



Institute of Spectroscopy of the Russian Academy of Sciences is 55 years old



The Institute of Spectroscopy of the Russian Academy of Sciences (RAS) is the legal successor of the Institute of Spectroscopy of the USSR Academy of Sciences (ISAN), which was set up in 1968, and is part of the Physical Sciences Division of the RAS. ISAN has about 150 staff members, 90 of whom are researchers, including 22 Doctors of Science and 40 Candidates of Science (PhDs).

The fame and worldwide recognition of ISAN was brought by *Sergei Leonidovich Mandel'shtam* (theory of the spectra of highly ionized atoms, analytical spectroscopy), *Vladilen Stepanovich Letokhov* (pioneering works on ultrahigh-resolution spectroscopy, time and frequency standards, selective laser photochemistry and multiphoton excitation of molecules, laser isotope separation, laser cooling of atoms, optical lattices, atomic optics and nanoplasmonics), *Roman Ivanovich Personov* (burning holes in the spectra of molecules, spectroscopy of single molecules), *Vladimir Moiseevich Agranovich* (theory of excitons, polaritons, nonlinear optical properties of organic and semiconductor materials, theory of hybrid nanostructures) and other prominent ISAN scientists.

In 2018, in honor of the 50th anniversary of ISAN, the European Physical Society (EPS) awarded the institute the status of Historic Site for the above discoveries and breakthrough results. In total, 45 institutes and laboratories in Europe have been awarded this status, and ISAN is the first Russian institute to receive this distinction. Also in 2018, the EPS, together with the Russian Academy of Sciences, established an award—the V S Letokhov Medal—for outstanding achievements in the area of laser radiation–matter interaction in recognition of the merits of the Russian physicist and the influence of his work on the development of modern physics. ISAN is a ‘crystallization center’ for professionals in the field of photonics, spectroscopy, spectral analysis, and optical spectral instrumentation.

ISAN is a long-time organizer of congresses on spectroscopy with participation of foreign scientists and specialists, as well as of many conferences and scientific schools on optical spectroscopy, and co-organizes conferences on medical physics in Troitsk.

The main areas of ISAN research currently include:

- fundamental investigations of the spectra of atoms, multiply charged ions, plasmas, molecules, clusters, liquids, crystals and films, nanostructures, metamaterials, surfaces of solids, bioobjects, including laser spectroscopy with the active action of light on matter, and analytical spectroscopy;
- development of new methods of traditional and laser spectroscopy with record high spectral, temporal, and spatial resolution and sensitivity; study of objects at ultralow and high temperatures, in magnetic fields, and at static pressures; spectral-kinetic measurements of the characteristics of fast processes; production and study of highly nonequilibrium states of matter;
- development and fabrication of unique instruments, spectral equipment, analytical tools, recording systems, and measurement techniques to support the main areas of fundamental research and practical applications.



Most of the devices and methods developed at the institute are original and promising for applications in the economy, defense, medicine, and ecology. According to foreign sources (SCImago Institution Rankings), it is invariably among the top twenty scientific organizations in Russia, with the highest citation index for papers by their scientists, and among the top three institutes in physical sciences (www.expertcorps.ru).

The Editorial Board of the journal *Uspekhi Fizicheskikh Nauk (Physics–Uspekhi)* congratulates the ISAN team on this glorious anniversary and wishes it further success!