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# 14<sup>th</sup> International Conference on Advanced Trends in Radioelectronics, Telecommunications and Computer Engineering (TCSET)

*Conference Program*

Lviv-Slavske, Ukraine  
February 20-24, 2018

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- IEEE Ukraine Section
- IEEE MTT/ED/AP/CPMT/SSC Joint West Ukraine Chapter
- Lviv Polytechnic National University, Ukraine
- Military University of Technology, Poland

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## CONFERENCE SECTIONS

Section ID	Section Title	Number of accepted papers
<b>S1</b>	Radar systems, satellite communication, navigation, positioning systems, monitoring	18
<b>S2</b>	Information systems and technologies, computer-aided design	36
<b>S3</b>	Electronic circuits and signals, electro-technical and electro-energetic systems	19
<b>S4</b>	Electronics, photonics and innovative optical technologies: systems and devices, micro- and nanotechnologies	24
<b>S5</b>	ICT systems and networks, Internet of Things, Cybersecurity	18
<b>S6</b>	Antennas, microwave technology and electromagnetic compatibility	17
<b>S7</b>	Biomedical engineering	21
<b>S8</b>	Quality, reliability and diagnostics of electronic and information systems and devices	14
<b>S9</b>	Simulation in radio electronics, communications and computer sciences	13
<b>S10</b>	Information processing	21
<b>S11</b>	Telecommunications: wired and wireless systems, network services, management	40
<b>S12</b>	Models, algorithms, software and hardware construction means of information and communication and radio electronic devices and systems	30
<b>ACCEPTED PAPERS, TOTAL</b>		271
<b>SUBMITTED PAPERS, TOTAL</b>		427
<b>ACCEPTANCE RATE</b>		0,63

## TIME LIMITS

<b>Plenary session:</b> up to 30 min	<b>Regular sessions:</b> up to 15 min
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## PROGRAM AT A GLANCE

February 20 Tuesday	09:00-14:00	Registration
	14:00-16:00	Conference Opening and Plenary Session
	16:00-16:30	Coffee Break
	16:30-18:30	Plenary Session
February 21 Wednesday	09:00-13:00	Regular Sessions
	13:00-14:00	Lunch
	14:00-18:00	Regular Sessions
	19:00-EOD	Welcome Party
February 22 Thursday	09:00-20:00	Social and Entertainment Events
February 23 Friday	09:00-13:00	Regular Sessions
	13:00-14:00	Lunch
	14:00-18:00	Regular Sessions
February 24 Saturday	10:00-11:00	Conference Final Session

## CONFERENCE TIMETABLE

Time	February 20 Tuesday	February 21 Wednesday				February 22 Thursday	February 23 Friday			
09.00	Registration	S1	S7	S12 (1)	S6	Social and Entertainment Events	S12 (2)	S8	S9	S5
10.00										
11.00										
12.00										
13.00	Lunch				Lunch					
14.00	Conference Opening and Plenary Session	S2 (1)	S11 (1)	S4	S10		S11 (2)	S2 (2)	S3	
15.00										
16.00	Coffee Break									
17.00	Plenary Session									
18.00	Free Time	Free Time					Free Time			
19.00		Welcome Party								
20.00										

## CONFERENCE OPENING

Tuesday, February 20

**14.00 – 14.30**

1.	<i>Yuriy Bobalo (Ukraine)</i> <b>Welcome Speech and Participants Congratulation</b>
2.	<i>Ievgen Pichkalov (Ukraine)</i> <b>Welcome Speech from IEEE Ukraine Section</b>

## PLENARY SESSION

Tuesday, February 20

**14.30 – 18.30**

### Co-Chairs:

Prof. **Mykhailo Klymash**, Lviv Polytechnic National University, Lviv, Ukraine

Prof. **Piotr Kaniewski**, Military University of Technology, Warsaw, Poland

1.	<i>Piotr Kaniewski and Tomasz Kraszewski (Poland)</i> <b>Drone-Based System for Localization of People Inside Buildings</b>
2.	<i>Patrik Rusnak, Jan Rabcan and Miroslav Kvassay (Slovakia)</i> <b>Time-Dependent Reliability Analysis based on Structure Function and Logic Differential Calculus</b>
3.	<i>Andriy Luntovskyy (Germany)</i> <b>Advanced Software-Technological Approaches for Mobile Apps Development</b>
4.	<i>Orest Lavriv, Mykhailo Klymash, Ganna Grynkevych, Olga Tkachenko and Volodymyr Vasylenko (Ukraine)</i> <b>Method of Cloud System Disaster Recovery Based on “Infrastructure as a Code” Concept</b>
5.	<i>Sergii Telenyk, Oleksandr Rolik, Eduard Zharikov and Andrii Koval (Ukraine)</i> <b>Dynamic Management of Data Center Resources Using Reinforcement Learning</b>
6.	<i>Olexiy Odokienko, Volodymyr Pavlikov, Nikolay Ruzhentsev, Valeriy Volosyuk, Semen Zhyla, Sobkolov Anton and Nguyen Van Huu (Ukraine)</i> <b>Two Frequency Radiometric Complex for Atmosphere Research</b>
7.	<i>Mykola Dyvak, Iryna Oliynyk, Yurii Maslyiak and Andriy Pukas (Ukraine)</i> <b>Static Interval Model of Air Pollution by Motor Vehicles and Its Identification Method</b>

8.	<i>Yevhen Yashchyshyn, Krzysztof Derzakowski, Grzegorz Bogdan, Konrad Godziszewski, Cheol Ho Kim and Bonghyuk Park (Poland, South Korea)</i> <b>Suitability of S-PIN Diodes Used in Reconfigurable Antennas</b>
9.	<i>Alexander Zemliachenko, Vladimir Lukin and Mohammad Alhihi (Ukraine, Jordan)</i> <b>Analysis of approaches to hyperspectral data compression based on orthogonal transforms</b>

**S1: Radar systems, satellite communication, navigation,  
positioning systems, monitoring**

Wednesday, February 21

**09.00 – 13.00**

Co-Chairs:

Prof. **Piotr Kaniewski (Poland)** and Prof. **Volodymyr Pavlikov (Ukraine)**

**ORAL SESSION**

1.	<i>Jan Kelner, Bogdan Uljasz and Leszek Nowosielski (Poland)</i> <b>BER measurements in the evaluation of operation correctness of VSAT modem traffic interfaces</b>
2.	<i>Damian Grzechca, Krzysztof Hanzel and Krzysztof Paszek (Poland)</i> <b>Accuracy analysis for object positioning on a circular trajectory based on the UWB location system</b>
3.	<i>Oleksandr Tsopa, Nikolay Ruzhentsev, Vladimir Pavlikov and Anatolii Merzlikin (Ukraine)</i> <b>Methodical maintenance of radiometric measurements of atmosphere at millimeter waves range</b>
4.	<i>Andrii Hryvachavskyy, Ivan Prudyus, Leonid Lazko and Sergiy Fabirovskyy (Ukraine)</i> <b>Methods of multispectral image fusion at the pixel level</b>
5.	<i>Michał Łabowski and Piotr Kaniewski (Poland)</i> <b>A Method of Swath Calculation for Side-looking Airborne Radar</b>
6.	<i>Valeriy Volosyuk, Olexiy Odokiyenko and Volodymyr Pavlikov (Ukraine)</i> <b>Algorithm for Optimal Primary Signal Processing in a Radiometer with an Unstable Gain</b>
7.	<i>Valeriy Oborzhytskyy, Volodymyr Storozh and Yuriy Matiieshyn (Ukraine)</i> <b>Microwave motion sensor with amplitude-manipulated reflected signal</b>
8.	<i>Valeriy Bezruk and Grigoriy Khlopov (Ukraine)</i> <b>Radar Recognition of Given and Unknown Meteorological Objects</b>
9.	<i>Bohdan Volochiy, Volodymyr Onyshchenko, Mykhailo Zmysnyi and Ihor Kulyk (Ukraine)</i> <b>Synthesis of Components Effectiveness Factors of Guard Signaling Complex with Layout of Three Seismic Sensors in Control Zone and with Majority Principle of Taking Decisions</b>



