



SFM 24 expects:

19 Conferences and Workshops

7 Plenary Speakers

25 Invited Speakers

>110 Internet Reports

>300 Participants from

>20 Countries

>250 Published papers



**CONFERENCES AND WORKSHOPS OF XIII SYMPOSIUM ON OPTICS
& BIOPHOTONICS**

- OPTICAL TECHNOLOGIES IN BIOPHYSICS & MEDICINE XXVI
- LASER PHYSICS AND PHOTONICS XXVI
- SPECTROSCOPY AND MOLECULAR MODELING XXV
- ELECTROMAGNETICS OF MICROWAVES, SUBMILLIMETER & OPTICAL WAVES XXIV
- NANOBIPHOTONICS XX
- INTERNET BIOPHOTONICS XVII
- NONLINEAR DYNAMICS XV
- LOW-DIMENSIONAL STRUCTURES XIV
- BIOMEDICAL SPECTROSCOPY XI
- TERAHERTZ OPTICS AND BIOPHOTONICS VII
- ADVANCED MATERIALS FOR OPTICS AND BIOPHOTONICS VII
- MEDICAL APPLICATIONS OF LASER MOLECULAR IMAGING AND MACHINE LEARNING IV

- ENDOGENOUS BIOPHOTONICS: ULTRA-WEAK LUMINESCENCE FROM BIOLOGICAL SYSTEMS III
- BIOMEDICAL ENGINEERING: MINI-SYMPOSIUM

CHINESE-RUSSIAN WORKSHOP ON BIOPHOTONICS AND BIOMEDICAL OPTICS-2024

XXVIII INTERNATIONAL SCHOOL FOR JUNIOR SCIENTISTS AND STUDENTS ON OPTICS, LASER PHYSICS & BIOPHOTONICS:

- MODERN OPTICS XXIII
- ENGLISH AS A COMMUNICATIVE TOOL IN THE SCIENTIFIC COMMUNITY XXIII
- HISTORY, METHODOLOGY AND PHILOSOPHY OF THE OPTICAL EDUCATION XVII
- ROUND TABLE OF HIGH TECHNOLOGIES COMMERCIALIZATION AND REGIONAL INNOVATION SYSTEMS XVIII

INTERNATIONAL SCHOOL FOR STUDENTS AND YOUNG SCIENTISTS ON FLUORESCENT DYES, PROTEINS, AND INSTRUMENTATION IN LIFE SCIENCES

IMPORTANT DATES

06.06.2024 – Opening of abstract submission

25.08.2024 – Deadline for submission of abstracts

25.08.2024 – End of registration

01.09.2024 – Hotel booking

30.11.2024 – Submission of full texts of articles

The main goal of SFM'24 is to present and discuss the latest advances in the field of biophysics of optical and laser technologies in biology and medicine, fine mechanics and control of optical and physiological properties of tissues and cells, coherent optics of random and ordered media, materials and environmental sciences, nonlinear dynamics of laser systems, laser physics, spectroscopy and molecular modeling, nanophotonics and nanobiophotonics. Specific problems of imaging and engineering of eukaryotic genomes, laser femtosecond optoporation of cells and tissues for in situ transfection of cells, remotely controlled nanostructured systems for targeted drug delivery and diagnostics, development of technologies for optical 'disruption' of the blood-brain barrier and personalized treatment of aggressive forms of glial tumors, combined

thermographic imaging and terahertz tomography of tissues in the diagnosis of skin and mucous membranes, photoacoustic technologies for early theranostics of metastatic tumors, studies of the fundamental mechanisms of sleep for the development of breakthrough technologies in neurorehabilitation medicine, as well as the development of methods for screening-wise non-invasive diagnosis of viral and bacterial respiratory infections using laser spectroscopy and machine learning will be discussed.

The main attention will be paid to basic research of interactions of coherent, low-coherent, polarized, spatially- and temporally-modulated electromagnetic radiation within the broad wavelength range from x-rays to terahertz with inhomogeneous scattering media and biological tissues and cells. Elastic, inelastic (Raman, SERS, and CARS) and dynamic light scattering, Doppler, photoacoustic, photothermal, and nonlinear interactions, tissue and cell mechanics, and photobiological effects will be considered.

On this basis, the variety of laser and optical technologies for medical diagnostics, therapy, surgery, and light dosimetry, as well as for diagnostics and imaging of random and ordered media will be presented. Studies on lasers, fibers, and microstructured waveguides will be discussed. Optogenetics, plasmonics, and biosensing also will be the key features of the meeting.

PROCEEDINGS

Conference papers will be published as:

Conference Proceedings (in Russian or English) under the title “**Problems of Optical Physics and Biophotonics**” (Проблемы оптической физики и биофотоники)
Симоненко Георгий Валентинович gvsim1960@hotmail.com

Optics & Spectroscopy – Special section on Biophotonics (Russian or English)

Optics & Spectroscopy – Special section on Promising materials of optoelectronics, laser physics, and photonics (Russian or English)

Special Issue of *Journal of Technical Physics on Laser Physics and Photonics* (Russian or English)

Special issue of *Journal of Biomedical Photonics & Engineering*

Selected papers of *Journal of Biomedical Optics* (For request to Valery V. Tuchin)

Selected papers of *Journal of Biophotonics* (For request to Valery V. Tuchin)

Selected papers of *Journal Innovative Optical Health Science* (For request to Valery V. Tuchin)

Selected papers of [MDPI Materials](#)

Selected papers of MDPI Diagnostics

All manuscripts will be subject to the normal peer review process for journals.

