

Moisei Izrailevich Korsunskii (obituary)

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Soviet physics has suffered a great loss. Moisei Izrailevich Korsunskii, a noted scientist, Academician of the Kazakh Academy of Sciences, Professor, and Doctor of Physico-mathematical sciences, died suddenly on October 6, 1976.

Korsunskii was born at Rostov-on-Don on April 19, 1903. His working life began in 1920, when he tutored in mathematics. In 1922, he moved to Leningrad, where he enrolled in the Physics and Mechanics Department of the Polytechnic Institute. In 1923, while still a second-course student, he began work in the x-ray laboratory of the Physico-technical Institute (LFTI).

Korsunskii graduated from the Leningrad Polytechnic Institute in 1926 and completed graduate studies at the LFTI in 1928. After graduation from the Institute, he worked in the LFTI and headed a department at the Polytechnic Institute, in which he set up an x-ray laboratory. This was the first of many laboratories and departments that Korsunskii was to organize.

Work on the program to develop physics on the periphery was started in the late 1920s, and under this program Korsunskii moved in 1929 to Tomsk, where he organized first an x-ray laboratory and then a nuclear laboratory at the Siberian Physico-technical Institute. At the same time, he headed the Department of Experimental Physics in the Physico-mathematical Faculty of Tomsk State University.

This was followed by scientific, teaching, and organizational work back in Leningrad, where he headed a laboratory in the Leningrad Electrophysics Institute and at the same time served as professor in the Experimental Physics Department of the Industrial Institute. From 1938 to the outbreak of the war, he was at Khar'kov, directing the USSR Academy of Sciences Impact Stresses Laboratory, which merged in 1939 with the Ukrainian Physico-technical Institute (UFTI). Korsunskii was awarded the academic degree of Doctor of Physico-mathematical Sciences in 1940.

During the Second World War, after the UFTI had been evacuated to Kazakhstan, Korsunskii worked on defense-related problems and did much to advance nonferrous metallurgy in Kazakhstan. Following re-evacuation (April 1944), Korsunskii headed a Division of the UFTI, chaired a department in the Institute of Cements at the Aviation Institute, and, beginning in 1952, also worked at the V. I. Lenin Polytechnic Institute, where he set up an x-ray laboratory and gas-discharge and semiconduc-



tor-techniques problems laboratories.

After his election to the Kazakh Academy of Sciences, Korsunskii worked from 1962 to the end of his life at Alma-Ata, where he organized the Division of Solid State Physics and semiconductors in the Nuclear Physics Institute of the Kazakh Academy of Sciences and the Department of Solid-State Physics at the Kazakh State University.

Korsunskii's career was productive and many-faceted. His numerous scientific studies encompass the following fields of physics: x-rays, nuclear physics, solid-state and semiconductor physics, electron optics, and physical instrumentation. They also include studies on analysis of the physical composition of matter with the aid of x-rays, papers on the development of pulsed methods of accelerating charged particles for nuclear-physics problems, and papers bearing on the production of high ion currents. His investigations of the motion of electric charges in inhomogeneous electrostatic and magnetic fields, which pointed to the possibility of designing and building energy analyzers of the deflecting type with high resolution, are quite prominent.

During his last ten years, Korsunskii devoted much time to the conception and development of a model of the electronic structure of transition metals (the CLO model) and their alloys, stressing the essential difference

between the physical properties of these substances and the corresponding properties and electronic structures of nontransition metals. This model made it possible to explain a whole series of features of x-ray emission bands and the characteristic energy-mass spectra of electrons, to calculate the dispersion curves of phonon spectra, to estimate electron-phonon interaction parameters, and to evaluate the role of the optical branches of phonon spectra in the high critical parameters of the superconductive state.

Korsunskii paid an unusual amount of attention to the phenomenon of anomalous photoconductivity, which he discovered and which is being used more and more widely in semiconductor devices (for example, photoresistors, colored temperature indicators), whose operation is based on the long "spectral memory" of the anomalous photoconductors, which does not depend on the intensity of the incident light, but only on its wavelength.

Korsunskii published over 300 papers and authored a number of monographs and textbooks that have been used by several generations of Soviet physicists. Among them are the first Soviet monograph on x-ray physics and the monographs "The Neutron," "Isomerism of Atomic Nuclei," and "Anomalous Photoconductivity." In these books one can clearly sense Korsunskii's pro-

found approach to complex scientific problems and his skill in formulating the most difficult problems of contemporary physics in simple and accessible fashion. This explains why his outstanding popular-science book "The Atomic Nucleus" has been republished several times in the USSR and in many foreign countries. His textbook "Optics, Atomic Structure, and The Atomic Nucleus" also enjoys wide popularity.

Korsunskii shared his knowledge with his students generously and skillfully, forming a broad scientific school. His students, among whom there are 40 Candidates and Doctors of Sciences, are working successfully in many of the Soviet Union's scientific and educational institutions.

An eminent and talented scientist, Korsunskii was a kindly man who loved his work and remained endlessly devoted to his science to the last minute of his life. His spiritual warmth and sympathy seemed to have no limits.

The glowing memory of Moisei Izrailevich will forever remain in the hearts of many who, at one time or another, were fortunate enough to meet him.

Translated by R. W. Bowers