### POSTER SESSION

1.	<i>Igor Tovkach, Oleksandr Neuimin and Serhii Zhuk (Ukraine)</i> <b>Filtration of parameters of the UAV movement based on the RSS-measurement at the unknown power of the transmitter</b>
2.	<i>Jan Matuszewski (Poland)</i> <b>Radar signal identification using a neural network and pattern recognition methods</b>
3.	<i>Aykut Demirci and Nurhan Turker Tokan (Turkey)</i> <b>Performance of Corrugated Feed Horn for Satellite Earth Station Antennas</b>
4.	<i>Olga Petrova, Galyna Tabunshchuk, Tetiana Kapliienko and Oleksandr Kapliienko (Ukraine)</i> <b>Fuzzy Verification Method for Indoor-Navigation Systems</b>
5.	<i>Petro Kondratov, Albert Oganesjan, Viktor Tkachenko, Sergiy Fabirovskyy and Leonid Lazko (Ukraine)</i> <b>The problem of low-flying and small-scale targets monitoring over the water surface by a millimeter-wave radar</b>
6.	<i>Valeriy Volosyuk, Simeon Zhyla and Volodymyr Holopov (Ukraine)</i> <b>Determining the Radiation Field of UWB and Multiband Antenna</b>
7.	<i>Anatoliy Zubkov, Yehor Herasymenko, Andrii Diakov and Sergiy Fabirovskyy (Ukraine)</i> <b>Compensation of frequency instabilities of a magnetron auto generator as a way of incoherent radar stations characteristics improving</b>

## **S2: INFORMATION SYSTEMS AND TECHNOLOGIES, COMPUTER-AIDED DESIGN**

Wednesday, February 21

**14.00 – 18.00**

**Co-Chairs:**

Prof. **Mykola Dyvak (Ukraine)** and Prof. **Dmytro Fedasyuk (Ukraine)**

### **ORAL SESSION**

1.	<i>Savas Okyay and Nihat Adar (Turkey)</i> <b>Parallel 3D Brain Modeling &amp; Feature Extraction: ADNI Dataset Case Study</b>
2.	<i>Yuri Onikienko, Anna Vlasjuk, Volodymyr Lazebnyi and Olga Gedz (Ukraine)</i> <b>EMI Simulation of GaN Power Stage for Audio Class D Amplifiers</b>
3.	<i>Galina Shilo, Yuliya Lopatka and Evgeniy Areshkin (Ukraine)</i> <b>Computer-aided Thermal Design of Hermetically Sealed Stackable Electronic Units</b>
4.	<i>Vasyl Lytvyn, Ivan Peleshchak, Roman Peleshchak and Roman Holoshchuk (Ukraine)</i> <b>Detection of multispectral input images using nonlinear artificial neural networks</b>
5.	<i>Galina Kirichek and Viacheslav Kurai (Ukraine)</i> <b>Implementation quadtree method for comparison of images</b>
6.	<i>Petro Humennyi, Orest Volynskyy, Ivan Albanskiy and Artur Voronych (Ukraine)</i> <b>Designing A Shared Access Memory And Its Application In Data Transmission And Protection Systems</b>
7.	<i>Yaroslav Nykolaichuk, Borys Krulikovskyy, Volodymyr Gryga and Alina Daletova (Ukraine)</i> <b>Computational Accelerators for Analog-to-Digital and Digital Processing of Sensor Signals in Information Measuring Systems</b>
8.	<i>Oleg Bisikalo and Ilona Bogach (Ukraine)</i> <b>Experimental Research of Lexical Ontologies for textual information processing</b>
9.	<i>Volodymyr Ostakhov, Viktor Morozov and Nadiia Artykulna (Ukraine)</i> <b>Analysis of Models for IT Projects Prioritization in Telecommunication Company Portfolio</b>
10.	<i>Salim Azak and Eray Erdogan (Turkey)</i> <b>Performance Evaluation of the Grid-based FastSLAM in V-REP Using MATLAB</b>

**POSTER SESSION**

1.	<i>Iryna Spivak, Svitlana Krepych and Sergiy Budenchuk (Ukraine)</i> <b>Methods and Means of Expert Evaluation of Software Systems on the Basis of Interval Data Analysis</b>
2.	<i>Nataliia Yehorchenkova and Oleksii Yehorchenkov (Ukraine)</i> <b>Production and project activities modeling module of instrument-making enterprise</b>
3.	<i>Vadym Shkarupylo and Olga Polska (Ukraine)</i> <b>The Approach to SDN Network Topology Verification on a Basis of Temporal Logic of Actions</b>
4.	<i>Dmytro Chumachenko, Viktoriia Dobriak, Mariia Mazorchuk, Ievgen Menailov and Kseniia Bazilevych (Ukraine)</i> <b>On agent-based approach to influenza and acute respiratory virus infection simulation</b>
5.	<i>Sergey Subbotin (Ukraine)</i> <b>The Special Deep Neural Network for Stationary Signal Spectra Classification</b>
6.	<i>Natalia Bloshchynska, Hennadii Dobrovolskyi, Natalya Keberle and Natalia Myronova (Ukraine)</i> <b>An Approach to Synthesis of a Phonetically Representative English Text of Minimal Length</b>
7.	<i>Artem Rodin (Ukraine)</i> <b>Growing small businesses using Software system for intellectual analysis of financial performance</b>
8.	<i>Yuriy Furgala and Bohdan Rusyn (Ukraine)</i> <b>Peculiarities of Melin transform application to symbol recognition</b>
9.	<i>Vadim Shergin, Larysa Chala and Serhii Udovenko (Ukraine)</i> <b>Fractal dimension of infinite growing discrete sets</b>
10.	<i>Stanislaw Konatowski and Piotr Pawłowski (Poland)</i> <b>Ant Colony Optimization algorithm for UAV path planning</b>

Friday, February 23

**14.00 – 18.00****Co-Chairs:**Prof. **Mykola Dyvak (Ukraine)** and Prof. **Dmytro Fedasyuk (Ukraine)****ORAL SESSION**

1.	<i>Volodymyr Temnikov, Petro Pavlenko, Olena Temnikova and Andrii Temnikov (Ukraine)</i> <b>The methodology of increasing the functional safety of aviation enterprises</b>
2.	<i>Jan Rabcan, Patrik Rusnak and Sergey Subbotin (Slovakia, Ukraine)</i> <b>Classification by Fuzzy Decision Trees Inducted based on Cumulative Mutual Information</b>
3.	<i>Bohdan Rusyn, Oleksiy Lutsyk, Rostyslav Kosarevych and Valentyna Korniy (Ukraine)</i> <b>Segmentation of atmospheric clouds obtained by remote sensing</b>
4.	<i>Yaroslav Dorogyi (Ukraine)</i> <b>Meta model of compensatory-decompensational approach for architecture of critical it infrastructure designing</b>
5.	<i>Kirill Trapezon, Tamara Gumen and Alexandr Trapezon (Ukraine)</i> <b>Basics of Using Connected Me System in the Transmission of Information Signals</b>
6.	<i>Vladimir Barannik, Aleksander Musienko, Yuriy Ryabukha, Oleg Suprun and Alexander Slobodyanyuk (Ukraine)</i> <b>The Method of Video Streams Processing for Information Technologies of Aero Monitoring</b>
7.	<i>Mykhailo Klymash, Olga Shpur, Nazar Peleh and Iryna Lutsiuk (Ukraine)</i> <b>Clustering Model of Cloud Centers for Big Data Processing</b>
8.	<i>Mykola Beshley, Oleksiy Panchenko, Oleg Zyuzko, Marian Seliuchenko and Ihor Kahalo (Ukraine)</i> <b>Experimental Performance Analysis of Software-Defined Network Switch and Controller</b>
9.	<i>Diana Zahorodnia, Yuriy Pigovsky, Pavlo Bykovyy, Viktor Krylov and Anatoliy Sachenko (Ukraine)</i> <b>Information Technology for Structural and Statistical Identification of Hierarchical Objects</b>
10.	<i>Mehmet Korkmaz and Akif Durdu (Turkey)</i> <b>Comparison of optimal path planning algorithms</b>

**POSTER SESSION**

1.	<i>Artem Artyukhov, Nadiia Artyukhova and Andrii Ivaniia (Ukraine)</i> <b>Creation of Software for Constructive Calculation of Devices with Active Hydrodynamics</b>
2.	<i>Tatiana Vlasova, Oleksii Kovalenko and Vladimir Kosolapov (Ukraine)</i> <b>Organizational-Information Technology for Providing and Decisions Making in Situational Management</b>
3.	<i>Andrii Biloshchytskyi, Svitlana Biloshchytska, Alexander Kuchansky, Olena Bielova and Yurii Andrashko (Ukraine)</i> <b>Infocommunication System of Scientific Activity Management on the Basis of Project-Vector Methodology</b>
4.	<i>Yuliya Tanasyuk, Sergey Ostapov and Olexiy Konstantynyuk (Ukraine)</i> <b>Deploying Multydimensional Cellular Automata in the Hash Function Construction</b>

