

YURIY FEDKOVYCH
CHERNIVTSI
NATIONAL
UNIVERSITY

UKRAINE

THE SEVENTEENTH INTERNATIONAL CONFERENCE

Correlation OPTICS 2025

YURIY FEDKOVYCH CHERNIVTSI NATIONAL UNIVERSITY,
CHERNIVTSI, UKRAINE
SEPTEMBER 8-12, 2025





The organizers of the conference:

Chernivtsi National University, Ukraine
National Academy of Science of Ukraine, Department of Physics and Astronomy
Taizhou Research Institute of Zhejiang University, Republic of China

Sponsoring Organizations:

SPIE ●

Society of Optics and Photonics

OPTICA
Formerly OSA

Optica (formerly Optical Society of America)



International Commission for Optics



European Optical Society

Ukrainian Society of Pure and Applied Optics



Regional center "Laser microsurgery of the eye"





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DAY 1

SEPTEMBER 8

Plenary Session 2 (GMT+3)

Session Chairs – K.Y. Bliokh, G. Gbur

- 14.00** **M. Dennis** (UK) (INVITED) Skyrmionic textures in optical polarisation patterns: Stokes origami
- 14.40** **W. Wang** (UK), **M. Takeda** (Japan) (INVITED) Vector direct correlation of electric fields and its application to unification of coherence and polarization of light
- 15.20** **L. Marrucci** (Italy) (INVITED) Photonic quantum circuits in free space with structured light
- 16.00** **A. Dogariu** (USA) (INVITED) Optical sensing with structured wavefronts
- 16.40** **S. Oakley, E. Pisanty** (UK) High-order harmonic generation driven by vector necklace beams

Poster Session

17.40–18.40 New applications of correlation optics in biology and medicine (BM).

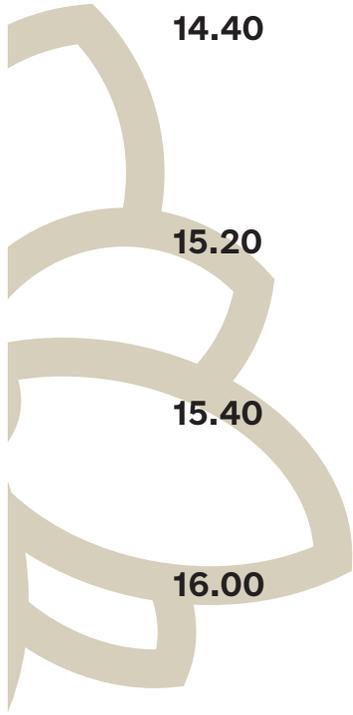
Digital, information and communication transformation of scientific and educational processes in the context of global changes (SE).





DAY 2

SEPTEMBER 9



- 14.40** **E.J. Galvez, K. Kendja, T. Nguyen, V. Rodriguez-Fajardo, O. Bulashenko, A. Moreso-Serra** (USA) (INVITED) Simulating gravitational lensing: a new laboratory astrophysics platform using complex light
- 15.20** **I. Mokhun, A. Bekshaev, Y. Galushko, Y. Viktorovskaya, M. Karabchyivskiy** (Ukraine) Polarization, energy flows, angular momentum of an electromagnetic wave
- 15.40** **P. Litwin** (Poland), **J. Wroński** (Poland), **K. Volke-Sepulveda** (México), **M. Szatkowski** (Poland) Dynamic control of spatial coherence via superposition of vortex lattices
- 16.00** **O. Mys, M. Kostyrko, R. Vlokh** (Ukraine) Magnetic field-induced enhancement of acousto-optic diffraction efficiency

Students Educational Session (GMT+3)

Session Chairs – O. Yermakov (online part)

- 14.20** **I. Kashtanov** (Slovak Republic), **O. Arkhelyuk** (Ukraine) Keeping the Lights On: Handling human errors and management fails in telco and data center outages (online)
- 15.00** **V. Ryukhtin** (Czech Republic), **M. Prituliak, O. Arkhelyuk, P. Maksymyak** (Ukraine) Neutron imaging and tomography using thermal neutrons (online)
- 15.50** **A. Demchenko** (Ukraine) Fluorescence sensing and superresolution imaging

Poster Session

- 16.30–17.30** Informative content of statistical optical fields, including optical chaos, polarization optics and coherence (**IM**).
- Methods and computer algorithms for intelligent data processing of correlation and singular optics (**IM**).
- Green engineering, metrology of optical processes and new challenges of engineering-transport technology (**GE**).





