

# OptiComp-2025



*Optical And Computational Technologies For Measurements And Industrial Applications*

## International Conference Program

**OptiComp-2025: Optical and Computational Technologies for Measurements and Industrial Applications 24-25 May 2025**

**Bukhara, Uzbekistan Organized by the Physicotechnical Institute of the Academy of Sciences of the Republic of Uzbekistan and the Scientific Center for Nanotechnological Engineering of Bukhara State Technical University**

## Venue

Scientific Center for Nanotechnological Engineering, Bukhara State

Bukhara State Technical University, Bukhara, Uzbekistan Dates:

Dates: May 24-25, 2025

# Conference Overview

The conference is organized by the Physicotechnical Institute of the Academy of Sciences of the Republic of Uzbekistan and the Scientific Center for Nanotechnological Engineering of the Bukhara State Technical University (Uzbekistan)

The program includes a wide range of topics in optics, photonics, and related fields. The advanced optical technologies, laser applications, semiconductor devices, and industrial applications are discussed. The conference also explores such areas as nano-optoelectronics, quantum optics, and terahertz technologies. Additionally, the program includes computational methods, artificial intelligence, and data processing systems relevant to optical engineering and industrial applications. Participants have the opportunity to engage with subjects ranging from biomedical optics and healthcare applications to materials science and nanotechnology.

The conference aims to foster discussions on intelligent networks, optical telecommunications, and the application of optical technologies in artificial vision and robotics.

Overall, the program reflects the interdisciplinary nature of modern optical science and engineering, emphasizing both fundamental research and practical industrial applications.

