

On the 80th birthday of V.S. Letokhov

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Vladilen Stepanovich Letokhov
(10 November 1939–21 March 2009)

Troitsk near Moscow occupies a special place among the cities associated with laser physics, photonics and their applications. It is here that the Institute of Spectroscopy of the Russian Academy of Sciences (RAS) is located, in which outstanding Soviet and Russian scientist Vladilen Stepanovich Letokhov worked. In honour of the 80th anniversary of his birth, the International Symposium on Laser Spectroscopy, organised with the support of the Russian Foundation for Basic Research, was held at the Institute of Spectroscopy on November 11–12, 2019. The program of the Symposium covered the most relevant areas of laser spectroscopy of atoms, ions, molecules, clusters, condensed matter, optics and spectroscopy of single nanoobjects and nanostructures, as well as the development and application of new spectral methods

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Received 18 February 2020
Kvantovaya Elektronika 50 (3) 205 (2020)
Translated by V.L. Derbov

and optical instruments for solving fundamental and applied problems.

In addition to the Symposium, the Quantum Electronics journal, in which Vladilen Stepanovich was a member of the editorial board from 1974 until his death in 2009, decided to organise a special issue dedicated to the 80th birthday of V.S. Letokhov. The papers included in the issue are authored by leading teams of experimentalists and theoreticians of the Institute of Spectroscopy of RAS, Lebedev Physical Institute of RAS, Rzhanov Institute of Semiconductor Physics of Siberian Branch of RAS, as well as scientists from many cities of Russia and foreign countries – those who were fortunate to work together with Vladilen Letokhov, communicate with him, be aware of his scientific achievements.

The results of the Symposium and the present issue of Quantum Electronics clearly demonstrate that the scientific ideas laid down in the works of V.S. Letokhov not only influenced the development of many areas of laser physics, but also determine their current state.

Recognition of the works of V.S. Letokhov at the international level is difficult to overestimate. This became one of the main factors in the European Physical Society (EPS) in 2018 awarding the Institute of Spectroscopy of RAS (ISAN) the honorary title “Historic Site”. ISAN became the second scientific organisation in Russia (after the Joint Institute for Nuclear Research in Dubna), awarded such a high rank. As stated in the EPS press release, ISAN “is also the place where in a creative atmosphere, a team of talented young researchers inspired by Vladilen Letokhov made pioneering experiments on laser trapping and cooling of atoms, which paved the way to a whole bunch of new directions in physics, as well as on laser isotope separation using selected laser excitation of atoms and molecules, which finally led to the development of a new field of laser chemistry.” In the same year, in recognition of the achievements of the Russian physicist and the impact of his work on the development of modern physical science, EPS instituted a new highest award – Letokhov medal for exceptional achievements in laser–matter interaction. Starting in 2019, this medal will be awarded once every two years at major conferences in Europe. In 2019, at the 13th Conference on Atomic, Molecular Physics and Photonics in Florence, the first Letokhov medal was awarded to Prof. Ferenc Krausz, director of Max Planck Institute of Quantum Optics, for his pioneering work in the field of attosecond pulses and their practical applications. This is the only foreign award for scientific achievements named after a Russian scientist! In addition, back in 2012, the Rozhdestvensky Optical Society of Russia instituted a medal named after V.S. Letokhov, which is awarded to young Russian scientists for achievements in the field of laser physics and photonics.