

Vyacheslav Vasil'evich Osiko (on his 60th birthday)

V. I. Aleksandrov, T. T. Basiev, V. G. Vesel, Yu. K. Voron'ko, B. I. Denker,
E. Dianov, E. V. Zharikov, P. P. Pashinin, A. M. Prokhorov, and I. A. Shcherbakov

Usp. Fiz. Nauk **162**, 165–167 (April 1992)

Vyacheslav Vasil'evich Osiko was born in Leningrad on March 28, 1932. After graduating from the Department of Physicochemical Engineering at the D. I. Mendeleev Moscow Chemical Engineering Institute in 1954, he began his scientific career in the Luminescence Laboratory of the P. M. Lebedev Physics Institute. In 1960, V. V. Osiko defended his candidate's dissertation, and in 1961 he was assigned the task of organizing a division of single crystals at the Physics Institute of the Academy of Sciences. A small group of enthusiasts, who worked first on the technology of laser crystals and then not only laser and not only crystals, soon formed. At first the division was called the Scientific-Industrial Division, whose purpose was only to service requirements. Everything started with the "dirty work" of fabrication of graphite crucibles and alteration of drilling lathes into equipment for growing perfect single crystals.

Among most scientific and allied workers technology was considered to be second rate science, if a science at all. All Vyacheslav Vasil'evich's subsequent work proved that this was one of the greatest and most expensive errors. Fortunately, at the Physics Institute of that time by no means all directors committed this error and not all efforts of the young director of the division in the area of development of technology of crystalline materials came to naught. At that Vyacheslav Vasil'evich understood and formulated the essence of what is now called high technology. Only an organic merging of the science of crystal growing, solid-state physics, spectroscopy, and materials science could ensure that our solid-state-laser physics would assume a leadership position in world science. The foundation for this was laid in 1961 by the formation, at the Physics Institute of the Academy of Sciences, of the Scientific-Industrial Division of Single Crystals under the direction of Vyacheslav Vasil'evich Osiko. By the end of the 1960s and the beginning of the 1970s the single-crystal division became a full-fledged scientific sector of the Laboratory of Oscillations at the Physics Institute. No one was surprised that with respect to the number of scientific publications per person the single-crystal sector has no equals at the Institute. Research in the physics and technology of synthesis of new laser materials largely determined the foundation of quantum electronics. Approximately one-fourth of all well-known laser crystals were synthesized under the scientific direction of V. V. Osiko. New types of lasers with unique parameters were developed based on these crystals.

Under the initiative of Vyacheslav Vasil'evich the scientific subject area of the subdivision greatly expanded and continues to expand to this day. The spectroscopy of inhomogeneous broadening and splitting, selective laser spectroscopy, radiative and nonradiative relaxation processes,



Vyacheslav Vasil'evich OSIKO

nonradiative transport and migration of electronic excitations, and high-temperature Raman scattering spectroscopy—these are only a partial list of fundamental physical directions and problems to which V. V. Osiko's school has made contributions that are recognized by scientists worldwide. The publications in the field of direct hf melting of nonmetallic materials in a cold container are well-known worldwide. In our and other countries an industry has been formed of especially refractory single crystals, glasses, and ceramic materials. Fianites, c-ox crystals, have been exported for a long time, and a large number of licensing agreements and contracts have been made with firms in developed capitalistic countries. In all large cities of the world, including such exotic (for us) cities as Seoul and Hong Kong, it is difficult to find a reputable jewelry store that does not carry fianite items.

The jewelry industry is the largest but not the most important user. In the last few years interest in fianites has increased sharply in connection with their use as substrates for films of high- T_c superconductors and semiconductors. The day is near when crystals of the fianite type will find wide application as constructional materials.

Official recognition of Vyacheslav Vasil'evich grew together with the number of publications, number of students, and expansion of the range of scientific interests. In 1968 he became a Doctor of Science, in 1972 he became a Professor, in 1981 he was selected as a Corresponding Member and in 1987 an Academician of the Academy of Sciences of the USSR. He has been awarded the highest scientific prizes of our country: the Lenin Prize and the Council of Ministers Prize. It is impossible to list all his numerous, including also international, duties. We note only that he has participated for many years in the work of the international organization on growing crystals and that he is a member of the European Physical Society.

Vyacheslav Vasil'evich's influence and authority are

spreading far outside the Division of Solid-State Physics, which he directs, and the Institute of General Physics, of which he is the Deputy Director. Graduates of his school today work in many scientific centers of the world and direct their own scientific schools.

By his work and life Vyacheslav Vasil'evich has created not only a scientific school of physicists and technologists, but he has also formed the world outlook of an entire generation of scientists, who are proud to be his students.

We wish Academician of the Russian Academy of Sciences Vyacheslav Vasil'evich Osiko happiness, good health, new creative successes, and students worthy of him.

Translated by M. E. Alferieff