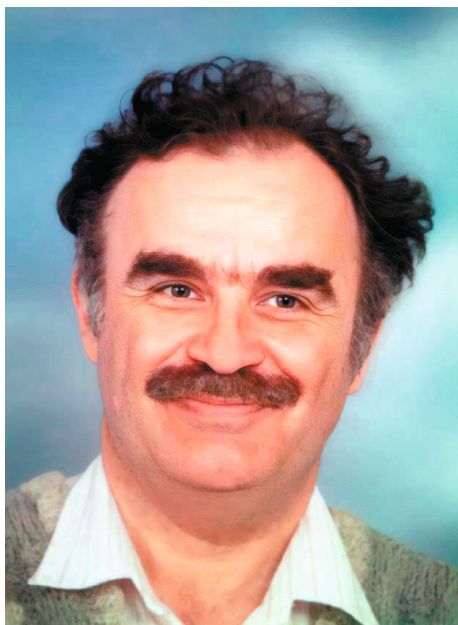


In Memoriam of I. Ya. Erukhimovich

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This thematic issue of the journal publishes articles by participants of the School-Conference for Young Scientists “Self-Organization in Soft Matter: Advances and Current State.” The conference was held on November 10–11, 2022 at the Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences (INEOS RAS), Moscow, Russia. It was attended by almost 150 scientists from various Russian cities.

The conference was dedicated to the memory of our colleague, an outstanding theoretical physicist, Doctor of Physical and Mathematical Sciences, Professor Igor Yakovlevich Erukhimovich (1947–2022), who passed away at the beginning of 2022, shortly before his 75th birthday.

Erukhimovich was born on May 19, 1947, in Nikolaev, USSR. In 1964, he entered the Physical Faculty, Kharkov State University, from which he graduated with honors. His development as a scientist proceeded under the guidance of Academician I.M. Lifshitz, a founder of the Moscow school of polymer theory. Lifshits was the supervisor of his thesis, defended in 1970, and his dissertation for the

degree of Candidate of Physical and Mathematical Sciences, defended in 1979. Lifshits was the initiator of Erukhimovich’s relocation to Moscow, and it was Lifshits who drew his attention to the field of macromolecular compounds, then novel for theorists. Before starting the actual scientific work, Erukhimovich passed all nine exams of L.D. Landau’s Theoretical Minimum. Erukhimovich was one of Lifshits’ first students working in the field of polymer theory, and his contribution to the formation and development of the Moscow school can hardly be overestimated. Erukhimovich not only actively worked, adapting the theoretical methods of condensed matter physics to polymer systems, but he was also for a long time (together with A.R. Khokhlov and A.Yu. Grosberg) a head of the Lifshits-founded seminar on the theory of polymers at the Physical Faculty, Lomonosov Moscow State University (MSU). This seminar was a regular gathering of polymer scientists from all over the Soviet Union and, after its dissolution, from all over Moscow.

Erukhimovich was the author of the concept and pioneering works on the theory of weak segregation in various systems based on (block-)copolymers, the fluctuation theory of polyelectrolytes and interpolyelectrolyte complexes, and the sol–gel transition in associating systems. Erukhimovich developed a statistical theory of microphase separation in the limit of weak segregation, taking into account fluctuation and relaxation effects for diblock, random, and multiblock copolymers, macromolecules of complex architecture, polymers containing amphiphilic, associating, and ionogenic groups, in the bulk, on the surface, under steric hindrances, etc.

Erukhimovich had a truly encyclopedic knowledge in various fields and generously shared it with his students and colleagues. He taught for a long time at the Physical Faculty, MSU, and eleven candidate’s dissertations were prepared under his supervision. His students work worldwide.

Erukhimovich is one of the most respected Russian theorists; he collaborated with leading polymer laboratories in France, Germany, UK, the Netherlands, Greece, Israel, Japan, and the USA. In 2003, he was awarded the prestigious title of Humboldt Professor.

From 1995 to the end of his life, Erukhimovich was a Leading Researcher at the Laboratory of Physical Chemistry of Polymers, INEOS RAS. He actively worked with the young, created in 2019, Laboratory of Computer Modeling of Macromolecules, INEOS RAS.

The conference school held at the INEOS RAS in memory of our colleague I.Ya. Erukhimovich was interdisciplinary. Its program included reports on various areas of soft matter, performed by theoretical, experimental and computer simulation methods.

We have tried to make the thematic issue, offered to your attention, just as diverse and interesting.

A. R. Khokhlov, Academician of Russian Academy of Sciences, Head of Laboratory of Physical Chemistry of Polymers, INEOS RAS

V. V. Vasilevskaya, Dr. Sci. (Phys.—Math.), Head of Laboratory of Computer Modeling of Macromolecules, INEOS RAS