

**Aleksandr Sergeevich Akhmatov (Obituary)**

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Soviet science and the higher educational institutions have suffered a grievous loss—Professor Aleksandr Sergeevich Akhmatov, an eminent Soviet physicist and educator, an honored scientist of the RSFSR died on March 6, 1983.

A. S. Akhmatov was born on June 2, 1897 in Moscow into a doctor's family. On completing secondary school Akhmatov entered the University of Moscow from which he graduated in 1925. Akhmatov began his scientific and working career in 1922 while he was still a third year student at the University of Moscow in the Scientific Research Institute Physics and Biophysics. There at the time the following were working under the direction of Academician P. P. Lazarev: S. I. Vavilov, B. V. Deryagin, M. A. Leontovich, P. A. Rebinder, D. M. Tolstoĭ, V. V. Shuleĭkin, and M. P. Volarovich.

The whole scientific and pedagogic activity of A. S. Akhmatov has been associated primarily with the Moscow Machine-Tool Construction Institute in which he worked from the day of its founding in August 1930 until September 1982. Between 1932 and 1979 he was in charge of the department of physics of that institute. In 1933–1934, when there was practically no domestic production of scientific apparatus, A. S. Akhmatov organized in the institute within the department of physics experimental machine shops devoted to the design and production of precise physics apparatus for higher educational institutions. Production of a number of instruments, in particular of optical instruments, was initiated.

In 1960 A. S. Akhmatov, being the chairman of the scientific-methodological council on physics within the Ministry of Higher and Secondary Special Education of the USSR, proposed to organize within the Institute for Machine-Tool Construction a model instructional physical laboratory for training within it of physicists from technical higher educational institutions. This laboratory, organized in 1965, was widely known and approved by the physicists of the technical higher educational institutions of the USSR.

Alongside with his scientific-educational work in the Institute for Machine-Tool Construction Akhmatov was in charge of the department of physics of the All-Union Industrial Academy for Light Industry (1935), was in charge of the department of physics in the Automechanics Institute (1937), was a professor in the department of physics of the Bauman Moscow Higher Technical College (1939–1949) and during the period 1949–1955 he was the vice-rector in charge of scientific work at the Moscow Engineering-Physics Institute.

A brilliant lecturer and pedagogue, Akhmatov worked for a long time and successfully in preparing scientific and scientific-pedagogical manpower. During the more than fifty years of uninterrupted work in the Moscow Institute for



**ALEKSANDR SERGEEVICH  
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(1897–1983)

Machine-Tool Construction he has made a tremendous contribution to the preparation of engineering manpower for our country.

Akhmatov has published more than 150 scientific papers which primarily lie in the field of properties of matter under conditions at boundaries, i.e., in the state of very thin films on phase surfaces liquids and solids. This field lies at the junction of several sciences: solid state physics, molecular physics and physical chemistry. Under Akhmatov's direction more than 40 of his students prepared and defended candidate and doctoral dissertations. The work of Akhmatov and his students has been devoted to the investigation of the properties of surface layers of metals, boundary friction, lubrication, wear, physical properties and behavior of liquids and solutions in thin capillary gaps, and adsorption of large molecules with chain structure on metallic surfaces. It is particularly in this field of the physics of the boundary state of materials that Akhmatov achieved fundamental results, which made his name widely known not only within the USSR, but also abroad.

The results of his scientific activity over many years are reflected in his monograph "Molecular Physics of Boundary Friction" (Fizmatgiz, M., 1963) in which for the first time in world literature there was given an exhaustive characteriza-

tion of the present state of this field. The monograph has been translated into English (U.S.A.) and has become a handy reference for many research workers and engineers interested in the problem of boundary states.

Akhmatov was the editor (of two volumes) and participated in the translation and preparation for publication of the "Berkeley Course in Physics" in five volumes (Nauka, M., 1971–1978).

At present the publishing house "Nauka" has in preparation a new edition of the aforementioned translation. Also he edited the translation from the English and supervised the publication of the textbook "Physics" (Nauka, M., 1965, 900 p.).

Throughout his life Akhmatov successfully participated in varied community work. For 15 years he was a member of the methodological council in physics and astronomy of the All-Union Society of the RSFSR for the dissemination of political and scientific knowledge. For more than 15 years Akhmatov was the permanent chairman of the scientific-methodological council on physics within the Ministries of Higher and Secondary Special Education of the USSR and of the RSFSR. A new program for a course in physics for technical higher education institutions was developed under his guidance. For more than 20 years Akhmatov was a member of the higher certification commission. In the course of assignments by the higher certification commission and at the

request of scientific research institutes and higher education institutions he has written approximately 400 detailed evaluations of different doctoral and candidate dissertations in physics.

For 15 years as a nominee of the Ministry of Higher and Secondary Education of the USSR and of the Academy of Sciences of the USSR A. S. Akhmatov was one of the seven members of the international commission on physics of UNESCO. As a representative of the USSR he participated many times in various international conferences on physics, and frequently chaired them. In the course of this he presented a number of papers which later appeared in monographs published by UNESCO. During the last 15 years he was a member of the editorial board of the journal "Uspekhi Fizicheskikh Nauk."

Akhmatov's achievements in the field of preparation of highly qualified manpower and his contribution to the development of science were held in high regard by the party and the government: he was awarded the Order of Lenin and ten medals.

Aleksandr Sergeevich Akhmatov—a person of high culture and erudition, a prominent scientist, a talented pedagogue—will be forever fondly remembered by his students and colleagues.

Translated by G. M. Volkoff