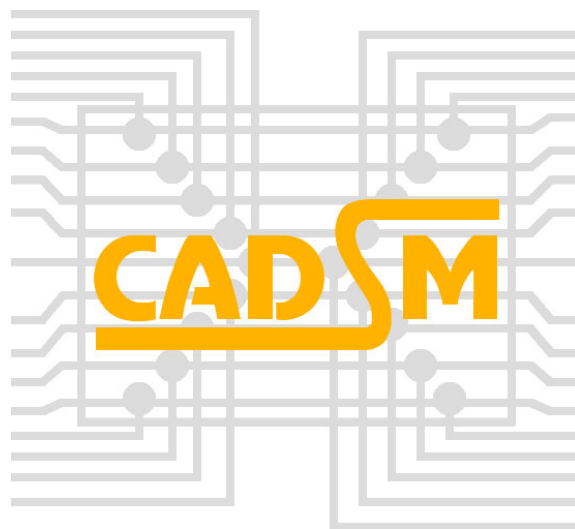




CONFERENCE PROGRAMME



**2019 15th International Conference on
the Experience of Designing and Application
of CAD Systems (CADSM)**

**February 26 – March 2, 2019
Polyana-Svalyava (Zakarpattia), Ukraine**

TABLE OF CONTENT

Conference Organizers..... 2
International Program Committee 4
Conference Program Agenda..... 5
Plenary Session..... 7
List of Presentations..... 8

ORGANIZED BY



**IEEE Ukraine Section;
IEEE Ukraine Section (West) MTT/ED/AP/EP/SSC
Societies Joint Chapter**



**Department of Computer-Aided Design
Institute of Computer Science and Information
Technologies,
Lviv Polytechnic National University**



**Department of Microelectronics and Computer
Science
Lodz University of Technology**

TRAVEL ARRANGEMENT

Like the previous 14 successful ones, this conference will be held in Polyana, Svalyava region, Zakarpattya, Ukraine in the Carpathian Mountains and approximately 190 km drive south of Lviv. Lviv is one of the oldest historic cities in Europe, an industrial and educational center of West Ukraine. We hope that the wonderful scenery and fresh air of the Carpathian Mountains will make for fruitful work at the conference and leave pleasant memories about the Conference.

Hotel "Fortuna",

Address: 61, Duhnovycha Str, Polyana – Svalyava, Ukraine



ORGANIZING COMMITTEE

- Chairman:** **Prof. Mykhaylo Lobur,**
Head of CAD Department, Lviv Polytechnic National
University, Ukraine
- Vice-chairman:** **Prof. Andrzej Napieralski,**
Lodz University of Technology, Poland
- Prof. Mykhaylo Andriychuk,**
CAD Department of Lviv Polytechnic National University,
Ukraine
- Conference Secretary:** **Dr. Nazariy Andrushchak,**
CAD Department of Lviv Polytechnic National University,
Ukraine
- Publication Chair:** **Prof. Pavlo Tymoshchuk**
CAD Department of Lviv Polytechnic National University,
Ukraine
- Financial Chair:** **Dr. Natalia Bokla**
CAD Department of Lviv Polytechnic National University,
Ukraine

MEMBERS OF ORGANIZING COMMITTEE

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- Dr. Natalia Bokla** Lviv Polytechnic National University, Ukraine
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- Dr. Lukasz Starzak** Lodz University of Technology, Poland
- Dr. Jacek Nazdrowicz** Lodz University of Technology, Poland
- Jan Napieralski** Lodz University of Technology, Poland

INTERNATIONAL PROGRAM COMMITTEE

Prof. Andriychuk M.	IEEE Ukraine Section (West) MTT/ED/AP/EP/SSC Societies Joint Chapter (Vice-chairman)
Prof. Dziuban J.	Wroclaw University of Technology, POLAND
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Prof. Prudyus Iv.	Lviv Polytechnic National University, UKRAINE
Prof. Raida Z.	Brno University of Technology, CZECH REPUBLIC
Prof. Rangelow I.	Technische Universität Ilmenau, GERMANY
Prof. Sankowski D.	Lodz University of Technology, POLAND
Prof. Skryshevsky V.	Kyiv National Taras Shevchenko University, UKRAINE
Prof. Tavzarashvili K.	University of Georgia, GEORGIA
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Prof. Yanovsky F.	National Aviation University, UKRAINE
Prof. Yashchyshyn Ye.	Warsaw University of Technology, POLAND

