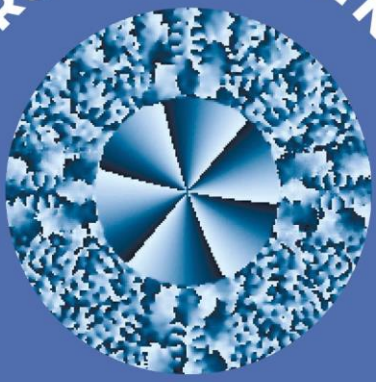
The X International Conference on Information Technology and Nanotechnology

PROGRAM OF ITNT



Dedicaded to the 300th anniversary of the Russian Academy of Science

May 20-24,
Samara, Russia

2024

The X International Conference on Information Technology and Nanotechnology (ITNT-2024) dedicated to the 300th anniversary of the Russian Academy of Sciences takes place in Samara (Russia) from May 20th to 24th, 2024. The Conference intends to provide a forum for leading scientists from all over the world to discuss the latest advances in the basic and applied research in the field of Information Technology, Nanotechnology, Artificial Intelligence and Industrial Internet of Things, attract young people to advanced scientific research, and share the latest trends in training and research programs for future ITNT specialists.

Organizers

Samara National Research University named after S.P. Korolev (Samara University)

Supporters

IT-SERVICE

Partners

IEEE

Photonics

Media-Supporters

Journal Photonics

Computer Optics

Optical Memory and Neural Networks (Information Optics)

Journal of Biomedical Photonics & Engineering

Avtometria

Rossiyskie nanotekhnologii

Sovremennye problemy distantsionnogo zondirovaniya Zemli iz kosmosa

Conference Venue

The ITNT-2024 is held in the 1st building of the Samara University.
Address**:** Molodogvardeyskaya st. 151, Samara, Russia

Conference topics

Section 1 "Computer Optics and Nanophotonics"

- Diffractive Optics (Design, Simulation and Manufacturing of Diffractive Optical Elements, Applications);
- Planar Optical Structures (Waveguides, Photonic Crystals, Resonance Structures, Bragg Gratings);
- Hyperspectral Systems (Optical Schemes, Dispersive Elements, Spectral Filters);
- Nanophotonics (Design, Simulation and Manufacturing of Elements of Nanophotonics, Plasmonics, Metasurfaces);
- Optical Sensing Systems, Information Transmission and Processing (Optical Calculations, Modeling of Optical Imaging Systems, Optical Neural Networks, Fiber Optics, Information Transfer in Free-space);
- Singular Optics (Generation and Registration of Optical Vortices, Propagation and Focusing of Optical Vortices, Cylindrical Vector Beams, Spin-Orbital Conversion).

Section 2 "Information technologies in Earth remote sensing"

- Information Technology in Design of Earth Remote Sensing Spacecraft and Payload;
- Software and Mathematical Solutions for Motion Control of Observation Spacecraft;
- Software and Hardware for Receiving, Processing and Analyzing Data Received from Earth Remote Sensing Spacecraft;
- Geoinformation Systems and Technologies (Vectorization, Tracing, Geospatial Analysis and Modeling; Geometric and Radiometric Correction; Image Fusion in Remote Sensing, Spectral Unmixing, Change and Anomaly Detection);
- Mathematical Modeling of the Processes of Earth Remote Sensing Spacecraft Performance;
- Modern Design Solutions for the Development of Earth Remote Sensing Spacecraft and their Constellations, Including CubeSat;
- UAV-based Remote Sensing Systems.

Section 3 "Artificial Intelligence"

- New Approaches, Trnds and Fundamental Results in the Field of Artificial Intelligence and its Applications to Pattern Recognition and Image Analysis, Text Processing, Speech Information;
- Neural Network Methods and Deep Learning: New Architectures, Neural Models, Teaching Methods, Multimodal Intelligent Systems, New Approaches to Solving Applied Problems, Preparing Data for Training, Datasets Forming;
- Applied Artificial Intelligence Technologies in Image Processing, Unmanned Vehicles, Industrial and Agricultural Applications, Medical Applications, Ecology, Environmental Monitoring and Others;
- Software Technologies for Solving Problems of Artificial Intelligence – Frameworks, Libraries, Open Initiatives and Communities;
- Multidisciplinary Aspects of Artificial Intelligence and Machine Learning: Ethical and Ontological Aspects of Artificial Intelligence, Systems of Trusted Artificial Intelligence.

Section 4 "Data Science"

Computer Science:

- Data Engineering: Data Preprocessing, Validation and Augmentation;
- Data Visualization;
- Mathematical Methods of Data Analysis;
- Software Platforms and Libraries for Data Processing;
- Hardware for Data Storage and Processing;
- High-performance, Parallel and Cloud Computing, Big Data Technologies;
- Databases, Tools and Languages for Working with Databases.

Data Mining Applications:

- Solution of Urgent Applied Problems: Time Series Analysis; Natural Language Processing; Video Data Streams Analysis; Diagnostic Data Analysis.

Mathematical Methods of Digital Image Processing:

- Filtering, Enhancement, Color Mapping, Reconstruction, Compression, Spectral Transformations and Invariants, Mathematical Morphology, Segmentation, Images Mosaicing.

Mathematical Methods of Pattern Recognition:

- Feature Extraction and Selection, Descriptors, Dimensionality Reduction.

Machine Vision Technologies:

- Photogrammetry, Shape or Scene Reconstruction, Registration, Geometry Transformation, Point Cloud Processing; Scene Analysis; Structure from Motion, visual odometry.

Section 5 "Information technologies in biomedicine"

- Mathematical Methods for Processing Biomedical Data, Signals, Images, Biomedical Visualization;
- Biomedical Data Mining, Clinical Decision Support Systems;
- Artificial Intelligence in Biomedical Data Processing, Neural Networks and Deep Learning in Biomedical Applications;
- Augmented and Virtual Reality (AR/VR) in Biomedical Applications;
- Medical Information Systems, Remote Interaction and Monitoring Systems, Telemedicine, Internet Medicine;
- Therapeutic and Diagnostic Systems, Implants, Artificial Organs, Biomedical Sensors, Medical Equipment, Internet of Medical Things (IoMT);
- Mathematical Modeling of Biophysical Processes.

Section 6 "Industrial Internet of Things"

- Digital Information Models (Digital Twins, Multi-Agent Systems, Digital Network Models);
- Intelligent Management Systems (Intelligent Decision-Making in Management Systems, Data Analysis for Decision Support, Machine Learning Models in Optimization and Management Tasks);
- Microservice Architecture and High-Load Applications (Organizing a Microservice Interaction, Load Balancing, Optimization of Distributed Computing);
- Collecting a Telemetry and Software Control of Devices (Sensors, Programmable Logic Controllers, Automation of Industrial Equipment).

Program Committee

Program Committee Chair

V.A. Soifer – Academician of RAS, Prof., President of Samara National Research University, Samara, Russia.

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Kupriyanov A.V. – Prof., Samara National Research University, Samara, Russia;

Organizing Committee

Organizing Committee Chair

Bogatyrev V.D. – Prof, Acting Rector of Samara National Research University, Samara, Russia.

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Kazanskiy N.L. – Prof., Head of Image Processing Systems Institute, NRC "Kurchatov Institute", Samara, Russia;

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Executive Secretary

Gordeeva O.A. – Dr., Samara National Research University, Samara, Russia.

