



**IEEE**



**TCSET'2014**

# **CONFERENCE PROGRAMME**

**XII<sup>th</sup> International Conference**

**Dedicated to the 170th anniversary of the Lviv Polytechnic  
National University**

**“MODERN PROBLEMS OF RADIO  
ENGINEERING, TELECOMMUNICATIONS,  
AND COMPUTER SCIENCE”**

**Lviv-Slavske, Ukraine  
February 25 – March 1, 2014**

## TCSET'2014

International Conference  
 "Modern Problems of Radio Engineering, Telecommunications, and Computer  
 Science"

Organized by

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## CONFERENCE SECTIONS

<b>S1</b>	Electronic circuits theory and mathematical modelling in radioelectronics and electrical engineering
<b>S2</b>	Antenna systems, microwave devices, and electromagnetic compatibility
<b>S3</b>	Models, algorithms, hardware, and software means for radioelectronic devices and systems
<b>S4</b>	Electronics: systems and devices, micro- and nanotechnologies
<b>S5</b>	Theoretical, software, and algorithmic aspects of information systems and technologies design
<b>S6</b>	Telecommunication systems and networks
<b>S7</b>	Information and Communication Technologies
<b>S8</b>	Selection and processing of the information
<b>S9</b>	Biotechnical and medical electronic devices and systems
<b>S10</b>	Radio-technical systems of the communication, positioning and control

## CONFERENCE TIMETABLE

<b>Tuesday February, 25</b>	<b>Wednesday February, 26 Section (session)</b>	<b>Thursday February, 27 Section (session)</b>	<b>Friday February, 28 Section (session)</b>	<b>Saturday March, 1</b>
10.00-13.00 <b>Registration</b>	9.00-13.00 <b>S1(s1), S3(s1), S5(s1), S6(s1)</b>	9.00-12.30 <b>S7(s1), S8(s1), S10(s1)</b>	9.00-12.00 <b>S2, S4(s1)</b>	10.00-12.00  <b>Participants departure</b>
14.00-19.00 Conference opening <b>Plenary Session</b>	14.00-18.00 <b>S1(s2), S3(s2), S5(s2), S6(s2)</b>	13.30-18.00 <b>S7(s2), S8(s2), S10(s2)</b>  19.00 <b>Welcoming dinner</b>	13.00-16.00 <b>S4(s2), S9</b>  16.00-18.00 <b>Final Session</b>	

Paper presentation at the regular session – 10 min

Discussion, questions – 5 min

## CONFERENCE OPENING

### PLENARY SESSION

Tuesday, February, 25

**14.00 – 19.00**

#### Co-Chairs:

Prof., DSc **Yuriy Bobalo**, Lviv Polytechnic National University

Prof., DSc **Ivan Prudyus**, Lviv Polytechnic National University

1.	<b>Rector Introduction</b> <i>Yuriy Bobalo</i> Rector, Lviv Polytechnic National University
2.	<b>The Theoretical Aspects and Practical Features Multi-Objective Optimization of Processes to Ensure the Quality of REE at the Manufacturing Stage</b> <i>Yuriy Bobalo, Andrey Bondariev, Myroslav Kiselychnyk, Oleg Nadobko, Leonid Nedostup</i> Lviv Polytechnic National University, Lviv, Ukraine
3.	<b>Advanced Wireless Access Methods for 5G Heterogeneous Mobile Networks</b> <i><sup>1</sup>Minho Jo, <sup>2</sup>Taras Maksymyuk, <sup>2</sup>Maryan Kyryk, <sup>2</sup>Mykhailo Klymash</i> <sup>1</sup> Korea University, Seoul, S. Korea <sup>2</sup> Lviv Polytechnic National University, Lviv, Ukraine
4.	<b>New Features of Reliability Engineering Technology of Radioelectronic Systems</b> <i>Bohdan Volochiy, Bohdan Mandziy, Leonid Ozirkovskyi</i> Lviv Polytechnic National University, Lviv, Ukraine
5.	<b>Creation of Highly Efficient Converged Infocommunication Networks of the Fifth Generation (5G)</b> <i>Vladimir Tolubko, Lubov Berkman, Larissa Komarova</i> State University of Telecommunications, Kyiv, Ukraine
6.	<b>Performance Analysis of Tensor Approach to Multipath QoS-based Routing</b> <i>Olexandr Lemeshko, Oksana Yevsyeyeva, Ahmad Hailan</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine

7.	<p><b>Increase of Design Efficiency of Linear Passive Microwave Devices in Integrated Execution through the Applying of Structure Symmetry Properties</b></p> <p><i>Valeriy Oborzhytskyy</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
8.	<p><b>Multi Frequency Phase Ranging Of The Objects</b></p> <p><i>Oleg Shinkaruk, Vitalii Liubchuk</i></p> <p>Khmelnitsky National University, Khmel'nitsky, Ukraine</p>
9.	<p><b>Comparative Analysis of Methods for Describing Topological Structures of Cloud Networks</b></p> <p><i>Bogdan Strykhalyuk, Olga Shpur, Mykhaylo Klymash</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
10.	<p><b>Multicriteria Choice of Optimal Design Decisions When Planning of LTE Networks</b></p> <p><i>Valeriy Bezruk, Daria Chebotareva, Ivanenko S. A.</i></p> <p>Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>

## SECTION 1

**ELECTRONIC CIRCUITS THEORY AND MATHEMATICAL  
MODELLING IN RADIOELECTRONICS AND ELECTRICAL  
ENGINEERING**

Wednesday, February 26 – Session 1

**9.00 – 13.00**

**Co-Chairs:**

Prof., DSc **Bohdan Mandziy**, Lviv Polytechnic National University

Prof., DSc **Petro Stakhiv**, Lviv Polytechnic National University

<b>1.</b>	<p><b>Quantum Method for Diagnosing Digital Systems</b> <i>Vladimir Hahanov, Svetlana Chumachenko, Anna Hahanova, Sergey Dementiev</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>
<b>2.</b>	<p><b>Modeling of Digital Systems</b> <i>Wajeb Gharibi, Vladimir Hahanov, Baghdadi Ammar Awni Abbas, Eugenia Litvinova, Dmitry Shcherbin</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>
<b>3.</b>	<p><b>Parameters Estimation of Correlated Random Sequences by Method of Maximizing of the Polynomial</b> <i>Volodymir Palahin, Alexander Ivchenko</i> Cherkasy State Technological University, Cherkasy, Ukraine</p>
<b>4.</b>	<p><b>About the Decrease Bulkiness of Mathematical Model of Linear Periodically Time-Variable Circuit</b> <i>Yuriy Shapovalov, Bohdan Mandziy, Dariya Bachyk</i> Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>5.</b>	<p><b>Tolerances Analysis and Optimization of Linear Periodically Time-Variable Circuits Based on the Frequency Symbolic Method</b> <i>Yuriy Shapovalov, Bohdan Mandziy, Dariya Bachyk</i> Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>6.</b>	<p><b>Approach to Design Automation of OBIST-based Test Circuitries for Analog Circuits</b> <i>Sergey Mosin</i> Vladimir State University, Vladimir, Russian Federation</p>
<b>7.</b>	<p><b>Usage of Expert Analysis for Practical Creation of Macromodels of Electrotechnical Systems</b> <i>Petro Stakhiv, Yuriy Kozak, Oksana Hoholyuk</i> Lviv Polytechnic National University, Lviv, Ukraine</p>



8.	<b>Evaluation of Functional Suitability of the Filter by the Method of Confidence Ellipsoids</b> <i>Svitlana Krepych</i> Ternopil National Economic University, Ternopil, Ukraine
9.	<b>Asymptotic Solution to Problem of Electromagnetic Scattering for Particles with Impedance Boundary Conditions</b> <i>Mykhaylo Andriychuk</i> Pidstryhach Institute for Applied Problems in Mechanics and Mathematics, NASU, Lviv, Ukraine
10.	<b>Interference Obstacles in Orthogonal Harmonic Signals Transfer Function</b> <i>Vitaliy Balashov, Leonid Lyakhovetsky, Irina Barba</i> Odessa national academy of telecommunications n.a. O.S. Popov, Odessa, Ukraine
11.	<b>Optimization of Digital Down Converter (DDC) Parameters for Implementation on FPGA</b> <i>Mykola Pavlenko</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
12.	<b>Source-Sink Control Properties of Fractal Point Vibrator</b> <i>Volodymyr Onufriyenko, Kateryna Chernyakhovska, Andriy Kuzemko</i> Zaporizhzhya National Technical University, Zaporizhzhya, Ukraine
13.	<b>Modeling Nonlinear Element of Chaotic Communication Systems</b> <i>Volodymyr Rusyn, Mykola Kushnir</i> Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine
14.	<b>The Integral Estimation of Chaos Generators</b> <i>Oleg Golevych</i> Khmelnitsky national university, Khmelnytsky, Ukraine

#### POSTER SECTION

15.	<b>Hybrid Intelligent Models Synthesis based on Association Rules</b> <i>Andrii Oliinyk, Tetyana Zayko, Sergey Subbotin</i> Zaporizhzhya National Technical University, Zaporizhzhya, Ukraine
16.	<b>The Analytical Description of Regular LDPC Codes Error-Correcting Ability</b> <i>Serhii Osypchuk</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine

17.	<b>Intrinsic Mode Function by Orthogonal Eigenvector Basis</b> <i>Volodymyr Moroz</i> Mechnikov National University, Odesa, Ukraine
18.	<b>Modelling of Moving of Rolled Stock on a Cooling Bed of Mill 390</b> <i>Valeriy Potsepaev</i> Donetsk National University, Donetsk, Ukraine
19.	<b>The Method of Integral Impedance Boundary Conditions Describing the Action of Pulsed Fields</b> <i>Victor Erofeenko</i> Belarusian State University, Minsk, Belarus

**Wednesday, February 26 – Session 2**

**14.00 – 18.00**

**Co-Chairs:**

Prof., DSc **Bohdan Mandziy**, Lviv Polytechnic National University

Prof., DSc **Petro Stakhiv**, Lviv Polytechnic National University

20.	<b>Passive Immitance LC-Logic Gates</b> <i>Chekhmestrouck R. Yu., Lishchinskaya L.B., Filinyuk N.A., Voytsekhovskaya E.V</i> Vinnytsia national technical university, Vinnytsia, Ukraine
21.	<b>Overview of Shape Parameter Estimators for Generalized Gaussian Distribution</b> <i><sup>1</sup>A.A. Roenko, <sup>1</sup>V.V. Lukin, <sup>2</sup>I. Djurovic, <sup>2</sup>M. Simeunovic</i> <sup>1</sup> National Airspace University named after N.Y. Zhukovsky “Kharkiv Aviation Institute”, Kharkiv, Ukraine <sup>2</sup> University of Montenegro, Podgorica, Montenegro
22.	<b>Investigation of Integral Nonlinearity of Third Order Sigma-Delta Modulator</b> <i><sup>2</sup>Zhongju Chen, <sup>1</sup>Roman Kochan, <sup>1</sup>Orest Kochan, <sup>1</sup>Iryna Yaremchuk</i> <sup>1</sup> Lviv Polytechnic National University, Lviv, Ukraine <sup>2</sup> School of Computer Science, Jingzhou, China
23.	<b>Analytical Modeling for Assessing the Capacity of Wireless Networks</b> <i>Gregoryy Vaskiv</i> Lviv Polytechnic National University, Lviv, Ukraine
24.	<b>Forming Pseudorandom Binary Signals Using Hardware and Software</b> <i>Kuzyk A. O., Matiyeshyn P. M.</i> Lviv Polytechnic National University, Lviv, Ukraine

25.	<b>Developing PC Software Project Duration Model based on Johnson transformation</b> <i>Sergiy Prykhodko, Andriy Pukhalevich</i> Admiral Makarov National University of Shipbuilding, Mykolayiv, Ukraine
26.	<b>DOA Estimation via Modified Unitary Root-MUSIC with Pseudo-noise Resampling</b> <i>Volodymyr Vasylyshyn</i> The Air Force University Kozhedub, Kharkiv, Ukraine
27.	<b>Analysis of Fast ReRoute Model For Multicast And Broadcast Flows in MPLS Network</b> <i>Kinan Arous, Alla Romanyuk, Natalia Korolyuk</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
28.	<b>Analysis Of Different Multipath Routing Metods In Traffic Designing Tasks</b> <i>Irina Strelkovskaya, Irina Solovskaya</i> Odessa national academy of telecommunications named after A.S. Popov, Odessa, Ukraine
29.	<b>Parametric Identification Methods of the Model of Website's Attendance</b> <i>Natalia Pasichnyk, Andriy Melnyk, Lyudmyla Honchar</i> Ternopil National Economic University, Ternopil, Ukraine
30.	<b>Numerical Modeling of Water Movement in the River Network in the Selected Area</b> <i>Petro Venherskyi, Yaryna Kokovska</i> Franko National University of Lviv, Lviv, Ukraine
31.	<b>Simulation of Fuzzy Regulator Based Electromechanical arc Steel Furnace Power Control System Modes</b> <i>Orest Lozynskyy, Yaroslav Paranchuk, Roman Paranchuk</i> Lviv Polytechnic National University, Lviv, Ukraine
32.	<b>Algorithm for Identification of Weighting Coefficients of Artificial Neural Networks with RBF for the Task of Detecting Laryngeal Nerve in Surgical Wound</b> <i>Nadya Savka, Mykola Dyvak, Iryna Strubytska, Viktor Spilchuk</i> Ternopil National Economic University, Ternopil, Ukraine