DAY 3

SEPTEMBER 10

- 11.40** **E. Pisanty** (UK) (INVITED) Knotted topologies in the polarization state of bichromatic light
- 12.20** **D. Marco** (Spain), **I. Herrera** (Spain), **R. Gutiérrez-Cuevas** (USA), **S. Vo** (USA), **S. Brasselet** (France), **M. A. Alonso** (USA) (INVITED) Optical Skyrmionic distributions: paraxial and nonparaxial, monochromatic and polychromatic
- 13.00** **O. Yermakov** (Ukraine, Germany) Near-field polarization and optical spin control with metasurfaces

13.20

LUNCH

Session 2 (GMT+3)

Session Chairs – S. Hanson, E.J. Galvez

- 14.20** **R. Zatserkovna, R. Zatserkovnyi, L. Slotska** (Ukraine) Augmented reality-based nutrition label recognition and visualization for food packaging
- 14.40** **N. Litchinitser** (USA) (INVITED) Structuring spatiotemporal states of polarization
- 15.20** **D. Adamenko, I. Skab, and R. Vlokh** (Ukraine), Optical vortices generated in multi-stage optical systems with glass optical elements stressed by bending

Poster Session

- 16.00–17.00** Optical correlation devices based on diffractive optical elements, including optical and digital holography, fractal optics, optical sensors (D).
- Optical correlation devices in information technology (D).
- Engineering, optical and biomedical devices and systems in tasks of correlation and singular optics (D).





DAY 3

SEPTEMBER 10

Session 2 (GMT+3)

Session Chairs – Wei Wang, Tim Lee

- 14.20** **M. Nikitin, A. Lavrinenko, R. Malureanu** (Denmark) Fabrication possibilities for silicon nitride metasurfaces to enhance high order nonlinearities
- 14.40** **V. Ryukhtin** (Czech Republic) Investigations of structures and dynamics of flux line lattices and skyrmions using neutron scattering
- 15.00** **V. Podolskiy** (USA) (INVITED) Primordial Metamaterials
- 15.40** **G. Gouesbet** (France), **L.A. Ambrosio** (Brasil), **J. Shen** (PRC) From light to acoustical (more generally scalar) scatterings

Poster Session

- 16.00–17.00** Optical correlation diagnostics, interferometry and microscopy of rough surfaces and random media (**MN**).
Nanooptics (**MN**).





DAY 4

SEPTEMBER 11

Session 2 (GMT+3)

Session Chairs – Zeev Zalevsky, V. Kumar

- 13.30** **Tim Lee** (Canada) (INVITED) Advancing polarization speckle-based detection of melanoma in vivo with deep learning
- 14.10** **R. Ossikovski** (USA) Phenomenological interpretation of Mueller matrices in polarimetry: theory and experiment
- 14.30** **Y. Ushenko** (Ukraine), **D. Weidong** (PRC), **I. Soltys**, **O. Dubolazov**, **V. Bachynskiy**, **O. Lytvynenko**, **V. Garasym**, **V. Rozhko** (Ukraine)
Phase-scanning Jones-matrix thesiography of dehydrated blood films

15.00
(GMT+3)

CLOSING CEREMONY



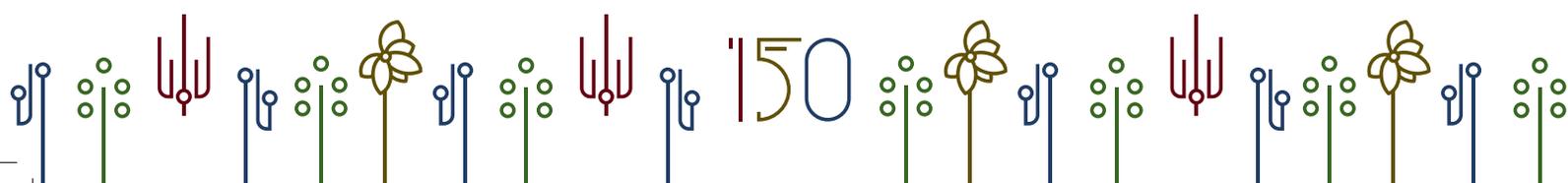


DAY 1 Poster Session

SEPTEMBER 8

New applications of correlation optics in biology and medicine (BM)