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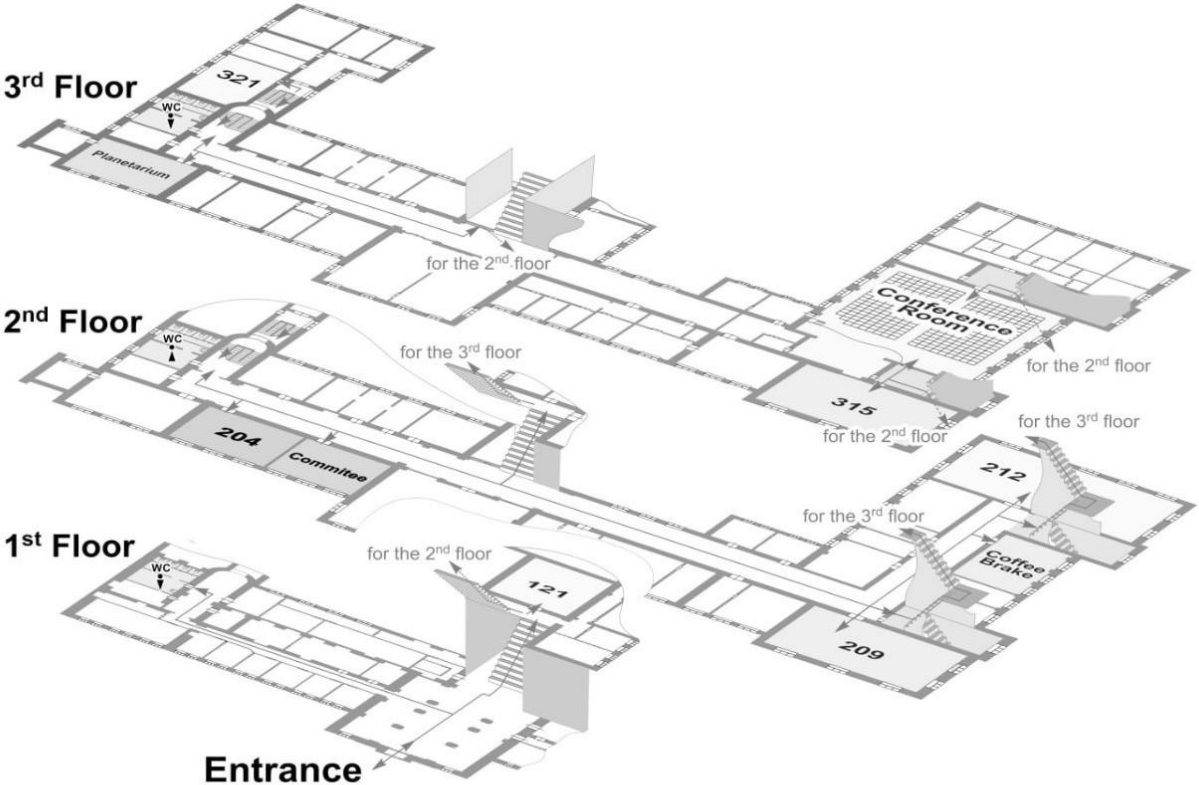
Tic S.N. – Dr., Samara National Research University, Samara, Russia;
Yakunenkova D.M. – Samara National Research University, Samara, Russia;
Yashina V.V. – Dr., Federal Research Center "Computer Science and Control" of the Russian Academy of Sciences.

Conference Schedule

Sessions	May 20	May 21	May 22	May 23	May 24
Registration	9:00-17:00 Hall, 1st floor	9:00-14:00 Hall, 1st floor	9:00-14:00 Hall, 1st floor		
Opening Ceremony	11:00-12:00 Conference Room				
Plenary Session	12:00-13:20 Conference Room	9:00-13:15 Conference Room	9:00-13:15 Conference Room	9:00-13:15 Conference Room	9:00-11:00 Conference Room
Section 1 "Computer Optics and Nanophotonics"	14:00-16:00 Track 1 209	14:00-16:00 Track 2 209	14:00-16:00 Track 3 209	15:00-19:00 Excursions	11:30-13:00 Track 4 209
Section 2 "Information Technologies in Earth Remote sensing"		14:00-16:00 Track 1 315	14:00-16:00 Track 2 121	15:00-19:00 Excursions	11:30-13:00 Track 3 121
Section 3 "Artificial Intelligence"	14:00-16:00 Track 1 315	14:00-16:00 Track 2 204	14:00-16:00 Track 3 315	15:00-19:00 Excursions	11:30-13:00 Track 4 315
Section 4 "Data Science"	14:00-16:00 Track 1 204			15:00-19:00 Excursions	11:30-13:00 Track 2 204
Section 5 "Information Technologies in Biomedicine"	14:00-16:00 Track 1 121	14:00-16:00 Track 2 121		15:00-19:00 Excursions	
Section 6 "Industrial Internet of Things"			14:00-16:00 Track 1 204	15:00-19:00 Excursions	
Poster Session			16:00-18:00 Hall, 2nd floor		
Workshops	16:00-18:00 315	16:00-18:00 315			
Board Games			17:00-19:00 ITNT Table Time 315		
Closing Ceremony. Best Paper Award					14:00-15:00 Conference Room



Plan of the building

Program of X International Conference on Information Technology and Nanotechnology (ITNT-2024)

20 May (Monday)
Time zone: Samara (GMT +4)

<table>
<tr><td>9:00-17:00</td><td colspan="4">Registration
Samara National Research University, building 1, Hall, 1st floor</td></tr>
<tr><td>11:00-12:00</td><td colspan="4">Opening of the Conference
building 1, Conference Room</td></tr>
<tr><td>12:00-13:20</td><td colspan="4">Plenary Session
building 1, Conference Room</td></tr>
<tr><td>13:20-14:00</td><td colspan="4">Lunch break</td></tr>
<tr><td rowspan="2">14:00-16:00</td><td colspan="4">Oral Sessions</td></tr>
<tr><td>Section 1
"Computer Optics and Nanophotonics"
Track 1: room 209</td><td>Section 3
"Artificial Intelligence"
Track 1: room 315</td><td>Section 4
"Data Science"
Track 1: room 204</td><td>Section 5
"Information Technologies in Biomedicine"
Track 1: room 121</td></tr>
<tr><td>16:00-16:15</td><td colspan="4">Coffe break</td></tr>
<tr><td rowspan="2">16:15-18:00</td><td colspan="4">Workshops</td></tr>
<tr><td colspan="2">Pavel Andryushenko
Team Lead Java, MediaSoft
Building Reactive Microservice with Armeria Framework
building 1, room 315</td><td colspan="2">Tinkoff
Algorithms and Data Structures
building 1, room 209</td></tr>
</table>

Program of X International Conference on Information Technology and Nanotechnology (ITNT-2024)

21 May (Tuesday)
Time zone: Samara (GMT +4)

<table>
<tr><td>9:00-
14:00</td><td colspan="4">Registration
Samara National Research University, building 1, Hall, 1st floor</td></tr>
<tr><td>9:00-
11:00</td><td colspan="4">Plenary Session
building 1, Conference Room</td></tr>
<tr><td>11:00-
11:15</td><td colspan="4">Coffe break</td></tr>
<tr><td>11:15-
13:15</td><td colspan="4">Plenary Session
building 1, Conference Room</td></tr>
<tr><td>13:15-
14:00</td><td colspan="4">Lunch break</td></tr>
<tr><td rowspan="2">14:00-
16:00</td><td colspan="4">Oral Sessions</td></tr>
<tr><td>Section 1
"Computer Optics and Nanophotonics"