<b>33.</b>	<p><b>Forming of Equivalent Circuits of Heterogeneous Parts of a Complex Object Using Diakoptical Approach</b></p> <p><i>Serhiy Rendzinyak</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
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### POSTER SECTION

<b>34.</b>	<p><b>Application Graph Model to Describe the Virtual Clusters of the HPC Type in the Cloud Computing</b></p> <p><i>Vitalii Nikitchenko</i></p> <p>Odessa national academy of telecommunications n.a. O.S. Popov, Odessa, Ukraine</p>
<b>35.</b>	<p><b>Method for Improving the Dynamic Range of the Analog-to-digital Path Signal Conversion Phase Jitter</b></p> <p><i>Gennadiy Bortnik, Mikola Vasylykivskyj, Mikhailo Minov</i></p> <p>Vinnitsa National Technical University, Vinnitsa, Ukraine</p>
<b>36.</b>	<p><b>Using of Parallel Computing for the Quasi-static Analysis of Microstrip Filters Topology</b></p> <p><i><sup>1</sup>Yuriy Sitsilitsin, <sup>2</sup>Maryna Mishchenko, <sup>2</sup>Nataliya Furmanova, <sup>2</sup>Olexiy Farafonov</i></p> <p><sup>1</sup>Taurian State Agrotechnological University, Melitopol, Ukraine <sup>2</sup>Zaporizhzhya National Technical University, Zaporizhzhya, Ukraine</p>
<b>37.</b>	<p><b>Mathematical Model of the Information Flows Transmission in Selected Route Channels in Mobile Special Purpose Radio Network</b></p> <p><i>Kostiantyn Polshchikov</i></p> <p>Donbass State Engineering Academy, Kramatorsk, Ukraine</p>
<b>38.</b>	<p><b>The Mathematical Modeling of the Working Regimes of the Pumps with Frequency-Controlled A.C. Drives</b></p> <p><i>Andriy Kutsyk, Andriy Lozynskyy, Olexander Kinchur</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>

**SECTION 2**  
**ANTENNA SYSTEMS, MICROWAVE DEVICES, AND**  
**ELECTROMAGNETIC COMPATIBILITY**

Friday, February 28

**9.00 – 12.00**

**Co-Chairs:**

Prof., DSc **Vitalij Nichoga**, Lviv Polytechnic National University

Prof., DSc **Volodymyr Krizhanovski**, Doneck National University

<b>1.</b>	<p><b>Antennas and Probes in EMF Metrology</b>  <i>Pawel Bienkowski, Vitalij Nichoga, Hubert Trzaska</i>          Technical University of Wroclaw, Wrocław, Poland,</p>
<b>2.</b>	<p><b>Integral, Local and Point Sensors for Magnetic Diagnostics of Technical Condition of Track Rails</b>  <i>Vitalij Nichoga, Petro Dub, Ihor Storozh</i>          Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>3.</b>	<p><b>Analysis of Curvilinear Antenna Array and Optimization of its Parameters</b>  <i>Mikhail Protsenko, Andrii Iaremenko</i>          Odessa national academy of telecommunications n.a. O.S. Popov, Odessa, Ukraine</p>
<b>4.</b>	<p><b>Results of Numerical Research of Circular Arrays Synthesized with the Account of Patterns of Elements</b>  <i>Alexander Romanovich, Alexander Kalinin</i>          Educational establishment «Belarusian State University of Informatics and Radioelectronics», Minsk, Republic of Belarus</p>
<b>5.</b>	<p><b>Microstrip Resonant Sensors for Scanning Microwave Microscopy</b>  <i>Igor Bondarenko, Aleksandr Galich</i>          Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>
<b>6.</b>	<p><b>The Impact of Water, Ice and Snow on Reflector of a Mirror Antenna Upon its Gain</b>  <i>Oleg Voitovych, Grigory Khlopov</i>          O.Ya. Usikov Institute for Radiophysics and Electronics of the National Academy of Sciences of Ukraine, Kharkiv, Ukraine</p>

7.	<p><b>Microstrip Patch Antenna for 4-6 GHz Frequency Band</b></p> <p><i>Oleg Yurtsev, Yury Bobkov, Ivan Shalagin</i></p> <p>Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus</p>
8.	<p><b>Microstrip Radiator for Sparse Antenna Array</b></p> <p><i>Ivan Shalyapin</i></p> <p>Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus</p>
9.	<p><b>Physical Modeling of Field Distribution for Magnetic Crack Detector</b></p> <p><i>Igor Storozh, Vitalij Nichoga, Liubomyr Vashchyshyn</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
10.	<p><b>Two-Branch Conical Spiral Antenna Radiation Characteristics Optimization</b></p> <p><i>Vladislav Golovin, Andrew Lukyanchikov, Yuriy Tyschuk</i></p> <p>Sevastopol National Technical University</p>
11.	<p><b>A Novel Approach for Measuring Dielectric Permittivity at Sub-THz Frequencies Using Vector Network Analyzer</b></p> <p><i>Nazariy Andrushchak, Yevgen Yashchyshyn, Ivan Karbovnyk, Andriy Vaskiv, Anatoliy Andrushchak</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
12.	<p><b>Algorithm of Simulation Electromagnetic Environment in Cinema and Concert Hall</b></p> <p><i>Volodymyr Pilinsky, Marija Rodionova, Oleksandr Chupakhin, Jaroslav Zozulenko</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
13.	<p><b>Methods of the Provision EMC of Radio Electronics Complexes and Systems</b></p> <p><i>Oleksandr Serkov</i></p> <p>National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine</p>
14.	<p><b>Methods of Electromagnetic Field Measurements in E-Band (60-90 GHz)</b></p> <p><i>Paweł Bienkowski, Paweł Gala, Vitalij Nichoga, Hubert Trzaska, Bartłomiej Zubrzak</i></p> <p>Technical University of Wrocław, Wrocław, Poland</p>

15.	<p><b>Sidelobes Suppression in Time Modulated Linear Array with Consecutive Switching</b></p> <p><i><sup>1</sup>Grzegorz Bogdan, <sup>1</sup>Yevhen Yashchyshyn, <sup>2</sup>Mehrbod Mohajer</i></p> <p><sup>1</sup> Warsaw University of Technology, Warsaw, Poland  <sup>2</sup> University of Waterloo, West, Waterloo, Ontario, Canada</p>
16.	<p><b>Simulation of the Antenna Azimuth Position Control System with Fuzzy PID-like Controller</b></p> <p><i>O. Mnushka</i></p> <p>Kharkiv National Automobile and Highway University, Kharkiv, Ukraine</p>

### POSTER SECTION

17.	<p><b>Research of the Vibration Effects on the Mirror Antenna's Radiation Using ANSYS</b></p> <p><i>Denis Shishulin, Alexander Yakimov, Nikolay Yurkov</i></p> <p>Penza State University, Penza, Russia</p>
18.	<p><b>Parametric Identification of the Characteristics Clusters for Model Indoor MIMO Radio Channel</b></p> <p><i>O. Kuznietsov, O. Tsopa</i></p> <p>Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>
19.	<p><b>A Model of Slotted Waveguide Antenna with an Asymmetrical Directional Diagram for on-off Radioray Safeguards</b></p> <p><i>Andryi Dobrovolskyi</i></p> <p>Bohdan Khmelnytsky National Academy of the State Border Guard Service of Ukraine, Khmelnytsky, Ukraine</p>
20.	<p><b>The Mutual Coupling of Rectangular Slot Resonators in Microstrip Line Ground Plane</b></p> <p><i>Yuliya Rassokhina, Volodymyr Krizhanovski</i></p> <p>Donetsk National University, Donetsk, Ukraine</p>
21.	<p><b>Introduction of Procedure the Distributed Processing of Information of the Real Time in Adaptive RFI-filters with a Wireless Interface</b></p> <p><i>Volodymyr Shvaichenko, Dmytro Titkov, Othman Sharadjah</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>

22.	<b>Low Noise Low Cost X-band Cavity Stabilized Oscillator</b> <i>Ivan Tsvelykh</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
23.	<b>Application of the Quasi-Optical Dielectric Resonator in the Resonant Auto-Oscillatory System</b> <i><sup>1</sup>A. V. Dormidontov, <sup>2</sup>Yu. F. Lonin, <sup>2</sup>A. G. Ponomarev, <sup>1</sup>Yu. V. Prokopenko</i>  <sup>1</sup> Usikov Institute of Radiophysics and Electronics, NAS of Ukraine, Kharkiv, Ukraine <sup>2</sup> Kharkiv Institute of Physics and Technology, Kharkiv, Ukraine
24.	<b>Circularly Polarized Microstrip Antenna for RFID Systems</b> <i>Andrey Schekaturin, Yury Mickhayluck, Alexander Savochkin</i> Sevastopol National Technical University, Sevastopol, Ukraine



**SECTION 3**  
**MODELS, ALGORITHMS, HARDWARE AND SOFTWARE MEANS**  
**FOR RADIO-ELECTRONIC DEVICES AND SYSTEMS**

Wednesday, February 26 – Session 1

**09.00 – 13.00**

**Co-Chairs:**

Prof., DSc **Bohdan Volochiy**, Lviv Polytechnic National University  
 Prof., DSc **Oleh Shynkaruk**, Khmelnytskyi National University

<b>1.</b>	<p><b>Software Architecture for Automation of Building the Reliability Models of Complex Technical Systems</b>  <i>Bogdan Mandziy, Dmytro Fedasyuk, Maxym Seniv</i>          Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>2.</b>	<p><b>Microcontroller System of Temperature Stabilization for Investigation of Thermoacoustic Engine Model Driven by the Waste Heat Energy</b>  <i>Yuriy Kondratenko, Volodymyr Korobko, Oleksiy Korobko</i>          Petro Mohyla Black Sea State University, Mykolayiv, Ukraine</p>
<b>3.</b>	<p><b>Adaptive Laser Distance Meter for Mobile Outdoor Applications</b>  <i>Sergiy Tyurin, Volodymyr Tyurin, Sergiy Perederyi</i>          Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>
<b>4.</b>	<p><b>Introduction to Reliability Development Lifecycle</b>  <i>Vitaliy Yakovyna</i>          Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>5.</b>	<p><b>Program Complex for Multi-objective Optimization of Processes to Ensure the Quality of REE at the Manufacturing Stage</b>  <i>Andrey Bondariev, Oleg Nadobko, Pavlo Taradakha, Lyubomyr Chyrun</i>          Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>6.</b>	<p><b>Cheap and Scalable Development Board for General Purpose Microcontrollers Systems</b>  <i>Dmytro Titkov</i>          National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
<b>7.</b>	<p><b>The Adaptive Model Operation of Complex Engineering Systems of Special Purpose</b>  <i>Volodymyr Sobchenko</i>          The National Academy of State Border Service of Ukraine named after Bogdan Khmelnytsky, Khmelnytsky, Ukraine</p>

8.	<p><b>Minimal Cut Sets Determination for Renewable Systems With Limited Repairs</b>  <i>Bohdan Volochiy, Leonid Ozirkovskyi, Andriy Mashchak, Oleksandr Shkiliuk</i>  Lviv Polytechnic National University, Lviv, Ukraine</p>
9.	<p><b>Comparative Characteristics of the PC ASONIKA-K and Reliability Calculations Programs</b>  <sup>1</sup><i>Alexander Iofin</i>, <sup>2</sup><i>Valeriy Zhadnov</i>  <sup>1</sup> JSC «Ural Design Bureau «Detal», Kamensk-Uralsky, Russia  <sup>2</sup> National Research University «Higher School of Economics», Moscow, Russia</p>
10.	<p><b>Decision Procedure Optimization for RFID Boundary Control Systems</b>  <sup>1</sup><i>Andrew Lukyanchikov</i>, <sup>2</sup><i>Eduard Levin</i>  <sup>1</sup> Sevastopol National Technical University, Sevastopol, Ukraine  <sup>2</sup> 3DTac Inc., Toronto, Ontario, Canada</p>
11.	<p><b>Evaluation Method of System Reliability of Special Communication</b>  <i>Sergiy Gnatiuk</i>  National Technical University of Ukraine 'Kyiv Polytechnic Institute', Kyiv, Ukraine</p>
12.	<p><b>Reliability Estimation of Renewable Dual Channel Telecommunication System</b>  <i>Bohdan Volochiy, Leonid Ozirkovskyy, Mykhailo Zmysnyi, Ihor Kulyk, Sergiy Martugov</i>  Lviv Polytechnic National University, Lviv, Ukraine</p>
13.	<p><b>Modelling the Reaction of Guard Signalling Complex on Appearance of Moving Object When Seismic Sensors Are Deployed in Far and Close Control Zones</b>  <sup>2</sup><i>Bogdan Volochiy</i>, <sup>1</sup><i>Volodymyr Onishchenko</i>  <sup>1</sup> Army Academy named after Hetman Petro Sahaydachnyi, Lviv, Ukraine  <sup>2</sup> Lviv Polytechnic National University, Lviv, Ukraine</p>