| | |
|-------------|--|
| BM1 | O. Roslyakov, S. Yermolenko, Ch. Felde (Ukraine) Compact multiwavelength NIR system for non-invasive grain moisture measurement |
| BM2 | S. Yermolenko, Ya. Penishkevich, O. Konovchuk (Ukraine) Multispectral visualization of biological tissues via smartphone-based smart imaging |
| BM3 | O. Roslyakov, Ya. Penishkevich, S. Yermolenko (Ukraine) Spectral-polarimetric imaging of the retina for individualized glaucoma diagnostics |
| BM4 | O. Roslyakov, S. Reshetnyk, N. Horodynska (Ukraine) Spectroscopic-refractometric module for in-situ microplastic detection in aquatic environments |
| BM5 | D. Burkovets, O. Peresunko, Ya. Shuh (Ukraine) Analytical modeling and error verification in spectrophotometry for biomedical and technical applications |
| BM6 | N. Horodynska, O. Peresunko, V. Krylyuk (Ukraine) Spectropolarimetric markers of malignancy of atrophic changes and vulvar leukoplakia in postmenopausal women |
| BM7 | D. Burkovets, O. Peresunko, Ya. Penishkevich (Ukraine) Spectral-morphometric analysis of atypical cervical vascular network |
| BM8 | M. Dolobáč (Slovak Republic), O. Kiriak, L. Ostafiichuk, A. Paskar, A. Karachevtsev, V. Dvorzhak (Ukraine) Laser diagnostics of systemic pathologies and legal aspects of human rights protection in the context of digitalization |
| BM9 | N. Hetmantseva, N. Protskiv, V. Anatiichuk, A. Karachevtsev, V. Dvorzhak (Ukraine) Biophysical systems of intelligent data processing and legal aspects of the use of artificial intelligence in ensuring human rights |
| BM10 | O. Melenko, N. Volkova, O. Stratii, O. Karabush, A. Motrich (Ukraine) Synergy of biomedical diagnostics methods and legal framework for social rehabilitation of citizens: domestic and foreign experience |
| BM11 | V. Vdovichen, N. Getmanceva, S. Vishnovetska, O. Melenko, A. Motrich (Ukraine) The legal paradigm of social protection of disabled people in the tasks of multiparameter laser diagnostics of disaster medicine |
| BM12 | V. Sholota, S. Pavlov, E. Kurek (Ukraine) Design and architecture of a multifunctional laser introscopy system for polycrystalline architecture of human tissues and fluids. Biomedical and legal aspects |
| BM13 | O. Bilookiy, Yu. Rogovii, V. Bilookiy, V. Sholota, E. Kurek, Yu. Tomka, M. Slyotov (Ukraine) Differential diagnostics of thyroid pathology by polarization mapping of blood facies. Biomedical and economic aspects |
| BM14 | V. Sklyarchuk, O. Kindzerska, M. Havrylyak, V. Kyfyak, O. Vinnychuk (Ukraine) Multifractal scanning of optically anisotropic blood plasma films. Biomedical and economic aspects |
| BM15 | N. Pavlyukovich, O. Khukhlina, O. Pavlyukovich, V. Sklyarchuk, O. Kindzerska, M. Havrylyak, V. Kyfyak, O. Vinnychuk (Ukraine) Multifractal scanning of blood plasma films in diagnostics of COVID-19 effects |





Poster Session

DAY 1

SEPTEMBER 8

| | |
|-------------|--|
| BM16 | O. Bilookyi, Yu. Rohovyi, V. Bilookyi, V. Zhytoryuk, E. Kurek, Yu. Tomka, M. Slyotov, M. Skrypnyk (Ukraine) Benign and malignant thyroid tumors using polarization-interference imaging |
| BM17 | V. Sklyarchuk, O. Kindzerska, V. Sholota (Ukraine) Matrix Mueller interferometry of optically anisotropic architectonics biological tissues object fields |
| BM18 | O. Ushenko (Ukraine), J. Zheng, L. Bin (PRC), O. Salega, V. Kyfyak, O. Vinnychuk (Ukraine) 3D digital wavelet histology in determining the duration of mechanical damage to the myocardium. Biomedical and economic aspects |
| BM19 | Yu. Ushenko (Ukraine), D. Weidong, Y. Xinlei (PRC), V. Bachynskiy, O. Lytvynenko, V. Garasym, V. Rozhko (Ukraine) Methods and devices of laser layer Jones-matrix mapping |
| BM20 | O. Ushenko, O. Olar, I. Mikirin, I. Marceniak, V. Prisyazhnyuk (Ukraine), J. Zheng, Sh. Chen (PRC) Jones-matrix introscopy of dichroism polycrystalline architectonics of bile films |
| BM21 | Yu. Ushenko (Ukraine), D. Weidong (PRC), I. Soltys, O. Dubolazov (Ukraine), Shi Biyun (PRC), V. Bachynskiy, O. Lytvynenko, V. Garasym, V. Rozhko (Ukraine) Polarization-interference Jones matrix mapping of supramolecular networks of biological fluid facies |
| BM22 | Zh. Hu (PRC), D. Uhryn, V. Lytvyn, V. Vysotska, A. Karachevtsev, V. Ivashko (Ukraine) Diagnostics of eye pathologies based on deep learning of medical images |
| BM23 | R. Kobylanskyi, V. Boichuk, V. Lysko, I. Konstantynovych, O. Zadorozhnyy, N. Pasychnikova (Ukraine) Heat flux density thermoelectric sensors for ophthalmology |
| BM24 | I. Konstantynovych, R. Kobylanskyi, O. Makhanets, M. Ivanochko, B. Metelsky, D. Demyanyshyn (Ukraine) Gyrotropic energy converters and sensors based on them |
| BM25 | R. Kobylanskyi, V. Boichuk (Ukraine) Thermoelectric Sensors for Medical Purposes |