### **S3: ELECTRONIC CIRCUITS AND SIGNALS, ELECTRO-TECHNICAL AND ELECTRO-ENERGETIC SYSTEMS**

February 23, Friday

**14.00 – 18.00**

Co-Chairs:

Prof. **Petro Stakhiv (Ukraine)** and Prof. **Andriy Bondariev (Ukraine)**

#### **ORAL SESSION**

1.	<i>Dmitry Maevsky, Artem Savieliev, Elena Maevskaya, Aleksandr Semenyug and Serhii Horokholynskyi (Ukraine)</i> <b>Coefficient of efficiency of coupled electric power transmission lines</b>
2.	<i>Bohdan Mandziy, Yuriy Shapovalov, Ksenia Chaban and Dariya Bachyk (Ukraine)</i> <b>The estimation of the influence of the multiplier characteristics nonlinearity on the output signals of the quadrature modulator QPSK</b>
3.	<i>Mikhaylo Kotsur, Dmytro Yarymbash, Igor Kotsur, Yuliia Bezverkhnia and Daniil Andrienko (Ukraine)</i> <b>Speed Synchronization Methods of the Energy-Efficient Electric Drive System for Induction Motors</b>
4.	<i>Volodymyr Moroz, Darius Calus and Oleksandr Makarchuk (Ukraine)</i> <b>Fractional Order Transfer Function for Eddy Current Simulation</b>
5.	<i>Ihor Shchur and Yurii Biletskyi (Ukraine)</i> <b>Interconnection and Damping Assignment Passivity-Based Control of Semi-Active and Active Battery/Supercapacitor Hybrid Energy Storage Systems for Stand-Alone Photovoltaic Installations</b>
6.	<i>Andriy Verlan and Volodymyr Fedorchuk (Ukraine)</i> <b>Computer modelling of drill string of an oilwell drilling rig</b>
7.	<i>Serhiy Rendzinyak and Vasyl Korud (Ukraine)</i> <b>Transient Analysis of High-Frequency Transmission Lines as Components of Heterogeneous Systems</b>
8.	<i>Petro Stakhiv and Oksana Hoholyuk (Ukraine)</i> <b>Features of calculation procedures used for transient processes calculation in electric systems and their components described by macromodels</b>
9.	<i>Vasyl Malyar, Orest Hamola and Volodymyr Madai (Ukraine)</i> <b>Choice of a Capacitor and Formation of the Characteristics of a One-Phase Asynchronous Motor</b>

**POSTER SESSION**

1.	<i>Mykola Kozlenko and Andrii Bosyi (Ukraine)</i> <b>Performance of Spread Spectrum System with Noise Shift Keying Using Entropy Demodulation</b>
2.	<i>Mykhaylo Melnyk, Roman Vynarovych, Taras Kvasnytsya and Mykhailo Lobur (Ukraine)</i> <b>Designing of Omnidirectional Speaker for Automation of Acoustic Measurement Process</b>
3.	<i>Artur Voronych, Nataliya Vozna, Oleg Zastavnyy, Taras Grynchyshyn and Taras Pastukh (Ukraine)</i> <b>Multichannel system for structuring and transmission entropy-manipulated cipher signals</b>
4.	<i>Vitalii Nikolskyi, Vitalii Budashko, Sergii Khniunin and Mark Nikolskyi (Ukraine)</i> <b>Parametrization and identification of energy flows in the ship propulsion complex</b>
5.	<i>Bohdan Trembach, Andrij Sydor, Rostyslav Trembach and Roman Kochan (Ukraine)</i> <b>The method of applying acoustic signals in vector and two-dimensional Hemming spaces given in cartesian and in polar coordinates</b>
6.	<i>Dmytro Yarymbash, Mikhaylo Kotsur, Serhiy Yarymbash, Iryna Kylymnyk and Tetyana Divchuk (Ukraine)</i> <b>An Application of Scheme and Field Models for Simulation of Electromagnetic Processes of Power Transformers</b>
7.	<i>Roman Voliansky, Nina Volianska and Alexander Sadovoi (Ukraine)</i> <b>Interval Model of the Piezoelectric Drive</b>
8.	<i>Valeriy Martynyuk, Grygoriy Il'Chuk, Mykola Fedula and Roman Petrus (Ukraine)</i> <b>Simulation of the Combined System of Power Grid Peak Load Compensation</b>
9.	<i>Natalia Obodan, Victor Adlucky and Vasiliy Gromov (Ukraine)</i> <b>Inverse Bifurcation Problem for von Karman-type Elliptic Equations</b>
10.	<i>Yaroslav Paranchuk, Roman Paranchuk and Volodymyr Tsyapa (Ukraine)</i> <b>Simulink-model of magneto-thyristor voltage regulator for active load</b>

**S4: ELECTRONICS, PHOTONICS AND INNOVATIVE OPTICAL TECHNOLOGIES: SYSTEMS AND DEVICES, MICRO- AND NANOTECHNOLOGIES**

Wednesday, February 21

**14.00 – 18.00**

**Co-Chairs:**

Prof. **Anatoliy Druzhinin (Ukraine)** and  
Prof. **Anatoliy Andrushchak (Ukraine)**

**ORAL SESSION**

1.	<i>Alexander Osadchuk, Vladimir Osadchuk, Seletska Olena and Lyudmila Krylik (Ukraine)</i> <b>Microelectronic Frequency Transducer of Power of Optical Radiation</b>
2.	<i>Vsevolod Novikov, Zenon Hotra, Oleksandr Mieshkov and Lidiya Novikova (Ukraine)</i> <b>Laser technology of receiving semiconductor glass's microstructures</b>
3.	<i>Gennady Khrypunov, Eugene Sokol, Dmytro Kudii and Maksim Khrypunov (Ukraine)</i> <b>The optimization of technology ITO layers for thin-film solar cells</b>
4.	<i>Anatoly Druzhinin, Igor Ostrovskii, Yuriy Khooverko, Oleksiy Kuttrakov and Serhii Yatsukhnenko (Ukraine)</i> <b>Multifunctional Sensors based on Si &lt; B,Ni &gt; microcrystals for Harsh Environment</b>
5.	<i>Volodymyr Fitio, Oleksandr Vernygor, Iryna Yaremchuk and Yaroslav Bobitski (Ukraine)</i> <b>Analytical Approximations of the Noble Metals Dielectric Permittivity</b>
6.	<i>Alexandr Shmat'Ko, Viktoriya Mizernik and Eugene Odarenko (Ukraine)</i> <b>Surface and Bulk Modes of Magnetophotonic Crystals</b>
7.	<i>Inessa Bolshakova, Fedir Shurygin, Anatoly Moroz, Yaroslav Kost, Yuriy Mykhashchuk, Maxim Radishevskiy, Oleksandr Vasyliev and Thomas Kuech (Ukraine, USA)</i> <b>Stability of gold nanofilms' based Hall sensors under thermal loads typical for the DEMO ex-vessel environment</b>
8.	<i>Mariana Seneta, Vasyl Teslyuk and Roman Peleshchak (Ukraine)</i> <b>Acoustoelectronic processes on the adsorbed surface of a solid</b>
9.	<i>Oleh Buryy and Anatoliy Andrushchak (Ukraine)</i> <b>The global maxima of piezo-optic effect in crystalline materials determined by extreme surfaces method</b>



10.	<i>Semen Krukovskiy, Rostyslav Krukovskiy, Hryhoriy Ilchuk, Emilia Zmiiovska and Ihor Semkiv (Ukraine)</i> <b>Formation of GaAs\AlGaAs epitaxial layers, with gradient profiles of charge carrier distribution</b>
11.	<i>Nazariy Andrushchak, Petra Goering and Anatoliy Andrushchak (Ukraine, Germany)</i> <b>Nanoengineering of Anisotropic Materials for Creating the Active Optical Cells with Increased Energy Efficiency</b>
12.	<i>Andriy Kityk, Patrick Huber, Anatoliy Andrushchak, Przemysław Kula and Wiktor Piecek (Ukraine, Germany, Poland)</i> <b>Application of retardation-modulation polarimetry in studies of nanocomposite materials</b>