**2019 15th International Conference on
The Experience of Designing and Application
of CAD Systems (CADSM)**

February 26 – March 2, 2019
Polyana-Svalyava (Zakarpattia), Ukraine

CADSM 2019 Conference Program Agenda

Tuesday, February 26	
14 ⁰⁰ -16 ⁰⁰	PLENARY (Room A) Chairman: Prof. Mykhaylo Lobur Secretary: Dr. Nazariy Andrushchak
16 ⁰⁰ -16 ³⁰	Coffee Break
16 ³⁰ -18 ⁰⁰	Session 1 (Room A) Chairman: Prof. Oleh Matviyiv Secretary: Dr. Natalia Bokla

Wednesday, February 27			
14 ⁰⁰ -15 ³⁰	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Session 2 (Room A) Chairman: Prof. Mykhaylo Andriychuk Secretary: Dr. Uliana Marikutsa</td> <td style="width: 50%; text-align: center;">Session 2 (Room B) Chairman: Prof. Marian Banas Secretary: Dr. Nazariy Jaworski</td> </tr> </table>	Session 2 (Room A) Chairman: Prof. Mykhaylo Andriychuk Secretary: Dr. Uliana Marikutsa	Session 2 (Room B) Chairman: Prof. Marian Banas Secretary: Dr. Nazariy Jaworski
Session 2 (Room A) Chairman: Prof. Mykhaylo Andriychuk Secretary: Dr. Uliana Marikutsa	Session 2 (Room B) Chairman: Prof. Marian Banas Secretary: Dr. Nazariy Jaworski		
15 ³⁰ -16 ⁰⁰	Coffee Break		
16 ⁰⁰ -17 ⁰⁰	Poster Session (Room C)		
17 ⁰⁰ -17 ³⁰	Coffee Break		
17 ³⁰ -19 ⁰⁰	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Session 3 (Room A) Chairman: Prof. Andrzej Napieralski Secretary: Dr. Nazariy Andrushchak</td> <td style="width: 50%; text-align: center;">Session 3 (Room B) Chairman: Prof. Oleksandr Lemeshko Secretary: Dr. Nazariy Jaworski</td> </tr> </table>	Session 3 (Room A) Chairman: Prof. Andrzej Napieralski Secretary: Dr. Nazariy Andrushchak	Session 3 (Room B) Chairman: Prof. Oleksandr Lemeshko Secretary: Dr. Nazariy Jaworski
Session 3 (Room A) Chairman: Prof. Andrzej Napieralski Secretary: Dr. Nazariy Andrushchak	Session 3 (Room B) Chairman: Prof. Oleksandr Lemeshko Secretary: Dr. Nazariy Jaworski		

Thursday, February 28		
15 ⁰⁰ -16 ³⁰	Session 4 (Room A) Chairman: Prof. Marcin Janicki Secretary: Dr. Mykhaylo Melnyk	Session 4 (Room B) Chairman: Prof. Anatoliy Melnyk Secretary: Dr. Wojciech Zabierowski
16 ³⁰ -17 ⁰⁰	Coffee Break	
17 ⁰⁰ -18 ⁰⁰	Poster Session (Room C)	
18 ⁰⁰ -18 ³⁰	Coffee Break	
18 ³⁰ -20 ⁰⁰	Session 5 (Room A) Chairman: Dr. Cezary Maj Secretary: Dr. Olga Gladkova	Session 5 (Room B) Chairman: Prof. Mykola Dyvak Secretary: Dr. Wojciech Zabierowski

Friday, March 1		
14 ⁰⁰ -15 ⁰⁰	Poster Session (Room C)	
15 ⁰⁰ -15 ³⁰	Coffee Break	
16 ⁰⁰ -17 ³⁰	Session 6 (Room A) Chairman: Dr. Lukasz Starzak Secretary: Dr. Mykhaylo Melnyk	

Saturday, March 2		
9 ⁰⁰ -11 ⁰⁰	General Discussion, Conference Closing	

TIME OF PRESENTATIONS

Oral presentation at the plenary session – 30 min.

Oral presentation at the regular session – 10 min.

Poster presentation at the poster session – 5 min.

Discussion, questions – up to 5 min.

