta
15. **Incomplete Medicobiologic Data Mathematical Treatment and Modeling** 656
Galyna Glemba, Oxana Lazko
16. **Nonparametric Methods Analysis for Medico-ecological Research** 657
Galina Tabunshchik, Olena Kirsanova
17. **Hardware Design For Processing Medical Signals** 659
Valeriy Semenets , Oleg Kruk
18. **The analysis of the appropriateness of the microelectromechanical systems sensor devices (MEMS) construction on the base of the active semiconductor elements** 663
Mykhaylo Matviyiv, Mykhaylo Lobur, Vasyl Teslyuk, Taras Matviyiv
19. **Non-linear properties of photon crystals: Simulation methods for prediction of relaxation strains** 664
Volodymyr Pavlysh, Liubov Zakalyk, Roman Korz

SECTION 10
MODERN PROBLEMS OF TRAINING SPECIALISTS IN THE FIELD OF RADIOELECTRONICS,
TELECOMMUNICATIONS AND COMPUTER TECHNOLOGY
DUE TO BOLOGNA PROCESS

1.	Ways of creative components improvement in the engineering education	707
	Anatolii Petrenko	
2.	Didactic Questions of Teaching of Telecommunication Problems	711
	Nadia Chernovol	
3.	Training Preparation Of Navigators For Work With Electronic Nautical Charts	712
	G.Bokov	
4.	Music Education in the Internet	713
	Mariusz Rzeźnik, Wojciech Zabierowski, Andrzej Napieralski	
5.	Training of specialists in radio electronics in terms of Bologna process	716
	Zoya Dudar, Ilona Revenchuk	
6.	Methods of search of decisions of tasks in consulting models	718
	Andrian Noha	
7.	First American-Ukrainian School of Computer Sciences and Technologies: Reality and Perspective	719
	Anatoly Sachenko, George Markowsky, Roman Pasichnyk	
8.	Transmission, receiving and processing of the information in the laser channel	720
	Alexeyev I.E., Voronin V.V.	
9.	A New Electrothermal Simulator in Analogue Integrated Circuit Design	722
	Marek Kamiński, Mariusz Jankowski, Michał Szermer	

20. **Modelling and dynamics of a knee-joint** 665
Marek Kuchta, Leszek Iwanejko, Marek Szulim, Zbigniew Sokolowski
21. **Electron system for testing and diagnostics of the vegetative status** 668
Bagaev Roman, Shvets Eugeny
22. **Passing of radiation over multy-layers biocloths in actuatory-sensory photomedical technologies** 670
Olexander Kozhuchar, Olena Tkachenko
23. **Gauges for Definition of Oxygene Permeability of Protective Films for Surfaces of Microelectronic Devices** 672
Nina Domantsevich, Bogdan Yatsyshin, Olena Aksimentyeva
24. **Fibre-optic pH sensor** 673
Zenon Hotra, Olena Aksimenteva, Iryna Hlushyk, Vladyslav Cherpak, Pavlo Stakhira
25. **Method of manufacturing precision diaphragmes wave-guide of HF-devices of a millimeter-wave** 675
Natalya Dorosh, Galyna Kuchmiy, Lyubomyr Smerklo
26. **The investigation of FeSO₄ and temperature influence on an activation energy of blood serum** 677
Zenon Hotra, Iryna Oliynyk
27. **Structures and designs of optical sensors of measurement of physical quantities** 679
Maryan Shymchyshyn, Alexander Sulima
28. **The analysis of features of optic fibres in sensors of physical quantities** 683
Alexander Sulima, Maryan Shymchyshyn
29. **Prime transducer of harmful gases of curriculum of food products** 687
Zenon Mykytiuk, Orest Sushynskyy, Vladyslav Cherpak, Iryna Glushyk, Marija Chohan, Vasyl Dmytrah

SECTION 9

ECONOMIC PROBLEMS OF DESIGN AND PERFORMANCE OF RADIOELECTRONIC, TELECOMMUNICATION AND COMPUTER NETWORKS

1. **Application of CAD/CAE/CAM-systems for anticrisis management of industrial financial groups** 690
Marija Kolisnyk, Kostjantyn Kolesnyk
2. **Agent's technologies of automated system for enterprise management** 692
Anton Goretsky
3. **Automatic Integration of Distributed Cultural Services on Example of Lodz City Hall Website** 694
Stanislaw Peczak, Bartosz Sakowicz, Krzysztof Dura, Andrzej Napieralski
4. **Management of development of computer and tele-communication maintenance of services sphere enterprises** 696
Igor Novakivsky, Kataryna Protsak
5. **Solving the Problems of Modern Radioelectronic and Telecommunication Problems for a Sustainable and Balanced Regional Growth** 697
Halyna Kopets, Ostap Semeniv, Olga Shchur
6. **Information Computing System for Municipal Energy Management** 698
Halyna Kopets, Taras Kopets
7. **Economic Problems of Implementation and Application of Telecommunication and Computer Networks in Ukraine** 699
Brunets Bohdana, Drobenko Julia
8. **Research of the Distributed Information Systems Efficiency on the Basis of Prime Price Diagrams of Data Movement Cycles** 700
Natalia Vozna
9. **Web Technologies In Management Of Small And Middle Size Firms** 702