

Vyacheslav Vasil'evich Osiko



An outstanding Russian scientist, Academician Vyacheslav Vasil'evich Osiko was 80 on 28 March 2012.

Vyacheslav Vasil'evich began his scientific carrier at the Laboratory of Luminescence of P.N. Lebedev Physics Institute, Academy of Sciences of the USSR after graduating from D.I. Mendeleev Moscow Chemical Technological Institute in 1955. V.V. Osiko defended his Ph.D. thesis in 1960, and in 1961 he became the head of the Department of Single Crystals, which was pioneered by academicians A.M. Prokhorov and N.G. Basov. Owing to the enthusiasm of the young scientist, who possessed the scientific and organising talents, the department quickly became one of the leading departments of P.N. Lebedev Physics Institute, which later evolved into the Research Centre of Laser Materials and Technologies of General Physics Institute (GPI), Russian Academy of Sciences.

V.V. Osiko made an invaluable contribution to the foundation and development of a new scientific field in our country – the technology of laser materials, which forms the basis of the development of laser instrument making and applications of lasers in the national economy. Vyacheslav Vasil'evich and his students created several dozens of new laser crystals and glasses, which found wide applications both in our country and abroad. Under the supervision of V.V. Osiko, new methods were developed for studying the structure of solids. The research team supervised by Vyacheslav Vasil'evich performed fundamental studies of energy relaxation processes in rare earth and transition metal-doped crystals and glasses. These studies resulted in the fabrication of highly concentrated laser media, which dramatically increased the output efficiency of solid-state lasers.

One of the greatest achievements of Vyacheslav Vasil'evich that is acknowledged worldwide, was the development of a new method for melting and crystallisation of high-melting dielectrics using a direct induction melting in a cold crucible. This method led to the synthesis of a number of new crystalline materials with unique properties. The most known of these materials, fianites, found wide application, now being provided globally, one of the leading places

in the world. V.V. Osiko was awarded the Lenin Prize for these studies in 1980. As a result of these works, there was developed an experimental and industrial technology of synthesis of high-strength, wear-resistant nanostructured crystals made of partially stabilised zirconia. In a series of electrosurgical 'Plasmatom' devices developed by the Research Centre of Laser Materials and Technologies of GPI, RAS, in recent years, use is made of the tools based on these materials.

V.V. Osiko and his collaborators have recently developed a new technology for producing nanostructured fluoride optical ceramics, which behave as single crystals (in their optical, spectroscopic and lasing properties) but substantially exceed them in mechanical strength. Use of fluoride ceramics opens up a possibility of fabricating new generation scintillators and lasers.

V.V. Osiko pays much attention to the science organisation and training of young scientists. He is a member of the Bureau of the Department of Nanotechnologies and Information technologies, RAS; a supervisor of the Section of Crystal Formation and Structure at the Council on Physics of Condensed State, RAS; a chairman of the Commission on Foreign Patenting, RAS; a chairman of the RAS – Samsung Committee; a member of a number of organisations such as the Expert Commission on Federal Target Programs, the Editorial Board of the 'Proceedings of the Russian Academy of Sciences' journal, the D.S. Rozhdestvenskii Optical Society, the American Optical Society, Materials Research Society (USA); a chairman of the Qualification Board of the Higher Attestation Commission of the Ministry of Education of Russia; a vice-president of many Russian and international scientific conferences.

Vyacheslav Vasil'evich Osiko is a founder of a world-renowned school of laser materials technology. Among his students are famous Russian and foreign scientists, members of RAS and CIS Academies, many doctors and candidates of sciences. Vyacheslav Vasil'evich is one of the founders and supervisors of the Scientific-Educational Centre of A.M. Prokhorov Genral Physics Institute, RAS – D.I. Mendeleev University of Chemical Technology of Russia. Under his active participation the laboratories of GPI successfully cooperate with the Kovrov State Technological Academy, Mordovia State University, Bryansk State Technical University.

V.V. Osiko is the author of more than 500 scientific papers, several dozens of patents and inventions, and several monographs published not only in Russian but also in English and Chinese.

V.V. Osiko was awarded the Order of the Red Banner of Labour (1976), the Lenin Prize (1980), the Prize of the Council of Ministers of USSR (1991), the Honorary Diploma of the D.S. Rozhdestvenskii Optical Society (1991), the Lodiz Prize of the International Organisation on the Crystal Growth (1992), the Order of Honour (2002), and the E.S. Fedorov Prize (2003).

The scope of interests of Vyacheslav Vasil'evich is very wide. He knows and loves fiction and music. For many years Vyacheslav Vasil'evich has been a member of the Council of the Central House of Scientists of RAS.

Friends, colleagues and former students as well as the Editorial Council, Editorial Board, and Editorial Office of Quantum Electronics cordially congratulate Vyacheslav Vasil'evich on his anniversary and wish him good health, happiness, and new scientific achievements.