REGISTRATION

Tuesday, February 26
10⁰⁰-13⁰⁰

Registration of participants.

PLENARY SESSION

Tuesday, February 26
14⁰⁰-16⁰⁰

Room A

Chairman: Prof. Mykhaylo Lobur
Secretary: Dr. Nazariy Andrushchak

SPEECH OF THE CONFERENCE ORGANIZERS

Head of CAD Department of Lviv Polytechnic National University

Mykhaylo Lobur

Chair of IEEE Ukraine Section (West) MTT/ED/AP/EP/SSC Societies Joint Chapter

Mykhaylo Andriychuk

INVITED LECTURES

- 1. Design and Analysis of Lab-Chip Module for Rainwater Chemical Hazards Monitoring System**
Oleh Matviyiv, Tamara Klymkovych, Nataliia Bokla, Ihor Farmaha and Krzysztof Pytel
- 2. Intelligent Spectrum Management in 5G Mobile Networks based on Recurrent Neural Networks**
Taras Maksymyuk, Longzhe Han, Stanislav Larionov, Bohdan Shubyn, Andriy Luntovskyy and Mykhailo Klymash
- 3. Signal Processing Algorithm for Active Aperture Synthesis Systems**
Vladimir Pavlikov, Valeriy Volosyuk, Simeon Zhyla, Huu Nguen Van, Kiem Nguen Van and Anton Sobkolov

SESSION 1

Tuesday, February 26
16³⁰-18⁰⁰

Room A

Chairman: Prof. Oleh Matviyiv
Secretary: Dr. Natalia Bokla

- 1. Using Windows PowerShell for object-based OLAP system building**
Mykola Fisun, Hlib Horban and Ihor Kandyba
- 2. Analysis of positioning in cooperative and non-cooperative wireless sensor networks**
Oleksandr Kuzmin and Stepan Grytsishin
- 3. The Commander's Decision Cycle of The Situational Control System**
Valery Shestakov and Yuriy Danyk
- 4. Increasing the Accessibility to Static Content using CDN Networks as PaaS**
Mykhailo Klymash, Olga Shpur, Nazar Peleh, Orest Lavriv, Roman Bak and Olexander Skybinskyi
- 5. Information technology for modeling of atmosphere pollution processes by motor vehicle harmful emissions**
Mykola Dyvak, Yurii Maslyiak and Andriy Pukas
- 6. A Model for the Calculation of the Thrust Force and Torque During Bone Tissue Drilling**
Oleksiy Kyrkach, Valeriy Khavin and Boris Kirkach

SESSION 2

Wednesday, February 27 14⁰⁰-15³⁰	
Room A	Room B
<p>Chairman: Prof. Mykhaylo Andriychuk Secretary: Dr. Uliana Marikutsa</p>	<p>Chairman: Prof. Marian Banas Secretary: Dr. Nazariy Jaworski</p>
<ol style="list-style-type: none"> 1. Developing Fuzzy Traffic Management for Telecommunication Network Services <i>Ivanna Dronyuk, Yurii Klishch and Svitlana Chupakhina</i> 2. Design System of Image Text Recognition Based on Neural Network <i>Vitaliy Yarkun, Yaroslav Paramud and Roman-Andrij Ivantsiv</i> 3. Problems of Designing the Information Systems for the Quality Monitoring of Protective Consortive Ecotones <i>Anatoliy Obshta, Igor Kohut, Mykola Prodaniuk, Maria Ruda and Iryna Soroka</i> 4. Neural Network-based Prediction of Visual Quality for Noisy Images <i>Andrii Rubel, Oleksii Rubel and Vladimir Lukin</i> 5. Investigation of Back Scattering Properties of Thin Films Consisting of a Set of Small-Size Particles <i>Mykhaylo Andriychuk</i> 6. Development of the Balanced Queue Management Scheme with Optimal Aggregation of Flows and Bandwidth Allocation <i>Oleksandr Lemeshko, Tetiana Lebedenko, Olena Nevzorova, Arkadii Snihurov, Amal Mersni and Aymen Al-Dulaimi</i> 7. The Method of Clustering Information Resource Data on the Sign of the Number of Series of Units as a Tool to improve the Statistical Coding Efficiency <i>Vladimir Barannik, Ivan Tupitsya, Oleksandr Dodukh, Valeriy Barannik and Maksym Parkhomenko</i> 8. Designing A Generator of Random Electronic Message Based on Chaotic Algorithm <i>Iryna Artyshchuk, Olexander Belej and Natalia Nestor</i> 	<ol style="list-style-type: none"> 1. A Simple Circuit for Decoupling of Two Dual-Frequency Antennas with Small Frequency Ratio <i>Valeriy Oborzhytsky, Ivan Prudyus and Volodymyr Storozh</i> 2. ARUZ – Analyzer of Real Complex Systems <i>Andrzej Napieralski, Rafal Kielbik and Krzysztof Halagan</i> 3. Implementation Features of Composite Materials Effective Mechanical Characteristics Finding Method Based on Microlevel Cellular Structural Models <i>Nazariy Jaworski, Marek Iwaniec and Mykhailo Lobur</i> 4. Development of an automated subsystem for modeling and calculating a mirror antenna from its guiding and tracking the target <i>Ivan Kozemchuk, Kostyantyn Kolesnyk, Roman Panchak and Zoryana Skybinska</i> 5. Methods and Special Processors of Entropy Signal Processing <i>Artur Voronych, Lyubov Nyckolaychuk, Nataliia Vozna and Taras Pastukh</i> 6. Detection of Unoccupied Frequency Channels in Cognitive Radio Networks <i>Valeriy Bezruk, Stanislav Ivanenko and Aleksey Fedorov</i> 7. Model and Method for Detecting Request Signals in Identification Friend or Foe Systems <i>Iryna Svyd, Ivan Obod, Oleksandr Maltsev, Inna Shtykh and Ganna Zavalodko</i> 8. Prediction of Visual Quality for Lossy Compressed Images <i>Sergey Krivenko, Mikhail Zriakhov, Nataliia Kussul and Vladimir Lukin</i>