Track 2: room 209</td><td>Section 2
"Information Technologies in Earth Remote sensing"
Track 1: room 315</td><td>Section 3
"Artificial Intelligence"

Track 2: room 204</td><td>Section 5
"Information Technologies in Biomedicine"

Track 2: room 121</td></tr>
<tr><td>16:00-
16:15</td><td colspan="4">Coffe break</td></tr>
<tr><td>16:15-
18:00</td><td colspan="4">Workshop
PhD Igor Rytsarev
MLOps Implementation Expert, Advanced Analytics Practice Employee, GlowByte LLC
How to Organize a Workspace for Data Science
building 1, room 315</td></tr>
</table>

Program of X International Conference on Information Technology and Nanotechnology (ITNT-2024)

22 May (Wednesday)
Time zone: Samara (GMT +4)

<table>
<tr><td>9:00-
14:00</td><td colspan="4">Registration
Samara National Research University, building 1, Hall, 1st floor</td></tr>
<tr><td>9:00-
11:00</td><td colspan="4">Plenary Session
building 1, Conference Room</td></tr>
<tr><td>11:00-
11:15</td><td colspan="4">Coffe break</td></tr>
<tr><td>11:15-
13:15</td><td colspan="4">Plenary Session
building 1, Conference Room</td></tr>
<tr><td>13:15-
14:00</td><td colspan="4">Lunch break</td></tr>
<tr><td rowspan="2">14:00-
16:00</td><td colspan="4">Oral Sessions</td></tr>
<tr><td>Section 1
"Computer Optics and Nanophotonics"

Track 3: room 209</td><td>Section 2
"Information Technologies in Earth Remote sensing"
Track 2: room 121</td><td>Section 3
"Artificial Intelligence"

Track 3: room 315</td><td>Section 6
"Industrial Internet of Things"

Track 1: room 204</td></tr>
<tr><td>16:00-
16:15</td><td colspan="4">Coffe break</td></tr>
<tr><td>16:15-
18:00</td><td colspan="4">Poster Session
building 1, Hall 2nd floor</td></tr>
<tr><td>17:00-
19:00</td><td colspan="4">Board Games
ITNT Table Time
room 315</td></tr>
</table>

23 May (Thursday)
Time zone: Samara (GMT +4)

9:00- 11:00	**Plenary Session** *building 1, Conference Room*
11:00- 11:15	**Coffe break**
11:15- 13:15	**Plenary Session** *building 1, Conference Room*
13:15- 14:00	**Lunch break**
15:00- 19:00	**Excursion**

Program of X International Conference on Information Technology and Nanotechnology (ITNT-2024)

24 May (Friday)
Time zone: Samara (GMT +4)

<table>
<tr><td>9:00-11:00</td><td colspan="4">Plenary Session
building 1, Conference Room</td></tr>
<tr><td>11:00-11:30</td><td colspan="4">Coffe break</td></tr>
<tr><td rowspan="2">11:30-13:00</td><td colspan="4">Oral Sessions</td></tr>
<tr><td>Section 1
"Computer Optics and Nanophotonics"

Track 4: room 209</td><td>Section 2
"Information Technologies in Earth Remote sensing"
Track 3: room 121</td><td>Section 3
"Artificial Intelligence"

Track 4: room 315</td><td>Section 4
"Data Science"

Track 2: room 204</td></tr>
<tr><td>13:00-14:00</td><td colspan="4">Lunch break</td></tr>
<tr><td>14:00-15:00</td><td colspan="4">Closing Ceremony. Best Paper Award
building 1, Conference Room</td></tr>
</table>

Plenary Session

20 May (Monday)
Time zone: Samara (GMT +4)

Chair: Academician of RAS, Prof. Victor Soifer
Secretary: Dr. Roman Khabibullin

12:00-12:40	**Prof. Bin Fan** Institute of Optics and Electronics, Chinese Academy of Science, China *Computational Imaging System for Optical Telescope in IOE* *(online)*
12:40-13:20	**Prof. Roman Meshcheryakov** V.A. Trapeznikov Institute of Control Sciences of RAS *Promising Scientific Directions for the Development of Cyberphysical Systems*

21 May (Tuesday)
Time zone: Samara (GMT +4)

Chair: Prof. Artem Nikonorov
Secretary: Dr. Egor Ershov

9:00-9:40	**Dr. Egor Ershov** Institute for Information Transmission Problems (Kharkevich Institute) of RAS *Illumination Distribution Estimation or How B.Funt Knew Everything?*
9:40-10:20	**Dr. Prabhash Mishra** Jamia Millia Islamia University, India *Advancements in High-Performance Photodetectors Utilizing Novel 2D Materials: Fabrication Techniques (online)*
10:20-11.00	**Dr. Maqsood Ahmad Malik** Jamia Millia Islamia University, India *Multifunctional Heterostructure Based Nanocomposites for Photocatalytic Applications (online)*

Chair: Prof. Artem Nikonorov
Secretary: Dr. Egor Ershov

11:15-11:55	**Dr. Vitaliy Zakharchenko** R&D Sensors. Modules. Systems ltd., Russia *Automation Control Systems Mass Engineering Services as a Core of Digital Transformation*
11:55-12:35	**Dr. Maria Antonietta Pascali** Institute of Information Science and Technologies - ISTI CNR Pisa, Italy *Topological Machine Learning for Raman Spectroscopy* *(online)*
12:35-13:15	**Prof. Simone Bianco** University of Milano-Bicocca, Italy *Expert-Driven vs Machine Learning Approaches in Digital Camera Pipeline Optimization* *(online)*

Plenary Session

22 May (Wednesday)
Time zone: Samara (GMT +4)

Chair: Prof. Ivan Bratchenko
Secretary: Anastasia Rymzhina

9:00-9:40	**Corresponding Member of RAS, Prof. Alexey Zhukov** HSE University - St. Petersburg *Quantum Dots, QD-lasers and Microlasers*
9:40-10:20	**Prof. Mohammad Shahid Khan** Jamia Millia Islamia University, India *Functionalized Quantum Dots for Solid State Lighting* *(online)*
10:20-11.00	**Prof. Rajan Patel** Jamia Millia Islamia University, India *Pharmaceutical and Biomedical Applications of Ionic Liquids* *(online)*

Chair: Corresponding Member of RAS, Prof. Alexey Zhukov
Secretary: Anastasia Rymzhina

11:15-11:55	**Dr. Victor Korolkov** Institute of Automation and Electrometry of the Siberian Branch of RAS *Diffractive Optics and Microtechnologies for the Russian Instrument-making Industry* *(online)*
11:55-12:35	**Dr. Dmitriy Vatolin** Lomonosov Moscow State University *JPEG AI Artifacts and Neural Network Algorithms Quality Measurement Problems*
12:35-13:15	**Dr. Alexandr Usachev, Dr. Pavel Yakimov** IT-SERVICE, Russia *Application of Machine Learning Methods in Industry*