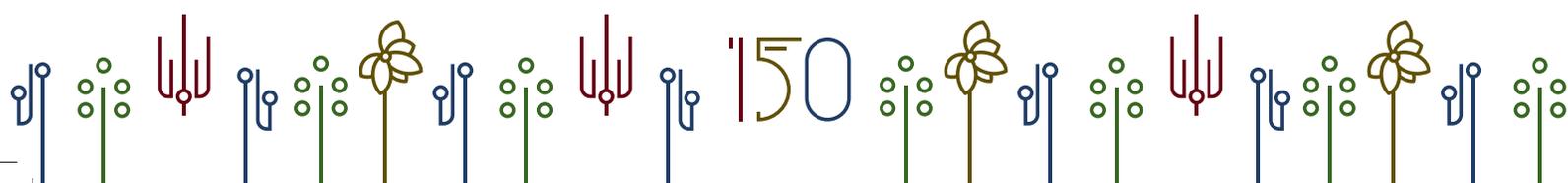


DAY 1 Poster Session

SEPTEMBER 8

Digital, information and communication transformation of scientific and educational processes in the context of global changes (SE)

| | |
|-------|---|
| SE 1 | M. Gorsky (Ukraine) Potential applications of decision-making algorithms in complex optical field calculations using cloud systems. |
| SE 2 | O. Derevyanchuk (Ukraine) Educational data mining technologies in systemic analysis of quality of vocational teacher training in context of educational process digitalization |
| SE 3 | O. Derevyanchuk, N. Ridei, N. Tytova, V. Kramar, M. Popovych (Ukraine) Implementation of STEM education in the process of training of future vocational education teachers |
| SE 4 | O. Derevyanchuk, N. Ridei, N. Tytova, O. Yatsko (Ukraine) 3D modeling as a means of forming professional competencies of future vocational education teachers |
| SE 5 | M. Havenko, S. Havenko, M. Labetska, M. Kadyliak (Ukraine) Conceptual model of information technology for assessing the quality of electronic book publications |
| SE 6 | S. Havenko (Ukraine, Poland), S. Khadzynova (Poland), O. Kotmalova (Ukraine) Study of the influence of surface topography on the quality of pad printing impressions |
| SE 7 | O. Lavrentieva, L. Rybalko, O. Krupskiy, M. Leonov, V. Kovdrysh (Ukraine) Hybrid models of professional training for medical personnel: digital educational strategies in the context of wartime instability |
| SE 8 | L. Rybalko, O. Lavrentieva, T. Hulko, A. Kovalov, V. Kovdrysh (Ukraine) Digital and information technologies in physical education and sports rehabilitation for the reintegration of war veterans |
| SE 9 | O. Lavrentieva, M. Sliusarenko, V. Tarasov, O. Tyutyunov, V. Kovdrysh (Ukraine) Technological education in the field of transport: responding to the challenges of eco-modernization |
| SE 10 | V. Kabak, O. Hulai, I. Martseniak (Ukraine) Digital psychological support for students under martial law using a chatbot |
| SE 11 | R. Horbatiuk, N. Bilan, N. Volkova, I. Martseniak (Ukraine) European integration as a determinant of scientific and educational processes of higher education institutions of Ukraine |
| SE 12 | T. Atroshchenko, V. Ivanova, T. Molnar, O. Popovych, O. Hrab, E. Chyzhevych (Ukraine) Transformation of content and forms of faculty-higher education student interaction in the digitalized education |
| SE 13 | M-O. Yershov, L. Romanov, G. Romanova, N. Kulalaieva, K. Derevianchuk (Ukraine) Challenges and opportunities in the digitalisation of Ukraine's vocational education |
| SE 14 | R. Savchuk, M-O. Yershov, L. Yershova, L. Romanov, G. Romanova, K. Derevianchuk (Ukraine) Prospects for the artificial intelligence application in dual education in Ukraine |





Poster Session

DAY 2

SEPTEMBER 9

Green engineering, metrology of optical processes and new challenges of engineering-transport technology (GE)

