

## International Conference PhysicA.SPb/2023

The International Conference PhysicA.SPb was held in St.Petersburg on 23–27 October 2023. The conference continues the tradition of St.Petersburg seminars on physics and astronomy, which originated about thirty years ago, in the mid 90s. This year, it gathered more than 400 participants from different regions of Russia, as well as from UK, France, Belarus, Azerbaijan, South Korea and China. The Conference was attended by scientists from universities and research institutions, as well as PhD and postgraduate students conducting research in various fields of physics and astronomy. The Program Committee of PhysicA.SPb traditionally pays great attention not only to the fundamental but also to the applied significance of the presented papers, which allows to bring together the whole spectrum of physical sciences, including astrophysics, plasma physics, solid state physics, semiconductor physics, and biophysics. The unification of different scientific topics within the framework of one conference gives a powerful impetus for the formation of new and development of existing areas of research. Due to this, PhysicA.SPb attracts keen interest from Russian and foreign scientists.

Traditionally, together with the Conference, the International School Laser PhysicA.SPb was organized with the support of the Russian Science Foundation (project No. 21-72-30020). The School was devoted to the physics of lasers, laser spectroscopy, physics and technology of semiconductors used for development of laser sources and detectors. Within the framework of the School, lectures were given on modern progress in photonics and on technologies of research and development of semiconductor heterostructures. Special attention was paid to biomedical applications of infrared and terahertz radiation. Lectures at the School were delivered by the prominent scientists representing national and foreign research centers, leading in the research and development of sources and detectors of infrared and terahertz radiation.

This issue of the Journal presents extended abstracts of presentations delivered at PhysicA.SPb/2023. The review of manuscripts was organized by the Chairs of the Conference Organizing and Program Committees and was carried out through the efforts of the Sectional and Technical Editors: A.V. Ivanchik (Corresponding Member of the Russian Academy of Sciences, Ioffe Institute), P.A. Ryabochkina (Ogarev Mordovia State University), S.V. Morozov (IPM RAS), Yu.G. Kusraev (Ioffe Institute), I.A. Sokolov (Ioffe Institute), N.A. Pikhtin (Ioffe Institute), A.F. Tsatsulnikov (Ioffe Institute), N.V. Teplova (Ioffe Institute), S.V. Nekrasov (Ioffe Institute), G.M. Savchenko (Ioffe Institute), P.A. Alekseev (Ioffe Institute), M.S. Dunaevskiy (Ioffe Institute), M.O. Nestoklon (Ioffe Institute), A.V. Dunaev (Orel State University), A.B. Ustinov (ETU LETI), A.M. Kalashnikova (Ioffe Institute), I.A. Mitropolsky (NRC „Kurchatov Institute“ — PNPI), E.D. Cherotchenko (Ioffe Institute), E.A. Kognovitskaya (Ioffe Institute), N.Yu. Gordeev (Ioffe Institute), and D.R. Khokhlov (Corresponding Member of the Russian Academy of Sciences, Lomonosov Moscow State University).

Chair of the Program Committee *N. S. Averkiev*

Chair of the Organizing Committee *G. S. Sokolovskii*