ORGANIZERS AND SPONSORS

Organized by

- Saratov State University (National Research University of Russia) (SSU)
- Department of Physical Sciences of the RAS
- International Research-Educational Center of Optical Technologies for Industry and Medicine “Photonics”, SSU
- Science Medical Center, SSU
- Institute of Biochemistry and Physiology of Plants and Microorganisms, FRC “Saratov Scientific Centre of the Russian Academy of Sciences” (IBPPM RAS)
- Institute of Precision Mechanics and Control, FRC “Saratov Scientific Centre of the Russian Academy of Sciences” (IPMC RAS)
- Saratov State Medical University named after V.I. Razumovsky
- Volga Region Center of New Information Technologies, SSU
- Tomsk State University (National Research University of Russia) (TSU)
- ITMO University
- Bauman Moscow State Technical University (BMSTU)
- Institute of Solid State Physics of the RAS (ISSP RAS)
- Prokhorov General Physics Institute of the RAS (GPI RAS)
- A.N. Bach Institute of Biochemistry, FRC “Biotechnology of the Russian Academy of Sciences”
- Sechenov First Moscow State Medical University (Sechenov University)
- Institute of Ultra High Frequency Semiconductor Electronics of the RAS (IUHFSE RAS)
- Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, RAS, Moscow, Russia
- Biomedical Photonics Committee of Chinese Optical Society, China
- University of São Paulo, Brazil
- University of Johannesburg, Republic of South Africa
- Manipal Academy of Higher Education, India

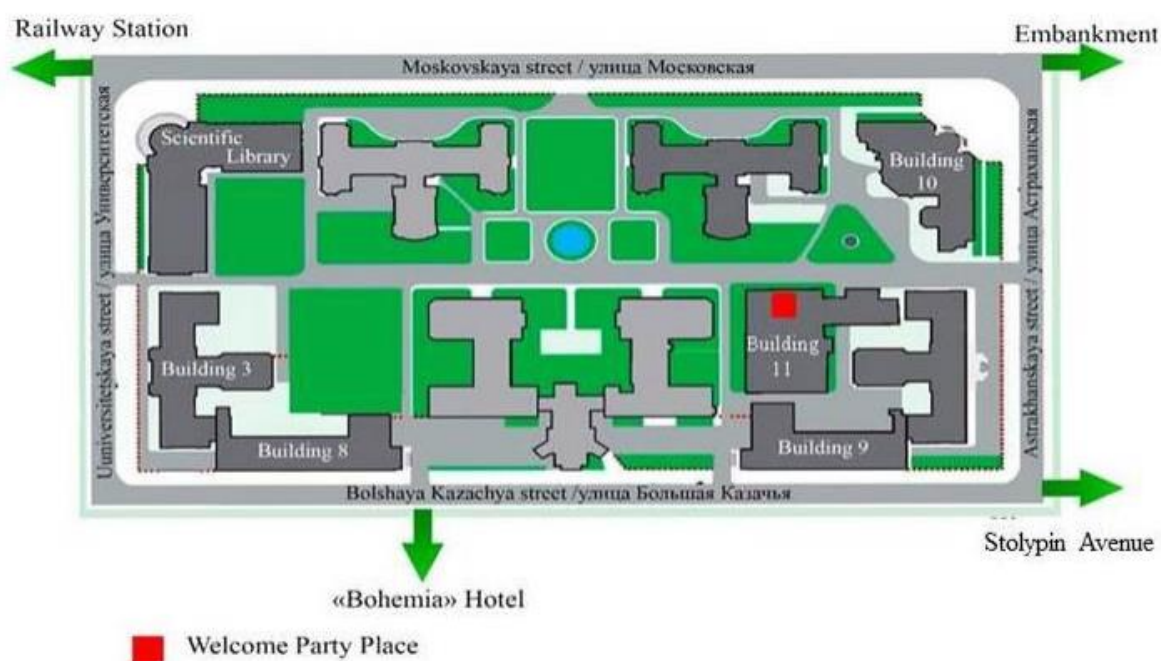
In cooperation with

- Russian Society for Photobiology
- Biophotonics.World - The Worldwide Consortium Biophotonics4Life
- EPIC – European Photonics Industry Consortium
- D.S. Rozhdestvensky Optical Society of Russia

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- Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, RAS, Russian Science Foundation grant No. 21-74-30016
- INJECT RME LLC, Saratov, Russia
- SPE Nanostructured Glass Technology, Saratov, Russia

The venue for our conference is the campus of the SSU, with its main building located at 83 Astrakhanskaya Street, Saratov, Russia.



General secretary of the SFM-24

Elina A. Genina (eagenina@yandex.ru)

Chair of Saratov Fall Meeting-2024

Valery V. Tuchin (tuchinvv@mail.ru)

<https://sfmconference.org>