
OBITUARY

Yu. M. Polukarov
November 28, 1927–August 23, 2010

DOI: 10.1134/S1023193511550015



Yurii Mikhailovich Polukarov died of a heart attack on August 23, 2010.

Doctor of Chemistry, Professor, Corresponding member of the Russian Academy of Sciences (RAS), Polukarov was a specialist in physical chemistry and electrochemistry of the highest qualification and erudition.

In 1949, Yurii Polukarov entered the post-gradual courses at the Institute of Physical Chemistry of the Academy of Sciences of the USSR. Here, he carried out his first studies under supervision of K. M. Gorbunova and displayed good experimental skills and excellent knowledge of theory. Later, he traveled the long way from a post-graduate student to the director of institute. His directorship fell on the years most difficult for the Russian science (1988–2002). Despite all difficulties, Yurii Mikhailovich guided the institute through all ordeals and managed to retain the main team of scientists and provide stable functioning.

For more than 30 years, Polukarov headed the Laboratory of the Structure of Surface Layers; for many years, he was the Editor-in-Chief of Journals *Zashchita Metallov* and *Elektrokhimiya*, the member of editorial boards of these journals and also of journal *Galvanotekhnika i Obrabotka Poverkhnosti* (since its foundation). He was the chairman of Moscow Division of the Mendeleev Chemical Society, the member of the International Society of Electrochemistry, the Chair-

man of the Interinstitute Seminary “Nanoparticles and Self-Organization Processes.”

From the very beginning of his scientific career, Yurii Mikhailovich, the bright scientist and erudite, focused attention on the elaboration of new experimental methods and the development of the instrumental basis. This allowed him to become the leading Russian scientist in the field of electrochemistry of metals and make the laboratory he headed the leading laboratory in the field of development of fundamentals of the electrochemical and autocatalytic deposition of metals and alloys. He had the ability and the desire to get insight into the essence of a phenomenon, his curiosity posed problems and his rich experience allowed finding their solutions.

Polukarov was the author of several hundred of original publications in scientific journals. He was always characterized by wide outlook and the ability to see general in special cases, the skill and the desire to get into the root of a phenomenon and its details, generate new ideas, and pose new problems. Under his supervision and in his own studies, many unique results on the magnetic properties of electrochemically synthesized alloys were obtained and several problems were posed that defined the development in this field of science and technology for many years. These studies dealt with initial stages of electrocrystallization, the metal deposition under very different

conditions including superhigh current densities, the amorphous deposits, the deposits with various non-metal inclusions, metal evolution under nonsteady-state and pulse conditions, the role of ions in intermediate degrees of oxidation, the postelectrolysis relaxation processes, and many other things. In addition to fundamental studies, Yurii Mikhailovich paid keen attention to applied problems, which were always associated with the results of his fundamental studies. The applied studies included those devoted to autocatalytic coatings with metals and alloys, polylayer deposits, magnetic alloys and also very topical recent studies on chrome-plating from electrolytes based on trivalent chromium.

Despite his numerous commitments as the director of a RAS institute, Polukarov always found time for training and teaching of young specialists in both the institute he headed and the Department of Electrochemical Industrial Technologies of the Mendeleev

University of Chemical Engineering, where he read courses and trained students.

Yurii Mikhailovich was a very good person. He could inspire the desire to study and gain insight into unknown, trust one's own abilities, and achieve the result. He was characterized by a combination of friendliness and strong principles, true democracy, fine sense of humor, the ability to understand and take into consideration other viewpoints, and a priori deep respect to people. Everything mentioned above won him the deepest respect and love of his pupils, colleagues, and everyone who was lucky to know him.

He will forever live in our memory and hearts.

*Yu.D. Gamburg, B.M. Grafov,
A.D. Davydov, A.I. Danilov,
V.N. Kudryavtsev, and A.Yu. Tsivadze*