#### POSTER SECTION

14.	<p><b>Neural Network Method for Temperature Field Control</b>  <sup>1</sup><i>Lei Ming</i>, <sup>2</sup><i>Orest Kochan</i>, <sup>2</sup><i>Roman Kochan</i>, <sup>2</sup><i>Hryhoriy Sapojnyk</i>  <sup>1</sup> School of Computer Science, Jingzhou, China  <sup>2</sup> Ternopil National Economic University, Ternopil, Ukraine</p>
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15.	<p><b>Methods of Microprocessors Average Energy Consumption Measurements</b></p> <p><i><sup>1</sup>Zhongju Chen, <sup>2</sup>Oleksandr Osolinskiy, <sup>3</sup>Volodymyr Kochan, <sup>2</sup>Orest Kochan</i></p> <p><sup>1</sup> School of Computer Science, Jingzhou, China  <sup>2</sup> Ternopil National Economic University, Ternopil, Ukraine</p>
16.	<p><b>Approach of Testing Signals Generation for ADC Metrology Verification</b></p> <p><i><sup>1</sup>Qiu Lin, <sup>2</sup>Roman Kochan, <sup>2</sup>Orest Kochan, <sup>2</sup>Halyna Klym</i></p> <p><sup>1</sup> School of Computer Science, Jingzhou, China  <sup>2</sup> Lviv Polytechnic National University, Lviv, Ukraine</p>
17.	<p><b>Design Load Network for Class-F Amplifier</b></p> <p><i>Andrii Yefymovych, Vladimir Krizhanovski</i></p> <p>Donetsk National University, Donetsk, Ukraine</p>
18.	<p><b>High-speed Computing Frequency Synthesizer in Galois Basis</b></p> <p><i>Oleksiy Polikarovskiykh, Viktor Mishan</i></p> <p>Khmelnytsky National University, Khmelnytsky, Ukraine</p>
19.	<p><b>Analysis of Reliability Indicators for Unsymmetrical Ramified Systems</b></p> <p><i>Andriy Sydor, Vasyl Teslyuk</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>

Wednesday, February 26 – Session 2

**14.00 – 18.00**

**Co-Chairs:**

Prof., DSc **Bohdan Volochiy**, Lviv Polytechnic National University

Prof., DSc **Oleh Shynkaruk**, Khmelnytskyi National University

20.	<p><b>Extended Bias-dependent Noise Macromodel of Operational Transconductance Amplifier</b></p> <p><i>Andrii Zazerin, Anatolii Orlov, Oleksandr Bogdan</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
21.	<p><b>The Multi-Valued Logic Elements Synthesis Using the Fuzzy Approach</b></p> <p><i>Olena Semenova, Andriy Semenov, Evgen Lutskiy, Olexander Zubarev, Roman Beznosjuk</i></p> <p>Vinnitsia National Technical University, Vinnitsia, Ukraine</p>

22.	<b>Modeling of Phase Angle Shift Measurer Based on Coincidence Series of Pulses in IDE Altera Baseline</b> <i>Igor Gula, Kostiantyn Horiashchenko, Oleg Voitiuk</i> Khmel'nitsky National University, Khmel'nitsky, Ukraine
23.	<b>Low Cost and Compact O/E Converter</b> <i>Anna Łysiuk, Konrad Godziszewski, Yevhen Yashchyslyn</i> Warsaw University of Technology, Warsaw, Poland
24.	<b>Multichannel Digital Filters on FPGA</b> <i>Bychkov V., Pravda V</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
25.	<b>Table-driven Algorithm for Line-tracking Autonomous Robots</b> <i>Aleks Nykorak, Robert E. Hiromoto, Anatoliy Sachenko, Vasyl Koval</i> Ternopil National Economic University, Ternopil, Ukraine
26.	<b>Time Domain Measurement of the Class E Oscillator Frequency Stability</b> <i>Vladimir Krizhanovskii, Sergey Sergienko</i> Donetsk National University, Donetsk, Ukraine
27.	<b>Impulse Selector for "Non Energy" Impulse Radio Ultra Wide Band Receiver</b> <i>Sergey Bunin, Roman Zhogov</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
28.	<b>The Automated Low-Frequency Relaxometer for Measuring the Internal Friction in Solids</b> <i>S.V. Balovsyak, T.A. Kazemirs'ky, E.I. Kurek, A.V. Oleynich-Lysyuk</i> Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine
29.	<b>FPGA-based programmable pulse sequencer for NQR-FFT spectrometer</b> <i>Andriy Samila, Vladislav Andrushchak, Fedor Kuku</i> Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine
30.	<b>Method for Determining the Optimal Performance of Polynomial Degree Canonical Expansion for Recognition of Random Sequences</b> <i>Igor Atamanyuk, Yuriy Kondratenko, Vyacheslav Shebanin</i> Mykolayiv National Agrarian University, Mykolayiv, Ukraine

**POSTER SECTION**

<b>31.</b>	<p><b>Modeling and Research of Total Cost Function of Quality Assurance Problems of the REE</b>  <i>Pavlo Taradakha, Myroslav Kiselychnyk, Leonid Nedostup, Oleg Nadobko</i>  Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>32.</b>	<p><b>Determination of Filters Parameters in Modified OQPSK Phase Detector</b>  <i>Andriy Bondarev, Ivan Maksymiv, Dmytro Pogoretsky</i>  Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>33.</b>	<p><b>Tolerance Range Evaluation in Low-Frequency Noise Level Control</b>  <i>Dmitry Mykhalevskiy</i>  Vinnytsia National Technical University</p>
<b>34.</b>	<p><b>Reliability Estimation of Embedded Systems with Software is Presented by Piecewise Linear Function</b>  <i>Bogdan Volochiy, Leonid Ozirkovskyi, Myron Miskiv, Vitaliy Yakovyna, Oleksandr Mulyak</i>  Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>35.</b>	<p><b>Reliability Model of Electrical System with Whole Standby Redundancy for Failure Cause Analysis</b>  <i>Serhiy Shcherbovskykh</i>  Lviv Polytechnic National University, Lviv, Ukraine</p>

**SECTION 4**  
**ELECTRONICS: SYSTEMS AND DEVICES, MICRO- AND**  
**NANOTECHNOLOGIES**

Friday, February 28 – Session 1

**9.00 – 12.00**

**Co-Chairs:**

Prof., DSc **Anatoliy Druzhynin**, Lviv Polytechnic National University  
 Prof., DSc **Bohdan Mytsyk**, Karpenko Physico-Mechanical Institute of NASU

<b>1.</b>	<p><b>P-channel Organic Field Effect Transistors Based on Pyrazoline Phenyl Derivatives</b></p> <p><i><sup>1</sup>Pavlo Stakhira, <sup>1</sup>Nataliia Kus, <sup>1</sup>Semen Khomyak, <sup>1</sup>Vladislav Cherpak, <sup>1</sup>Dmytro Volyniuk, <sup>1</sup>Volodymyr Novikov, <sup>1,2</sup>Zenon Hotra, <sup>2</sup>Jerzy Potencki, <sup>3</sup>Mykhajlo Hladun</i></p> <p><sup>1</sup> Lviv Polytechnic National University, Lviv, Ukraine  <sup>2</sup> Rzeszów University of Technology, Rzeszów, Poland  <sup>3</sup> European University, Lviv, Ukraine</p>
<b>2.</b>	<p><b>Rigorous Analysis of the Relief and Multilayer Subwavelength Periodic Structures</b></p> <p><i>Iryna Yaremchuk, Volodymyr Fitio, Yaroslav Bobitski</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>3.</b>	<p><b>A Usage of Symmetry in Search of Propagation Constants of Planar Gradient Waveguide Modes in a Frequency Domain</b></p> <p><i>Volodymyr Fitio, Volodymyr Romakh</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>4.</b>	<p><b>Computer Simulation the Influence of Electric Field on Forming of the Gradient Light Guide in the Layer of Nematic Liquid Crystal</b></p> <p><i>Zinoviy Mykytyuk, Yaroslav Ilnytskyi, Andriy Fechan, Orest Sushynskyy, Volodymyr Kotsun, Taras Prystay</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>5.</b>	<p><b>Elements of Integrated Circuit for Cryoelectronics</b></p> <p><i>Anatoly Druzhinin, Igor Ostrovskii, Igor Kogut, Yuriy Khoverko, Volodymyr Peretyatko</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>

6.	<b>Determination of Turning Piezo-Optic Coefficients by the Conoscopic Method on the Example of Calcium Tungstate Crystals</b> <i>Bohdan Mytsyk, Yaroslav Kost', Nataliya Demyanyshyn Volodymyr Gaba</i> Karpenko Physico-Mechanical Institute of NASU, Lviv, Ukraine
7.	<b>Impedance Spectroscopy of Si Wires</b> <i>Anatoly Druzhinin, Igor Ostrovskii, Yuriy Khoverko, Stepan Nichkalo, Roman Koretsky, Olexandra Adamchuk</i> Lviv Polytechnic National University, Lviv, Ukraine
8.	<b>Polymer Optical Fiber Based Strain Sensor</b> <i>Vasyl Varyshchuk, Hans Poisel, Yaroslav Bobitski</i> Lviv Polytechnic National University, Lviv, Ukraine
9.	<b>Effect of Multiplicities of Period of the Flat Modulated Dielectric Structure on the Spatial Distribution of the Field</b> <i>Viktor Hoblyk, Nadiia Goblyk, Iryna Nychai</i> Lviv Polytechnic National University, Lviv, Ukraine
10.	<b>Pressure-Temperature Sensor Based on P-Type Silicon Whiskers</b> <i>A.A. Druzhinin, A.P. Kuttrakov, N.S. Liakh-Kaguy, A.M. Vuytsyk</i> Lviv Polytechnic National University, Lviv, Ukraine
11.	<b>Metal/Ce<sub>x</sub>/Si Structures for MOS Devices</b> <i>Nataliia Maksimchuk</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
12.	<b>The Development of the Method for Measuring Phase Instability of Microwave Devices</b> <i>Konstyantyn Koval, Nelly Trukhacheva, Andriy Vergelyuk</i> Vinnytsia National Technical University, Vinnytsia, Ukraine

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13.	<b>Features of the Unequal Multilayer Coatings</b> <i>V.M. Fitio, G.A. Petrovska, I.Y. Yaremchuk</i> Lviv Polytechnic National University, Lviv, Ukraine
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14.	<p><b>A Sine Wave RC-oscillator on C-negatron</b></p> <p><i>Alexander Lazarev, Kostyantyn Koval, Denys Bondaryuk, Vladimir Stahov</i></p> <p>Vinnitsia National Technical University, Vinnitsia, Ukraine</p>
15.	<p><b>Magnetic Field Influence in Nanoheterostructure Including Magnetic and Semimagnetic Layers with Different Layer Width</b></p> <p><i>Cornelia Tovstyuk</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
16.	<p><b>Feasibility of Using Quantum Dots for Solar Spectrum Down-conversion in Photovoltaic Applications</b></p> <p><i><sup>1</sup>Rostyslav Lesyuk, <sup>2</sup>Val Marinov</i></p> <p><sup>1</sup> Pidstryhach Institute of Applied Problems of Mechanics and Mathematics of NASU, Lviv, Ukraine  <sup>2</sup> North Dakota State University, Fargo, USA</p>
17.	<p><b>Reserch of the Piezoelectric Thin Disk Asymmetric In-Plane Vibration Spectrum</b></p> <p><i>Iuliia Ianovska, Oleksandr Bogdan, Oleg Petrishev, Yuriy Yakimenko, Marina Lyskova</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, UKRAINE</p>
18.	<p><b>Investigation the Influence of External Static Electric Field on Semibounded Metal</b></p> <p><i>Petro Kostrobij, Bogdan Markovych, Ivan Zadvorniak</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
19.	<p><b>Coupled Biconical Resonators for Measuring the Parameters of Dielectric Liquids</b></p> <p><i>Oleg Drobakhin, Dmitry Saltykov</i></p> <p>Dnipropetrovsk National University, Dnipropetrovsk, Ukraine</p>
20.	<p><b>Technology of the Thick-film Microassembly with the use of Cu-contain Nanocompositions</b></p> <p><i>Shamil Kurmashev, Ivan Vikulin, Aleksandr Sofronkov</i></p> <p>Odessa national academy of telecommunications n.a. O.S. Popov, Odessa, Ukraine</p>



Friday, February 28 – Session 2

**13.00 – 16.00****Co-Chairs:**

Prof., DSc **Anatoliy Druzhynin**, Lviv Polytechnic National University  
 Prof., DSc **Bohdan Mytsyk**, Karpenko Physico-Mechanical Institute of NASU

21.	<p><b>Quasiclassical Electron Gas in Strong Anisotropic Layer Semiconductors</b>  <i>Cornelia Tovstyuk</i>          Lviv Polytechnic National University, Lviv, Ukraine</p>
22.	<p><b>The Short-Range Charge Carrier Scattering Models in Indium Antimonide</b>  <i>Orest Malyk, Galyna Kenyo, Volodymyr Myshchyshyn, Stepan Voytusik</i>          Lviv Polytechnic National University, Lviv, Ukraine</p>
23.	<p><b>Development of a New Information Technology for Efficient Application of Bulk and Nanostructured Crystalline Materials in Electro-Optical and Nonlinear Optical Devices</b>  <i><sup>1</sup>Anatoliy Andrushchak, <sup>2</sup>Oleg Kushnir, <sup>1</sup>Oleg Yurkevych, <sup>3</sup>Andrzej Rusek</i>  <sup>1</sup> Lviv Polytechnic National University, Lviv, Ukraine  <sup>2</sup> Ivan Franko Lviv National University, Lviv, Ukraine  <sup>3</sup> Czestochowa University of Technology, Czestochowa, Poland</p>
24.	<p><b>Measuring Thickness of Layers of Polymeric Materials by Using Phase Measurer Based on Multiplicity Impulses</b>  <i>Kostiantyn Horiashchenko, Igor Gula, Serhiy Horiashchenko</i>          Khmel'nitsky National University, Khmel'nitsky, Ukraine</p>
25.	<p><b>Post-growth Thermal Treatment of ZnO Nanorods</b>  <i>Veronika Ulianova, Anatolii Orlov, Genadzi Pashkevich, Oleksandr Bogdan</i>          National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>