#### POSTER SESSION

1.	<i>Orest Malyk and Stepan Syrotyuk (Ukraine)</i> <b>The local electron interaction with point defects in zinc blende GaN, CdTe and ZnTe: ab initio calculation</b>
2.	<i>Stanislaw Konatowski and Maciej Gołgowski (Poland)</i> <b>Road surface hazard warning system for vehicle drivers</b>
3.	<i>Alexander Gritsunov, Igor Bondarenko, Alexey Pashchenko and Oksana Babychenko (Ukraine)</i> <b>Theory of Natural Oscillatory Systems and Advance in Nanoelectronics</b>
4.	<i>Victor Gorbachev, Ivan Vikulin, Anna Gorbacheva, Victoria Krasova and Sergey Polakov (Ukraine)</i> <b>Radiation resistant BJT-based Temperature Sensor for IoT Sensor Nodes</b>
5.	<i>Anatoly Druzhinin, Inna Maryamova, Oleksiy Kutrakov and Natalia Liakh-Kaguy (Ukraine)</i> <b>Studies piezoresistive properties of n-type conductivity Indium Antimonide Thin Layers</b>
6.	<i>Vasyl Varyshchuk, Tetiana Bulavinets, Iryna Yaremchuk and Yaroslav Bobitski (Ukraine)</i> <b>The Shape Effect on the Optical Properties of Metallic Nanoparticles</b>
7.	<i>Inessa Bolshakova, Dmytro Dyuzhkov, Yaroslav Kost, Maxim Radishevskiy, Fedir Shurygin, Oleksandr Vasyliev, Zhenxing Wang, Daniel Neumaier and Martin Otto (Ukraine, Germany)</i> <b>Prospects of graphene use in sensor technology</b>

8.	<i>Inessa Bolshakova, Fedir Shurygin, Anatoly Moroz, Yaroslav Kost, Yuriy Mykhashchuk, Maxim Radishevskiy, Oleksandr Vasyliev and Thomas Kuech (Ukraine, USA)</i> <b>Temperature effect on electrophysical properties of as-deposited gold nanofilms for use in electronics devices and sensor technology</b>
9.	<i>Denis Afanassyev and Vasyl Rabyk (Ukraine)</i> <b>A digital lock-in technique for small signal detection with square wave reference over a wide frequency range</b>
10.	<i>Sergey Brostilov, Alexey Grishko, Nikolay Yurkov, Tatyana Brostilova and Igor Kochegarov (Russia)</i> <b>Special Features of Structural Design for a Fiber- Optic Microdisplacement Transducer</b>
11.	<i>Nataliya Demyanyshyn, Oleh Buryy, Victor Shut, Bohdan Mytsyk, Andriy Vas'Kiv, Olena Horina and Anatoliy Andrushchak (Ukraine)</i> <b>New high-efficiency material for acoustooptic modulators. Anisotropy of piezooptic effect in TGS crystals</b>
12.	<i>Iwan Kityk, Ahmed El-Naggar, Abdullah Albassam, Nazariy Andrushchak and Daniel Kulwasis (Poland, Saudi Arabia, Egypt, Ukraine)</i> <b>Coherent Laser Induced Synthesis of Rare Earth Doped Nanocrystallites of 50PbO–25Bi<sub>2</sub>O<sub>3</sub>–20Ga<sub>2</sub>O<sub>3</sub>–5BaO</b>

## **S5: ICT SYSTEMS AND NETWORKS, INTERNET OF THINGS, CYBERSECURITY**

February 23, Friday

**09.00 – 13.00**

**Co-Chairs:**

Prof. **Serhiy Toliupa (Ukraine)** and Prof. **Volodymyr Hahanov (Ukraine)**

### **ORAL SESSION**

1.	<i>Ievgeniia Kuzminykh and Oleksii Popov (Ukraine)</i> <b>Analysis of Methods for Reducing Topology in Wireless Sensor Networks</b>
2.	<i>Volodymyr Saiko, Volodymyr Nakonechnyi, Serhii Toliupa and Mykola Brailovskyi (Ukraine)</i> <b>Method for Determining Optimal Transparency Windows For Mobile 5th Generation</b>
3.	<i>Orest Kostiv, Ivan Demydov, Anatoliy Makarenko and Mykola Tverdohlib (Ukraine)</i> <b>Metaheuristics in cloud platform traffic engineering</b>
4.	<i>Vladimir Barannik, Sergey Podlesny, Denys Tarasenko, Dmitriy Barannik and Oleg Kulitsa (Ukraine)</i> <b>The Video Stream Encoding Method in Infocommunication Systems</b>
5.	<i>Ihor Tereikovskiy, Serhii Toliupa, Ivan Parkhomenko and Liudmyla Tereikovska (Ukraine)</i> <b>Markov Model of Normal Conduct Template of Computer Systems Network Objects</b>
6.	<i>Oleksandr Oksiiuk, Liudmyla Tereikovska and Ihor Tereikovskiy (Ukraine)</i> <b>Adaptation of The Neural Network Model to The Identification of The Cyberattacks Type "Denial of Service"</b>
7.	<i>Tetiana Babenko, Serhiy Toliupa and Yuliia Kovalova (Ukraine)</i> <b>LVQ models of DDOS attacks identification</b>
8.	<i>Alexey Strelnitskiy, Ivan Obod, G Zavolodko, Dmytro Gavva and Vasyl Aliksieiev (Ukraine)</i> <b>Improvement of Information Protection Quality of Systems for Observing Airspace</b>
9.	<i>Dmytro Havrylov, Vadym Fustii, Oksana Stetsenko, Denis Medvedev and Pavlo Gurzhiy (Ukraine)</i> <b>Multilevel Selective Data Processing Method of Frames with Different Information Comparison for Mobile Sensor Networks</b>

10.	<i>Igor Yakymenko, Mykhailo Kasianchuk and Stepan Ivasiev (Ukraine)</i> <b>Realization of Rsa Cryptographic Algorithm Based on Vector-Module Method of Modular Exponention</b>
11.	<i>Vasyl Alieksieiev, Yuliia Synytsia, Aleksey Strelnitskiy, Dmitry Gavva and Denis Gorelov (Ukraine)</i> <b>Studying of keystroke dynamics statistical properties for biometric user authentication</b>

### POSTER SESSION

1.	<i>Arkadiy Prodeus, Vitaliy Didkovskiy, Maryna Didkovska and Igor Kotvytskyi (Ukraine)</i> <b>Automated Subjective Evaluation of Speech Intelligibility in Noise and Reverberation</b>
2.	<i>Artem Potebnia (Ukraine)</i> <b>Innovative Metrics for Assessing the Catastrophic Collapse of the Complex Networks Under the Greedy Attacks on Their Most Important Vertices and Edges</b>
3.	<i>Dmytro Ageyev, Oleg Bondarenko, Walla Alfroukh and Tamara Radivilova (Ukraine)</i> <b>Provision Security in SDN/NFV</b>
4.	<i>Kostiantyn Zashcholkin and Olena Ivanova (Ukraine)</i> <b>LUT-object Integrity Monitoring Methods Based on Low Impact Embedding of Digital Watermark</b>
5.	<i>Vladimir Barannik, Ali Bekirov, Albert Lekakh and Dmitriy Barannik (Ukraine)</i> <b>A Steganographic Method Based on the Modification of Regions of the Image with Different Saturation</b>
6.	<i>Oleg Ivanchenko and Vyacheslav Kharchenko (Ukraine)</i> <b>Semi-Markov Availability Model Considering Deliberate Malicious Impacts on an Infrastructure-as-a-Service Cloud</b>
7.	<i>Yuriy Danyk and Valery Shestakov (Ukraine)</i> <b>The Detection of Hybrid Vulnerabilities and Effects on the Basis of Analyzing the Information Activity in Cyberspace</b>

**S6: ANTENNAS, MICROWAVE TECHNOLOGY AND  
ELECTROMAGNETIC COMPATIBILITY**

Wednesday, February 21

**09.00 – 13.00**

Co-Chairs:

Prof. Yevhen Yashchynshyn (Poland) and  
Prof. Mykhailo Andriychuk (Ukraine)

**ORAL SESSION**

1.	<i>Dmytro Gavva, Olekii Strelnitskiy, Dmytro Gretskeh, Denis Gorelov and Eugene Medvedev (Ukraine)</i> <b>Impact of Non-linear Switch Characteristics on the Reconfigured Antenna Properties</b>
2.	<i>Vladimir Krizhanovski, Dmitriy Chernov and Andrei Grebennikov (Ukraine)</i> <b>Low-Voltage Class E/F3 High Frequency Oscillator</b>
3.	<i>Szczepan Odrobina, Kamil Staszek, Krzysztof Wincza and Slawomir Gruszczynski (Poland)</i> <b>Wideband Six-Port Reflectometer</b>
4.	<i>Pawel Bienkowski, Vitalij Nichoha and Hubert Trzaska (Poland, Ukraine)</i> <b>Magnetic Antennas and Magnetic Probes</b>
5.	<i>Mateusz Pasternak (Poland)</i> <b>Lambert W function application for construction of antipodal Vivaldi-type antenna</b>
6.	<i>Valeriy Oborzhytskyy and Ivan Prudyus (Ukraine)</i> <b>Tolerance Definition Method at the Calculation Stage of the Passive Symmetric Microstrip Two-Port Circuits</b>
7.	<i>Volodymyr Pelishok, Ihor Tchaikovskiy, Oleg Yaremko and Valeriy Koval (Ukraine)</i> <b>Determination of antennas characteristics based on combined beam width</b>
8.	<i>Viktor Hoblyk (Ukraine)</i> <b>Theory of modulated plasmon-polariton antennas</b>
9.	<i>Mykhaylo Andriychuk and Yarema Kuleshnyk (Ukraine)</i> <b>Determination of Antenna Shape using its Radiation Pattern</b>