Plenary Session

23 May (Thursday)
Time zone: Samara (GMT +4)

Chair: Prof. Alexey Kovalev
Secretary: Nikita Demin

9:00-9:40	**Prof. Fatima Adilova** V.I. Romanovsky Institute of Mathematics, Academy of Sciences of the Republic of Uzbekistan *Artificial Intelligence in Biomedicine: Present and Future* *(online)*
9:40-10:20	**Prof. Vladimir Lukin** V.E. Zuev Institute of Atmospheric Optics RAS, Siberian Branch *Influence of the Quality Criterion on the Dynamic Parameters of the Adaptive Optics System* *(online)*
10:20-11.00	**Prof. Evgeny Lupyan** Space Research Institute of RAS *Experience In Creating and Using Technologies for Building Remote Monitoring*

Chair: Prof. Victor Kotlyar
Secretary: Dr. Evgeni Bezus

11:15-11:55	**Dr. Nikolay Chkhalo** Institute for Physics of Microstructures of RAS *Lithography in the Extreme Ultraviolet Range: The State of Affairs in the World and Prospects for Development in the Russian Federation*
11:55-12:35	**Dr. Sara Colantonio** Institute of Information Science and Technologies - ISTI CNR Pisa, Italy *Radiomics for Cancer Grading: Limits and Challenges* *(online)*
12:35-13:15	**Prof. Alexander Volyar** V.I. Vernadsky Crimean Federal University *The Hidden Geometry of Structured Beams*

Plenary Session

24 May (Friday)
Time zone: Samara (GMT +4)

Chair: Prof. Vladimir Pavelyev
Secretary: Dr. Sergey Stafeev

9:00-9:40	**Prof. Kehar Singh** Indian Institute of Technology, India *A Secure Image Encryption Method Using Toroidal Vortex Phase Masks, QR Decomposition, and Gyrator Transform* *(online)*
9:40-10:20	**Dr. Alexey Kucherik** Vladimir State University named after Alexander and Nikolay Stoletovs *Methods for the Production of Linear Carbon and Its Application in Nanophotonics*
10:20-11.00	**Dr. Andrey Pryamikov** Prokhorov General Physics Institute, Russia *Vortex Properties of Modes of Micro-structured Optical Fibers* *(online)*

Oral session **Section 1 - Computer Optics and Nanophotonics**

20 May (Monday)
Time zone: Samara (GMT +4)
Track 1

Chair: Prof. Roman Skidanov
Secretary: Vladimir Podlipnov

14:00-14:15	**Azat Nizametdinov, Alexey Chertoriysky** *ID 83: Optical sensor for measuring the concentration of ethanol in aqueous solutions*
14:15-14:30	**Sergey Osepan, Roman Skidanov, Nikolay Ivliev** *ID 235: Imaging system based on single photodiode*
14:30-14:45	**Vladislav Samyshkin, Stella Kutrovskaya, Anton Osipov, Igor Chestnov, Aleksey Kavokin, Aleksey Kucherik** *ID 118: The method for deposition of long linear carbon chains in the presence of static electric field*
14:45-15:00	**Roman Sergeev, Mikhail Osipov** *ID 288: Influence of the transverse shape of the laser beam on the formation of the size of the objective speckle*
15:00-15:15	**Anastasiia Rymzhina, Ivan Andreev, Azamat Temirbulatov, Prachi Sharma, Vladimir Platonov, Vladimir Pavelyev, Nishant Tripathi** *ID 167: Synthesis and study of transition metal chalcogenides and their compounds for photonics devices*
15:15-15:30	**Nikita Telitsyn, Ksenia Brusina, Anna Solomnikova** *ID 270: Application of the Fourier spectroscopy method in the infrared region of the spectrum to determine the concentration of boron impurity in diamond*
15:30-15:45	**Vladimir Toporovsky, Ilya Galaktionov, Alexis Kudryashov, Alexey Rukosuev, Vadim Samarkin** *ID 272: Stroke investigation of the piezostack wavefront corrector with preload of actuators*

21 May (Tuesday)
Time zone: Samara (GMT +4)
Track 2

Chair: Prof. Victor Kotlyar
Secretary: Dr. Sergey Stafeev

14:00-14:30	**Alexey Chernykh, Nikolay Petrov, Alexey Yezersky, Elizaveta Tsiplakova, Nikita Raginov, Ignat Rakov, Albert Nasibulin, Dmitry Krasnikov, Arina Radivon, Gleb Katyba, Alexey Arsenin, Valentin Volkov, Maria Burdanova** *ID 298: Tunable THz vortex field modulator based on spiral zone plates of single-walled carbon nanotubes* **(invited)**
14:30-14:45	**Dmitry Bykov, Evgeni Bezus, Leonid Doskolovich** *ID 81: Two methods for simulating diffraction of a plane wave by a Bragg grating with a wedged defect layer*
14:45-15:00	**Dmitry Nesterenko, Victor Soifer** *ID 224: Fano resonances in a system of two coupled metal-insulator-metal optical resonators*
15:00-15:15	**Anton Nalimov, Victor Kotlyar** *ID 284: Metalens for detection of fractional order vortices*
15:15-15:30	**Mikhail Bretsko, Server Khalilov, Selim Yakubov, Dmitriy Maksimov, Svetlana Lapaeva, Alexander Volyar** *ID 206: Astigmatic structured Laguerre-Gaussian beams: orbital angular momentum and its transformation*
15:30-15:45	**Server Khalilov, Mikhail Bretsko, Alexander Volyar, Selim Yakubov, Svetlana Lapaeva, Dmitriy Maksimov** *ID 250: Astigmatic Laguerre-Gaussian beams with rapid oscillations of the OAM*
15:45-16:00	**Albert Mingazov, Maria Mingazova, Leonid Doskolovich** *ID 213: Semispherical conservation of topological charge in scalar diffraction theory*

22 May (Wednesday)
Time zone: Samara (GMT +4)
Track 3

Chair: Prof. Vladimir Pavelyev
Secretary: Dr. Sergey Degtyarev

14:00-14:15	**Evgenii Kuvshinov, Nataliia Konobeeva, Renat Trofimov** *ID 33: Simulation of laser beams evolution in impurity carbon nanotubes using the Madelung approach*
14:15-14:30	**Alexander Biryukov, Mark Shleenkov** *ID 46: Modeling processes in quantum computer elements to improve their opera-tional efficiency using modern quantum theory methods*
14:30-14:45	**Artem Kashapov, Leonid Doskolovich, Evgeni Bezus, Dmitry Bykov** *ID 117: Optical computation of the Laplace operator using a multilayer metal-dielectric structure*
14:45-15:00	**Yuliana Krivosheeva, Dimitry Golovashkin, Vladimir Pavelyev** *ID 64: Design of the intersection node of photonic crystal waveguides by genetic algorithm*
15:00-15:15	**Maksim Abelmas, Oleg Ivanov, Sergei Suhov** *ID 26: Modeling the distribution of the surface electromagnetic field of modes of a coreless optical fiber*
15:15-15:30	**Alexander Parshin, Yuri Parshin** *ID 282: A Capacity of MIMO System Communication in Visible Light Random Channel*
15:30-15:45	**Elena Kozlova, Alexandra Savelyeva, Viktor Kotlyar** *ID 214: Investigation of the influence of turbulent media on the propagation of optical vortex beams*
15:45-16:00	**Yuliya Kharlamova, Narkis Arslanov, Sergey Moiseev** *ID 238: Study of the efficiency of a fast quantum memory protocol on a single atom in a resonator*