26.	<p><b>Magnetic and Dielectric Properties of Microwave Transparent and Absorbing Materials - Opal Matrices whose Intersphere Nanocavities Filled with Multiferroic, Piezo- and Segnetoelectric Crystallites</b></p> <p><i><sup>1</sup>Mikhail Samoilovich, <sup>2</sup>Anatoliy Rinkevich, <sup>3</sup>Viktor Bovtun, <sup>1</sup>Alexey Belyanin</i></p> <p><sup>1</sup> Central Research Technological Institute «TECHNOMASH», Moscow, Russia  <sup>2</sup> Institute of Metal Physics, Ural Div. of the RAS, Ekaterinburg, Russia  <sup>3</sup> National Technical University of Ukraine «Kyiv Polytechnic Institute», Kyiv, Ukraine</p>
27.	<p><b>Mathematical Modeling of the Excitation of Bulk Waves in Piezoelectric Monocrystals of Acousto-optical Devices of Radio Electronics</b></p> <p><i>Oleksander Bogdan, Oleg Petrishev, Sergiy Zelenskyy, Yuriy Yakymenko</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
28.	<p><b>Methods of Correction of Distortions Luminous Raster Cathode Ray Tube</b></p> <p><i>Yurij Balanyuk, Volodymyr Shkliarskyi, Bogdana Lubinecka, Taras Smarkutskyi</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
29.	<p><b>Influence of Acoustic-Electronic Interaction on Formation of Nanostructure of Adsorbed Atoms</b></p> <p><i>Roman Peleshchak, Oleh Kuzyk, Olesya Dan'kiv, Maria Kuz'o, Mykhaylo Pavluk</i></p> <p>Ivan Franko Drohobych State Pedagogical University, Drohobych, Ukraine</p>
30.	<p><b>Influence of hydrogen electric centers pasivation degree on the resolving power of image optic record devices with <i>n-p-i-m</i> nanostructures</b></p> <p><i><sup>1</sup>V. Brytan, <sup>1</sup>R. Peleschak, <sup>2</sup>A. Velchenko, <sup>1</sup>D. Shuptar</i></p> <p><sup>1</sup> Ivan Franko Drohobych State Pedagogical University, Drohobych, Ukraine  <sup>2</sup> East-Ukrainian Volodymyr Dal National University, Lugansk, Ukraine</p>

31.	<p><b>Control Character of Schottky Current Transfer Diode Using Quantum Dots</b></p> <p><i><sup>1</sup>Roman Peleshchak, <sup>2</sup>Zenon Hotra, <sup>2</sup>Iryna Kremer, <sup>1</sup>Nadiya Kulyk</i></p> <p><sup>1</sup> Drohobych Ivan Franko state pedagogical University, Drohobych, Ukraine</p> <p><sup>2</sup> Lviv Polytechnic National University, Lviv, Ukraine</p>
32.	<p><b>Modelling of Ageing Processes in p+-p-conductive Thick-film Structures for Sensor Application</b></p> <p><i>Halyna Klym, Valentina Balitska, Oleh Shpotyuk, Ivan Hadzaman</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>

### POSTER SECTION

33.	<p><b>Digital Synthesizer With Temperature And Vibration Compensation Of Frequency Instability</b></p> <p><i>Sergey Pidchenko, Alla Taranchuk, Victor Stecjuk</i></p> <p>Khmelnytsky National University, Khmelnytsky, Ukraine</p>
34.	<p><b>Influence of Crystallization Processes on the Optical Properties of Ge-Ga-Se Glasses</b></p> <p><i>Halyna Klym, Oleh Shpotyuk</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
35.	<p><b>Two-photon Polymerization: Formation of Nanoscale Elements</b></p> <p><i>Denys Nevinskyi, Lubou Zakalyk, Volodymyr Pavlysh, Solomiya Lebid</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
36.	<p><b>Surface Hydrogenation of the Silicon Multicrystalline Substrate for Solar Cells</b></p> <p><i>Anatoliy Druzhinin, Valeriy Yerokhov, Nicolas Berchenko</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
37.	<p><b>Distribution of Optical Parameters in layer <math>CN_x:Eu^{3+}</math> on <math>SiO_2</math> Substrate</b></p> <p><i>Anna Velchenko, Natalia Radkevich, Vladimir Sviridov</i></p> <p><i>East-Ukrainian Volodymyr Dal National University, Lugansk, Ukraine</i></p>
38.	<p><b>Finding of Dispersion Mechanisms of Electrical Charge Carriers in Semiconductors Based on Energy Spectrum of Noises</b></p> <p><i>Zenoviy Kolodiy, Roman Peleshchak, Svyatoslav Yatsyshyn, Andriy Kolodiy</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>

39.	<p><b>Model Research of the Calorimetric Sensor Scheme Based on a Transistor Transducer</b></p> <p><i><sup>2</sup>Zenon Hotra, <sup>1</sup>Oksana Boyko, <sup>2</sup>Roman Holyaka</i></p> <p><sup>1</sup> Danylo Halytsky Lviv National Medical University, Lviv, Ukraine  <sup>2</sup> LvivPolytechnic National University, Lviv, Ukraine</p>
40.	<p><b>Characteristics of Blue Carbazole Based Organic Light-emitting Diodes with Electron Injection Layer</b></p> <p><i><sup>1</sup>Hrustuna Ivanyuk, <sup>1,2</sup>Zenon Hotra, <sup>1</sup>Ihor Helzhynskyy, <sup>1,3</sup>Dmytro Volyniuk, <sup>1</sup>Vladyslav Cherpak, <sup>1</sup>Pavlo Stakhira, <sup>3</sup>Asta Michaleviciute, <sup>3</sup>Jurate Simokaitiene, <sup>3</sup>Ausra Tomkeviciene, <sup>3</sup>Juozas Vidas Grazulevicius, <sup>3</sup>Grzegorz Bład</i></p> <p><sup>1</sup> Lviv Polytechnic National University, Lviv, Ukraine  <sup>2</sup> Rzeszów University of Technology, Rzeszów, Poland  <sup>3</sup> Kaunas University of Technology, Kaunas, Lithuania</p>

**SECTION 5**  
**THEORETICAL, SOFTWARE, AND ALGORITHMIC ASPECTS OF**  
**INFORMATION SYSTEMS AND TECHNOLOGIES DESIGN**

Wednesday, February 26 – Session 1

**9.00 – 13.00**

**Co-Chairs:**

Prof., DSc **Dmytro Fedasyuk**, Lviv Polytechnic National University  
 Prof., DSc **Andriy Peleshchyn**, Lviv Polytechnic National University

<b>1.</b>	<p><b>Features of Structure Identification of Models of Distributed Parameters Objects Based on the Artificial Bee Colony Algorithm</b></p> <p><i>Natalia Porplytsya, Mykola Dyvak, Irina Spivak, Taras Dyvak</i></p> <p>Ternopil National Economic University, Ternopil, Ukraine</p>
<b>2.</b>	<p><b>Determination of the Set of Virtual Communities Indicators for Higher Education Institutions (HEI)</b></p> <p><i>Roman Korzh, Andriy Peleshchyn, Olha Trach</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>3.</b>	<p><b>The Improvement of Operating Efficiency for University Library Content by Knowledge Bases</b></p> <p><i>Taras Styslo, Khrystyna Vintoniv</i></p> <p>Ivano-Frankivsk National Technical University of Oil and Gas, Ivano-Frankivsk, Ukraine</p>
<b>4.</b>	<p><b>Algorithms and Hardware Components of Processors for Data Encryption in Rademacher-Krestenson's Delimited Number System</b></p> <p><i><sup>1</sup>Volodymyr Kimak, <sup>2</sup>Boris Krulikovsky, <sup>3</sup>Orest Volynskyy</i></p> <p><sup>1</sup> Ivano-Frankivsk National Technical University of Oil and Gas, Ivano-Frankivsk, Ukraine</p> <p><sup>2</sup> Rivne National University of Water Management and Nature Resources Use, Rivne, Ukraine</p> <p><sup>3</sup> Ternopil National Economical University, Ternopil, Ukraine</p>

5.	<p><b>Remote Data Collection and Processing Software for Educational and Scientific Laboratory Complex</b></p> <p><i>Yuriy Yakimenko, Oleksandr Bogdan, Anatolii Orlov, Andrii Zazerin, Victor Spivak</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
6.	<p><b>New Techniques and Measuring Equipment for Construction of Algorithmic Software and Information Systems</b></p> <p><i>Ivan Trotsyshyn</i></p> <p>Odessa national academy of telecommunications named after A.S. Popov, Odessa, Ukraine</p>
7.	<p><b>Investigation of Peculiarities Software Development for Embedded Systems</b></p> <p><i>Anzhelika Parkhomenko, Olga Gladkova</i></p> <p>Zaporizhzhya National Technical University, Zaporizhzhya, Ukraine</p>
8.	<p><b>Features of Construction DLP Systems to Protect Computer Networks from Internal Threats</b></p> <p><i>Alexander Petrov, Sergey Velchenko</i></p> <p>East-Ukrainian Volodymyr Dal National University, Lugansk, Ukraine</p>
9.	<p><b>Cloud Technologies in the Integrated System of Preparation and Development Staff Bank</b></p> <p><i>Vyacheslav Chaplyha, Volodymyr Chaplyha</i></p> <p>Lviv Institute of Banking UB NBU, Lviv, Ukraine</p>
10.	<p><b>The Mathematical Model for the State of the Telecommunication System in Terms of Random Effects</b></p> <p><i>Vladimir Popovskij, Vladislav Skibin</i></p> <p>Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>

### POSTER SECTION

11.	<p><b>Neural Controller for Robot Arm</b></p> <p><i>Orest Ivakhiv, Markiyan Nakonechnyy, Taras Repetylo</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
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12.	<b>Technology of Tests Qualitative Analysis Producing</b> <i>Iryna Kutsevych</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
13.	<b>Detection of Very Long and Power Signal in Information Radio Systems</b> <i>Borys Bondarenko, Vitalij Datsyk, Volodymyr Tymchuk</i> Army Academy, Lviv, Ukraine
14.	<b>Architectural Solutions Used in the Creation of Algorithms to Protect Information from Unauthorized Access</b> <i>Svetlana Sakharova, Sergey Britskiy</i> Odessa National Academy of Food Technologies, Odessa, Ukraine
15.	<b>Contour Segmentation Method in Video Surveillance Systems</b> <i>Diana Zahorodnia, Kostantin Kovalok, Anatoly Sachenko, Viktor Krylov, Sergiy Nychyporuk</i> Ternopil National Economic University, Ternopil, Ukraine
16.	<b>Linguistic Method of Identifying Participant's Information Intentions in Information Activity on the Web</b> <i>Oksana Tymovchak-Maksymets, Andriy Peleshchyshyn</i> Lviv Polytechnic National University, Lviv, Ukraine
17.	<b>Information Encrypting Based on Chaotic Systems and XOR Operations</b> <i>Grigoriy Kosovan, Petro Kroyalo, Mikola Kushnir, Margarita Rozhdestvenska</i> Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine
18.	<b>Key Distribution in a Single-Photon Quantum Cryptography</b> <i>Elizaveta Bolonna, Petro Shpatar</i> Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine
19.	<b>Background Modeling the Processing of Electronic Applications in the University</b> <i>Oleksandr Markovets</i> Lviv Polytechnic National University, Lviv, Ukraine

**Co-Chairs:**

Prof., DSc **Dmytro Fedasyuk**, Lviv Polytechnic National University  
 Prof., DSc **Andriy Peleshchyn**, Lviv Polytechnic National University

20.	<b>Synthesis of Primitive Matrices Galois and Fibonacci</b> <i>Anatoly Beletsky</i> Aviation National University, Kyiv, Ukraine
21.	<b>Synthesizing of an Improved Method for Hiding Data in Digital Images</b> <i>Olexiy Dorozhan, Olesya Vovk, Andriy Astrahantsev</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
22.	<b>Use of Help Desk System in Library Work</b> <i>Kateryna Bukatevych, Serhiy Palyukh, Dmytro Tarasov</i> Lviv Polytechnic National University, Lviv, Ukraine
23.	<b>Neuro Fuzzy Predicting Mathematic Model of Computer Network Load</b> <i>Olexandr Tarasov, Kostiantyn Polishchikov, Nikita Yeryomin</i> Donbass State Engineering Academy, Kramatorsk, Ukraine
24.	<b>Intelligent System for Detection and Classification of Computer Attacks</b> <i>Myroslav Komar, Vladimir Golovko, Anatoly Sachenko, Sergei Bezobrazov</i> Ternopil National Economic University, Ternopil, Ukraine
25.	<b>Analysis of Statistical Data of Card Fraud</b> <i>Elena Nyemkova, Vyacheslav Chaplyga</i> Lviv banking institute University of banking of National bank of Ukraine, Lviv, Ukraine
26.	<b>Application of Modern Information Technology in the Educational Process for the Purpose of Professional Training in the Field of Radio Engineering, Telecommunication and Computer Science</b> <i>Galyna Kopets, Andrew Dzyubina</i> Lviv Polytechnic National University, Lviv, Ukraine



