

Personalia*ALEKSANDR ALEKSEEVICH LEBEDEV (1893-1969)*

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THE outstanding physicist and scientist, Hero of Socialist Labor, Academician Aleksandr Alekseevich Lebedev died in the night of 15 March 1969 after a long illness.

Lebedev was born on 27 November 1893 in Ponevezh; his father was principal of a secondary school. His secondary education was completed in St. Petersburg, where his family moved after his father's death. In 1916 he was graduated from the Physics and Mathematics Department of the St. Petersburg University. His gifts and unusual experimental capabilities have attracted deserved attention, and soon after graduation from the university he was retained by the Physics Department to train for a professorship.

While still in the university, and later in 1918 in the State Optical Institute created by D. S. Rozhdestvenskiĭ, Lebedev performed his trail-blazing research on the theory of the vitreous state. Connecting the changes of the refractive index and of the expansion coefficient observed in annealing of optical glass with the structural changes of the composition of the glass, Lebedev established the crystallite theory of the vitreous state, which was brilliantly confirmed later by the appearance of new glass-crystal materials—pyrocerams.

Lebedev's circle of scientific interest continuously expanded during the years. He himself, as well as his many students and successors, carried out a variety of investigations on nonreflecting optical elements, on the introduction of interference methods to metrology, on atmospheric optics and the determination of the long-wave radiation of the sun, and on high-accuracy distance measurements by determining the time consumed in the passage of light (optical radar).

He is responsible for many original and very useful developments for optical devices for the photography of rapid processes. One of these investigations was awarded a State Prize of the USSR. Under his direction, work was carried out on the creation of lasers and new sources of light.

For many years, Lebedev paid much creative effort and attention to photoconductivity in semiconductors. He established many regularities connecting the photoelectric characteristics of semiconducting layers and photoresistances with their structure, and developed various radiation receivers, which have found great practical use. At the same time, highly sensitive thermal radiation receivers were developed under his direction.

Electron-optics research initiated by Lebedev in 1930, served as a starting point for numerous and varied studies, interest in which was maintained by him to his very last days. Work was organized on the design of various electron-optical systems, on the diffraction and interference of electrons, and on the development of optical systems for numerous electron-



optical instruments and devices. For directing work on the creation of the first domestic electron microscope, Lebedev was awarded a State Prize of the USSR in 1947.

An outstanding feature of the variety of scientific activity of Lebedev and his school was the fact that his research was greatly task oriented, and most of his developments found immediate practical application.

His 50 years of scientific activity in the State Optical Institute was combined by Lebedev with work at the Leningrad State University, where he was in charge of the Electrophysics Department since 1947.

During the first postwar years, science and industry were in particular need of research physicists with broad experience. Being in charge of large scientific divisions in other institutions, Lebedev understood better than anyone else the need for training such groups. He therefore concentrated his main attention on the organization of scientific laboratories in his department. This was not an easy task. During the time of the war, the department of electrophysics lost

all its pre-war staff, and the research materials were completely damaged. Lebedev devoted many efforts to the organization of a practically new department. After 20 years, the electrophysics department has turned into a major scientific organization with a modern experimental base.

From 1950 to 1957, Lebedev was a delegate to the Superior Soviet of the USSR, and in 1953 through 1956 he was the deputy chairman of the Council of the Superior Soviet of the USSR.

Lebedev was awarded many governmental prizes, including four Orders of Lenin. In 1957 he was given the title of Hero of Socialist Labor. He won a Lenin Prize and two State Prizes.

Many scientific conference and conventions were

held under his direction. For many years he was the editor and member of editorial staffs of a number of scientific and technical journals.

No one who ever worked with Lebedev will forget his ability of pointing out, with the aid of a few remarks or questions, a new vital trend of work, and when the first success was reached he himself remained in the shadow.

Selflessly devoted to science, a true citizen and patriot of his country, modest and simple, accessible to everyone who needed him, Academician Lebedev worked without stopping to the last days of his life.

Translated by J. G. Adashko