

Georgii Vladimirovich Rozenberg (Obituary)

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Professor Georgii Vladimirovich Rozenberg, chairman of a department of the Institute of Atmospheric Physics, Academy of Sciences of the USSR, doctor of physicomathematical sciences, a remarkable man, and an eminent scientist in the field of physical and atmospheric optics, died on December 9, 1982.

He was born on April 29, 1914, in Smolensk, to the family of an electrical engineer. After completing school he worked as a laboratory assistant in physics laboratories for several years, and in 1932 he entered the Physics Department at Moscow State University. Beginning in 1938, he worked at the Physics Institute of the Academy of Sciences of the USSR under the guidance of G. S. Landsberg; he later worked in the atmospheric optics laboratory of the Institute of Theoretical Geophysics, Academy of Sciences of the USSR.

In October 1941 Rozenberg volunteered for the front, and until 1945 he was in the regular army. For his service in the Great Patriotic War (World War II) he was awarded the Order of the Red Star, the Order of the Patriotic War, Degree II, and medals.

After the war he completed work for his first graduate degree, defending his candidate's dissertation in 1947. In 1955 he defended his doctoral dissertation. From 1956 to 1982 he headed the department of atmospheric optics, which was subsequently renamed the department of the physics of atmospheric aerosols, of the Institute of Atmospheric Physics, Academy of Sciences of the USSR.

His outstanding erudition, his breadth of opinions and scientific interests, his energy, and his unusual capacity for work (he published more than 200 papers and four monographs) won him worldwide recognition.

One of the founders of statistical optics, Rozenberg developed the basis of algebraic optics and formulated a matrix radiation-transport equation. He discussed the concepts of photometry from the standpoint of electrodynamics. He discovered several very important results in the optics of inhomogeneous media. He developed a semiempirical theory of radiation transport and the fundamentals of the spectroscopy of dispersed media. His results have found many applications in work on the optics of clouds, planetary atmospheres, etc.

He made an important contribution to the development of methods for optical sounding of the earth's atmosphere. In addition to carrying out extensive and successful research on twilight sounding, he proposed and developed many methods for sounding the atmosphere, clouds, and the underlying surface from space. His



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work on searchlight sounding of the atmosphere also remains quite pertinent.

With his colleagues, he devoted more than a quarter of a century to studying the properties of atmospheric aerosols and developing optical methods for studying them. The extensive research carried out under his guidance led to an understanding of the physics of aerosol transformation processes. One important result of this research was the development of an optical model for an aerosol; another was the derivation of a kinetic theory for aerosols. His last years were devoted to developing a new approach to these problems.

Among the results of research carried out under his supervision in the field of hydrooptics we might mention the study of the light scattering matrix of seawater.

An extensive and multifaceted program of research on atmospheric aerosols as a climate-forming and ecological factor was carried out under his scientific and practical guidance. In particular, the international expedition AFAEKS-79 was carried out successfully as part of this program.

Rozenberg developed a large school of scientists in atmospheric optics. Membership in this group is proudly claimed by scientists working in many institutes in Moscow and Leningrad; institutes of the Acad-

emies of Science of Belorussia, Georgia, and Estonia; and, primarily, the department of atmospheric optics which he headed in the Institute of Atmospheric Physics, Academy of Sciences of the USSR.

He deserves great credit for his work in training scientific cadre. Among his immediate students are five doctors and more than 30 candidates of science. Since 1968 he had been a professor at Moscow Physico-technical Institute.

Rozenberg carried out extensive and multifaceted work as an organizer and in scientific publishing. From 1945 to 1962 he was a senior scientific editor of *Uspekhi fizicheskikh nauk* and in 1967 he became a member of its editorial board. In 1963 he became a

member of the editorial board of the journal *Izvestiya AN SSSR, seriya fizika atmosfery i okeana*.

In 1967 he was named a member of the Commission on Radiation of the International Association of Meteorology and Atmospheric Physics.

His country placed high value on his efforts for Soviet science. In 1975 he was awarded the Order of the Red Banner of Labor.

All who knew Georgii Vladimirovich Rozenberg respected him highly and appreciated his purity of opinions and principles, his personal courage, and his nobility of character.

Translated by Dave Parsons