27.	<b>Technical Decision Justification on the Stage of Design Specifications Development by Analytic Hierarchy Process</b> <i>Irina Atamanova, Larysa Hlinenko, Volodymyr Fast</i> Lviv Polytechnic National University, Lviv, Ukraine
28.	<b>Evaluation of Results Information and Education Activities as Part of Management Accounting in Institutions of Higher Education</b> <i>Nadiya Khorunzhak, Yaroslav Nykolajchuk</i> Ternopil National Economic University, Ternopil, Ukraine

### POSTER SECTION

29.	<b>Algorithm Analysis of Control Object Transitional States Based on Cluster Models</b> <i>Nadiia Shyrmovska</i> Ivano-Frankivsk National Technical University of Oil and Gas, Ivano-Frankivsk, Ukraine
30.	<b>Ontology for Billing System Description</b> <i>Danylo Antsybor, Larysa Globa, Maksym Ternovoy</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
31.	<b>Development Of Methods And Tools For The Objective Control Of Cultural And Professional Student`S Skills To Meet The 3rd Federal State Educational Standard Requirements</b> <i>Evgeny Aidarkin, Marina Pavlovskaya, Dmitry Sherbina, Artem Starostin</i> Southern Federal University, Rostov-on-Don, Russia
32.	<b>The Concept Model of the Subject of Law as an Information and Communication Component of IT and Cloud Technologies</b> <i>Lyubov Nykolaychuk</i> Ivano-Frankivsk National Technical University of Oil and Gas, Ivano-Frankivsk, Ukraine
33.	<b>Pattern Method of Web Project Management Optimization</b> <i>Kateryna Alekseyeva</i> Lviv Polytechnic National University, Lviv, Ukraine

34.	<p><b>Effective Method of Modular Multiplication in the Theoretical and Numerical Basis of Rademacher-Krestenson's</b></p> <p><i>Mykhailo Kasianchuk, Igor Yakymenko, Stepan Ivasev, Yaroslav Nykolajchuk</i></p> <p>Ternopil National Economic University, Ternopil, Ukraine</p>
35.	<p><b>The Passive Method Error Analysis for Time standards Collation Using Geostationary Satellites</b></p> <p><i>Ivan Antipov, Viacheslav Pryimak</i></p> <p>Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>
36.	<p><b>SOA as an Enabler of the Agile Customer-centric Virtual Enterprise</b></p> <p><i>Iryna Ivanochko</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
37.	<p><b>Overview of the Methods for Selective Encryption of MPEG-Video of International Conference</b></p> <p><i>Dmitry Komolov, Alexandr Slobodyanyuk, Nikita Kutya</i></p> <p>Main Directorate of the Ministry of internal affairs of Ukraine in Kharkiv region, Kharkiv, Ukraine</p>

**SECTION 6**  
**TELECOMMUNICATION SYSTEMS AND NETWORKS**

Wednesday, February 26 – Session 1

**9.00 – 13.00**

**Co-Chairs:**

Prof., DSc **Olexander Lemeshko**, Kharkiv National University of  
Radioelectronics

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

<b>1.</b>	<p><b>The Data Transfer Systems With Using of the Noncoherent Detection of the Chaotic Signals</b> <i>Ruslan Politanskiy, Mykhailo Klimash, Yuriy Bobalo</i> Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>2.</b>	<p><b>Frame Synchronization Symbols for an OFDM System</b> <i>Ali Eyadeh</i> Aljouf University, Sakaka, Saudi Arabia</p>
<b>3.</b>	<p><b>Information-Telecommunication Network With LTE Subnetwork System-Level Optimal Planning Mathematical Models Selection</b> <i>Dmitriy Ageyev, Ali Al-Anssari, Nameer Qasim</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>
<b>4.</b>	<p><b>Noise Immunity Assessment In Telecommunication Systems with Cascade Encoding Structures</b> <i>Juliy Boiko, Oleksander Eromenko</i> Khmelnitsky National University, Khmelnytsky, Ukraine</p>
<b>5.</b>	<p><b>Principles of Access Networks Design Considering the Changes in the Number of Users</b> <i>Galyna Gayvoronska, Svetlana Sakharova, Oleg Domaskin</i> Odessa National Academy of Food Technologies, Odessa, Ukraine</p>
<b>6.</b>	<p><b>Energy Efficiency of the Networks</b> <i>Andriy Luntovskyy</i> BA Dresden Univ. of Coop. Education, Dresden, Germany</p>

7.	<b>Application Features of the Modern Microwave Systems Usage in the Mobile Networks</b> <i>Andriy Shokotko</i> LTD «Huawei», Kiev, Ukraine
8.	<b>The Cooperative Spectrum Sensing Performance Research in Cognitive Radio Networks</b> <i>Maryan Kyryk, Volodymyr Yanyshyn</i> Lviv Polytechnic National University, Lviv, Ukraine
9.	<b>Features of Analysis of the Interdomain Routing in WAN-Networks</b> <i>Sergey Vorontsov, Kirill Trapezon</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
10.	<b>Multiparameter Adaptation in Cognitive Radio Networks</b> <i>Vladymyr Saiko</i> State University of Telecommunications, Kyiv, Ukraine
11.	<b>Assessment of Costs and Revenues on Different Stages of Implementing Telecommunication Technologies</b> <i>Galyna Gayvoronska, Illia Gannytskyi, Petr Yatsuk</i> Odessa National Academy of Food Technologies, Odessa, Ukraine
12.	<b>Method of Telecommunications Channel Throughput Distribution Based on Linear Programming</b> <i>Zdorenko Yuriy, Shkickiy Vladimir, Masesov Nikolay</i> Military Institute of Telecommunications and Information of the State University of Telecommunications, Kyiv, Ukraine
13.	<b>Data Loss Prediction in CDMA Networks on Base of Gilbert-Elliot Algorithm</b> <i>Mykhailo Klymash, Yuriy Vakula</i> Lviv Polytechnic National University, Lviv, Ukraine
14.	<b>Method for Determining the Characteristics Pulse Code Modulator Based on Spectral Transformations</b> <i>Vasyl Kichak, Gennadiy Bortnik, Natalya Punchenko</i> Vinnitsa National Technical University, Vinnitsa, Ukraine

<b>15.</b>	<p><b>Influence of Frame Aligner's Probabilistic and Time Characteristics on CESoETH Channel Usage Efficiency</b></p> <p><i>Lesia Nikityuk, Yuriy Babich</i></p> <p>Odessa national academy of telecommunications named after A.S. Popov, Odessa, Ukraine</p>
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**POSTER SECTION**

<b>16.</b>	<p><b>Compensation of Noises in Protected Telecommunication Systems</b></p> <p><i>Georgiy Rozorynov, Serg Toluypa Helen Odeyanenko,</i></p> <p>State University of Telecommunications, Kyiv, Ukraine</p>
<b>17.</b>	<p><b>Proposals for the Integration of Various Wireless Sensor Networks</b></p> <p><i>Igor Shostko, Julia Sosedka</i></p> <p>Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>
<b>18.</b>	<p><b>Engineering View on the Capacity of Telecommunication Systems</b></p> <p><i>Anatoliy Semenko, Sergiy Khomych</i></p> <p>State University of Telecommunications, Kyiv, Ukraine</p>
<b>19.</b>	<p><b>Algorithm for Generating Information blocks in the Optical Network</b></p> <p><i>Yuri Grynkov</i></p> <p>Odessa National Academy of Food Technologies, Odessa, Ukraine</p>
<b>20.</b>	<p><b>Analysis of Bottlenecks at the Transmission of Data Traffic in Telecommunication Networks</b></p> <p><i>Roman Tanets, Eugene Golub, Kirill Trapezon</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
<b>21.</b>	<p><b>Restrictions Due to Length of Existence Route Mobility Sensor Networks</b></p> <p><i>Matthew Gren</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
<b>22.</b>	<p><b>Directions of Mobile Ad Hoc Networks efficiency increase</b></p> <p><i>Valeriy Romanjuk, Oleg Sova, Olexandr Zhuk, Anton Romanjuk</i></p> <p>Military Institute of Telecommunication and Information Technology, Kyiv, Ukraine</p>

23.	<b>Technical Characteristics of Advanced Telecommunication Networks Radio Access Systems Analysis</b> <i>Sergey Mikhailov, Sergey Shreyner</i> International Humanitarian University, Odessa, Ukraine
24.	<b>The Fuzzy Neural Controller for CDMA Networks</b> <i>Olena Semenova, Andriy Semenov, Vitaliy Mondlyak, Roman Krasota</i> Vinnytsia National Technical University, Vinnytsia, Ukraine

**Wednesday, February 26 – Session 2**

**14.00 – 18.00**

**Co-Chairs:**

Prof., DSc **Olexander Lemeshko**, Kharkiv National University of Radioelectronics

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

25.	<b>Use of Multiposition Signals on the Basis of the Modified Gold Pseudorandom Sequences for the Increase of Efficiency of the Telecommunication Systems with the Channel Code Division</b> <i>Anatoliy Semenko, Natalia Bokla</i> State University of Telecommunications, Kyiv, Ukraine
26.	<b>Experimental Research of Digital Communication Systems with Chaotic Masking</b> <i>Dmytro Vovchuk, Serhii Haliuk, Leonid Politanskii</i> Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine
27.	<b>Determination of Radio Signal fading at passing through Double-Layer Wall</b> <i>Andriy Smelyanskiy</i> State University of Telecommunications, Kyiv, Ukraine
28.	<b>Peculiarities of GNSS, TWSTFT and TTTOF Technologies Usage for Deployment of National Time Dissemination System</b> <i>Victor Gaidamanchuk</i> State University of Telecommunications, Kyiv, Ukraine
29.	<b>Effect Type of Modulation on Peak-to-Average Power Ration (PAPR) in 3Gpp for OFDMA and SC-FDMA</b> <i><sup>1</sup>Al-Shuraifi Mushtaq, <sup>2</sup>Al-Zayadi Haider</i> <sup>1</sup> Taras Shevchenko National University of Kyiv, Kyiv, Ukraine <sup>2</sup> Lviv Polytechnic National University, Lviv, Ukraine

30.	<b>LDPC Codes Parameters Selection for Channels with AWGN</b> <i>Novykov R.S, Astrakhantsev A.A</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
31.	<b>CPLD Encoder and Decoder for Modified Correction Codes Based on Residue Number System</b> <i>Vasyl Yatskiv, Nataliya Yatskiv, Anatoly Sachenko, Su Jun</i> Ternopil National Economic University, Ternopil, Ukraine
32.	<b>Method to Improve the Capacity of Communication Systems LTE-Advanced with MIMO</b> <i>Lykhograi Vasil, Vovchenko Victoria, Oparin Maxim</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
33.	<b>Result Research Model of Scheduling Block Allocation in Downlink LTE</b> <i><sup>1</sup>Sergiy Garkusha, <sup>2</sup>Aymen Al-Dulaimi, <sup>2</sup>Haider Al-Janabi</i> <sup>1</sup> Poltava University of Economics and Trade, Poltava, Ukraine <sup>2</sup> Odesa National Academy of Telecommunications named after O.S.Popov, Odesa, Ukraine
34.	<b>Research of Goal Coordination Method for Congestion Management on Telecommunication Network Nodes</b> <i>Maxim Semenyaka</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
35.	<b>Features of Use of Hypergraphs in the Simulation of Multi-Channel Mesh-Networks IEEE 802.11</b> <i>Sergiy Garkusha, Olena Garkusha, Ahmed Hassan Abed</i> Poltava University of Economics and Trade, Poltava, Ukraine
36.	<b>Improve Bit Error Rate Using Equalization Techniques</b> <i>Haider Abbas Al-Zayadi</i> Lviv Polytechnic National University, Lviv, Ukraine
37.	<b>Advanced Multi-Wavelength Data Transmission Method for Optical Access Networks</b> <i>Olena Krasko, Pavlo Huskov, Taras Maksymyuk</i> Lviv Polytechnic National University, Lviv, Ukraine
38.	<b>Determination the GSM Coverage Radius for Different Channel Modes</b> <i>Ruslan Kozlovskiy, Oleh Yaremko, Mykola Brych</i> Lviv Polytechnic National University, Lviv, Ukraine

39.	<p><b>Telecommunication Systems Architectures Structural Synthesis with Modern Services Providing</b>  <i>Oleg Kopyyka, Alexander Drobyk, Iurii Kovalchuk</i>          State University of Telecommunications, Kyiv, Ukraine</p>
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### POSTER SECTION

40.	<p><b>Topology and Structure Designing Algorithms for Photonic Transport Networks</b>  <i>Mykola Kaidan, Olena Krasko</i>          Lviv Polytechnic National University, Lviv, Ukraine</p>
41.	<p><b>Air Parameters Optimization for UMTS Networks</b>  <i>Viktoriya Voropayeva</i>          Donetsk National Technical University, Donetsk, Ukraine</p>
42.	<p><b>The Use of Chaos Generators for Encryption of the Audio Information</b>  <i>Alexander Gres, Ruslan Politansky, Petro Shpatar</i>          Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine</p>
43.	<p><b>Hardware Representation of Encoder and Decoder of Fractal Signals of Comb-Type Structure</b>  <i>Leonid Politansky, Andriy Verygha, Alexander Gres</i>          Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine</p>
44.	<p><b>Model of Transmission Rate Allocation WiMAX with Taking Into Account the Defined Priorities</b>  <i>Sergiy Garkusha, Essa Mohammed Al-Azzawi</i>          Poltava University of Economics and Trade, Poltava, Ukraine</p>
45.	<p><b>Model of Distribution of Frequency Resource in the WiMAX Mesh-Network</b>  <i>Sergiy Garkusha, Haider Al-Janabi, Aymen Al-Dulaimi</i>          Poltava University of Economics and Trade, Poltava, Ukraine</p>
46.	<p><b>The Comparative Analysis of the Service Efficiency of Calls by Digital and Analogous Telephone Exchanges</b>  <i>Ksenia Chaban, Hanna Laba, Ihor Tchaikovsky</i>          Lviv Polytechnic National University, Lviv, Ukraine</p>



