

International Conference PhysicA.SPb/2025

International Conference PhysicA.SPb, which continues the tradition of St. Petersburg seminars on physics and astronomy that was born approximately thirty years ago, in the mid-90s, was held in St. Petersburg on October 20–24, 2025. This year the Conference brought together about 400 participants from various regions of Russia, as well as from Great Britain, France, Italy, Kazakhstan, South Africa, and China. The Conference is attended by scientists from higher education institutions and scientific organizations, as well as students and postgraduates conducting research in various fields of physics and astronomy. As has always been the case, the Program Committee of PhysicA.SPb devotes much attention to both fundamental and applied importance of the presented reports, providing coverage of the entire spectrum of physical sciences (astrophysics, plasma physics, solid-state physics, semiconductor physics, and biophysics) within a single conference. This integration of various scientific topics within one conference facilitates the formation of new research areas and progress in existing fields. Owing to this, PhysicA.SPb attracts great attention of Russian and foreign scientists.

In continuing tradition, International School Laser Physics.SPb was held together with the Conference. This School is supported by the Russian Science Foundation (project No. 21-72-30020-P) and focused on the physics of lasers, laser spectroscopy, and physics and technology of semiconductors used to produce sources and detectors of laser radiation. Its program includes lectures on modern advances in photonics and technologies for fabrication and examination of semiconductor heterostructures. Special attention is paid to biomedical applications of infrared and terahertz radiation. Leading scientists from Russian and foreign scientific centers spearheading the development and study of sources and detectors of infrared and terahertz radiation are invited to give lectures at the School.

This issue of Technical Physics Letters starts the publication of extended abstracts of reports presented at PhysicA.SPb/2025. The review of manuscripts was organized by the chairmen of the Conference Organizing and Program Committees, who thank the section and technical editors for their efforts: A. V. Ivanchik (corresponding member of A.V. Ivanchik (Ioffe Institute), P.A. Ryabochkina (Ogarev Moscow State University), S.V. Morozov (Institute of Physics and Mathematics, RAS), I.A. Sokolov (Ioffe Institute), N.A. Pikhtin (Ioffe Institute), A.Yu. Azbel (Ioffe Institute), A.F. Tsatsulnikov (Ioffe Institute), S.O. Slipchenko (Ioffe Institute), K.Yu. Golenitsky (Ioffe Institute), N.V. Teplov (Ioffe Institute), G.M. Savchenko (Ioffe Institute), P.A. Alekseev (Ioffe Institute), M.S. Dunaevsky (Ioffe Institute), M.O. Nestoklon (Ioffe Institute), A.V. Dunaev (Orel State University named after I.S. Turgenev), A.B. Ustinov (Saint Petersburg Electrotechnical University „LETI“), A.M. Kalashnikov (Ioffe Institute), A.A. Shimidt (Ioffe Institute), M.V. Tchernyshov (Baltic State Technical University „VOENMEKH“), E.D. Tcherotchenko (Ioffe Institute), E.A. Kognovitskaya (Ioffe Institute), N.Yu. Gordeev (Ioffe Institute) and D.R. Khokhlov (Associate Member of RAS, Lomonosov Moscow State University). the Russian Academy of Sciences, Moscow State University).

Chairman of the Program Committee N. S. Averkiev

Chairman of the Organizing Committee G. S. Sokolovskii