**POSTER SESSION**

1.	<i>Larysa Hlinenko and Volodymyr Fast (Ukraine)</i> <b>Application of Superimposed Properties Cards for Efficient 3D MID Process Choice</b>
2.	<i>Pavel Molochko, Viktor Dmitrenko and Sergiy Romanenko (Ukraine)</i> <b>New Type of Metamaterials based on Composite Spiral Scatterers</b>
3.	<i>Mahdi Salarpour and Forouhar Farzaneh (Iran, Netherlands)</i> <b>Design Procedure of a U-slot Patch Antenna Array for 60 GHz MIMO Application</b>
4.	<i>Serhii Siden, Anna Vakarchuk and Volodymyr Pyliavskiy (Ukraine)</i> <b>UWB Coplanar Spiral Antenna</b>
5.	<i>Olga Shcherbyna and Roman Zadorozhniy (Ukraine)</i> <b>The Log-Periodic Dipole Array Antenna for Monitoring</b>
6.	<i>Yulia Rassokhina and Vladimir Krizhanovski (Ukraine)</i> <b>The Microstrop Line Step Discontinuity Analysis by Transverse Resonance Technique: Method of boundary value problem algebraization</b>
7.	<i>Dmytro Vovchuk and Leonid Politanskyi (Ukraine)</i> <b>Wire Media for Pixel Signal Transfer</b>

**S7: BIOMEDICAL ENGINEERING**

Wednesday, February 21

**09.00 – 13.00**

Co-Chairs:

Prof. **Roman Holyaka (Ukraine)** and Prof. **Orest Sushynskyy (Ukraine)****ORAL SESSION**

1.	<i>Vsevolod Novikov, Zenon Hotra, Anastasia Novikova and Oleksandr Mieshkov (Ukraine)</i> <b>Application and automation of a clinical statistical method of Kaplan Meyer for prediction of patient's treatment dynamics</b>
2.	<i>Bohdan Kolomiiets and Anton Popov (Ukraine)</i> <b>System for registration and analysis of human stabilograms</b>
3.	<i>Sergii Kostishyn, Sergii Zlepko, Dmytro Shtofel, Alexandr Azarhov, Viacheslav Bychkov, Hanna Lepokhina and Sergii Goncharuk (Ukraine)</i> <b>Information system for adaptive correction of newborns motor disorders</b>
4.	<i>Anna Melnyk, Igor Khudetsky and Yuliya Antonova-Rafi (Ukraine)</i> <b>Backward design technology of stump socket for CAD/CAM prosthetics technology</b>
5.	<i>Alexander Tychkov, Alan Alimuradov, Anna Tyhkova, Alexsey Ageykin and Petr Churakov (Russia)</i> <b>New Signal Markers of Borderline Mental Disorders in EEG</b>
6.	<i>Kostiantyn Chorny, Igor Khudetsky and Yuliya Antonova-Rafi (Ukraine)</i> <b>Robotic hardware and software system for diagnostic and treatment of spine diseases using traction therapy</b>
7.	<i>Volodymyr Shelyagin, Ievgen Zaitsev, Artemii Bernatskyi, Volodymyr Sydorets, Andrii Dubko and Oleksandr Bondarenko (Ukraine)</i> <b>Contactless monitoring of welding processes with computer processing of acoustic emission signals</b>
8.	<i>Anna Sobko, Vasily Kozyar, Igor Khudetsky and Yuliya Antonova-Rafi (Ukraine)</i> <b>The method of evaluation bioelectric activity of the brain in the study of electroencephalography</b>
9.	<i>Alexander Trunov (Ukraine)</i> <b>The Processing of Hyperspectral Images as Matrix Algebra Operations</b>

10.	<i>Mykola Dyvak, Volodymyr Tymets and Vasyl Brych (Ukraine)</i> <b>Improving the Effectiveness of Electrophysiological Monitoring of the Recurrence Laryngeal Nerve During Surgery on Neck Organs</b>
11.	<i>Volodymyr Shkliarskyi and Rostyslav Matviyiv (Ukraine)</i> <b>Formation of the Image of Investigated Biological Objects with Small Contrast in a Scanning TV Microscope</b>
12.	<i>Yevgeniy Bodyanskiy, Iryna Perova, Olena Vynokurova and Ivan Izonin (Ukraine)</i> <b>Adaptive Wavelet Diagnostic Neuro-Fuzzy System for Biomedical Tasks</b>

### POSTER SESSION

1.	<i>Oleksandra Hotra and Magdalena Michalska (Poland)</i> <b>Effect of reflection probe displacement on human skin spectra</b>
2.	<i>Yevheniia Yakovenko and Yevhen Storchun (Ukraine)</i> <b>Variation of pulse signal spectrum under the action of an external force</b>
3.	<i>Nataliya Dorosh, Kateryna Ilkanych, Halyna Kuchmiy, Ivan Boyko, Dmytro Voloshyn and Oleg Dorosh (Ukraine)</i> <b>Measurement modules of digital biometric medical systems based on sensory electronics and mobile-health applications</b>
4.	<i>Oksana Boyko, Roman Holyaka and Zenon Hotra (Ukraine)</i> <b>Functionally integrated sensors on magnetic and thermal methods combination basis</b>
5.	<i>Andrii Rabotiahov, Oleg Kobylin, Vyacheslav Lyashenko and Zoia Dudar (Ukraine)</i> <b>Bionic Image Segmentation of Cytology Samples Method</b>
6.	<i>Fedir Vezyr, Zenon Hotra, Zenoviy Mykytyuk, Ivan Diskovskyi and Grygory Barylo (Ukraine)</i> <b>Optic Sensors of Enzymes with Sensitive Environment Based On Cholesterol Liquid Crystals</b>
7.	<i>Orest Sushynskyi, Iryna Kremer, Volodymyr Virt, Marija Vistak, Romana Petrina and Grzegorz Blad (Ukraine, Poland)</i> <b>Liquid crystal active medium for quercetin optical sensor</b>
8.	<i>Volodymyr Shkliarskyi, Yuriy Shkorbatov, Yuriy Matiieshyn, Volodymyr Grytsay and Taras Smarkutskyi (Ukraine)</i> <b>Device for the formation of a signal to study the influence of low-frequency field on biological objects</b>
9.	<i>Solomiya Lebid (Ukraine)</i> <b>Optical non-invasive brain-computer interface system</b>



**S8: QUALITY, RELIABILITY AND DIAGNOSTICS OF  
ELECTRONIC AND INFORMATION SYSTEMS AND DEVICES**

Friday, February 23

**09.00 – 13.00**

Co-Chairs:

Prof. Bohdan Volochiy (Ukraine) and Prof. Jan Matuszewski (Poland)

**ORAL SESSION**

1.	<i>Serhiy Shcherbovskykh and Tetyana Stefanovych (Ukraine)</i> <b>Modelling Features of Type I and II Errors of Switching Device for System with Double Hot and Double Cold Redundancy based on Two-Terminal Dynamic Fault Tree</b>
2.	<i>Alla Goriushkina and Irina Iliina (Ukraine)</i> <b>Analysis and comparative study of methods of improving the quick-speed of communication of multimedia data in computer networks</b>
3.	<i>Mykola Kasian and Kostiantyn Kasian (Ukraine)</i> <b>Diagnostic Mathematical Model of Radio-electronic Devices</b>
4.	<i>Andriy Goncharenko (Ukraine)</i> <b>Multi-Optional Hybrid Effectiveness Functions Optimality Doctrine for Maintenance Purposes</b>
5.	<i>Tetiana Bubela, Vasyl Yatsuk, Yevgen Pokhodylo, Mykola Mykyychuk and Vasyl Dmytriv (Ukraine)</i> <b>Admittance Research and Simulation of Nonelectrical Nature Object Properties</b>
6.	<i>Tetyana Frolova and Andrii Frolov (Ukraine)</i> <b>Solar Simulator for Photovoltaic Devices Based on the Electrodeless Sulfur Lamp</b>
7.	<i>Vladimir Hahanov, Ivan Hahanov, Svetlana Chumachenko, Anastasia Hahanova and Eugenia Litvinova (Ukraine)</i> <b>Methods for Quantum Analysis of Digital Circuits</b>
8.	<i>Bohdan Volochiy and Leonid Ozirkovskyy (Ukraine)</i> <b>Method of Developing Unified Model for Estimating Safety and Reliability of Complex Systems for Critical Application</b>
9.	<i>Oleksandr Drozd, Viktor Antoniuk, Valeria Nikul and Myroslav Drozd (Ukraine)</i> <b>Hidden faults in FPGA-built digital components of safety-related systems</b>