24 May (Friday)
Time zone: Samara (GMT +4)
Track 4

Chair:Prof. Alexey Kovalev
Secretary: Dr. Elena Kozlova

11:30-11:45	**Victor Kotlyar, Anton Nalimov, Alexey Kovalev** *ID 156: Longitudinal spin Hall effect in the tight focus of optical vortices*
11:45-12:00	**Alexey Kovalev, Victor Kotlyar** *ID 155: Spin Hall effect of two-index Laguerre-Gaussian vector beams*
12:00-12:15	**Elena Kozlova, Sergey Stafeev, Victor Kotlyar** *ID 4: Spin Hall effect while focusing an optical vortex and a plane wave with linear polarizations*
12:15-12:30	**Sergey Stafeev, Victor Kotlyar** *ID 215: Sharp focusing of vector beams which do not contain longitudinal component of the electric field*
12:30-12:45	**Evgeni Bezus, Artem Kashapov, Dmitry Bykov, Elena Kadomina, Leonid Doskolovich** *ID 2: Generation of spatiotemporal optical vortices in a slab waveguide using an integrated metal-dielectric structure*
12:45-13:00	**Vladislav Zaitsev, Sergey Stafeev, Victor Kotlyar** *ID 219: Sharp focusing of optical vortices with hybrid polarization*

Oral session **Section 2 - Information Technologies in Earth Remote Sensing**

21 May (Tuesday)
Time zone: Samara (GMT +4)
Track 1

Chair: Dr. Ivan Tkachenko
Secretary: Dr. Ekaterina Khnyryova

14:00-14:15	**Anara Zainab, Mukesh Singh Boori, Kamal Uddin** *ID 50: A review of crop yield prediction models based on crop phenology using satelliteimagery and environmental data*
14:15-14:30	**Komal Choudhary, Alexander Kupriyanov, Rustam Paringer, Mukesh Singh Boori** *ID 54: Spatiotemporal variations of Gross Primary Productivity for croplandusing machine learningapproach*
14:30-14:45	**Kamal Ud Din, Mukesh Singh Boori, Anara Zainab** *ID 60 A Review of Eco-environmental Changes and Their Impact on Ecology*
14:45-15:00	**Vadim Elkin, Dmitry Abrameshin, Ilya Chernyavskikh, Maria Bubnova, Ilya Motailenko, Ivan Nosov** *ID 114: Reception, transmission and decoding of messages from ADS-B transmitters using small spacecraft*
15:00-15:15	**Oleg Antipov, Il'ya Eranov, Yuri Getmanovskiy, Stanislav Balabanov** *ID 267: High-efficiency 2.3-2.5 μm electronically tuned narrow-line laser system for remote sensing in Earth's atmosphere window*

22 May (Wednesday)
Time zone: Samara (GMT +4)
Track 2

Chair: Dr. Ivan Tkachenko
Secretary: Dr. Ekaterina Khnyryova

14:00-14:15	**Vadim Salmin, Yuri Lazarev, Vladimir Volotsuev** *ID 222: Synthesis of motion control of an ultra-low orbit spacecraft for remote sensing of the Earth with measurement of current disturbances from the resistance of the upper atmosphere*
14:15-14:30	**Olga Zhaldybina, Maxim Ivanushkin, Maxim Korovin, Ivan Tkachenko** *ID 228: Algorithm for determining the design parameters of a small spacecraft with radar imaging equipment at the initial stages of design*
14:30-14:45	**Sergey Ivlev, Vitaly Evseev** *ID 236: Device for time synchronization of on-board clocks of an Earth remote sensing satellite*
14:45-15:00	**Alexandr Kim, Nikita Andriyanov, Xenin Fao** *ID 237: Using Generative Models to Improve Fire Detection Efficiency*
15:00-15:15	**Maxim Ivanushkin, Olga Zhaldybina** *ID 243: Assessment of the design characteristics of low-orbit constellations of Earth remote sensing spacecraft*
15:15-15:30	**Anton Doroshin, Alexandr Eremenko** *ID 245: Attitude dynamics of a composite nanosatellite with a gravitational damper and with a movable unit on a rail system*
15:30-15:45	**Dmitry Vorokh, David Ovakimyan, Vladimir Kirillov** *ID 285: Features of the construction of a UAV flight controller when conducting remote sensing of the Earth*
15:45-16:00	**Dmitry Vorokh, David Ovakimyan, Vladimir Kirillov** *ID 286: Features of the algorithm for integrating information from the UAV flight controller*

24 May (Friday)
Time zone: Samara (GMT +4)
Track 3

Chair: Dr. Ivan Tkachenko
Secretary: Dr. Ekaterina Khnyryova

11:30-11:45	**Gennady Kazakov** *ID 21: Ensuring the reliability of information from the integrated database of an automated flight control system for aircraft*
11:45-12:00	**Olga Starinova, Roman Khabibullin, Ivan Tkachenko, Daniil Kupriyanov, Elizaveta Sergaeva** *ID 29: Maintaining the operating orbit of a low-thrust Earth remote sensing spacecraft*
12:00-12:15	**Marcel Mordanov, Sergei Safronov, Ekaterina Khnyryova** *ID 159: Development of a cooling system for a photovoltaic battery with concentrators for space applications*
12:15-12:30	**Andrey Sedelnikov, Roman Skidanov, Maria Bratkova, Ekaterina Khnyryova, Ulyana Maslova, Maxim Ivanushkin, Marcel Mordanov** *ID 166: Reconstruction of the rotational motion of the small Earth remote sensing spacecraft ISOI (SXC3-219) from onboard measurements*
12:30-12:45	**Vladimir Volotsuev** *ID 178: Digital model for assessing the frequency of ground objects entering the capture zones of observation equipment of an ultra-low orbit constellation of spacecraft*
12:45-13:00	**Zotov Leonid, Victor Yushkin, Natalya Frolova, S.K. Sham** *ID 200: GRACE & GFO satellite gravimetry data forhydrology and Earth rotation*
13:00-13:15	**Alexander Khoperskov, Alexey Matz** *ID 227: Features of forecasting the state of arid territoriesbased on the SARIMA model using remotesensing data*

Oral session Section 3 - Artificial Intelligence

20 May (Monday)
Time zone: Samara (GMT +4)
Track 1

Chair: Prof. Artem Nikonorov
Secretary: Dr. Egor Ershov

14:00-14:15	**Alexey Kovalenko, Yana Demyanenko** *ID 27: Wavelet-based transforms to design interpretable denoising neural network*
14:15-14:30	**Aleksei Golovin, Nataly Zhukova, Igor Kulikov** *ID 96: Knowledge Graph Completion Method based on using Multi-hop Reasoning*
14:30-14:45	**Pavel Parfenov, Aleksandr Lyabzin, Gleb Dementev, Dmitriy Savenkov** *ID 101: Classification of tree species and tree crown segmentation in spatial data*
14:45-15:00	**Ilya Hodashinsky, Roman Ostapenko** *ID 126: Extracting fuzzy classifier rules frommixed data*
15:00-15:15	**Elena Mozaidze, Sergei Zuev, Petr Kabalyants** *ID 129: Online learning model for short text examination*
15:15-15:30	**Alexander Krokhin, Leonid Krokhin, Savelie Spitsin** *ID 279: GPT teaching assistant as a tool for improvingteacher-student interaction*
15:30-15:45	**Tatiana Kuznetsova, Polina Repp, Anton Naborshchikov** *ID 188: Improving the accuracy of aeroengine state identification using artificial intelligence technologie*