# Conference Program

## Section 1: Materials Science and Aerospace Technologies

Thermopower in lutetium-substituted manganese sulfides	S. S. Aplesnin, A. M. Kharkov, M. N. Sitnikov, O. N. Bandurina, I. V. Uvaev, E. G. Voronova, Hichem Abdelbaki	Reshetnev Siberian State University of Science and Technology, Technology, Krasnoyarsk, Russia; Kirensky Institute of Physics, Physics, Federal Research Center KSC SB RAS, Akademgorodok, Akademgorodok, Krasnoyarsk, Russia; Faculty of Sciences, M'hamed Bougara Boumerdes University, Boumerdes, Algeria
Method for determining the displacement of sub-block boundaries of rock mass during drilling and blasting operations	A.O. Shigin, E.A. Kokhonkova, I.A. Kozyrev, D.S. Kudinov	Federal Research Center «Krasnoyarsk Science Center of the Siberian Branch of the Russian Academy of Sciences», Siberian Federal University, Russia
Scientific Problems and Solutions for Measuring Aerosol Concentrations in the Atmosphere Taking Into Account Metrological Requirements	Sh. M. Masharipov	Tashkent State Technical University, Tashkent, Uzbekistan
Influence of Geometric Parameters of Granular Particles on Fluidization Quality	Razzoq Jalilov, Nazora Khudoyberdieva	Navoi State University of Mining and Technologies, Navoi, Uzbekistan
Eddy current method for studying the electrical conductivity of semiconductor and thin-film materials	Darya Medvedeva, Elena Soldatova, Sergey Voinash, Alisher Shirinov, Mukhiba Sulaymanova, Dildora Badiyeva, Irina Vornacheva	Altai State University, Barnaul, Russia; Kazan Federal University, Kazan, Russia; Bukhara State University, Uzbekistan; South-West State University, Kursk, Russia
Investigation of the Mineralogical Composition of Altintau Kaolins Using X-ray Diffraction Analysis	Odina Turdieva, Yusuf Zhumanov, Dilshod Akhtamov, Abdulla Umrzokov	Navoi State University of Mining and Technologies, Navoi, Uzbekistan
Artificial Intelligence in the Control of the Drying Process	Shaira Nasirova, Askar Artikov, Zulkhumor Masharipova, Mukhriddin Kholiqov, Botir Usmonov, Maxfuza Shodiyeva, Sadullo Xalilov	Navoi State University, Navoi, Uzbekistan
Optical sorting methods and information technologies in the integrated system for improving the quality and traceability of bare sown cotton seeds	Vakhit G. Rakipov, Rinat A. Gulyaev, Ravil F. Yunusov, Azamat A. Sultonov, Damir R. Rafikov	Paxta Ilmiy-innovasiya markazi LLC, Tashkent, Uzbekistan; Buxoro Agroklaster LLC, Vobkent, Bukhara region, Uzbekistan
Analysis of thermal engineering characteristics of thermal insulation materials in a quasi-stationary thermal regime	Yasmin Begich, Alexey Belous, Artem Enikeev, Mira Overchenko, Olga Belous	Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia; GDTs-Razvitie LLC, Moscow, Russia; Donbas National Academy of Civil Engineering and Architecture, 2 Makeevka, Russia; Don State Technical University, Rostov-on-Don, Russia
Tribological testing and wear resistance of plunger parts with composite chrome coatings	Zayniddin Oripov, Akbarjon Normurodov, Nasriddin Obitov, Khalim Kadirov, Khamro Turabov	Navoi State University of Mining and Technologies, Uzbekistan
Modeling the performance of a data network router using queueing theory with simulation and analytical validation	Rustam Djuraev, Shukhrat Djabbarov, Dilshod Matkurbonov, Orif Khasanov	Tashkent University of Information Technologies named after Muhammad al-Khwarizmi, Uzbekistan
Application's Carleman's Formula for A(z)-Analytic Functions	Behzod Husenov, Mekhriniso Khakimova, Orifjon Khaydarov, Mukhayyo Juraeva, Tukhtasin Rajabov	Bukhara State University; Bukhara State Pedagogical Institute; Bukhara University of Innovation; Karshi State University, Uzbekistan
The genesis of the matrix of the shape of the potential energy of a multiatomic cluster	K E Plokhonnikov	M.V. Lomonosov Moscow State University; Financial University under the Government of the Russian Federation, Moscow, Russia
Digitalization and optimization of dual use goods production using artificial intelligence	Igor Kartsan, Alexander Zhukov, Alyona Nerush	Analytical Center, Moscow; Sevastopol State University, Russia
Determination of transport properties of rock cores based on neural network algorithms	Nikolay E. Staroverov, Nikolay N. Potrakhov, Dmitrii K. Kostrin, Semen R. Shevelev	Saint Petersburg Electrotechnical University, Russian Federation
Modernization of the «Sofia Varvarchuk» Holographic System for Controlling the Geometry of a Gas Turbine Blade	V Poyarkov	Bolhov Plant of semiconductor devices, Bolkhov, Russia
Formation of Electroneutral Ni–Mn Complexes in Silicon and Their Effect on Material Properties	Sattarov Olmas Ergashevich, Abdurakhmanov Bakhrom Abdukakhkharovich, Yakubov Dostonjon Tokhirjon ugli, Sabirov Erkin Ergashevich, Akbarova Nigora Alimjanovna, Normamatov Annamurod	Tashkent State Technical University, Uzbekistan; National Research University "Tashkent institute of irrigation and agricultural mechanization engineers", Uzbekistan
Highly Co-Polymer Viscosity for Improving Lubricant Flow Properties and Tribological Performance	Mustafa Najm Obaid, Akram Alabadi, Salma M. Hassan	University of Baghdad, Iraq; South Refineries Company (SRC), Ministry of Oil, Iraq