**47. Survey on Modern Methods and Algorithms for Cognitive Radio Interaction***Ivan Prudyus, Ihor Strykhalyuk*

Lviv Polytechnic National University, Lviv, Ukraine

**SECTION 7**  
**INFORMATION AND COMMUNICATION TECHNOLOGIES**

Thursday, February 27 – Session 1

**9.00 – 12.30**

**Co-Chairs:**

Prof., DSc **Sergiy Toluypa**, Telecommunications State University

Prof., DSc **Volodymyr Pelishok**, Lviv Polytechnic National University

<b>1.</b>	<p><b>Hierarchical Control Method for Hybrid Content Delivery Network</b></p> <p><i>Oksana Yevsyeyeva, Mohammed B. Khader</i></p> <p>Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>
<b>2.</b>	<p><b>Cloud Service for Traffic Control</b></p> <p><i>Vladimir Hahanov, Volodymyr Miz, Artur Ziarmand, Anastasya Hahanova, Aleksey Priymak</i></p> <p>Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>
<b>3.</b>	<p><b>The Buffering and Congestion Management in Multiservice Networks</b></p> <p><i>Kyryk Maryan, Pleskanka Nazar</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>4.</b>	<p><b>Video Data Processing Method in Telecommunication Systems</b></p> <p><i>Yu. Ryabukha, Vladimir Krivonos, S. Turenko</i></p> <p>The Air Force University Kozhedub, Kharkiv, Ukraine</p>
<b>5.</b>	<p><b>Mathematical Model for Quality Estimation of Real Time Flows Requests Servicing in a Telecommunications Network</b></p> <p><i>Kateryna Kubrakova</i></p> <p>Poltava National Technical Yuri Kondratyuk University, Poltava, Ukraine</p>
<b>6.</b>	<p><b>Principles of Organization SDN-networks are in Modern Telecommunications</b></p> <p><i>Dmitriy Yukhnovskiy, Valentin Abakumov, Kirill Trapezon</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>

7.	<b>DNR Packet for RTCP Feedback Model with a Diagnostic Node</b> <i>A.V. Babich, A. Yu. Mova</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
8.	<b>Network Management System of User Request</b> <i>Liubov Demchenko, Issam Saad</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
9.	<b>The Concept of Data Structuring Based on Entropy Forming, Transmission and Processing Methods of Information Flows</b> <i><sup>1</sup>Nataliya Vozna, <sup>2</sup>Artur Voronych, <sup>1</sup>Taras Pastuh, <sup>1</sup>Volodymyr Gladyuk</i> <sup>1</sup> Ternopil National Economic University, Ternopil, Ukraine <sup>2</sup> Ivano-Frankivsk National Technical University of Oil and Gas, Ivano-Frankivsk, Ukraine
10.	<b>Codes of Galois with Interruptions and Their Application in Systems Data</b> <i>Petro Humennyi, Alina Davletova</i> Ternopil National Economical University, Ternopil, Ukraine
11.	<b>An Approach to Development of Messages Streams' Model in Convergent Telecommunication Network</b> <i>Galina Gayvoronska, Maxim Solomitsky</i> Odessa National Academy of Food Technologies, Odessa, Ukraine
12.	<b>Analysis of the Access Network Traffic</b> <i>Olena Tykhonova</i> Odessa national academy of telecommunications named after A.S. Popov, Odessa, Ukraine

### POSTER SECTION

13.	<b>Method of Increasing Availability and Integrity of Video Information Resources</b> <i>Vladimir Barannik, Andrey Vlasov, Ruslan Akimov</i> The Air Force University Kozhedub, Kharkiv, Ukraine
14.	<b>The Problem Aspect of Control of Bit Speed of the Video Stream in Telecommunication Networks</b> <i>Andrii Krasnorutskij, Andrii Tristan, N. Kharchenko</i> The Air Force University Kozhedub, Kharkiv, Ukraine

15.	<p><b>Research of Features of Introduction of Network Technology of Autonomic Networking is in Telecommunications Networks</b></p> <p><i>Artem Agamalov, Kirill Trapezon</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
16.	<p><b>Using Fuzzy Logic to Solve Traffic Engineering Problem</b></p> <p><i>Anton Vrublevsky, Ivan Lesovoy</i></p> <p>Odessa national academy of telecommunications named after A.S. Popov, Odessa, Ukraine</p>
17.	<p><b>Load Balancing in Cloud Services Considering the Self-Similar Properties of Incoming Flows</b></p> <p><i>Igor Ivanisenko, Lyudmila Kirichenko, Tamara Radivilova</i></p> <p>Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>
18.	<p><b>Design of Information and Telecommunication Systems with Multi-Hour, Multiservice Traffic</b></p> <p><i>Fouad Wehbe, Dmitriy Ageyev, Rami Dabbus</i></p> <p>Kharkiv National University of Radioelectronics, Kharkiv, Ukraine</p>

Thursday, February 27 – Session 2

**13.30 – 18.00**

**Co-Chairs:**

Prof., DSc **Sergiy Toluyba**, Telecommunications State University

Prof., DSc **Volodymyr Pelishok**, Lviv Polytechnic National University

19.	<p><b>Ensuring Delivery Quality for Total Traffic Signals 4G Services to a Large Number of Mobile Terminals on the Autobahn</b></p> <p><sup>1</sup><i>Sunduchkov K.S.</i>, <sup>2</sup><i>Sunduchkov A.K.</i>, <sup>2</sup><i>Golik A.L</i></p> <p><sup>1</sup> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine  <sup>2</sup> Telecommunications State University, Kyiv, Ukraine</p>
20.	<p><b>Enhancing Reliability of Transport Software-Defined Networks Using Flow Table Mutual Reservation Method</b></p> <p><i>Marian Seliuchenko, Andriy Kovalchuk, Orest Lavriv, Mykhailo Klymash</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>

21.	<b>Semi-Markov Model of Traffic Control Quality Assurance in Telecommunication Networks with Routes Precalculation Considering Risks of Information Security</b> <i>Snigurov Arkadii, Chakrian Vadym</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
22.	<b>Method of Resource Distribution for Mobile Cloud Computing Systems</b> <i>Mykola Beshley, Bogdan Buhyl, Vasyl Romanchuk, Mykhailo Klymash</i> Lviv Polytechnic National University, Lviv, Ukraine
23.	<b>Routing Protocols Investigation in Fully Connected Wireless Networks</b> <i>Nataliya Chervinska, Ivan Klimov, Volodymyr Chervynskyy</i> Donetsk National Technical University, Donetsk, Ukraine
24.	<b>Convergence Analysis of the Hierarchical Routing Method</b> <i>Olena Nevzorova, Ahmad K. Hasan, Olena A. Korshets</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
25.	<b>QoE Estimation on the Basis of LTE Service Architecture</b> <i>Haider Abbas Al-Zayadi, Orest Lavriv, Mykhailo Klymash</i> Lviv Polytechnic National University, Lviv, Ukraine
26.	<b>Modification of the Virtual Structure in the Concept Infrastructure as a Service</b> <i>Buhyl Bogdan, Melnychuk Sofia, Bogdan Strykhalyuk</i> Lviv Polytechnic National University, Lviv, Ukraine
27.	<b>The Use of DVB-T2 Format for Point-to-Multipoint Telecommunication in City Area</b> <i>Igor Shirokov, Danil Shendrik</i> Sevastopol National Technical University, Sevastopol, Ukraine
28.	<b>The Countries Classification According the Telecommunication Technologies Development Level</b> <i>Illia Gannytskyi, Kazak Julia</i> ONAFI School of Information Technologies and Cybersecurity, Odessa, Ukraine
29.	<b>Structural Model of the Subsystem, which Prevents Industrial Accidents in the System of Smart House</b> <i>Vasyl Teslyuk, Vasyl Beregovskyy, Pavlo Denysyuk, Taras Teslyuk</i> Lviv Polytechnic National University, Lviv, Ukraine

30.	<b>Ways for Organization of IPTV Services Over Peer-To-Peer Networks</b> <i>Michail Oshchepkov, Katerina Popovskaya</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
31.	<b>Load Balancing on Flows in Router IP-Network</b> <i>Artem Proskochylo, Andrey Vorobyov, Alexander Gora, Artem Akulinichev</i> National Aerospace University, Kharkiv, Ukraine

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32.	<b>Server Resources Load Monitoring Serving Different Types of Services</b> <i>Larysa Globa, Maria Skulish, Andrei Reverchuk</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
33.	<b>Manage of Incoming Application Flow to Prevent Shortage of Server Resources</b> <i>Larysa Globa, Maria Skulish, Andrei Reverchuk</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
34.	<b>The Organization of Message Processing in Controllers of Serial Interfaces</b> <i>Ihor Maykiv, Pavlo Bykovyy</i> Ternopil National Economic University, Ternopil, Ukraine
35.	<b>Development Trends of Wireless Technologies</b> <i>Sergiy Veretiuk</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
36.	<b>Short- and Long-Term Prediction of Cloud Resources Price Using Neural Networks</b> <i>Volodymyr Turchenko, Vladyslav Shults</i> Ternopil National Economic University, Ternopil, Ukraine
37.	<b>The Holographic Technologies in the Infocommunication</b> <i>Tsaryov Roman, Nikituk Lesya, Prikhodko Ekaterina</i> Odessa national academy of telecommunications named after A.S. Popov, Odessa, Ukraine

## SECTION 8

## SELECTION AND PROCESSING OF THE INFORMATION

Thursday, February 27 – Session 1

09.00 – 12.30**Co-Chairs:**

Prof., DSc **Bohdan Rusyn**, Karpenko Physico-Mechanical Institute of The  
National Academy of Sciences of Ukraine

Prof., DSc **Yuriy Romanyshyn**, Lviv Polytechnic National University

1.	<b>Contrast Enhancement Technique Based on Local Equivalence Evaluation</b> <i>Roman Vorobel</i> Physico-Mechanical Institute of NAS of Ukraine, Lviv, Ukraine
2.	<b>Filtering Efficiency Prediction for Images Corrupted by Signal-Dependent Noise</b> <i><sup>1</sup>Sergey Krivenko, <sup>1</sup>Vladimir Lukin, <sup>2</sup>Benoit Vozel, <sup>2</sup>Kacem Chehdi</i> <sup>1</sup> National Aerospace University, Kharkiv, Ukraine <sup>2</sup> University of Rennes, Lannion, France
3.	<b>Allocation of Homogeneous Areas on Fracture Surface Images by Means of Point Process Features</b> <i>Rostyslav Kosarevych, Bohdan Rusyn, Oleksandra Student, Oleg Kapshiy, Mykhaylo Kobasiar</i> Karpenko Physics-Mechanics Institute of NAS of Ukraine, Lviv, Ukraine
4.	<b>The Comparison of Segmentation Methods of Metallographic Images</b> <i>Kerod T.I., Rusyn B.P., Kosarevych R.Ya</i> Karpenko Physico-Mechanical Institute of NASU, Lviv, Ukraine
5.	<b>Combinatorial Method of Constructing a Vector Layer Semantic Structures Images</b> <i><sup>2</sup>Vladimir Barannik, <sup>1</sup>Andrey Shiryayev</i> <sup>1</sup> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine <sup>2</sup> The Air Force University, Kharkiv, Ukraine
6.	<b>Quality Indicators for Steganographic Transformations of Images</b> <i>Vladimir Barannik, Bekirov Ali, Konstantin Tryfonenko</i> National Aviation University, Kyiv, Ukraine

7.	<b>Analysis of Video Transmission Rate Control Based on the Standard JPEG2000</b> <i>Vitaliy Tverdokhleb, P. Gurgziy, Bogdan Filonenko</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
8.	<b>Image Segmentation Based on Neural Network Technology</b> <i>Dmytro Mitiev</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
9.	<b>Welding Defects Adaptive Segmentation on Radiographic Images</b> <i>Iryna Ivasenko, Teodor Mandziy</i> Karpenko Physico-Mechanical Institute of NASU, Lviv, Ukraine
10.	<b>Color Concentration Features for Metal Physical Properties Analysis</b> <i>Roman Melnyk, Illya Kozhukh</i> Lviv Polytechnic National University, Lviv, Ukraine
11.	<b>Negotiation of a Priori Uncertainty of Image Fractal Properties by Histogram</b> <i>Alexander Parshin</i> Ryazan State Radio Engineering University, Ryazan, Russia
12.	<b>Approaches to the Elimination of Visual Information Defects</b> <i>Lyubov Pinchuk, Aleksandr Pryadko, Tamara Gumen, Kirill Trapezon</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
13.	<b>Methods of Constructing Dictionaries in Compression Algorithms LZ-family</b> <i>Sergey Pugachev, V. Tretyak, Konstantin Yurchenko</i> The Air Force University Kozhedub, Kharkiv, Ukraine
14.	<b>Nonuniform Redundancy Extraction from Oversampled Images</b> <i>Denis Afanassyev, Illya Degtyarenko</i> Donetsk National University, Donetsk, Ukraine
15.	<b>Reduction of Visual and Space Redundancy of TV Images</b> <i>Victor Zagrebnyuk</i> Odessa national academy of telecommunications n.a. O.S. Popov, Odessa, Ukraine