| | |
|-------|---|
| GE 1 | T. Hutsul, M. Khobzei, V. Tkach (Ukraine) Optical Methods for Soil Parameter Analysis: A Step Forward in Humanitarian Demining |
| GE 2 | S. Panchenko, M. Ravliuk, Ya. Derevianchuk, A. Rybin, M. Dominikov (Ukraine) Improvement of diagnostic technology for the brake system of a passenger wagon under operating conditions |
| GE 3 | V. Ravlyuk, A. Babenko, V. Kramar (Ukraine), Ya. Ivantsyk (Italy), Ya. Derevianchuk (Ukraine) Statistical modeling and fault analysis of the braking equipment of passenger wagons |
| GE 4 | V. Ravlyuk, A. Babenko, M. Ravliuk, O. Pshenychnyi (Ukraine) Methodology for enhancing the reliability of freight wagon braking systems through the integration of mechanical components |
| GE 5 | V. Ravlyuk, Ya. Ivantsyk, O. Yatsko (Ukraine) Improving diagnostic methods for wagon axlebox bearing defects through experimental research |
| GE 6 | M. Ravliuk, A. Babenko, Ya. Derevianchuk, V. Bohutskyi, O. Yatsko (Ukraine) Modeling and optimization of lever transmission elements in freight wagons |
| GE 7 | V. Bondarenko, R. Viznyak, V. Bereznyi (Ukraine), S. Bondarenko (Poland), V. Bohutskyi, O. Pshenychnyi (Ukraine) Reliability analysis of electrical equipment in passenger wagons |
| GE 8 | V. Bondarenko, R. Viznyak (Ukraine), Ya. Ivantsyk (Italy), V. Bereznyi (Ukraine), S. Bondarenko (Poland), O. Tashchuk (Ukraine) Diagnostic algorithm for reliability assessment in electronic equipment for passenger wagons |
| GE 9 | V. Bondarenko, R. Viznyak, O. Oboznyi, V. Bereznyi (Ukraine), S. Bondarenko (Poland), R. Tashchuk (Ukraine) Use of energy-efficient lithium-ion battery systems for power supply in passenger train carriage |
| GE 10 | I. Elyazov, E. Yusifzade, I. Hüseyinov, A. Bakhshiev (Azerbaijan), O. Oboznyi, V. Tomash (Ukraine) Improvement of the technical condition monitoring system for freight wagons |
| GE 11 | I. Elyazov, E. Yusifzade, I. Hüseyinov, A. Bakhshiev (Azerbaijan), V. Tomash (Ukraine) Mathematical aspects of vibration diagnostics of rolling bearings in axlebox assemblies of freight cars |
| GE 12 | M. Kravchenko, A. Kyman, A. Prokhorchenko, Ya Zapara, O. Novikov, H. Prokhorchenko, V. Tomash (Ukraine) Enhancing the procedure for detecting capacity constraints on a railway network under spatial changes in train flow routing |
| GE 13 | S. Panchenko, A. Lovska (Ukraine), J. Dizo (Slovak Republic), A. Rybin, V. Kramar (Ukraine) Features of the research of the longitudinal load of a wagon bearing structure covered with a tarpaulin |
| GE 14 | A. Lovska (Ukraine), J. Dizo (Slovak Republic), O. Oboznyi, M. Dominikov (Ukraine) Mathematical modelling of the vertical load of a flat wagon with sandwich-type components |
| GE 15 | A. Lovska (Ukraine), J. Dizo (Slovak Republic), A. Rybin, O. Pshenychnyi, A. Lovska (Ukraine) Research on the longitudinal load of a container with a frame made of rectangular pipes while railway transportation |





DAY 2

Poster Session

SEPTEMBER 9

Informative content of statistical optical fields, including optical chaos, polarization optics and coherence.

Methods and computer algorithms for intelligent data processing of correlation and singular optics (IM)

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|-------|--|
| IM 1 | W. Jia (PRC), J. Nie (PRC), S. G. Hanson (Denmark), M. Takeda (PRC, Japan), W. Wang (PRC, UK) Recovering object information by holographic speckle imaging technique |
| IM 2 | J. Nie (PRC), Y. Tuo (PRC), S. G. Hanson (Denmark), M. Takeda (PRC, Japan), W. Wang (PRC, UK) Influence of rotational errors on the optical transfer matrix in polarization imaging systems |
| IM 3 | Sh. Liu (PRC), S. G. Hanson (Denmark), M. Takeda (PRC, Japan), W. Wang (PRC, UK) Wavelength-dependent speckle scattering phenomena in birefringent materials with rough interfaces |
| IM 4 | Y. Tuo (PRC), J. Lei (PRC), S. G. Hanson (Denmark), M. Takeda (PRC, Japan), W. Wang (PRC, UK) Iterative Algorithm for Polarization Imaging: Recovering Object Amplitudes from Noisy Stokes Data |
| IM 5 | S. Zhukov , A. Tyurin , A. Bekshaev (Ukraine) Modelling of the formation of regular 3D structures in KCl crystals by means of interference light field |
| IM 6 | M. Trofimenko , A. Bekshaev (Ukraine) Optical control of the combustion process in vertical propane-butane gas torch |
| IM 7 | C. Zenkova , D. Ivanskyi , A. Koniakhin , M. Diachenko (Ukraine) Polarized light scattering modelling by eye cornea cells |
| IM 8 | C. Zenkova , D. Ivanskyi , O. Angelsky , M. Diachenko (Ukraine)) Discrete approach for fast STWP/STOV simulation |
| IM 9 | P. Riabiyi , I. Fesiv , D. Burkovets , Yu. Ursuliak (Ukraine) Polarization-interference diagnostics of birefringent medium using geometric-phase approach |
| IM 10 | I. Yakovenko , V. Danko , A. Kovalenko (Ukraine) On optimality of focusing light through scattering media with wavefront shaping technique |
| IM 11 | V. Zhytaryuk (Ukraine) "Book review "Instrumentation: Design and Construction of Devices" |
| IM 12 | M. Kitsan , V. Kruk , O. Maksimyak (Ukraine) Study of the Mueller matrix of the image of micro objects |
| IM 13 | S. Shchukin , P. Maksimyak (Ukraine) Multiplexing on photonic zigzags |
| IM 14 | O. Angelsky , O. Maksimyak (Ukraine) Study of the optical confinement of graphene oxide by Z-scanning of the optical field in the Pierce zone |
| IM 15 | H. Kosovan , V. Melnyk (Ukraine) A Simple GRU Approach to Predicting Chaos in 1-D, 2-D and 3-D Systems |