10.	<i>Igor Kovtun, Juliy Boiko and Svitlana Petrashchuk (Ukraine)</i> <b>Nondestructive hermetic seal diagnostics and prediction method for super-high-frequency modules</b>
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### POSTER SESSION

1.	<i>Oleksandr Solomentsev, Valeriyi Kuzmin, Maksym Zaliskyi, Oleksiy Zuiev and Yevhen Kaminskyi (Ukraine)</i> <b>Statistical Data Processing in Radio Engineering Devices Operation System</b>
2.	<i>Yuriy Bobalo, Myroslav Kiselychnyk and Leonid Nedostup (Ukraine)</i> <b>Providing the Adequacy of Models of Quasi-Normal Distribution of Radio-Electronic Devices Parameters</b>
3.	<i>Leonid Ozirkovsky, Ihor Kulyk, Andriana Mazur, Nataliia Petryshyn and Yuliia Malynovska (Ukraine)</i> <b>Analysis of the Maintenance Strategy Effectiveness Based on the Reliability/Cost Ratio</b>

## **S9: SIMULATION IN RADIO ELECTRONICS, COMMUNICATIONS AND COMPUTER SCIENCES**

Friday, February 23

**09.00 – 13.00**

Co-Chairs:

Prof. **Vladimir Krizhanovski (Ukraine)** and  
Prof. **Ruslan Politansky (Ukraine)**

### **ORAL SESSION**

1.	<i>Yaroslav Sokolovskyy, Maryana Levkovych, Olha Mokrytska and Vitalij Atamanyuk (Ukraine)</i> <b>Mathematical modeling of anisotropic visco-elastic environments with memory based on integro-differentiation of fractional order</b>
2.	<i>Olexander Osadchuk, Vladimir Osadchuk and Iaroslav Osadchuk (Ukraine)</i> <b>Mathematical Model of the Generator on the Basis of Transistor Structure with the NDR</b>
3.	<i>Inayet Ozge Aksu and Ramazan Coban (Turkey)</i> <b>Second Order Sliding Mode Control of MIMO Nonlinear Coupled Tank System</b>
4.	<i>Anatolii Pashko and Iryna Rozora (Ukraine)</i> <b>Accuracy of simulation for the network traffic in the form of Fractional Brownian Motion</b>
5.	<i>Andriy Samila, Galina Lastivka, Leonid Politansky and Taras Kazemirskiy (Ukraine)</i> <b>Waveform generation for the digital synthesis systems based on embedded hardware</b>
6.	<i>Andriy Semenov, Kostyantyn Koval, Anton Savytskyi, Oleksander Zviahin and Serhii Baraban (Ukraine)</i> <b>Numerical Study of the Deterministic Chaos Oscillator with a Differential Integral Element on the Colpitts Circuit</b>
7.	<i>Iryna Darmorost, Mykola Dyvak, Ruslan Shevchuk, Volodymyr Manzhula and Natalia Kasatkina (Ukraine)</i> <b>Correlation Analysis Traffic Intensity of the Motor Vehicles and the Air Pollution by Their Harmful Emissions</b>
8.	<i>Roman Pasichnyk, Natalia Pasichnyk, Mykhailo Susla and Andriy Melnyk (Ukraine)</i> <b>Model of Pollution on the Local Section of an Urban Highway and Its Identification Method</b>
9.	<i>Oleg Gofaizen, Olena Osharovska and Mikola Patlayenko (Ukraine)</i> <b>Details of High Definition Images and Compression Factor</b>

10.	<i>Ruslan Politanskyi, Leonid Politanskyi, Oleksandr Hres and Valentyn Lesinskyi (Ukraine)</i> <b>Statistical Estimation of Pseudorandom Number Sequences</b>
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**POSTER SESSION**

1.	<i>Andriy Semenov, Anton Savytskyi, Oleg Bisikalo and Pavlo Kulakov (Ukraine)</i> <b>Mathematical Modeling of the Two-Stage Chaotic Colpitts Oscillator</b>
2.	<i>Bohdan Rytsar (Ukraine)</i> <b>Set-Theoretical Decomposition on the Basis of Symmetric Functions</b>

**S10: INFORMATION PROCESSING**

Wednesday, February 21

**14.00 – 18.00**

Co-Chairs:

Prof. **Bohdan Rusyn (Ukraine)** and Prof. **Yuriy Romanyshyn (Ukraine)****ORAL SESSION**

1.	<i>Andrey Rubel and Vladimir Lukin (Ukraine)</i> <b>Denoising Efficiency Analysis based on No-Reference Image Quality Assessment</b>
2.	<i>Andrii Podorozhniak, Natalia Lubchenko, Oleksii Balenko and Dmytro Zhuikov (Ukraine)</i> <b>Neural network approach for multispectral image processing</b>
3.	<i>Olena Vynokurova, Dmytro Peleshko, Yevgeniy Bodyanskiy, Yuriy Rashkevych and Ilya Kobylin (Ukraine)</i> <b>Hybrid Fuzzy Clustering Algorithm of Time Series with Unevenly and Asynchronously Distributed Observations in Information Processing Tasks</b>
4.	<i>Viktoriia Onyshchenko, Oles Dibrivniy and Victor Grebenyuk (Ukraine)</i> <b>Forecasting based on the trend model and adaptive Brown's model</b>
5.	<i>Roman Melnyk and Ruslan Tushnytskyy (Ukraine)</i> <b>Cloudiness Analysis in Ukraine by the 3-Stages Hierarchical Clustering Algorithm</b>
6.	<i>Sergei Yelmanov and Yuriy Romanyshyn (Ukraine)</i> <b>Automatic Contrast Enhancement of Complex Low-contrast Images</b>
7.	<i>Pavlo Pidhornyi and Marina Sidorova (Ukraine)</i> <b>Software for spatio-temporal trajectory analysis and pattern mining</b>
8.	<i>Vladimir Barannik, Andrii Krasnorutsky, Vladimir Larin, Anna Hahanova and Sergii Shulgin (Ukraine)</i> <b>Model of Syntactic Representation of Aerophoto Images Segments</b>
9.	<i>Ivanna Dronyuk and Olha Fedevych (Ukraine)</i> <b>The Signal Processing with Adaptation Based on Ateb-transformations</b>

**POSTER SESSION**

1.	<i>Stepan Melnychuk, Serhiy Yakovyn and Mykola Kuz (Ukraine)</i> <b>Emulation of logical functions NOT, AND, OR, and XOR with a perceptron implemented using an information entropy function</b>
2.	<i>Sergey Krivenko, Mikhail Zriakhov, Vladimir Lukin and Benoit Vozel (Ukraine, France)</i> <b>MSE Prediction in DCT-based Lossy Compression of Noise-Free and Noisy Remote Sensing</b>
3.	<i>Roman Melnyk and Yurii Kalychak (Ukraine)</i> <b>Analysis and Classification of Cloudiness in Ukraine by Clustering and Image Transformation</b>
4.	<i>Sergei Yelmanov and Yuriy Romanyshyn (Ukraine)</i> <b>A Method for Rapid Quantitative Assessment of Incomplete Integral Contrast for Complex Images</b>
5.	<i>Tadeusz Pietkiewicz and Jan Matuszewski (Poland)</i> <b>Recognition of Maritime Objects Based on FLIR Images Using the Method of Eigenimages</b>
6.	<i>Ivan Tsmots, Vasyl Rabyk and Oleksa Skorokhoda (Ukraine)</i> <b>Parallel algorithms and matrix structures for scalar product calculation</b>
7.	<i>Tetiana Fedoronchak and Tetiana Kolpakova (Ukraine)</i> <b>Study on vibrations diagnostics of gas turbine engines with wavelets</b>
8.	<i>Pavlo Zhezhnych and Oksana Markiv (Ukraine)</i> <b>Recognition of tourism documentation fragments from web-page posts</b>
9.	<i>Sergiy Prykhodko, Natalia Prykhodko, Lidiia Makarova and Andrii Pukhalevych (Ukraine)</i> <b>Application of the Squared Mahalanobis Distance for Detecting Outliers in Multivariate Non-Gaussian Data</b>
10.	<i>Marina Polyakova, Alesya Ishchenko and Natallia Huliaieva (Ukraine)</i> <b>Document Image Segmentation using Averaging Filtering and Mathematical Morphology</b>
11.	<i>Andrii Oliinyk, Sergey Subbotin, Valerii Lovkin, Serhii Leoshchenko and Tetiana Zaiko (Ukraine)</i> <b>Development of the indicator set of the features informativeness estimation for recognition and diagnostic model synthesis</b>

