Kirill Sergeevich Aleksandrov (on his sixtieth birthday)

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Academician Kirill Sergeevich Aleksandrov celebrated his sixtieth birthday on January 9, 1991. He is a prominent Soviet physicist, outstanding scientist in crystallography and crystal physics, and director of the L. V. Kirenski Institute of Physics of the Siberian Division of the USSR Academy of Sciences.

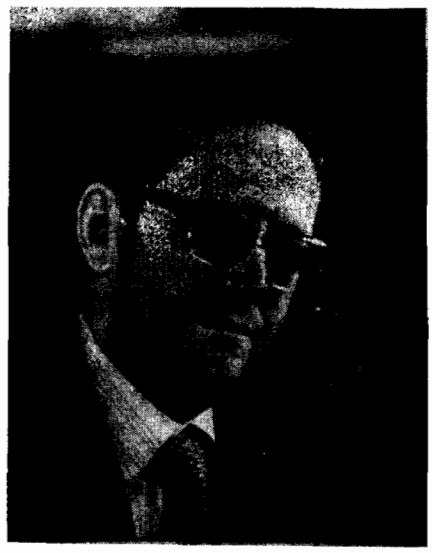
K. S. Aleksandrov was born in Leningrad. In 1948 he began his studies at the V. I. Ul'yanov Electrical Engineering Institute in Leningrad, from which he graduated with distinction. His research work began as a postgraduate at the Institute of Crystallography of the USSR Academy of Sciences under the guidance of Academician A. V. Shubnikov. In 1958 he was invited to join the recently founded Institute of Physics of the Siberian Division of the USSR Academy of Sciences in Krasnoyarsk.

The first fundamental results obtained by K. S. Aleksandrov were related to the laws of propagation of elastic waves and to elastic properties of anisotropic media. He detected and investigated the phenomena of internal conical refraction and rotation of the plane of polarization of elastic waves, studied reflection and refraction of elastic waves in various media, found ways for determination of the elasticity tensors of media of arbitrary symmetry, and built new ultrasonic devices for the investigation of elastic properties of crystals, textures, and rocks. This work led to development of a new branch of the physics of crystals in the form of acoustic crystallography and was used in particular to develop ultrasonic delay lines in radioelectronics.

The work of K. S. Aleksandrov on structural phase transitions is well known. Comprehensive experimental investigations and a parallel development of the theory enabled him to establish the nature and mechanism of structural phase transitions in many ferroelectrics and related crystals, to discover new ferroelectrics, and to propose an explanation of consecutive structural transitions of the ordering type (model of two or more sublattices, model with a multiminimum potential) and of the displacive type (condensation of several soft modes of different origin).

This work was a major contribution to the understanding of the nature of instabilities of crystal structure, possible structural distortions, and associated changes in dielectric, optical, and other properties of many crystals used in radioelectronics, optoelectronics, and acoustoelectronics, information technology, and other applications. This work also led to the development of methods used in the search for and deliberate modification of properties of promising crystals, and creation of new materials for acoustooptic and magnetooptic applications and devices based on the use of these materials.

The purposeful investigations of phase transitions, structure, and crystal chemistry of solids, together with a deep understanding of the meaning of theoretical models enabled K. S. Aleksandrov to develop a unified approach to the description of phase transitions in such large families of crystals as layer perovskites and crystals of the $A^1A^2BX_4$ type.



KIRILL SERGEEVICH ALEKSANDROV

The scientific work of K. S. Aleksandrov is widely known: he is the author of 250 publications, including five monographs.

In 1989 he and several of his colleagues were awarded the State Prize of the USSR for the investigation of new materials and the development of new devices based on them.

K. S. Aleksandrov is active in teaching young scientists: there were 25 candidates of science among his students. For many years now he has been holding the Chair of Physics at the Krasnoyarsk University.

Academician K. S. Aleksandrov is a member of the Joint Scientific Council on Physicotechnical Sciences of the Siberian Division of the USSR Academy of Sciences, chairs the Scientific Council of the USSR Academy of Sciences on Physics of Ferroelectrics and Dielectrics, is a member of a number of other specialist councils, and is also a member of editorial boards of the Soviet journals *Kristallografiya* and *Fizika Tverdogo Tela*, and also of several international journals.

He was awarded the Order of Friendship of Nations, and two Orders of the Red Banner of Labor.

On his sixtieth birthday we express to Kirill Sergeevich our sincere wishes of good health and new successes to the benefit of the Soviet and world science.

Translated by A. Tybulewicz

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