Poster Session

DAY 2

SEPTEMBER 9

| | |
|-------|--|
| IM 16 | V. Ivashko, O. Krulikovskiy, D. Uhryn, O. Yatsko (Ukraine) Computer simulation and numerical analysis: essential tools for scientific investigation in physics (Review) |
| IM 17 | D. Uhryn, A. Sachenko, E. Vatamanitsa, Yu. Tomka, V. Ilin, Yu. Halin (Ukraine) System analysis of regional population development using intelligent forecasting |
| IM 18 | S. Yakovliev, S. Balovsyak, M. Borcha, I. Iakovlieva, I. Yanchuk (Ukraine) Automatic bilateral filtering of digital images using histograms |
| IM 19 | I. Fodchuk, A. Kuzmin, V. Dovganyuk, I. Hutsuliak, O. Vorobets, M. Solodkyi (Ukraine) The influence of concentrations and sizes of microdefect of several types on total integrated reflectivity of CdTe:Cl single crystals |
| IM 20 | Yu. Dobrovolsky, P. Prokhorov, K. Hazdiuk, O. Pavliuchenko (Ukraine) Video data from external web cameras for entropy generation using hash functions |





DAY 3 Poster Session

SEPTEMBER 10

Optical correlation devices based on diffractive optical elements, including optical and digital holography, fractal optics, optical sensors.

Optical correlation devices in information technology. Engineering, optical and biomedical devices and systems in tasks of correlation and singular optics (D)

| | |
|-----|--|
| D1 | R. Politanskyi, A. Ploshchych, M. Vistak, I. Chesanovskyi (Ukraine) Research and design of reflector-type antennas based on anisotropic metamaterials |
| D2 | K. Zolotukhina, S. Melnichenko (Ukraine) Optical characteristics of the digital printing's imprints |
| D3 | N. Talimonova, K. Zolotukhina (Ukraine) Overview of innovative optical technologies for restoration of rare editions |
| D4 | O. Demchenko, P. Maksymyak (Ukraine) Application of J-aggregates for optical confinement |
| D5 | O. Maksymyak, A. Maksymyak (Ukraine) Computer modeling of the passage of structured light through turbulence in the atmosphere and atmospheric precipitation |
| D6 | A. Maksymyak, S. Shchukin (Ukraine) Back-beam energy flow in perforated microspheres |
| D7 | V. Brailovsky, O. Ilarionov, M. Ivanchuk, M. Rozhdestvenska (Ukraine) Radiometer with data recording function |
| D8 | V. Brailovsky, O. Ilarionov, M. Ivanchuk, M. Rozhdestvenska (Ukraine) Threshold hermoanometer |
| D9 | O. Angelsky, M. Strynadko, C. Zenkova (Ukraine), J. Zheng (PRC) Hybrid distributed acoustic and Fourier-transform interferometric sensing with modular fiber-optic architecture |
| D10 | I. Mokhun, Y. Galushko, Y. Viktorovskaya, M. Karabchyivskyi (Ukraine) Fiber-optic communication system with interference protection from illegal access |
| D11 | I. Mokhun, M. Vasnetsov, Ch. Felde, Y. Galushko, Y. Viktorovskaya, M. Kitsan, M. Karabchyivskyi (Ukraine) FSO communication system with singular multiplexing of channels |
| D12 | O. Filipenko, O. Sychova, S. Novoselov, V. Tuz, V. Chumakov (Ukraine) Microstructured optical fiber cross-sectional profile deformations influence on chromatic dispersion study |
| D13 | N. Hrynyk, S. Balovsyak, V. Branashko, O. Dubovyk, Kh. Odaiska (Ukraine) Improving accuracy of photogrammetry method by masking images and using coordinates of video cameras |
| D14 | Yu. Dobrovolsky, Yu. Sorokatiy (Ukraine) Development of an automated model of a photometric device for accurate uv radiation measurement using silicon photodiode Ld2288 |
| D15 | M. Sakhnovskyi, B. Tymochko, M. Dominikov (Ukraine) Acoustically controlled Fourier interferometer based on fiber Bragg gratings |