Poster SESSION

Wednesday, February 27

16⁰⁰-17⁰⁰

Room C

1. **Interface-Sensitive Method of Synthesis of Microcontroller-Based System Structures**
Pavlo Denysyuk, Taras Teslyuk, Andriy Kernytskyy, Vasyl Teslyuk, Ivan Tsmots and Oleh Berezsky
2. **Energy-efficient Backfill-based Scheduling Approach for SLURM Resource Manager**
Larysa Globa, Nataliia Gvozdetska and Volodymyr Prokopets
3. **Hardware Implementation of Sigmoid Activation Functions using FPGA**
Ivan Tsmots, Vasyl Rabyk and Oleksa Skorokhoda
4. **Methods and processors for image recognition in a linear and quadratic Hamming space**
Andriy Sydor, Yaroslav Nykolaychuk, Nataliia Vozna, Boris Krulikovskyi, Alina Davletova and Oleh Liura
5. **The Software for Authorship and Style Attribution**
Khomytska Iryna and Teslyuk Vasyl
6. **Modeling and design of the industrial production control unit**
Svitlana Popereshnyak and Anastasiya Vecherkovskaya
7. **Specialized computer system Controlling the Technological Parameters of the Drilling Rig**
Nadiia Shyrmovska, Artur Voronych, Yaroslav Zaiachuk, Maksym Karpash and Olha Lazoriv
8. **Hull Parametric Modeling of a SWATH ships**
Anzhela Boiko, Oleksandr Bondarenko and Yevhen Davydenko
9. **Spatial-temporal Transformation of Sorting Algorithm with "Perfect Shuffle"**
Volodymyr Gryga, Yaroslav Nykolaichuk, Artur Voronych, Ihor Pitukh and Orest Volynskyi
10. **Data Transmission System for a Distributed Real-Time Information-Control System**
Vitaliy Mazur and Volodymyr Karkulovskyy
11. **A Dynamic Programming Method of Calculating the Overlapping Allan Variance**
Tetyana Marusenkova and Iryna Yurchak
12. **On intelligent agent-based simulation of network worms propagation**
Dmytro Chumachenko and Sergiy Yakovlev
13. **Use of Genetic Algorithm for Optimal Codes Search**
Roman Yankevych, Ivan Prudyus and Volodymyr-Myron Miskiv
14. **Modelling Features of Switching Device Errors for 2-out-of-3 and Sliding Redundancy Systems Based on k-Terminal Dynamic Fault Tree**
Serhiy Shcherbovskykh, Tetyana Stefanovych and Mykhaylo Lobur
15. **Algorithm for Image Transfer Using Dynamic Chaos**
Olexander Belej, Tamara Lohutova and Marian Banas
16. **Absolute and Relative Classification of Cloud Regions by Satellite Image Clustering**
Roman Melnyk, Yuriy Kalychak and Ruslan Tushnytskyy
17. **Method of Increasing the Object Detection Probability by the Multispectral Monitoring System**
Andrii Hryvachevskyi, Sergiy Fabirovskyy, Ivan Prudyus, Leonid Lazko and Jan Matuszewski

