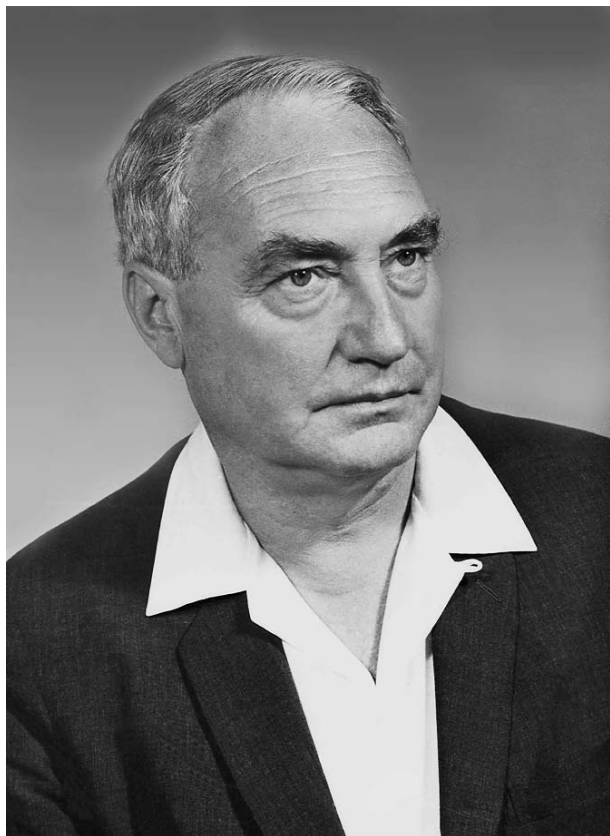


On the 100th Anniversary of the Birth of Valentin Alekseevich Kargin

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Academician Valentin Alekseevich Kargin (1907–1969) is an outstanding Russian physicochemist, one of the founders of modern polymer science. The combination of fundamental studies with the activity significant for industrial practice always gave an impetus for numerous researchers of various specialties to be united around Kargin. His scientific school received wide recognition both in the country and abroad already during his lifetime.

Kargin's scientific activity was associated for 45 years with the Karpov Institute of Physical Chemistry; from 1953 and to the end of his life, with Moscow State University, where he founded the Chair of High Molecular Compounds and was its first head; with the Institute of Petrochemical Synthesis of the USSR Academy of Sciences, Research Institute of Polymer Chemistry and Technology in Dzerzhinsk (now the Kargin Insti-

tute of Polymers), as well as with dozens of other research enterprises of the country.

The breadth of Valentin Alekseevich's scientific interests, great talent as a researcher and science organizer, and his phenomenal capacity for work allowed him to make a fundamental contribution to a number of branches of polymer physics and chemistry.

In the mid-1930s, he was one of the first to prove the real homogeneity of polymer solutions and the applicability of classical thermodynamics to these systems. In the 1940s, he gave a clear picture of the structure and physicochemical behavior of amorphous glasses and elastomers by proposing a universal thermomechanical method of the study of polymeric bodies, which has become a common practice in the majority of polymer laboratories.

Kargin was one of the first to pay attention to the multistage character of ordering processes in amorphous polymers. In 1941, he predicted the appearance of liquid polymer crystals that were discovered 20 years later and, in the 1950s, he performed the first direct observations of the initial stages of supramolecular structuring in amorphous polymers. Kargin was first in the world to draw an analogy between metallography and analogous studies of the micro- and macrostructures of polymers and began to be involved in the study of polymer alloys well in advance of the time when this field of research became significant for modern materials; additionally, coined the term "alloying" of polymers.

Pioneer's ideas on the study of the effect of structural factors on the processes of solid-state polymerization, structure-related chemical principles of the control of the reactivity of macromolecules and the chemical modification of polymers, on the role of complexation in radical-induced reactions of polymerization and other processes of the chemical activation of monomers belong to Kargin and his school.

The domestic industry of organic glasses for defense and civil aircrafts created in the 1960s to a great extent owes its origin to Kargin and his pupils, who performed fundamental and applied studies in this field.

In 1958, Kargin, Topchiev, and their coworkers were one of the first to publish the work on thermal transformations of polyacrylonitrile to form polymer with conjugated linkages in the chain. This work, along with the DuPont's patent that became known by that time, stim-

ulated the worldwide current of studies of the synthesis and properties of polyconjugated polymers.

Kargin was among the first who attracted attention to the analogy between the stereospecific synthesis of macromolecules and matrix synthesis of biopolymers. Successful attempts of Kargin and his pupils to use the principles of the functioning of biological systems for the purposes of synthetic macromolecular chemistry and imparting the contour of fundamental science to the chemistry of medical biological polymers as early as in the 1960s is yet one more insurmountable service of the great scientist.

However, most important is the fact that the designation of polymer science in our country as an independent branch of knowledge and introduction of polymer science and relevant laboratory practical work into the curricula of country's universities is related to Kargin's name. His immense international prestige as a scientist promotes the popularization of the achievements of polymer science of our country. If Herman Mark had been the founding father of polymer science in the United States, we can state that Kargin performed the same role in the USSR and Russia.

Finally, one cannot but infer that Kargin played a gigantic role as the organizer of science; for many years he was the Chairman of the Scientific Council on Poly-

mers of the USSR Academy of Sciences and analogous Council of the USSR Committee on Science and Technology. A number of industrial and academic institutes of polymer chemistry and technology were established in the country in the 1960s at his initiative. As a member of IUPAC in 1968–1969, Kargin was among those who stood at the start of the organization of the IUPAC Macromolecular Division.

The Hero of Socialist Labor, Winner of the Lenin and four State Prizes, Valentin Alekseevich Kargin, who passed away so early, left unfading memories of himself.

Noticeable figures of the world polymer community of the 1950s and 1960s were among his friends and foreign colleagues. Nature has endowed him not only with talent but also with masculine beauty. Although he was often severe by outward appearance, he was actually very kind and considerate towards his friends, pupils, and coworkers.

N.A. Platé[†], Vice President
of the Russian Academy of Sciences

[†] Deceased.