## **S11: TELECOMMUNICATIONS: WIRED AND WIRELESS SYSTEMS, NETWORK SERVICES, MANAGEMENT**

Wednesday, February 21

**14.00 – 18.00**

Co-Chairs:

Prof. **Mykhailo Klymash (Ukraine)** and  
Prof. **Oleksandr Lemeshko (Ukraine)**

### **ORAL SESSION**

1.	<i>Serhii Osypchuk, Leonid Uryvsky, Alina Moshynska and Mykhaylo Ilchenko (Ukraine)</i> <b>Empirical and analytical energy thresholds of Modulation-Coding Schemes research in IEEE 802.11n devices</b>
2.	<i>Oleksandr Lemeshko, Oksana Yevsieieva and Maryna Yevdokymenko (Ukraine)</i> <b>Tensor Flow-Based Model of Quality of Experience Routing</b>
3.	<i>Oleksandr Lemeshko and Oleksandra Yeremenko (Ukraine)</i> <b>Linear Optimization Model of MPLS Traffic Engineering Fast ReRoute for Link, Node, and Bandwidth Protection</b>
4.	<i>Oleksandr Lemeshko, Olena Nevzorova and Ahmad Hailan (Ukraine, Iraq)</i> <b>Hierarchical method of routing and resource allocation in DiffServ-TE Network</b>
5.	<i>Cezary Ziółkowski, Jan Kelner and Leszek Nowosielski (Poland)</i> <b>Correlation Properties of Signal at Mobile Receiver for Different Propagation Environments</b>
6.	<i>Konstantin S. Sunduchkov, Ievgeniia Svetsynska and Sergey Volkov (Ukraine)</i> <b>Algorithms and the Aggregative Mathematical Model for Fragment of Optimization Task of Synthesis of Satellite Distribution Network of Television Broadcasting in Ukraine</b>
7.	<i>Mariia Skulysh and Oleksandr Romanov (Ukraine)</i> <b>The structure of a mobile provider network with network functions virtualization</b>
8.	<i>Juraj Gazda, Marcel Volosin, Eugen Slapak, Peter Drotar and Taras Maksymyuk (Slovakia, Ukraine)</i> <b>Frequency spectrum distribution dynamics: Evidence from an agent-based experimental economy model</b>

9.	<i>Taras Maksymyuk, Mykola Beshley, Oleksiy Petrenko, Mykhailo Klymash and Yuriy Matsevityi (Ukraine)</i> <b>Eavesdropping-Resilient Wireless Communication System based on Modified OFDM/QAM Air Interface</b>
10.	<i>Halyna Beshley, Taras Maksymyuk, Mykola Beshley and Ihor Strykhalyuk (Ukraine)</i> <b>Method of Centralized Resource Allocation in Virtualized Small Cells Network with IoT Overlay</b>
11.	<i>Alexander Zhuk, Valery Romaniuk, Eugen Stepanenko and Anton Romaniuk (Ukraine)</i> <b>Methodology of the Tactical Wireless Sensor Networks Control</b>
12.	<i>Roman Odarchenko, Anastasiia Abakumova, Sergiy Gnatyuk and Oleh Polihenko (Ukraine)</i> <b>Traffic Offload Improved Method for 4G/5G Mobile Network Operator</b>
13.	<i>Yulia Klymash, Mykola Kaidan and Bogdan Strykhalyuk (Ukraine)</i> <b>Modified routing algorithms for self-organized networks</b>
14.	<i>Galina Proskura, Alexander Totsky and Victoriia Naumenko (Ukraine)</i> <b>Novel Wireless Communication System Using Ultra Wideband Pulse Triplet-Signals</b>

#### POSTER SESSION

1.	<i>Kirill Smelyakov, Anastasiya Chupryna, Vitalii Martovytskyi and Dmitry Pribylnov (Ukraine)</i> <b>Investigation of network infrastructure control parameters for effective intellectual analysis</b>
2.	<i>Vasyl Oreshkov, Olena Iegupova and Irina Barba (Ukraine)</i> <b>Efficiency of generalized class orthogonal harmonic signals application in G.fast transmission systems</b>
3.	<i>Serhii Shestopalov, Nina Kniazieva, Tatjana Kunup and Anastasiia Kondratenko (Ukraine)</i> <b>Research of Intelligent Services traffic in NGN</b>
4.	<i>Vyacheslav Vakas, Dmytro Domin, Oleksandr Manko and Oleksii Kulinskyi (Ukraine)</i> <b>Comparison of synchronization reference signals of primary Atomic Clocks</b>
5.	<i>Amal Mersni, Andriy Ilyashenko and Tetiana Vavenko (Ukraine)</i> <b>Two-level method of multipath routing for multicast flows in telecommunication networks</b>
6.	<i>Tetiana Lebedenko, Oleksandra Yeremenko, Serhii Harkusha and Ali Salem Ali (Ukraine, Iraq)</i> <b>Dynamic Model of Queue Management based on Recourse Allocation in Telecommunication Networks</b>



7.	<i>Arkadii Snihurov and Vadym Chakrian (Ukraine)</i> <b>Dynamic Model of Routing in Telecommunication Network Considering Probability of Timely Packet Delivery and Information Security Requirements</b>
8.	<i>Anastasia Kalchenko and Nina Kniazieva (Ukraine)</i> <b>Quality of services evaluation method in next generation networks</b>
9.	<i>Haider Mohammed Turki Al Hilfi (Romania)</i> <b>WiMAX and WiFi Network Integration as Backhaul on Emergency Communications</b>
10.	<i>Ihor Lazarovych, Stepan Melnychuk and Mykola Kozlenko (Ukraine)</i> <b>Optimization of entropy estimation computing algorithm for random signals in digital communication devices</b>
11.	<i>Anna Vakarchuk, Eduard Sukachev, Serhii Siden and Volodymyr Pyliavskyi (Ukraine)</i> <b>Analysis of cell capacity in the reverse CDMA channel</b>
12.	<i>Arseny Goreskul and Mykola Ishchenko (Ukraine)</i> <b>Efficiency of construction of a cellular network on the basis of WiMAX technology</b>
13.	<i>Volodymyr Lazebnyi and Cheng Liang Yin (Ukraine, China)</i> <b>Some aspects of wireless Wi-Fi network throughput calculation</b>
14.	<i>Andriy Masiuk, Bogdan Koval, Halyna Beshley and Roksoliana Basa (Ukraine)</i> <b>Resource Management Method in LTE Heterogeneous Networks</b>
15.	<i>Olena Krasko, Haider Al-Zayadi, Volodymyr Pashkevych, Halyna Kopets and Bohdan Humeniuk (Ukraine, Iraq)</i> <b>Network Functions Virtualization for Flexible Deployment of Converged Optical-Wireless Access Infrastructure</b>

Friday, February 23

**14.00 – 18.00**

Co-Chairs:

Prof. **Mykhailo Klymash (Ukraine)** and Prof. **Valeriy Bezruk (Ukraine)****ORAL SESSION**