SESSION 3

Wednesday, February 27 17³⁰-19⁰⁰	
Room A	Room B
<p>Chairman: Prof. Andrzej Napieralski Secretary: Dr. Nazariy Andrushchak</p> <ol style="list-style-type: none"> 1. Set-theoretical FSM models activity subsystem for Cognitive Control Systems <i>Mykhailo Poliakov, Oleksii Poliakov and Sergey Subbotin</i> 2. Optimization of the Structural Characteristics of the Robotic System Holder <i>Andriy Zdobytskyi, Mykhailo Lobur and Vasul Breznitskyi</i> 3. Development of CAD/CAM/CAE Systems of Designing Spatial Frame for Technological and Machine-Tool Equipment <i>Yuriy Rozov, Serhii Rusanov, Hanna Rudakova, Dmytro Dmitriev, Anton Omelchuk and Dmytro Fedorchuk</i> 4. The analysis of the optimal data distribution method at the content delivery network <i>Nazar Pleskanka, Maryan Kyryk and Mariana Pleskanka</i> 5. Development the Software for Simulation of Physical Fields in Wood Drying Chambers by Using Cellular Automata <i>Yaroslav Sokolovskyy, Oleksiy Sinkevych and Roman Voliansky</i> 6. Mathematical models and analysis of the heat-mass-transfer in anisotropic materials taking into account the boundaries of phase transition <i>Yaroslav Sokolovskyy, Iryna Boretska, Bogdana Gayvas and Igor Kroshnyy</i> 7. Technology for efficient encoding of structural components using the multi-agent approach for telecommunication tools and devices <i>Vladimir Barannik, Oksana Stetsenko, Anton Sorokun, Alexander Musienko and Oleksandr Yudin</i> 	<p>Chairman: Prof. Oleksandr Lemeshko Secretary: Dr. Nazariy Jaworski</p> <ol style="list-style-type: none"> 1. Model and Method for Request Signals Processing of Secondary Surveillance Radar <i>Iryna Svyd, Ivan Obod, Oleksandr Maltsev, Ganna Zavolodko, Inna Shtykh and Halyna Maistrenko</i> 2. A Fast Algorithm for Modeling Rough Surfaces in the Remote Sensing Tasks <i>Anatoliy Popov, Masha Bortsova and Anton Sobkolov</i> 3. Design of the Fast ReRoute QoS Protection Scheme for Bandwidth and Probability of Packet Loss in Software-Defined WAN <i>Oleksandr Lemeshko, Maryna Yevdokymenko, Oleksandra Yeremenko, Ahmad M. Hailan, Pavel Segeč and Jozef Papán</i> 4. Structure identification of difference equations with interval estimates of their parameters <i>Iryna Darmorost, Mykola Dyvak, Nataliya Porplytsya and Iryna Hural</i> 5. Improving the Efficiency of LTE Spectral Resources Use by Introducing a M2M/IoT Multi-Service Gateway <i>Halyna Beshley, Mykhailo Klymash, Mykola Beshley and Ihor Kahalo</i> 6. Modeling Linear Electrical Circuits with Time-Variable Inductances by the Frequency Symbolic Method <i>Yuriy Shapovalov, Dariya Bachyk, Ksenia Chaban and Roman Romaniuk</i> 7. HetNet spatial topology design using mini-batch K-means clustering <i>Eugen Slapak, Juraj Gazda, Gabriel Bugár, Marcel Vološin and Taras Maksymyuk</i>

