ISSN 1023-1935, Russian Journal of Electrochemistry, 2009, Vol. 45, No. 7, pp. 833–834. © Pleiades Publishing, Ltd. 2009.
Original Russian Text © B.M. Grafov, A.D. Davydov, L.I. Krishtalik, I.G. Medvedev, G.A. Tsirlina, 2009, published in Elektrokhimiya, 2009, Vol. 45, No. 7, pp. 895–896.

IN MEMORIAM

In memory of Aleksandr Mikhailovich Kuznetsov

DOI: 10.1134/S1023193509070210

The electrochemical science suffered irreplaceable loss. On the night from February 12 to 13 2009, the vice Editor-in-Chief of Journal *Elektrokhimiya*, Doctor of Physics and Mathematics, principal researcher of the Frumkin Institute of Physical Chemistry and Electrochemistry of the Russian Academy of Sciences, Professor Aleksandr Mikhailovich Kuznetsov deseased. A distinguished scientist in the field of theoretical electrochemistry, physical chemistry, and chemical physics, a person remarkably friendly and sympathetic passed away. He never lost his heart in the battle with hard disease, was always optimistic, and actively worked virtually up to his last days. In the beginning of treatment, his state quickly stabilized and nothing predicted the close end. The dramatic change to worth that led to his decease as quick as in a week was so unexpected that it is still hard to believe this.

Aleksandr Mikhailovich was born on January 5, 1938. In 1955, he entered the Moscow Institute of Engineering Physics (MIEP), the Faculty of Experimental and Theoretical Physics. In those days, MIEP was among the best centers of higher education in our country. Famous scientists, namely, Obreimov I.V., Kikoin I.K., Tananaev I.V., Kagan Yu.M., Migdal A.B., Galitskii V.M., Pomeranchuk I.Ya., etc. were among his lecturers. With the beginning of specialization, Aleksandr Mikhailovich was moved to a group at the Department of Theoretical Physics. The chairman of this department, the corresponding member of the Academy of Sciences of the USSR, Professor V.G. Levich proposed him to take a position in the Institute of Electrochemistry of the Academy of Sciences of the USSR (now, the Frumkin Institute of Physical Chemistry and Electrochemistry, Russian Academy of Sciences) at the theoretical department. Although, according to his diploma, Kuznetsov was a "theoretical nuclear physicist", his education allowed him to work in different research directions that employ methods of theoretical physics.

At that time, according to the established procedure, work at the institute started with a position of laborato-

rian; in about one year, Aleksandr Mikhailovich was moved up to the junior researcher position. First, V.G. Levich proposed him to work in the field of hydrodynamics, but this was not for long. It is at this very time that R.R. Dogonadze had accomplished his first studies on the quantum mechanical theory of electron transfer in solutions. It became clear that this is a very promising direction, and Dogonadze asked Levich to organize a special group to explore this direction. As a result, Kuznetsov became the first member of this group, Dogonadze became his scientific supervisor and, later, his friend, which continued up to the death of Dogonadze in 1985.

Aleksandr Mikhailovich defended his candidate dissertation in 1964 and his doctorate dissertation in 1971. In a year after the defense of his doctorate dissertation (in 1972), he became a senior researcher. In 1986, Kuznetsov was elected the head of the Theoretical Department of the Institute of Electrochemistry. Later, in line with the started "perestroika" and the changes that took place at the institute, he first headed the Laboratory of Theoretical Studies and then worked as the principal researcher.

The outstanding theoretical physicist, the author of more than 380 papers, 6 monographs, 6 reviews, 5 chapters in monographs, Aleksandr Mikhailovich was worldly acknowledged as one of the authors of the modern quantum mechanical theory of charge-transfer reactions that has found the most extensive use in very different fields of chemical, electrochemical, and biochemical kinetics and continues to find new applications. His studies on the proton transfer became a revolutionary breakthrough in this fundamental problem. In his last years, he actively elaborated a new field, namely, the electron tunneling via redox groups in electrochemical bridge contacts, and has predicted for these systems several new effects important for molecular electronics. In fact, he has developed a new direction that establishes an important role of electrochemistry in nanoelectronics.

The pioneering studies by Aleksandr Mikhailovich were highly acknowledged all over the world. He was repeatedly invited to carry out joint studies and to read lectures in universities of the USA, England, Denmark, Switzerland, and Germany; he delivered lectures at the most highly appreciated international conferences. His studies are actively cited in the world scientific literature, his monographs published in English are recommended as manuals in many universities. Aleksandr Mikhailovich was elected the member of the Royal Danish Academy of Sciences. His sixty fifth anniversary was acknowledged by a special issue of the journal *Chemical Physics* with articles written by scientists from many countries all over the world.

At different time, Kuznetsov was the member of editorial boards of several scientific journals, namely, *Elektrokhimiya* (Vice Editor), *Nouveau Journal de Chimie* (New Journal of Chemistry), *Electrochemistry Communications*, *Journal of Electroanalytical Chemistry.*

His research style was characterized by the precise formulation of problems, clear reasoning, and the ability to see the relationship with experimental studies. In scientific discussions, he could quickly grasp the essence of virtually any problem and discuss it to the point. Aleksandr Mikhailovich was a very responsible, social, and tolerant person. He could passionately argue on one or another issue either scientific or worldly, but he never transferred the arising difficulties to personal relations. It is largely due to their joint studies with Aleksandr Mikhailovich that the former members of the Institute of Electrochemistry, now living all over the world, continue to keep close contacts with one another.

Fundamental studies by Aleksandr Mikhailovich are now in the gold fund of world science, the memory of him as a close and dear person will always live in hearts of his colleagues and friends.

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