<b>16.</b>	<p><b>Transcoding of Video Files During the Non-Linear Editing</b>  <i>Bogdan Verzhbitskiy, Oleksii Liebiediev, Alexander Prjadko</i>  National University of theatre, cinema and television of Karpenko-Kary, Kyiv, Ukraine</p>
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<b>17.</b>	<p><b>Analysis of Options for Increasing Secrecy of the Videosystem Resource</b>  <i>Sergey Sidchenko, Vladimir Larin, Roman Tarnopolov</i>  The Air Force University Kozhedub, Kharkiv, Ukraine</p>
<b>18.</b>	<p><b>The Calculable Complication Estimation of the Compression Method Realization and the Images Regeneration with the Use of Extended Recurrence Reverse Position Structural-Weight Coding</b>  <i>Vladimir Barannik, Andrii Krasnorutskij, Yuliia Boiko</i>  The Air Force University Kozhedub, Kharkiv, Ukraine</p>
<b>19.</b>	<p><b>Video Information Safety Increase Method of Emergency Situations Aero Monitoring</b>  <i>Yudin O., Oleg Kulitsa, Shkolnyk A.</i>  Academy fire safety of a name of Heroes Chernobyl, Cherkasy, Ukraine</p>
<b>20.</b>	<p><b>The Adaptive Synthesizers of the Models for the Numerical Characteristic of the Arrays of Primary Inventory</b>  <i>Olena Zadorozhnya</i>  Cherkasy National University named by Bogdan Chmelnytskyi, Cherkasy, Ukraine</p>
<b>21.</b>	<p><b>Verification of Socio-demographic Characteristics of Virtual Community Members</b>  <i>Solomia Fedushko, Andriy Peleschyshyn, Roman Korzh, Yuriy Syerov</i>  Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>22.</b>	<p><b>Information Technology of Multilevel Transformation of Mammogram Analysis Results</b>  <i>Serhii Holub, Svitlana Palash</i>  Cherkasy Bogdan Khmelnytskyi National University, Cherkasy, Ukraine</p>

23.	<b>The Method of Sub-pixel Accuracy for Coordinate Measuring Systems</b> <i>Iosip Bilynsky, Irina Sukhotska</i> Vinnytsia National Technical University, Vinnytsia, Ukraine
24.	<b>Application of Multi-level Information Transformation into Socio-hygienic Monitoring</b> <i>Victoria Nemchenko</i> Cherkasy State Technological University, Cherkasy, Ukraine
25.	<b>Convert Forms of Information in the Management of Mobile Robot</b> <i>Vadym Nemchenko</i> Cherkasy State Technological University, Cherkasy, Ukraine

Thursday, February 27 – Session 2

**13.30 – 18.00**

**Co-Chairs:**

Prof., DSc **Bohdan Rusyn**, Karpenko Physico-Mechanical Institute of The National Academy of Sciences of Ukraine

Prof., DSc **Yuriy Romanyshyn**, Lviv Polytechnic National University

26.	<b>Galois Field Augmentation</b> <i>Stanislaw Krivenko, Valeriy Bezruk</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
27.	<b>Theory and Special Processors of Spectral Cosine Fourier Transformation Based on Various Correlation Functions in Hamming Space</b> <i><sup>1</sup>Volodymyra Pikh, <sup>2</sup>Ivan Albanskiy, <sup>1</sup>Tetyana Zavedyuk, <sup>1</sup>Galina Korniychuk</i> <sup>1</sup> Ivano-Frankivsk National Technical University of Oil and Gas, Ivano-Frankivsk, Ukraine <sup>2</sup> Ternopil National Economical University, Ternopil, Ukraine
28.	<b>Energetic Efficiency of Methods of Spectral Representation in Signal Detection Problems</b> <i>Levchunets Denis, Babii Yuliia</i> Khmelnitsky National University, Khmelnitsky, Ukraine

29.	<b>The Transform with Comb Distribution Wavelet Function for the Texture Segmentation of Images</b> <i>Marina Polyakova, Alesya Ishchenko, Oleg Pavlov</i> Odessa National Polytechnic University, Odessa, Ukraine
30.	<b>Cyclic Properties of Incomplete Permutations, Realized on a Basis of the Simplest Regular OCCM</b> <i>Olena Ianovska-Skrypala</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
31.	<b>Construction of Orthogonal Wavelet Basis Using Specified Wavelet Function</b> <i>Yuriy Romanyshyn, Svitlana Petrytska</i> Lviv Polytechnic National University, Lviv, Ukraine
32.	<b>Evaluation and Prediction of Values of Unknown Measured with Error</b> <i>Volodymyr Evtushok, Lesya Karpova, Viktor Luzhanskyi</i> Khmelnitsky National University, Khmelnitsky, Ukraine
33.	<b>Electromagnetic Type Ultrasonic Transducers Design Improvement</b> <i>Yaropolk Prytulyak, Stephania Prytulyak</i> Ternopil National Economic University, Ternopil, Ukraine
34.	<b>Application External Optical Rotating Filters for the Formation of Three-dimensional Images</b> <i>Mykhailo Chervoniuk, Viktor Spivak</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
35.	<b>Improved Algorithm for Fuzzy Data Processing</b> <i>Lesia Dubchak, Nadiya Vasylykiv, Volodymyr Kochan</i> Ternopil National Economic University, Ternopil, Ukraine
36.	<b>Comparison Modifications of Nonlinear Smoothing Algorithm of Trajectory Measurements Using Different Ways Constructing Orthogonal Basis Functions</b> <i>Ivan Drozda, Oleksandr Milshstein, Volodymyr Paslon</i> Donetsk National Technical University, Donetsk, Ukraine

37.	<b>Methods of Aggregative Processing of Linguistic Information in Decision Making Processes</b> <i>Yuriy Kondratenko, Ievgen Sidenko</i> Petro Mohyla Black Sea State University, Mykolayiv, Ukraine
38.	<b>Android-Based Grid Computing Implementation</b> <i>Mykola Alieksieiev, Vladyslav Shkola</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
39.	<b>A Method of Dataset Separation Into Two Distinct Groups for Monitoring Environmental Parameters</b> <i>Volodymyr Pelishok</i> Lviv Polytechnic National University, Lviv, Ukraine
40.	<b>Decreasing of Thermal Afterglow Influence on the Quality of Object Thermal Representation</b> <i>Petro Kondratov, Iryna Kazymyra, Leonid Lazko</i> Lviv Polytechnic National University, Lviv, Ukraine

#### POSTER SECTION

41.	<b>The Input Data Array (IDA) Format is Unified to Ensure the Consolidation of Heterogeneous Models, Synthesized by the Model Synthesis Algorithm</b> <i>Maria Golub</i> Cherkasy National University, Cherkasy, Ukraine
42.	<b>Develop a Universal Technique of the Organization Control Parameters Multi-Structured Company</b> <i>Ilya Skumatenko</i> Ural Technical Institute of Communications and Informatics "Siberian State University of Telecommunications and Informatics", Ekaterinburg, Russia
43.	<b>Information Image Model of Geospatial Objects in Virtual Communities</b> <i>Andriy Peleshchyshyn, Iryna Khmil</i> Lviv Polytechnic National University, Lviv, Ukraine

44.	<b>Associative Memory Images of the Robot</b> <i>Alexander Harchenko</i> Cherkasy National University named by Bogdan Chmelnytskyi, Cherkasy, Ukraine
45.	<b>New capabilities of video editing</b> <i>Maxim Semashko, Alexander Prjadko</i> National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine
46.	<b>Structuring Models in Technology of Multilevel Conversion of Information Form</b> <i>Irina Sopko</i> Cherkasy Bogdan Khmelnytskyi National University, Cherkasy, Ukraine
47.	<b>Semantic Analysis of Visual Information for Industrial Safety Gas Transport Enterprises Systems</b> <i>Nataliya Bilous, Maxim Nosatov, Iryna Bilous</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
48.	<b>Method Exhaustive Search Optimal Codes</b> <i>Viktor Banket, Julia Totmina</i> Odessa national academy of telecommunications n.a. O.S. Popov, Odessa, Ukraine

**SECTION 9**  
**BIOTECHNICAL AND MEDICAL ELECTRONIC DEVICES AND**  
**SYSTEMS**

Friday, February 28

**13.00 – 16.00**

**Co-Chairs:**

Prof., DSc **Anatoliy Povoroznyuk**, Kharkiv National Technical University  
 “Kharkiv Polytechnic Institute”

Prof., DSc **Oleksandr Kozhukhar**, Lviv Polytechnic National University

<b>1.</b>	<p><b>Permutation Entropy of Brain Electrical Activity During Routine EEG Tests in Healthy Subjects</b></p> <p><i>Anton Popov, Oleksii Kanaykin</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
<b>2.</b>	<p><b>Mutual Information Between EEG and Cardiorhythmogram Signals in Various Spectral Bands</b></p> <p><i>Mykhailo Zhukov, Anton Popov, Volodymyr Kharytonov, Ilyia Chaikovsky</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
<b>3.</b>	<p><b>The Imaging Method of Pathologic Structures on Mammograms Using Layerwise Overlay</b></p> <p><i>Boyko D., Filatova A., Povoroznjuk A</i></p> <p>Kharkiv National Technical University «Kharkiv Polytechnic Institute», Kharkiv Ukraine</p>
<b>4.</b>	<p><b>Computer Diagnostic System for Fetal Monitoring During Pregnancy</b></p> <p><i>V. Shulgin, O. Shepel</i></p> <p>National Airspace University named after N.Y. Zhukovsky “Kharkiv Aviation Institute”, Kharkiv, Ukraine</p>
<b>5.</b>	<p><b>Problem-Oriented Information Technology of Decision Support for Improving the Exploited Power Equipment</b></p> <p><i>Olena Arsiriy, Svitlana Antoshchuk</i></p> <p>Odessa National Polytechnic University, Odessa, Ukraine</p>

6.	<p><b>Control of Micro- and Nanostructures Parameters Biological Fluids by Using Circuit Engineering Provide</b></p> <p><i>Oleksandr Kozhukhar, Oleksandra Hotra, Hryhoriy Barylo, Mariya Ivakh</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
7.	<p><b>Fuzzy Evaluation of Uncertainty of Polarization States in Imaging Polarimetry</b></p> <p><i>Ronald Rovira, Sergey Pavlov, Marcia Bayas</i></p> <p>Vinnytsia National Technical University, Vinnytsia, Ukraine</p>
8.	<p><b>The detection of Degradation of Nutrient Medium for Bacterial Cells by Optical Method</b></p> <p><i><sup>1</sup>Ihor Kotsyumbas, <sup>1</sup>Ihor Kushnir, <sup>2</sup>Oleksandr Bilyy, <sup>2</sup>Taras Grechukh</i></p> <p><sup>1</sup> State Scientific-Res. Control Inst. of Veterinary Preparations and Fodder Additives, Lviv, Ukraine</p> <p><sup>2</sup> Ivan Franko Lviv National University, Lviv, Ukraine</p>
9.	<p><b>Application of the Principle of Symmetry for Synchronization of Biosignals in their Sample</b></p> <p><i>Bohdan Yavorsky</i></p> <p>Ternopil Ivan Pul'uj National Technical University, Ternopil, Ukraine</p>
10.	<p><b>Time-Colored Histogram as a New Approach for Visualization of Patient Monitoring Parameters</b></p> <p><i>Yevgeniy Karplyuk</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
11.	<p><b>Analysis of Biochemical Processes as a Basis for Building Macro Models of Dynamic Processes at Biogas Plants</b></p> <p><i>Iryna Hural, Iryna Voytyuk, Yevgeniya Martsenyuk</i></p> <p>Ternopil National Economical University, Ternopil, Ukraine</p>
12.	<p><b>Errors Of Microobjects Velocity Determination By The Television Scanning Optical Microscope</b></p> <p><i>Volodymyr Shkliarskyi, Yuriy Matiieshyn, Vitaliy Goy</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
13.	<p><b>Improving Sensitivity of Scanning Television Optical Microscope</b></p> <p><i>Borys Hudz, Volodymyr Shkliarskyi, Petro Tokarchuk</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>

<b>14.</b>	<p><b>Scanning Television Optical Microscope with the Guided Freezing of Mikroobjects</b></p> <p><i>Volodymyr Shkliarskyi, Ivan Prudyus, Anatolij Pedan, Aleksandr Zaichenko, Ljubov Palianyca</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
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<b>15.</b>	<p><b>Energy-Time Characteristics of Defibrillation Waveforms</b></p> <p><i>Tatyana Smerdova</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>16.</b>	<p><b>Mathematical Model of Glucose Dynamics During Food Digestion Process</b></p> <p><i>Y.M. Chaikivska, R.M. Pasichnyk</i></p> <p>Ternopil National Economical University, Ternopil, Ukraine</p>
<b>17.</b>	<p><b>Stereo-Television Scanning Optical Microscope</b></p> <p><i>Andrew Rehush, Volodymyr Shkliarskyi, Yaroslav Tebenko</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>18.</b>	<p><b>Fiber Optic Gyroscope Based on the Registration of the Spatial Interference Pattern</b></p> <p><i>Sergiy Pavlov, Stanislav Tuzhanskyi, Andriy Sakhno</i></p> <p>Vinnitsia National Technical University, Vinnitsia, Ukraine</p>
<b>19.</b>	<p><b>The Synthesis of a Rectenna with Narrow Directivity Pattern for Implanted Pacemaker Charging</b></p> <p><i>Yuriy Stoyanov</i></p> <p>Ternopil Ivan Pul'uj National Technical University, Ternopil, Ukraine</p>
<b>20.</b>	<p><b>Efficient Tensor Spline-based Algorithm for Optical Diffusion Tomography Imaging</b></p> <p><i>Dmytro Shulga, Oleksii Morozov</i></p> <p>National Aerospace University "KhAI", Kharkiv, Ukraine</p>
<b>21.</b>	<p><b>Light Pulse Sensitivity of the Human Vision</b></p> <p><i>Ivan Pyslar, Igor Danileiko, Margaryta Rozhdestvenska, Volodymyr Brailovsky</i></p> <p>Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine</p>