SESSION 4

Thursday, February 28 15⁰⁰-16³⁰	
Room A	Room B
<p>Chairman: Prof. Marcin Janicki Secretary: Dr. Mykhaylo Melnyk</p>	<p>Chairman: Prof. Anatoliy Melnyk Secretary: Dr. Wojciech Zabierowski</p>
<ol style="list-style-type: none"> 1. Algorithmic Model of the Cyclic Changes in the Temperature of the Solid Under the Effect of Convective Heat Exchanges with the Environment <i>Maksym Korobchynskiy, Alexander Mariliv, Andrii Bohuslavets, Serhii Tsybulskiy, Elina Sablina and Vitalii Nechepurenko</i> 2. Computer simulation of the partitioning by mutually orthogonal lines <i>Valentina Komyak, Oleksandr Sobol, Iryna Yakovleva, Vladimir Komyak, Alexander Danilin and Olena Lyashevskaya</i> 3. On the maximum coverage problems in geometric design systems <i>Sergiy Yakovlev, Oleksii Kartashov, Valentina Komyak, Sergiy Shekhovtsov, Oleksandr Sobol and Iryna Yakovleva</i> 4. Suitable damping control methods for semi-active dynamic vibration absorbers <i>Orest Horbay, Bohdan Diveyev, Ivan Kernytsky, Mykhailo Burian and Victoria Opalko</i> 5. Signed permutation polytope packing in VLSI design <i>Oksana Pichugina and Oleksii Kartashov</i> 6. The Mathematical Models of Mechanical and Electromechanical Systems Study via the Qualitative and Analytical Approach <i>Petro Pukach, Zinovii Nytrebych, Volodymyr Ilkiv, Myroslava Vovk and Oksana Malanchuk</i> 7. Analysis of reliability, survivability and telemetry data of on-board equipment of small satellites <i>Vadim Skobtsov, Natalia Lapitskaja, Dmitriy Kim, Natalia Novoselova, Roman Saksonov and Eugene Nikolaenya</i> 	<ol style="list-style-type: none"> 1. Techniques of Automated Processing of Kolmogorov – Chapman Differential Equation System for Reliability Analysis of Technical Systems <i>Yuriy Bobalo, Vitaliy Yakovyna, Maksym Seniv and Ivan Symets</i> 2. Research on the Scalability of All-Optical Switches in the OLS Networks <i>Volodymyr Andrushchak, Mykola Kaidan, Stepan Dumych, Yulia Pyrih and Taras Maksymyuk</i> 3. A Numerical Results of Variable Radii Method in the Unequal Circles Packing Problem <i>Sergiy Yakovlev, Oleksii Kartashov, Kyryl Korobchynskiy and Bohdan Skripka</i> 4. Designing of functionally stable information systems optimal for a minimum of losses <i>Viktor Shevchenko, Alina Shevchenko, Ruslan Fedorenko, Yurii Shmorhun and Asadi Hrebennikov</i> 5. Good practices of electrothermal simulation of p-n structures using SentaustusTCAD <i>Janusz Wozny, Jacek Podgorski, Zbigniew Lisik and Ewa Raj</i> 6. Simulation and Analysis of the Magnetic Field Distribution in a Magneto-Solid Layer <i>Yaroslav Pelekh, Andrii Kunynets, Serhii Mentynskiy, Roksoliana Stolyarchuk, Bohdan Pakholok and Tetiana Maherovska</i> 7. Ordered Access Memory Based Programmable Hardware Accelerator Parallel Architecture <i>Anatoliy Melnyk and Viktor Melnyk</i>