Poster Session

DAY 3

SEPTEMBER 10

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|-----|---|
| D16 | Y. Dobrovolsky, H. Prokhorov, K. Hazdiuk, K. Dmytrashchuk (Ukraine) Reliability assurance of long-lifetime photosensitive devices using software engineering techniques |
| D17 | M. Strynadko, P. Riabyi (Ukraine) DSE stream encryption protocol: data protection in fiber-optic networks with cryptographic strength comparable to quantum protocols |
| D18 | V. Roschuk, V. Horbulyk, P. Shpatar (Ukraine) High-speed data transmission from unmanned aerial vehicles |
| D19 | S. Haliuk, H. Kosovan, V. Ivashko, O. Krulikovskiyi (Ukraine) Secure multichannel communication system using chaos-based pseudo-random spreading sequences |
| D20 | I. Yarmystyi, V. Horbulyk, P. Shpatar, O. Hres (Ukraine) Improving the efficiency of special-purpose networks |
| D21 | I. Oleksiuk, A. Veryga, P. Shpatar (Ukraine) Reducing unproductive energy consumption of a solar power plant |
| D22 | S. Hospodariuk, H. Lastivka, A. Veryga, D. Vovchuk, V. Bobrovs, A. Samila (Ukraine) Design of bandpass filters for a low-noise preamplifier of spin induction signals |
| D23 | O. Lastivka, H. Lastivka (Ukraine), O. Hotra (Poland), A. Samila (Ukraine) Investigation of NQR/NMR spectra by means of computer parametric identification |
| D24 | O. Krulikovskiyi (Ukraine, Romania), Yu. Herman, O. Verenko (Ukraine) Hardware/software communication architecture for a SoC-FPGA-based time-to-digital converter |
| D25 | S. Hospodariuk, H. Lastivka, A. Veryga (Ukraine), D. Vovchuk (Latvia), V. Bobrovs (Latvia), A. Samila (Ukraine) Design of bandpass filters for a low-noise preamplifier of spin induction signals |
| D26 | A. Prybyla, M. Korop, V. Lysko (Ukraine) Optimization of spiral anisotropic thermoelectric sensors using machine learning algorithms |
| D27 | V. Lysko, L. Vikhor, V. Razinkov, M. Havryliuk, K. Strusovskiyi (Ukraine) Methods and equipment for measuring electrical and thermal resistance of contact structures in thermoelectric coolers for optical electronic devices |
| D28 | R. Cherkez, O. Porubanyi, V. Khrykov (Ukraine) Computational study of thermoelectric generator elements with enhanced lateral heat exchange |
| D29 | M.Kotsur, L. Vikhor (Ukraine) Evaluation of time to reach operating temperature of optical electronic device with thermoelectric cooling |
| D30 | O. Velykyi, V.Lesinskyi (Ukraine) Peak performance analysis of integrated multi-threading and asynchrony in multiprocessor systems |
| D31 | Yu. Antoshchuk, V. Lesinskyi (Ukraine) Analysis and investigation of artificial intelligence-enabled attacks on air-gapped information systems |
| D32 | O. Zorenko, Ya. Zorenko, V. Skyba (Ukraine) Spectrophotometric color analysis for imprints on corrugated cardboard |
| D33 | Ya. Zorenko, B. Kanievskiyi (Ukraine) Investigation of surface features of the restored anilox rollers studied by optical microscopy |
| D34 | R. Zaiats, Yu. Ursuliak, M. Strynadko (Ukraine) Optimized data processing of retinal OCTA with AI methods |





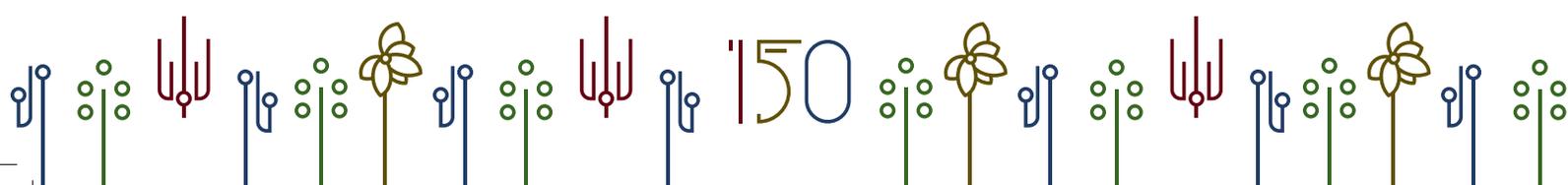
DAY 3 Poster Session

SEPTEMBER 10

Optical correlation diagnostics, interferometry and microscopy of rough surfaces and random media.

Nanooptics (MN)