# Conference Program

## Section 2: Optical Technologies for Measurements and Industrial Applications

Choice of Rational Number of Instruction Slots in Very Long Instruction Word Processors	Valery Bakanov	National Research University Higher School of Economics, Moscow, Russia
Mathematical model of an electromechanical jackhammer based on a variable structure mechanism	Omurbek Ismanov, Abdykadyr Abidov, Zhyldyz Turdubaeva, Ernis Bolushev	Osh Technological University, Kyrgyzstan
Attendance Marking System using Face Recognition Technique Technique based on SVM and PCA	Chamroeun Khim, Srun Sovila, Vysal Vothy, Olga V. Begun, Irina A. Irina A. Dmitrieva, Natalia A. Ivanova	Royal University of Phnom Penh, Cambodia; Anton Chekhov Taganrog State Institute (branch) Rostov State University of Economics, Russia; Taganrog Institute of Management and Economics, Russia; Don State Technical University, Russia
Methods of integral assessment of the level of skill development in operators on a computer simulator using mathematical data processing	Ivan Polevshchikov, Ivan Blagoveshchensky, Evgeny Nazoikin, Rostislav Kravchenko	Russian Biotechnology University, Moscow
Determination of frequency characteristics of alpine skis on a laboratory stand using digital sensors	Andrey Ya. Minaev	Mechanical Engineering Research Institute of the Russian Academy of Sciences, Moscow, Russia
Concept of a cyberphysical system for technical diagnostics and monitoring of railway automation and telemechanics devices	Evgeny Tarasov, Anna Tarasova, Ilya Bredun, Snezhana Nadezhkina	Volga State Transport University (SSTU), Samara, Russia
Preparation Of V2O3 Coatings Using Low-Vacuum Oxidation Of Vanadium	V.V. Putrolaynen, V. S. Ignakhin, I.V. Sekirin	Petrozavodsk State University, Russia
Using $\mu$ -synthesis to investigate the robustness of a rotary debarking machine	Nikolay A. Tseligorov, Viktor L. Panasov, Vadim A. Chubukin, Elena N. Tseligorova, Andrey R. Gazizov	Don State Technical University, Russia; Rostov State Transport University, Russia
Modern Methods of Measurement Data Processing and Their Mathematical Models in Metrological Problems	Sh.M.Masharipov, P.M.Matyaqubova	Tashkent State Technical University, Uzbekistan
Integrated Artificial Intelligence System for Real-Time Knowledge Assessment and Instruction in Virtual Robotics Environments	Gulnora Buronova, Nazokat Sayidova, Gulsina Atayeva, Feruza Narzullayeva, Dilshoda Bahronova	Bukhara State University, Uzbekistan
Computational analysis of the stress-strain state of a pipeline laid across a ravine using the finite element method	Batirjan Mardonov, Ibrakhim Mirzaev, Ekaterina An, Elbek Kosimov	Institute of Mechanics and Seismic Stability of Structures, Uzbekistan Academy of Sciences; Tashkent State Transport University, Uzbekistan
A system for parsing data from online sites for the sale of logging equipment	Pavel Egarmin, Roman Panov, Farid Ahmatshin, Sergey Mikitchak	Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
Computational Modeling the Influence of Lattice Textures on Service Life of Ceramic Inserts in Lathing	Marina A. Volosova, Anna A. Okunkova, Khasan I. Gkhashim	Moscow State University of Technology "STANKIN", Russia
Development Of Intelligent Components Of Modern Flexible Information Systems	Siddikov Isamidin, Sanjarbek Bekturdiev, Shaxnoza Sadikova, Sadoqat Tursunova, Sheraliyev Asadbek	Tashkent State Technical University; Tashkent University of Social Innovation, Uzbekistan
Comparison of the effect of germanium (Ge) and germanium-silicon (Ge-Si) combinations on the hardness of aluminum alloy through mathematical modeling	Sarvar Tursunbaev, Azizakhon Turakhujaeva, Furkat Odilov, Sharofuddin Mardonakulov, Nuritdin Tadjiev, Sherzod Tashbulatov, Boburjon Ibrokhimov, Shukhrat Chorshabiev, Zokirjon Nurdinov	Tashkent State Technical University, Uzbekistan
Development of an Intellectual information system for managing the operation of a biogas plant	D.N. Klesov, V.A. Lomazov, I.V. Miroshnichenko, A.V. Lomazov	MIREA – Russian Technological University, Moscow, Russia; FSBEI HE Belgorod SAU, Russia; NRU BelSU, Russia; Financial University under the Government of the Russian Federation, Moscow, Russia
Research and requirements for tilt sensors in angle measurement using electronic total stations	Mirzayev Anvar Abdisaidovich, Ulugbek Raximov, Yekimov Sergiy	Samarkand State Architecture and Construction University, Uzbekistan; Czech University of Life Sciences Prague, Czech Republic
Prospects for the Use of Pitovsky Feldspar in Fine Ceramic Materials	Yusuf Zhumanov, Odina Turdieva, Dilshod Akhtamov, Gulrux Khaidarova	Navoi State University of Mining and Technologies, Uzbekistan

### Note:

- The program is subject to updates. The complete list of presentations and articles will be published on the conference proceedings website after July 3, 2025.
- For the full list of presentations, including additional contributed talks and poster sessions, please refer to the official conference booklet or website.
- The conference will also include plenary lectures, invited talks, and panel discussions on emerging trends in optical and computational technologies for measurement and industry