21 May (Tuesday)
Time zone: Samara (GMT +4)
Track 2

Chair: Prof. Sergey Popov
Secretary: Vladimir Procenko

14:00-14:15	**Olga Volodina, Arkadiy Skvortsov, Vladimir Nikolaev** *ID 76: Logic gates based on thermal memory elements*
14:15-14:30	**Egor Vuychik** *ID 9: Anomaly detection based on Mahalanobis distance in SportTech Human Activity Recognition tasks*
14:30-14:45	**Daniil Iashin, Irina Lyozina** *ID 10: Research of the use of the Kohonen neural network to solve the problem of identifying diseases of the cardiovascular system based on electrocardiography results*
14:45-15:00	**Olga Soldatova, Ilya Lyozin, Irina Lyozina, Ekaterina Muravyeva** *ID 15: Analysis of the effectiveness of Wang-Mendel fuzzy network learning algorithms*
15:00-15:15	**Rinat Nasyrov , Irina Lyozina** *ID 19: Investigation of the application of a multilayer perceptron to solve the problem of speech emotion recognition*
15:15-15:30	**Dmitry Antonov, Sergey Sukhov, Bulat Batuev** *ID 30: Spiking neural networks training with combined Hebbian rules*
15:30-15:45	**Sergey Korchagin, Egor Ershov, Fedor Egorov** *ID 139: Parameterization of a neural network as a mean to increase classification accuracy in the blood group determination problem*
15:45-16:00	**Dmitry Yarchuk, Ekaterina Zaychenkova, Sergey Korchagin, Alexey Zaitsev, Egor Ershov** *ID 143: Estimation the prediction uncertainty of computer vision models for blood typing*

22 May (Wednesday)
Time zone: Samara (GMT +4)
Track 3

Chair: Dr. Julia Vybornova
Secretary: Dr. Nikita Davydov

14:00-14:15	**Bulat Batuev, SergeySukhov** *ID 58: Determining the directions of information flows between populations of spiking neurons*
14:15-14:30	**Daniil Iashin, Ilya Lyozin** *ID 62: Research of the use of the Kohonen neural network to solve the problem of assigning a treatment regimen*
14:30-14:45	**Gennady Algashev, Alexandr Kupriyanov** *ID 77: Smoke detection in industrial production using deep convolutional neural networks*
14:45-15:00	**Evgeny Kurkin, Jose Gabriel Quijada Pioquinto, Vladislava Chertykovtseva** *ID 119: Application of a deep learning model to design the runner system geometry*
15:00-15:15	**Yana Shurinova, Alexandr Belousov** *ID 39: Recognition and segmentation of the earth's surface using convolutional neural networks*
15:15-15:30	**Vadim Kolodin, Dmitrey Savelyev** *ID 47: Human age recognition using convolutional neural networks*
15:30-15:45	**Timofey Kazarkin, Leonid Abakumov, Larisa Taskina** *ID 174: Modeling of virtual stimuli using the method of visual-tactile feedback*
15:45-16:00	**Leonid Abakumov, Timofey Kazarkin, Larisa Taskina** *ID 186: Development of a method for assessing the visual characteristics of a person with a visual impairment using synthetic data*

24 May (Friday)
Time zone: Samara (GMT +4)
Track 4

Chair: Dr. Evgeniy Minaev
Secretary: Nikita Firsov

11:30-11:45	**Artyom Makovetskii, Sergei Voronin, Vitaly Kober, Alexei Voronin** *ID 226: A global refinement algorithm to 3D scene reconstruction*
11:45-12:00	**Andrey Makarov, Vladimir Platonov, Artem Pirogov, Vladimir Podlipnov, Artem Nikonorov, Roman Skidanov, Olga Kalashnikova** *ID 234: Analysis of hyperspectral images of reservoirs*
12:00-12:15	**Vitaly Konovalov, Vladislav Myasnikov** *ID 244: Study of colorization and super-resolution efficiency in image restoration*
12:15-12:30	**Anton Morkovkin, Dmitry Ilvovsky** *ID 264: Improving scientific event classification through clustering of adjacent fields of study*
12:30-12:45	**Mark Polyak, Yana Senichenkova** *ID 278: Detecting classical music community members with VGG-Face model*
12:45-13:00	**Petr Skobelev, Aleksey Tabachinskiy, Elena Simonova, Anatoly Strizhakov, Evgeny Kudryakov, Tzong-Ru Lee, Yung-Kuan Chan** *ID 293: Multiparametric variety models in digital twin of plant for winter wheat*

Oral session Section 4 - Data Science

20 May (Monday)
Time zone: Samara (GMT +4)
Track 1

Chair: Yegor Goshin
Secretary: Daria Arkhipova

14:00-14:15	**David Shapiro, Vladislav Sergeyev** *ID 55: A simple method to protect video using binary phase watermarks*
14:15-14:30	**Diana Anisimova, Elena Dyukova, Anastasia Dyukova** *ID 59: Supervised Classification Problem: Searching for Maximum Patterns*
14:30-14:45	**Mikhail Lange, Semyon Paramonov** *ID 94: Information-theoretic lower bounds on the probability of object classification error in metric spaces*
14:45-15:00	**Mikhail Borisov, Mikhail Krinitsky** *ID 140: Forecasting the characteristics of the age migration of sockeye salmon in the Fraser river estuary using deep learning methods*
15:00-15:15	**Igor Bychkov, Alexander Feoktistov, Mikhail Chekan** *ID 172: Modeling the behavior of agents in interacting microgrids*
15:15-15:30	**Pelageia Fadeeva, Alexei Chulichkov, Natalia Shapkina, Varvara Gazaryan, Peter Golubtsov** *ID 176: Recovery and forecast of time series using the ARIMA method and its modifications*

24 May (Friday)
Time zone: Samara (GMT +4)
Track 2

Chair: Yegor Goshin
Secretary: Daria Arkhipova

11:30-11:45	**Vadim Rezvov, Mikhail Krinitskiy, Viktor Golikov, Natalia Tilinina** *ID 179: Improvement of the AI-based estimation of significant wave height based on X-band radar data and preliminary training on synthetic sea clutter images*
11:45-12:00	**Marina Balabaeva, Sergei Smirnov, Larisa Zelenko** *ID 192: The method of multicriteria reduction of formal ontologies based on interestingness indices*
12:00-12:15	**Evgenii Kurkin, Evgenii Kishov, Jose Gabriel Quijada Pioquinto, Andrey Gavrilov, Vladislava Chertykovtseva** *ID 217: Identification of a mathematical model of elastic-plastic behavior of short-reinforced composite materials using evolutionary algorithms*
12:15-12:30	**Dmitry Murashov** *ID 225: Algorithms for Image segmentation based on a combined quality measure*
12:30-12:45	**Darya Galushkina, Anastasia Kuvshinova, Yulia Tsyganova** *ID 230: Numerical identification of reaction-diffusion model parameters under unknown boundary conditions*
12:45-13:00	**Viacheslav Antsiperov** *ID 283: Image Enhancement Directed by Maximum Contrast Gradients Encoded by a Lattice of Receptive Fields*