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| MN1 | V. Pylypko, V. Ivanitska, Y. Khalavka (Ukraine) Effect of oleylamine content on the optical properties of CsPbBr ₃ nanoparticles synthesized in the presence of various antisolvents |
| MN2 | V. Tkachuk, M. Sorokaty, Yu. Sorokaty, M. Diachenko (Ukraine) Membrane surface roughness of biological cells diagnostics using fluorescent nanoparticles |
| MN3 | V. Tkachuk, P. Ryabyi, L. Drutsul, Yu. Ursuliak (Ukraine) Using fluorescent nanoparticles for the speckle field structure, formed by a biological object, diagnostics |
| MN4 | D. Ivanskyi, V. Tkachuk, P. Ryabyi, M. Pecherkin (Ukraine) Studying of the 3D absorption dipole moment spatial orientation of fluorescent nanoparticle |
| MN5 | M. Gavrylyak, P. Maksymyak (Ukraine) Generation and control of photonic nanostreams using a parabolic mirror |
| MN6 | A. Maksymyak, S. Shchukin (Ukraine) Formation of energy flows of structured light using a biaxial crystal |
| MN7 | A. Korop, M. Korop, T. Vakulenko, Y. Khalavka (Ukraine) An Extension of MNPBEM toolbox for the Simulation of Decahedral Silver Nanoparticles' Electromagnetic Properties |
| MN8 | M. Hanzhelo, A. Mazurets, G. Prokhorov, S. Yanushevskiy (Ukraine) Photosensitive matrix as a source of entropy |
| MN9 | A. Dobryanskiy, T. Kyrychok, L. Slotska, M. Ohirko, M. Gavrylyak, Ch. Felde (Ukraine) Application of optical methods for the analysis of the physical condition of paper banknotes |
| MN10 | A. Dobryanskiy, L. Slotska, M. Gorsky, M. Gavrylyak, Ya. Struk, R. Zaplitniy, K. Chepurna (Ukraine) Polarization methods for monitoring the surface of printed products |
| MN11 | M. Ohirko, I. Soltys, O. Dubolazov, O. Khmiliarchuk, O. Barauskiene, M. Kozhokar, R. Zaplitniy (Ukraine) Analysis of print quality metrics in polygraphic products |
| MN12 | T. Kyrychok, V. Vorobyova, T. Klymenko, A. Bilousova, B. Bardovskyi, M. Volodko, Ye. Avdiakov (Ukraine) Investigation of adhesive properties polymer and paper printed substrates treated with corona discharge |
| MN13 | V. Strutynsky, T. Kyrychok, O. Korotenko, V. Korotenko (Ukraine) Automated quality control for intaglio printing through a matrix model of color intensity distribution |
| MN14 | I. Fodchuk, V. Romankevich, V. Dovganyuk, M. Solodkyi, I. Hutsuliak (Ukraine) Phase and structural transformations in high-strength concrete composites modified with microsilica and metakaolin after thermal loading |
| MN15 | I. Fodchuk, S. Balovsyak, I. Iakovliev, T. Litvinchuk, I. Yanchuk, D. Makotiak (Ukraine) Oriented filtering of X-ray moiré images |





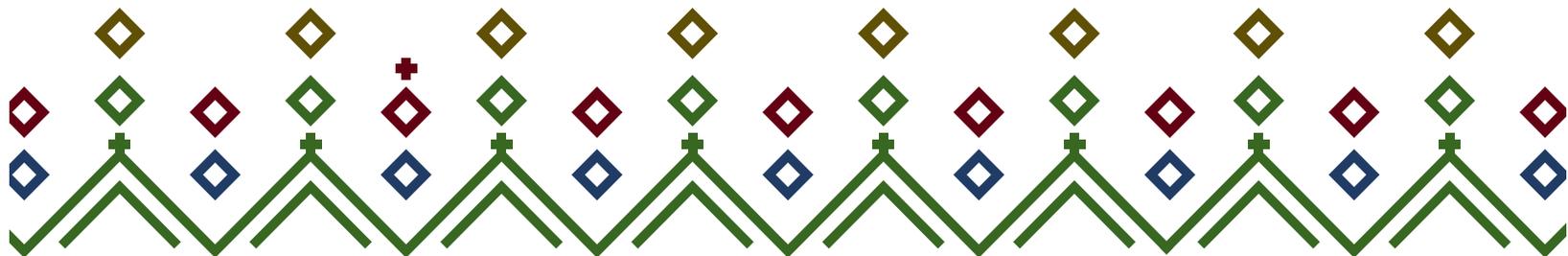
Poster Session

DAY 3

SEPTEMBER 10

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| MN16 | M. Borch , M. Solodkyi , O. Kroitor , A. Kuzmin , R. Zaplitnyy , I. Litvinchuk (Ukraine) Automatic band detection in Kikuchi patterns using Hough transform |
| MN17 | M. Borch , S. Novikov. , Ya. Garabazhiv , D. Fedortsov , I. Yanchuk , I. Hutsuliak (Ukraine) Simulation of the influence of combined deformation field on the formation of X-ray topographic images of microdefects |
| MN18 | A. Arkheluk (Ukraine), I. Kashtanov (Slovak Republic) Estimating the Polarizable Characteristics of the Mesophase of the Nematic Liquid Crystals in Temperature Gradient |
| MN19 | M. Sorokatyi , V. Strebezhev , I. Yuriychuk , Y. Khalavka (Ukraine) The effect of laser radiation on graphene/CdSb(ZnSb) heterostructures and on interference optical elements |
| MN20 | O. Manyk , M. Krechun (Ukraine) Correlation models of anti-diffusion and connecting structures in thermoelectric energy converters |
| MN21 | O. Manyk , D. Rybchakov (Ukraine) Correlation models of chemical bond formation in thermoelectric materials based on Bi-Sb-Se-Te |
| MN22 | O. Makhanets , I. Konstantynovych , I. Hnidko , M. Ivanochko , D. Chenkova (Ukraine) Electron spectrum in a semiconductor nanostructure quantum dot-quantum ring with a non-central donor impurity |





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