Poster SESSION

Thursday, February 28

17⁰⁰-18⁰⁰

Room C

1. **Novel approach to Computer-Aided detection of lung nodules of difficult location with use of multifactorial models and deep neural networks**
Pavlo Orobinskyi, Dmytro Petrenko and Vyacheslav Lyashenko
2. **Component Fractal Coding of Color Images**
Mikola Patlayenko, Olena Osharovska and Volodymyr Pyliavskiy
3. **Research of The Generalized Class Orthogonal Harmonic Signals Application Efficiency in BPL Transmission Systems**
Vasyl Oreshkov, Anatoliy Lashko, Leonid Lyakhovetsky, Alexandr Yanevich, Irina Barba and Olena Iegupova
4. **A New Approach for Designing and Approbation of Laser-Based 3D Scanner**
Nazariy Andrushchak, Serhiy Klyuchkovskyy, Yaroslav Neznaradko and Vladyslav Hnatiuk
5. **Numerical analysis of the nanowire unipolar transistors**
Jacek Podgórski, Janusz Woźny and Zbigniew Lisik
6. **Improvement of Multiprotocol Label Switching Network Performance using Software-defined Controller**
Andrii Pryslupskiy, Mykola Beshley, Oleksiy Panchenko and Marian Seliuchenko
7. **Application of Spline-Fourier Transform for Radar Signal Processing**
Volodymyr Shutko, Mykola Shutko, Olena Kolganova, Lidiia Tereshchenko and Iuliia Silantieva
8. **Analysis of Influence of Initial Conditions on Setting Weight Vector of Adaptive Antenna Array**
Mykola Moskalets, Konstantin Selivanov and Batoul Sleiman
9. **Cumulative Rain Attenuation Probability in Ukraine**
Vladimir Pavlikov, Nikolay Ruzhentsev, Simeon Zhyla, Oleksandr Tsopa, Anton Sobkolov and Olexiy Odokienko
10. **Efficient Calculation Methods of Subtraction Signals Convolution**
Oleksandr Tymchenko, Oleksandr O. Tymchenko, Bohdana Havrysh, Orest Khamula, Olha Sosnovska and Svitlana Vasiuta
11. **Infocommunication Networks Design with Self-Similar Traffic**
Dmytro Ageyev, Aram Mohsin, Tamara Radivilova and Lyudmyla Kirichenko
12. **Optimization Model for 5G Network Planning**
Oleg Bondarenko, Dmytro Ageyev and Othman Mohammed
13. **Combinatorial optimization problems solving based on evolutionary approach**
Ievgen Fedorchenko, Andrii Oliinyk, Alexander Stepanenko, Mykyta Rud and Dmytro Goncharenko
14. **Method of artificial neural network synthesis for using in integrated CAD**
Sergey Leoshchenko, Andrii Oliinyk, Sergey Subbotin, Serhii Shylo and Vadym Shkarupylo
15. **Simulation features of electrically controlled optical systems based on polymer structure - liquid crystal**
Andriy Fechan, Yuriy Bashtyk, Volodymyr Kotsun and Andriy Senyk

SESSION 5

Thursday, February 28
18³⁰-20⁰⁰

Room A	Room B
<p>Chairman: Dr. Cezary Maj Secretary: Dr. Olga Gladkova</p>	<p>Chairman: Prof. Mykola Dyvak Secretary: Dr. Wojciech Zabierowski</p>
<ol style="list-style-type: none"> 1. Analytical Method of Investigation of Wave Processes in Mathematical Models of Some Dynamic Systems <i>Zinovii Nytrebych, Petro Pukach, Volodymyr Ilkiv and Oksana Malanchuk</i> 2. Modeling and calculation of the temperature-force regime of functioning of a spherical bimetallic sensor in a nonstationary electromagnetic field <i>Roman Musij, Nataliia Melnyk, Khrystyna Drohomiretska, Olga Veselovska, Oleksandra Hasko and Oksana Puha</i> 3. Designing of Z-axis accelerometer with asymmetrical proof-mass using surface micromachining process <i>Cezary Maj and Michał Szermer</i> 4. Considerations on Electronic System Compact Thermal Models in The Form of RC Ladders <i>Marcin Janicki and Andrzej Napieralski</i> 5. Influence of the thickness of a metal nanofilm on the spectrum of surface plasmons <i>Vitalii Polovyi and Petro Kostrobij</i> 6. Order Relation on Scalar Products in Real Linear Spaces <i>Volodymyr Ilkiv, Zinovii Nytrebych, Petro Pukach, Ihor Kohut and Bohdan Pakholok</i> 7. MEMS Rotational Gyroscope Operation in Various Temperature Environment <i>Jacek Nazdrowicz</i> 	<ol style="list-style-type: none"> 1. Computer aided system of time series analysis methods for forecasting the epidemics outbreaks <i>Yulia Polyvianna, Dmytro Chumachenko and Tetyana Chumachenko</i> 2. Electrocardiogram Processing System Design with Parallel Computing and Memory Transferring Using Fuzzy ART Neural Network <i>Serhii Shatnyi and Pavlo Tymoshchuk</i> 3. Algorithm Reliability of Kalman Filter Coefficients Determination for Low-Intensity Electoretinosignal <i>Pavlo Tymkiv and Yuriy Leshchyshyn</i> 4. Concept of an electronic device dedicated to imbalance disorders monitoring <i>Mariusz Jankowski, Michał Szermer and Piotr Amrozik</i> 5. 3D modeling of aesthetic breast prosthesis <i>Nataliya Liubarenko, Yuliya Antonova-Rafi and Igor Khudetskyy</i> 6. CAD technology in development of the spinal traction therapy smart systems <i>Kostiantyn Chorny, Igor Khudetskyy and Yuliya Antonova-Rafi</i>