Oral session **Section 5 - Information Technologies in Biomedicine**

20 May (Monday)
Time zone: Samara (GMT +4)
Track 1

Chair: Prof. Ivan Bratchenko
Secretary: Irina Matveeva

14:00-14:15	**Dmitry Doruzhinsky, Natalya Ilyasova, Nikita Demin** *ID 242: Investigation of the active contour method for diagnostic analysis of areas of interest in optical coherence tomography images of retinal layers*
14:15-14:30	**Ekaterina Sazonova, Ekaterina Medvedeva** *ID 98: Measuring blood flow velocity using a developed small-size optical sensor*
14:30-14:45	**Olga Sushkova, Alexey Morozov, Ivan Kershner, Margarita Khokhlova, Alexandra Gabova, Larisa Chigaleychik, Alexey Karabanov** *ID 115: Investigation and development of methods for automatic search for AUC-diagram-based features of Parkinson's disease and essential tremor*
14:45-15:00	**Svetlana Kolesnikova, Ekaterina Kustova** *ID 173: Approbation of a generalization of the synergetic design of regulators for a stochastic base immunology system*
15:00-15:15	**Nikolay Khlebtsov** *ID 273: Plasmonic nanoparticles, nanocomposites and SERS tags for biomedicine*
15:15-15:30	**Alexey Morozov, Olga Sushkova, Mikhail Sinkin, Irina Okuneva, Yuri Obukhov** *ID 116: Investigation and development of neurosymbolic methods for analysis of video EEG in patients with delayed cerebral ischemia after subarachnoid hemorrhage*
15:30-15:45	**Kirill Zaichenko, Arseniy Afanasenko, Elena Denisova, Daniil Shevyakov, Evgeniy Logachev** *ID 127: Application of modern methods of distinguishing characteristic points of an electrocardiogram for ultra-high resolution electrocardiosignals*
15:45-16:00	**Mark Polyak, Alexandra Shchegoleva** *ID 277: Modeling toxic and non-toxic algal blooms using methods of synergetic control theory*

21 May (Tuesday)
Time zone: Samara (GMT +4)
Track 2

Co-Chairs: Prof. Valery Zakharov, Prof. Ivan Bratchenko
Secretary: Irina Matveeva

14:00-14:15	**Nikita Kuritsyn, Natalya Ilyasova, Nikita Demin** *ID 124: Recognition of drusen subtypes using OCT data for diagnosing age-related macular degeneration*
14:15-14:30	**Valeria Ten, Maxim Polyakov, Elena Tuchina** *ID 108: Mathematical model of the growth of a benign brain tumor based on the diffusion equation*
14:30-14:45	**Sergey Kust, Yuri Obukhov, Mikhail Sinkin, Irina Okuneva** *ID 212: Application of relative alpha variability and alpha-delta ratio in the early diagnosis of delayed cerebral ischemia after subarachnoid hemorrhage*
14:45-15:00	**Maxim Lyakin, Natalya Ilyasova, Nikita Demin** *ID 247: Identification of osteoporotic changes of vertebral bodies on computed tomography images based on the analysis of groups of textural features*
15:00-15:15	**Oleg Frolov, Pavel Timchenko, Elena Timchenko** *ID 160: Algorithm for analyzing Raman spectra of dental tissues for use in experimental medicine and dentistry*
15:15-15:30	**Mikhail Danilychev, Vladislav Kershner, Vyacheslav Antsiperov, Gennady Mansurov, Mikhail Shcherbakov** *ID 246: Implementation of a provocative testing scheme for patients with temperature urticaria*
15:30-15:45	**Anna Gurgenidze, Olga Sushkova, Margarita Khokhlova, Alexey Morozov** *ID 93: Investigation of Freezing of Gait in Parkinson's disease by the wave train electrical activity analysis*
15:45-16:00	**Ravil Samigullin, Natalya Ilyasova, Nikita Demin** *ID 132: Development of a method of feature space formation for assessment of chorioidea condition from retinal angio-OCT images*

Oral session Section 6 - Industrial Internet of Things

22 May (Wednesday)
Time zone: Samara (GMT +4)
***Track 1**

Chair: Dr. Irina Lyozina
Secretary: Irina Belger

14:00-14:15	**Evgeny Uraskin, Irina Khaimovich, Tatyana Klimova** *ID 7: Organization of design and technological preparation of production in the Anylogic system*
14:15-14:30	**Sergey Ivlev, Danil Polukarov** *ID 232: Some issues of implementing the concept of the Internet of things based on ultra-small spacecraft*
14:30-14:45	**Artem Tarasov, Ilya Lyozin** *ID 45: Digital twin model based on digital device passport*
14:45-15:00	**Irina Belger, Ilya Lyozin** *ID 65: Using a multi-agent technical system and digital twins for modelling the production process*
15:00-15:15	**Artem Tarasov, Ilya Lyozin** *ID 68: Universal telemetry collection system for the industrial Internet of things*
15:15-15:30	**Anton Lobankov, Irina Belger, Nikolai Zezin** *ID 79: Development of a labor standardization module for the Digital Factory system*
15:30-15:45	**Daniil Strelnikov, Konstantin Omelchenko, Alexey Rolich** *ID 134: The influence of resource selection parameters in NR-V2X networks on the age of information*

Poster Session

22 May (Wednesday)

16:00-18:00, Hall, 2nd floor

Section 1 - Computer Optics and Nanophotonics

1. **Elena Kozlova, Sergey Stafeev, Victor Kotlyar**
   ID5: Numerical modeling of the electromagnetic field measurement process by an aperture cantilever
2. **Alexander Bagrov, Evgeniy Bashkirov**
   ID 6: Entanglement in the three-qubit Tavis-Cummings model with Kerr nonlinearity
3. **Polina Vechkanova**
   ID 16: Modeling and analysis of the effect of astigmatic transformations on the two-mode superposition of vortex beams
4. **Andrey Khlebodarov**
   ID 22: Optimization of parameters of ring and vortex spatial filters based on samples generated by the Canny operator
5. **Elizaveta Yarunova , Anton Krents , Nonna Molevich**
   ID 31: Study of the efficiency of incoherent external optical injection for stabilization of broad-area semiconductor VCSELs
6. **Victoria Guseva, Yuriy Egorov, Alexander Rubass, Alexander Volyar, Svetlana Lapaeva**
   ID 42: Polarization features of an Erf-Gaussian beam caused by external disturbances
7. **Andrey Ustinov, Valentin Logachev, Svetlana Khonina**
   ID 56: Calculation of the transmission function of a generalized spiral phase plate to form a given curve
8. **Olga Dyukareva, Andrey Ustinov**
   ID 61: Generation of off-axis diffraction orders at the quantization of shifted vortex lens phase
9. **Paul Khorin, Alexey Dzyuba, Svetlana Khonina**
   ID 72: Wavefront aberrations recognition study based on multi-channel spatial filter matched with basis Zernike functions and convolutional neural network with Xception architecture
10. **Pavel Khorin, Stanislav Sergunin**
    ID 73: Simulation of diffraction on a stepped spiral phase plate with radiation of different wavelengths in order to form optical vortices of different orders
11. **Alexey Abramov, Alexey Kadochkin, Sergey Moiseev, Dmitry Sannikov**
    ID 74: Generation of frequency-modulated laser pulses in a cylindrical semiconductor structure with a traveling space charge wave
12. **Maria Marshunina**
    ID 80: Modeling the transformation of the spatial spectrum in the binarization of the periodic function
13. **Sergey Afanas'ev, Sergey Moiseev, Victor Zaytsev, Dmitry Sannikov, Alexey Kadochkin, Galina Tertyshnikova**