22.	<p><b>Perspectives of Creation the Prototype Multi-Functional Diagnostical Expert System</b></p> <p><i>Evheniya Yavorska</i></p> <p>Ternopil National Technical University named after Ivan Pului, Ternopil, Ukraine</p>
23.	<p><b>Automatic Definition of the Gradient Filter Threshold for Dynamic Biomedical Images in Real Time</b></p> <p><i>Pavlov Sergiy, Poplavskyi Oleksandr, Poplavska Anna</i></p> <p>Vinnytsia National Technical University, Vinnytsia, Ukraine</p>
24.	<p><b>Determining Necessary Number of Frequencies for Complex Objects Impedance Measuring</b></p> <p><i>Grygorii Tymoshenko</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
25.	<p><b>The Research of the Spectra of Glow of Gas Discharge Visualization the Liquid-Phase Object</b></p> <p><i>J. J. Bilynsky, O. A. Pavliuk</i></p> <p>Vinnytsia National Technical University, Vinnytsia, Ukraine</p>
26.	<p><b>Impulse Sterilizer of High Effectiveness</b></p> <p><i>Alla Taranchuk, Vladimir Chumakov, Victor Michan, Aleksander Pavlov</i></p> <p>Khmelnytsky National University, Khmelnytsky, Ukraine</p>
27.	<p><b>Success Assessment of Radiofrequency Catheter Ablation by High Resolution Electrocardiography</b></p> <p><i>Ivanushkina N., Ivanko K., Matveyeva N.</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
28.	<p><b>Features of realization of technology of Connected Me are in the informative systems</b></p> <p><i>Natalia Panicheva, Elena Gordienko, Kirill Trapezon</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
29.	<p><b>Photoplethysmography in Integrated Evaluation of Collateral Circulation of Lower Extremities</b></p> <p><i>Sergiy Pavlov, Sergiy Sander, Tetijana Kozlovska</i></p> <p>Vinnytsia National Technical University, Vinnytsia, Ukraine</p>

30.	<b>Correlation of Heart Rate Variability Parameters and Glucose Concentration in Human Blood</b> <i>Sergey Krivenko, Anatolii Pulavskiy</i> BioPromin LTD, Kharkiv, Ukraine
31.	<b>Static Error of the Current Setting in the Load of Precise Voltage-to-Current Converter</b> <i>Volodymyr Vasyluk, Volodymyr Shkliarskiy, Mykola Skochelias</i> Lviv Polytechnic National University, Lviv, Ukraine

**SECTION 10**  
**RADIO-TECHNICAL SYSTEMS OF THE COMMUNICATION,  
 POSITIONING AND CONTROL**

Thursday, February 27 – Session 1

**09.00 – 12.30**

**Co-Chairs:**

Prof., DSc **Valeriy Bezruk**, Kharkiv National University of Radioelectronics

Prof., DSc **Anatoliy Zubkov**, Army Academy named after Hetman Petro Sahaydachnyi

<b>1.</b>	<p><b>Complexed Remote Monitoring System of Earth's Surface and Information Support of Control Systems</b></p> <p><i><sup>1</sup>Anatoliy Zubkov, <sup>2</sup>Ivan Prudyus, <sup>1</sup>Andriy Shcherba, <sup>1</sup>Alexandr Karavanov</i></p> <p><sup>1</sup> Army Academy named after Hetman Petro Sahaydachnyi, Lviv, Ukraine  <sup>2</sup> Lviv Polytechnic National University, Lviv, Ukraine</p>
<b>2.</b>	<p><b>Combinational Zone-based Localization Algorithm for RFID Systems</b></p> <p><i>Yuriy Gimpilevich, Dmitry Savochkin</i></p> <p>Sevastopol National Technical University, Sevastopol, Ukraine</p>
<b>3.</b>	<p><b>Electromagnetic Scattering by Nonspherical Particles of Rain</b></p> <p><i>Ganna Veselovska, Grigoriy Khlopov, Oleg Voitovych</i></p> <p>O.Ya. Usikov Institute for Radiophysics and Electronics, Kharkiv, Ukraine</p>
<b>4.</b>	<p><b>Principles of Construction of the Complex Radar and Telecommunications Devices for Minimizing the Fire Control Cycle</b></p> <p><i>Yuri Budaretskiy, Yuri Shavinskiy, Andrew Sherba, Andrew Dyakov, Yevgeny Gerasimenko</i></p> <p>Army Academy named after Hetman Petro Sahaydachnyi, Lviv, Ukraine</p>
<b>5.</b>	<p><b>Spectral Polarimetric Approach to Remote Sensing of Natural Objects and Environments</b></p> <p><i>Felix Yanovsky</i></p> <p>National Aviation University, Kyiv, Ukraine</p>

6.	<p><b>Statistical Properties of Bispectral Estimate and its Smoothing by Kravchenko Weight Functions</b></p> <p><i>Victor Kravchenko, Vladimir Pavlikov, Alexander Totsky, Alexander Zelensky</i></p> <p>National Aerospace University, Kharkiv, Ukraine</p>
7.	<p><b>Building a Highly Effective Differentiating Filters Using Compact Basic Transformations</b></p> <p><i><sup>1</sup>Ivan Chesanovskyi, <sup>1</sup>Oleg Shynkaruk, <sup>2</sup>Andrey Ivanov</i></p> <p><sup>1</sup> Khmelnytsky National University, Khmelnytsky, Ukraine  <sup>2</sup> National Academy of the State Border Guard Service of Ukraine, Khmelnytsky, Ukraine</p>
8.	<p><b>Application of CUSUM Method for Detection of Tracking Loss Using Amplitude Information</b></p> <p><i>Oleksandr Neuimin, Serhii Zhuk</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
9.	<p><b>The Effectiveness of Using Radar Technology Artificial Reduction of the Effective Surface Emission Aircraft</b></p> <p><i>Sergiy Tolyupa, Volodymyr Druzhyhin, Volodymyr Nakonechny</i></p> <p>State University of Telecommunications, Kyiv, Ukraine</p>
10.	<p><b>Preprocessing of Images for Space-Based Observing System Sich-2</b></p> <p><i>Leonid Varichenko, Michael Mikhailov, Igor Kugasyan</i></p> <p>CONECS state scientific-research enterprise, Lviv, Ukraine</p>
11.	<p><b>Modeling Data Channel Remote Sensing of the Earth from Space</b></p> <p><i>Alla Taranchuk, Oleksandr Kalvatynskiy, Sergey Pidchenko</i></p> <p>Khmelnytsky National University, Khmelnytsky, Ukraine</p>

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12.	<p><b>Selecting Tracking System for Virtual Reality Studio</b></p> <p><i>Andrew Chekmez, Aleksandr Pryadko, Aleksandr Grebin, Kirill Trapezon</i></p> <p>National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine</p>
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13.	<b>Earth Remote Sensing Data Formats in the Infotelecommunication Systems</b> <i>Andriy Podorozhnyak</i> National Technic University “Kharkiv Polytechnic Institute”, Kharkiv, Ukraine
14.	<b>Data Receiving Station of Earth Remote Sensing</b> <i>Leonid Varichenko, Michael Mikhailov, Sergey Salyeyev, Roman Panchak, Yuriy Chain</i> CONECS state scientific-research enterprise, Lviv, Ukraine
15.	<b>Combined Use of Active and Passive Remote Sensing for Measurement of Rain Intensity</b> <i>Anna Linkova, Grygoriy Khlopov</i> O. Ya. Usikov Institute for Radiophysics and Electronics of NASU, Kharkiv, Ukraine
16.	<b>Mapping the Regional Ionospheric TEC using Observations of GNSS Stations of Ukraine</b> <i>Evgeniy Bessonov, Igor Ditskiy, Alexey Zhelanov, Alexey Zhalilo</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine

Thursday, February 27 – Session 2

**13.30 – 18.00**

**Co-Chairs:**

Prof., DSc **Valeriy Bezruk**, Kharkiv National University of Radioelectronics

Prof., DSc **Anatoliy Zubkov**, Army Academy named after Hetman Petro Sahaydachnyi

17.	<b>Experimental Estimation of Potential Accuracy Synchronization of Time and Frequency Standards by Using Signals of Digital TV</b> <i>Alexander Kostyria, Sergey Plehno, Vitaliy Naumenko, Sergey Ushakov</i> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine
18.	<b>Measurement of Liquid Level in Tanks under Non-Stationary Conditions Based on Radar Sensor System</b> <i>Yuriy Kondratenko, Oleksiy Korobko, Oleksiy Kozlov, Oleksandr Gerasin, Andriy Topalov</i> Petro Mohyla Black Sea State University, Mykolaiv, Ukraine

19.	<p><b>A Simplified Method of the Distance Calculation Between Two Points on The Surface of the Earth</b></p> <p><i>Sergey Bratuhin</i></p> <p>Admiral Makarov National University of Shipbuilding, Mykolaiv, Ukraine</p>
20.	<p><b>Phase-Based Estimation of Range</b></p> <p><i>Slyusar V.I., Zinchenko A.O</i></p> <p>Central Research Institute of Armaments and Military Equipment of Ukraine's Armed Forces, Kyiv, Ukraine</p>
21.	<p><b>The Use of One-Port Resonant Transistor Amplifiers in Conjunction with Lange Coupler for Transponder Development of RFID System in 868MHz</b></p> <p><i>Igor Shirokov, Dmitry Lyalyuk</i></p> <p>Sevastopol National Technical University, Sevastopol, Ukraine</p>
22.	<p><b>The Approaches for Simulation Modeling Efficiency of Perspective Weapons and Equipment</b></p> <p><i>Ruslan Huminskyi, Mykhailo Savchuk, Volodymyr Tymchuk</i></p> <p>Army Academy, Lviv, Ukraine</p>
23.	<p><b>Radiometric System for Early Detection of Fireplaces in Radioactively Contaminated Areas</b></p> <p><i><sup>1</sup>Ivan Bragin, <sup>1</sup>Alexander Chebotarev, <sup>2</sup>Victor Mikhailov</i></p> <p><sup>1</sup> JSC "Special research bureau of the Moscow Power Engineering Institute", Moscow, Russia</p> <p><sup>2</sup> St. Petersburg state university of aerospace instrumentation, St. Petersburg, Russia</p>
24.	<p><b>Aeronautical Telemetry Signals Verification Using Basic Tools</b></p> <p><i>Roman Yankevych, Ivan Prudyus, Sergiy Martyugov, Petro Tokarchuk, Myron Miskiv, Andriy Ogorodnyk</i></p> <p>Lviv Polytechnic National University, Lviv, Ukraine</p>
25.	<p><b>Combined Radar Speed and Wheel Slip Sensor for Agricultural Vehicles</b></p> <p><i>Valentyn Maltsev</i></p> <p>O.Ya. Usikov Insnitute for Radiophysics and Elektronics of the National Academy of Scinces of Ukraine, Kharkiv, Ukraine</p>

26.	<b>Influence of a Pixel Aperture by Subpixel Imaging in Remote Sensing of the Earth</b> <i>Sergiy Fabirovskyy, Leonid Lazko, Ivan Prudyus</i> Lviv Polytechnic National University, Lviv, Ukraine
27.	<b>Single Frame Handling of Pyroelectric Signal of the Thermal Imaging Camera</b> <i>Petro Kondratov, Victor Tkachenko, Sergiy Fabirovskyy</i> Lviv Polytechnic National University, Lviv, Ukraine
28.	<b>Detection of Unknown Objects In Radar Recognition of Meteorological Phenomena</b> <i><sup>1</sup>V. Bezruk, <sup>2</sup>O. Voitovych, <sup>2</sup>G. Rudnev, <sup>2</sup>G. Khlopov, <sup>2</sup>S. Khomenko</i> <sup>1</sup> Kharkiv National University of Radioelectronics, Kharkiv, Ukraine <sup>2</sup> Institute of RadioPhysics and Electronics of National Academy of Science of Ukraine, Kharkiv, Ukraine

#### POSTER SECTION

29.	<b>Increasing of People Localization Accuracy under Avalanches with Use of System of RFID and Search</b> <i>Igor Shirokov, Maxim Durmanov</i> Sevastopol National Technical University, Sevastopol, Ukraine
30.	<b>The Analysis of Physical Model-Based and Non-Model-Based Visibility Improvement Methods</b> <i>Denys Nacharov</i> Sevastopol National Technical University, Sevastopol, Ukraine
31.	<b>Positioning and Identification of the Objects in Warehouse Accounting</b> <i>Igor Shirokov, Igor Serdyuk, Ivan Filippov</i> Sevastopol National Technical University, Sevastopol, Ukraine
32.	<b>The Many Scales Multifrequency Method of The Phase-ranging of The Objects</b> <i>Maksim Lantvoit, Oleksandr Kylymnyk</i> Khmelnitsky National University, Khmelnitsky, Ukraine