Poster SESSION

Friday, March 1

14⁰⁰-15⁰⁰

Room C

1. **Synthesis the Structure of the Technological Cutting Process**
Inna Khavina, Vyacheslav Lymarenko, Andrew Podorozhnyak, Elena Chernykh and Nicholas Mezentsev
2. **Simulation of porous silicon 1-D optical sensor array**
Ivan Ivanov and Valeriy Skryshevsky
3. **Monte Carlo Algorithm for the Optimization of Mathematical Models in Micromechanical Systems Using Quadratic Irrationalities and Proportional Division**
Petro Kosobutskyy, Roksolana Kordiuk and Iryna Yakymets
4. **Modelling of Microelectromechanical Inertial Sensors**
Olga Sushchenko, Yurii Bezkorovainyi and V. Golitsyn
5. **Statistical Analysis of Wind Turbine Operational Data**
Valeriyi Kuzmin, Maksym Zaliskyi, Olena Kozhokhina, Olga Shcherbyna and Roman Odarchenko
6. **Modeling and calculation of the temperature-force regime of functioning of an electrical conductive spherical sensor under the action of an amplitude-modulated radio pulse**
Roman Musij, Nataliia Melnyk, Veronika Dmytruk, Oryslava Bilyk, Beata Kushka and Hanna Shayner
7. **Hull Parametric Modeling of a SWATH ships**
Anzhela Boiko, Oleksandr Bondarenko and Yevhen Davydenko
8. **Performance prediction method for Embedded Systems products**
Zhanna Kaminska and Serhii Serdiuk
9. **Synthesis of neurocontroller for intellectualization tasks of process control systems**
Taras Teslyuk, Vasyl Teslyuk, Pavlo Denysyuk, Ivan Tsmots, Oleh Berezsky and Mykhaylo Melnyk
10. **Investigation and Realisation of Prototyping Technologies for Robotic-Prostheses Computer Aided Design**
Anzhelika Parkhomenko, Olga Gladkova and Yaroslav Zalyubovskiy
11. **The method of indirect restoration of human communicative function**
Oksana Dozorska, Evhenia Yavorska, Vasil Dozorskyi, Iryna Pankiv, Iryna Dedit and Leonid Dedit
12. **Comparison of High-Frequency Ablation and Convectional-Infrared Coagulation Usage in the Treatment of Arrhythmias During Opened-Heart Surgery**
Igor Khudetsky, Yurii Stasiuk, Vitalii Maksymenko and Yuliia Antonova-Rafi
13. **Design Method Based on Logical Assertions**
Dmitry Zerbino and Iryna Yurchak

SESSION 6

Friday, March 1

16⁰⁰-17³⁰

Room A

Chairman: Dr. Lukasz Starzak**Secretary: Dr. Mykhaylo Melnyk**

1. **Estimation of noise hazards in environmental monitoring tools design in the subway**
Volodymyr Petrivskyi, Victor Shevchenko, Oleksiy Bychkov and Maksym Brazhenenko
2. **High Performance Computing System Design for ANSYS CFD and Mechanical**
Volodymyr Saviak, Andrii Golovynskyi, Taras Lazariev and Volodymyr Sirenko
3. **Geometry details influenced on vibratory microgyroscope performance**
Jacek Nazdrowicz
4. **Cloud Based Architecture Design of System of Systems**
Maksym Brazhenenko, Pavlo Kozachok, Volodymyr Petrivskyi, Oleksiy Bychkov and Viktor Shevchenko
5. **Structural Parameters Influence on a Soft Robotic Manipulator Finger Bend Angle Simulation**
Viktoriia Bortnikova, Vladyslav Yevsieiev, Vladimir Beskorovainyi, Igor Nevliudov, Iryna Botsman and Svitlana Maksymova

FINAL SESSION

Saturday, March 2

9⁰⁰-11⁰⁰

1. Concluding reports of Section Chairman.
2. Discussion.
3. Conference summary.
Conference closing.