ID 82: The propagation peculiarities of surface plasmon-polaritons in an array of multi-walled carbon nanotubes

14. **Rano Kashina, Vladimir Demidov, Nikolay Nikonorov**
    ID 85: Simulation of Microstructured Hollow Core Fibers for Laser Applications

15. **Maxim Pomeshchikov**
    ID 86: Analysis of the influence of Gauss-Laguerre modes of different orders on the intensity pattern in the presence of aberration distortions

16. **Serguei Murzin, Heinz Palkowski**
    ID 89: Increasing the joining depth of laser welded metal layers in metal-polymer sandwich composites

17. **Serguei Murzin, Valeriy Balyakin, Maksim Blokhin**
    ID 90: Surface modification of ceramic gas-dynamic seal by pulse-periodic laser treatment

18. **Liudmila Yablokova, Irina Vetlova, Aleksander Dmitriev, Denis Yablokov, Anastasia Lee, Viktor Lee**
    ID 97: Parallel calculation possibility investigation of micro-optics elements in DOERIS

19. **Anna Skidanova**
    ID 99: Formation of axial optical traps using binary axicon with different frequency in annular regions

20. **Danila Turkin**
    ID 102: Consideration of polarization during the ray tracing through a two lens system

21. **Sergey Silifonkin, Sergey Degtyarev**
    ID 105: The guiding vector of an extraordinary ray for the case of light falling on the crystal surface at right angles

22. **Serguei Murzin**
    ID 110: The application of laser technologies for forming smart materials

23. **Victor Dolgirev, Sergey Sharangovich, Daniil Rastrygin**
    ID 111: Electrically controlled optical spectral filters for DWDM communication networks based on multiplexed three-layer holographic PPM-LC diffraction structures

24. **Selim Yakubov, Mikhail Bretsko, Server Khalilov, Svetlana Lapaeva, Dmitry Maksimov**
    ID 123: Formation and polarization control of vector structured Laguerre-Gaussean beams

25. **Alexander Kazankov, Ilya Frolov, Oleg Radaev, Viacheslav Sergeev**
    ID 136: Measurement of fluctuation parameters of luminescence intensity of local regions of LED crystal in the electric breakdown mode

26. **Yuri Strelkov, Egor Rubtsov, Sergey Degtyarev**
    ID 138: Automatic simulation of optical circuits in Zemax

27. **Valeria Atapina**
    ID 148: Simulation of the propagation of aberration vortex laser beams

28. **Shilov Dmitry**
    ID 149: Propagation of vortex beams in turbulent media

29. **Victor Lapin, Alexey Abramov, Pavel Mironov**

ID 157: Dynamics of a modulated wave in a fiber with different types of dependence of group velocity dispersion on length

30. **Lyubov Dubman**
    ID 158: Study of the propagation of light curves in free space

31. **Victor Danilov**
    ID 170: Elements of diffraction sensory

32. **Roman Skidanov, Sofia Gogoleva**
    ID 180: On one method for constructing a composite invariant filter for a coherent diffraction correlator

33. **Aidar Timirbulatov**
    ID 191: Simulation of interference of a set of displaced Gaussian beams

34. **Ilya Galaktionov, Alexander Nikitin, Julia Sheldakova, Vladimir Toporovsky, Alexis Kudryashov**
    ID 208: Analysis of optical surface quality tests using Hartmannometer metrology device

35. **Anton Krents, Elizaveta Yarunova, Nonna Molevich**
    ID 218: Square optical waves in a resonator with cubic nonlinearity and delayed feedback

36. **Svyatoslav Slepovichev, Sergey Degtyarev**
    ID 268: Software project for modeling interior lighting with using ray tracing technology

37. **Nikolay Ivliev**
    ID 275: Development and creation of optical elements for multi-channel atmospheric communication systems in the visible and near-IR ranges

38. **Christian Stiglbrunner**
    ID 276: Laser material processing using diffractive optical elements

39. **Elena Achimova, Vladimir Abaskin, Alexei Meshalkin, Constantin Losmanschii, Vladislav Botnari, Alexandr Prisacar, Vladimir Podlipnov**
    ID 280: Photoinduced anisotropy peculiarities of PEPC-co-SY3 azopolymer

40. **Davron Djuraev, Jurabek Abdulloev, Akmal Turaev**
    ID 294: Correlations between electronic and superconducting properties of superconductors

Section 2 - Information Technologies in Earth Remote Sensing

41. **Mikhail Gashnikov**
    ID 14: Filtering the Mismatch Field when Encoding Images and Videos

42. **Mikhail Gashnikov**
    ID 17: Preprocessing for Geometric Matching of Digital Images

43. **Nikolay Glumov, Mikhail Gashnikov**
    ID 18: Error Control during Decorrelating Encoding of Images and Video

44. **Maksim Yakubenko, Mikhail Gashnikov**

ID 20: The Influence of Neural Network Image Compression Methods on Digital Watermarks

45. **Roman Aleshko, Alexander Ponomarev, Vladimir Berezovskiy, Ksenia Shoshina, Alexander Gordeychik, Tatyana Desyatova**
ID 87: Development of Methodology for Predicting Space Weather Based on Machine Learning Model

46. **Roman Aleshko, Vladimir Berezovsky, Ksenia Shoshina, Irina Vasendina, Roman Vorontsov, Tatyana Desyatova**
ID 88: Development of a Wood Accounting System Based on Image Processing Methods

47. **Ksenia Shoshina, Roman Aleshko, Vladimir Berezovsky, Irina Vasendina, Tatyana Desyatova, Alexander Guriev**
ID 91: Algorithm for identifying tree crowns from UAV images based on a structural model

48. **Huy Anh Nguyen, Trinh Minh Anh Nguyen, Van Trong Tran, Thi Anh Thu Nguyen**
ID 152: Application of remote sensing imagery in the study of fractional vegetation cover in Dak Lak Province, Vietnam

49. **Олег Чудилин, Виктор Федосеев**
ID 171: Метод защиты геопространственных данных MVTводяными знаками без внесения в них видимых искажений

50. **Alexander Tashlinskii, Radik Ibragimov**
ID 131: Optimization of Stochastic Image Georeferencing Algorithms Using Mutual Information

Section 3 - Artificial Intelligence

51. **Ekaterina Pechenina, Vadim Pechenin, Alexander Khaimovich**
ID 3: Development of an algorithm for detecting parts during their manufacture

52. **Alexander Minkin, Sergey Demin, Kirill Sidorov**
ID 11: Development of a simple neurotrainer based on a machine learning model using the MediaPipe software platform

53. **Edgar Solis Romeu, DmitryShashev**
ID 13: BinaryConvolutionModelforImageClassification

54. **Ekaterina Markina, Andrey Kuznetsov**
ID 24: Development and research of methods for detecting distorted data using a multimodal approach

55. **Danil Gribanov, Ihar Kilbas, Artem Mukhin, Rustam Paringer**
ID 28: Influence of encoder architectures on the generation of vector representations for modeling 3D objects through the set of convexes

56. **Ihar Kilbas, Danil Gribanov, Artem Mukhin, Rustam Paringer**
ID 34:Expanding the Context of Large Language Models Using Linear Interpolation of Positional Embeddings

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