1.	<i>Sangchul Oh, Hongsoog Kim and Yeongjin Kim (South Korea)</i> <b>User Mobility Impacts to Mobility Load Balancing for Self-Organizing Network over LTE System</b>
2.	<i>Sergiy Veretiuk, Vladimir Pilinsky and Ivan Tkachuk (Ukraine)</i> <b>Cognitive Radio Systems Clustering</b>
3.	<i>Volodymyr Baliar, Oleg Gofaizen and Yulia Irkha (Ukraine)</i> <b>Advanced DOCSIS technology for providing UHDTV service in Cable TV Networks</b>
4.	<i>Volodymyr Andrushchak, Stepan Dumych, Taras Maksymyuk, Mykola Kaidan and Oksana Urikova (Ukraine)</i> <b>Intelligent Data Flows Management for Performance Improvement of Optical Label Switched Network</b>
5.	<i>Vasyl Yatskiv, Nataliya Yatskiv and Taras Tsavolyk (Ukraine)</i> <b>Burst Error-Correcting Codes Based on Modular Correcting Codes</b>
6.	<i>Maryan Kyryk and Volodymyr Yanyshyn (Ukraine)</i> <b>Cognitive Radio Network Simulation Model for Capacity Evaluation</b>
7.	<i>Volodymyr Saiko, Serhii Toliupa, Volodymyr Nakonechnyi and Serhii Dakov (Ukraine)</i> <b>The Method for Reducing Probability of Incorrect Data Reception In Radio Channels of Terahertz Frequency Range</b>
8.	<i>Vasyl Romanchuk, Arthur Polishuk, Mykola Beshley and Marian Seliuchenko (Ukraine)</i> <b>Method for Processing Multiservice Traffic in Network Node Based on Adaptive Management of Buffer Resource</b>
9.	<i>Vladimir Tolubko, Sergei Otrokh, Lyubov Berkman, Oleksandr Pliushch and Vladislav Kravchenko (Ukraine)</i> <b>Noise Immunity Calculation Methodology for Multi-Positional Signal Constellations</b>
10.	<i>Anatoliy Semenko, Mykola Kushnir, Natalia Bokla and Grygoriy Kosovan (Ukraine)</i> <b>Features of creating based on chaos pseudo-random sequences</b>

**S12: MODELS, ALGORITHMS, SOFTWARE AND HARDWARE  
CONSTRUCTION MEANS OF INFORMATION AND  
COMMUNICATION AND RADIO ELECTRONIC DEVICES AND  
SYSTEMS**

Wednesday, February 21

**09.00 – 13.00**

Co-Chairs:

Prof. Volodymyr Shkliarsky (Ukraine) and Prof. Volodymyr Lukin (Ukraine)

**ORAL SESSION**

1.	<i>Maryna Miroshnyk, Dmitry Karaman, Viktoriia Krylova, Inna Filippenko, Tetyana Korytchinko and Olexandr Demihev (Ukraine)</i> <b>Practical Methods for de Bruijn sequences Generation using Non-Linear Feedback Shift Registers</b>
2.	<i>Gennadiy Bortnyk, Mikola Vasylkivskyi and Vasyl Kychak (Ukraine)</i> <b>Analog-digital path of radio-technical systems with digital processing of high-frequency signals</b>
3.	<i>Andriy Samila, Olexandr Hres and Georgiy Rozorynov (Ukraine)</i> <b>Hardware and software implementation of data acquisition system for pulsed NQR spectrometer</b>
4.	<i>Pavel Pustovoitov, Galina Sokol and Natalia Rvachova (Ukraine)</i> <b>Routing Procedure In Network With Nodes Dynamic Usage Rate</b>
5.	<i>Svitlana Hrushko (Ukraine)</i> <b>Implementing Combined Finite State Machine with Heterogeneous Field Programmable Gate Array</b>
6.	<i>Ivan Trotsyshyn (Ukraine)</i> <b>Quantum Theory of Measurements: principQuantum Theory of Measurements: principles and methods of measuring convergence parameters of radio signals</b>
7.	<i>Josyp Bilynsky, Konstantin Ogorodnik, Alexander Lazarev and Andrii Syrovatskyi (Ukraine)</i> <b>Development and Research of an Ultrasonic Resonance Method Mathematical Model of Measuring Medium Parameter</b>
8.	<i>Igor Gula, Denis Makaryshkin and Viktor Mishan (Ukraine)</i> <b>Use of nonpositional numerical systems for design of high-speed computing frequency synthesizer</b>
9.	<i>Dmytro Kalian (Ukraine)</i> <b>Precise time provider with speed optimal phase-locked loop for digital substations of smart grid systems</b>

10.	<i>Oleksiy Polikarovskih, Liudmila Kovtun and Lesya Karpova (Ukraine)</i> <b>Principles of Construction of Structural Units for Direct Digital Frequency Synthesizer</b>
11.	<i>Roman Saiko (Ukraine)</i> <b>Methods of modeling electromagnetic fields</b>
12.	<i>Andriy Topalov, Oleksiy Kozlov, Oleksandr Gerasin, Galyna Kondratenko and Yuriy Kondratenko (Ukraine)</i> <b>Stabilization and Control of the Floating Dock's List and Trim: Algorithmic Solution</b>
13.	<i>Yuriy Bobalo, Volodymyr-Myron Mis'kiv, Ivan Prudyus and Roman Yankevych (Ukraine)</i> <b>A Synthesis Method of Optimal Binary Sequences with Simple Dimensionality</b>
14.	<i>Vitaliy Ivanyuk, Vadym Ponedilok and Jo Sterten (Ukraine, Norway)</i> <b>Regularization Methods for Differentiating Noise Signals</b>

### POSTER SESSION

1.	<i>Iryna Svyd, Ivan Obod, Ganna Zabolodko and Oleksandr Maltsev (Ukraine)</i> <b>Interference immunity of aircraft responders in secondary surveillance radars</b>
2.	<i>Ratybor Chohey, Dmytro Fedasyuk and Tetyana Marusenkova (Ukraine)</i> <b>A Model for Estimating Firmware Execution Time Based On Peripherals' Time Behavior</b>
3.	<i>Lesya Karpova, Oleksiy Polikarovskiykh, Liudmila Kovtun and Igor Gula (Ukraine)</i> <b>Method for correcting the time position of pulses in direct digital synthesizers of frequencies</b>
4.	<i>Ivan Maksymiv, Andriy Bondariev, Yuriy Bobalo, Serhiy Altunin and Myroslav Kiselychnyk (Ukraine)</i> <b>Research of the Noise Influence on Software Phase-Locked Loop Dynamic Performance</b>
5.	<i>Volodymyr Pyliavskyi, Oleg Gofaizen, Anna Vakarchuk and Serhii Siden (Ukraine)</i> <b>Use color appearance model for video applications</b>
6.	<i>Ihor Orlovskyi and Andrii Pirozhok (Ukraine)</i> <b>The laboratory stand with SCARA robot for training masters' students of electrotechnical specialties</b>
7.	<i>Andriy Mis'kiv, Volodymyr-Myron Mis'kiv, Ivan Prudyus and Roman Yankevych (Ukraine)</i> <b>Discrete Sequences with Optimal Aperiodic Autocorrelation Functions. Conditions for Existence</b>

8.	<i>Ivan Dadiak, Volodymyr Gryga, Yaroslav Nykolaichuk and Bohdan Dzundza (Ukraine)</i> <b>Research and implementation of hardware algorithms for multiplying binary numbers</b>
9.	<i>Petro Venherskyi and Yaryna Kokovska (Ukraine)</i> <b>Computer Simulation of Water Flow in Networks on the Basis of Kinematic Approximation</b>
10.	<i>Myroslav Kiselychnyk, Mykhailo Melen and Fedir Pavlov (Ukraine)</i> <b>Magnetometer on Avalanche Transistor</b>

Friday, February 23

**09.00 – 13.00**

Co-Chairs:

Prof. **Volodymyr Shkliarskyi (Ukraine)** and Prof. **Volodymyr Lukin (Ukraine)**

**ORAL SESSION**

1.	<i>Sergey Pidchenko, Alla Taranchuk and Anna Spivak (Ukraine)</i> <b>Parametric Synthesis of Piezoresonance Oscillation Systems in Multi-Frequency Excitation Mode of Quartz Resonator</b>
2.	<i>V.M. Onufrienko, T.I. Slyusarova and L.M. Onufrienko (Ukraine)</i> <b>Planar Fractally-Shaped Terahertz Waveguide: on the Goos-Hänchen Effect</b>
3.	<i>Ihor Bodnarchuk, Olexandr Kharchenko, Ihor Raichev and Natalia Zagorodna (Ukraine)</i> <b>Optimization of Software Architecture Selection for the System Under Design and Reengineering</b>
4.	<i>Ivan Katerynychuk, Oleg Shynkaruk and Igor Balytskyi (Ukraine)</i> <b>Definition of approaches to the assessment of tactical unmanned aerial vehicles effective use in the state border guard body</b>
5.	<i>Oleksandr Shkiliuk, Bohdan Volochiy, Leonid Ozirkovskyy and Volodymyr-Myron Miskiv (Ukraine)</i> <b>Research of Efficiency Indexes of Radio Telemetry System with Short-Term Use</b>
6.	<i>Mykola Dyvak, Iryna Voytyuk, Natalia Porplytsya and Andriy Pukas (Ukraine)</i> <b>Modeling the Process of Air Pollution by Harmful Emissions from Vehicles</b>



# SLAVSKE MAP

