
OBITUARY

Nina Vladimirovna Fedorovich (March 17, 1922–March 1, 2004)



Professor Nina Vladimirovna Fedorovich died on March 1, 2004, nearly two weeks before her 82th birthday, after a serious disease. She was Doctor of Chemistry, the eldest scientist at the Department of Electrochemistry, Faculty of Chemistry, Moscow State University, a remarkable pedagogue and electrochemist.

N.V. Fedorovich (Nikolaeva) was born on March 17, 1922 at Malaya Chelnovka village of the Tambov District. In 1940, she entered the Faculty of Chemistry, Moscow State University, from which she graduated in 1945. All her further life was closely associated with the Moscow University and its Department of Electrochemistry. In 1948, after finishing the post-graduate course, she defended a Candidate Dissertation on a burning topic of the day “The Effect of Surface Active Organic Substances on the Discharge Kinetics of Hydrogen Ions on Mercury Electrode.” Since then, her scientific activity was focused on the central problem of electrochemical kinetics, viz., experimental check-up and substantiation of the slow discharge theory developed by her teacher and scientific supervisor Academician Aleksandr Naumovich Frumkin.

The main scientific achievements of Fedorovich were associated with extensive studies of the kinetics of electrochemical reduction of anions, the theme she pursued since the early 1950s of the past century till the end of her life. These studies based on a solid experi-

mental basis made it possible to reveal the most important mechanisms of the effect of the electrode/solution interface structure on the electrochemical reaction rate. It is due to these results that quite a number of fundamental concepts of the Frumkin theory of slow discharge were confirmed. One of the most significant examples of such a kind is experimental confirmation of the theoretical conclusion that the effect of the electrode nature on the anion electroreduction rate is determined solely by the changes in the interphase layer structure at the metal/solution interface and that the electron work function at a constant potential and the heterogeneous rate constant for a process in the absence specific adsorption of both reactant and reaction products are independent of the metal nature. The results of these studies were generalized in her Doctoral Dissertation “Studies on Anion Electroreduction” (1968). In 1970, Nina Vladimirovna was given the Professor title.

In her further studies, Nina Vladimirovna paid special attention to peculiarities of the kinetic behavior of the group of anions whose electroreduction involves proton donors.

Studying how the condensed layers of certain organic substances, which are formed of the mercury electrode surface, affect the kinetics of electrode processes gave rise to the discovery of the phenomenon of hydrodynamic instability of interfaces. As applied to the dropping mercury electrode, this phenomenon was called the polarographic maxima of the third kind.

For the mentioned studies, Fedorovich developed special procedures of water deep cleaning from organic impurities and methods of purity control, which were pioneering for that time. This became one of pre-requisites that allowed her to obtain experimental results of very high precision and reliability. The extremely high requirements imposed upon the purity control and strictness of experimental conditions as well as her intrinsic efficiency characterize her as one of the best representatives of the electrochemical scientific school of A.N. Frumkin.

Fedorovich published more than 250 scientific papers, her studies were often reported at international, all-Union, and all-Russian conferences, and frequently won competitions. She was awarded the A.N. Bakh prize for the study “Electrochemical Reduction of Anions.” Fedorovich read lecture courses on the kinetics of electrode processes, theoretical electrochemistry, and electrochemistry part in the general course of physical chemistry, took part in writing several textbooks,

actively participated in establishing the laboratory course on electrochemistry. The experienced lector with a wide range of interests, Fedorovich read lectures in a number of universities and institutes, worked as a lector in the Znanie Society. She was in organizing committees of many workshops and conferences. In Moscow, she developed the All-Moscow Seminar on Nonaqueous Solvents, which worked for a long time. Under her supervision, 20 candidate and one doctoral dissertations and tens of graduate works were defended.

Nina Vladimirovna always paid great attention to the problems of the Faculty of Chemistry, MSU. She took part in sessions of methodological committees and State Examination Committee, headed the Committee on Electrical Equipment when the MSU new building was constructed, headed the Library Council, took part in organization of summer student brigades of Faculty of Chemistry on restoration of historical buildings in Kizhi and Mikhailovskoe. It is due to her active efforts that the faculty could continue the restoration works in these historical places of Russia.

The student years of Nina Vladimirovna coincided with the Second World War. All this period, she stayed at Moscow and, being a second-year student, took part in air defense: she guarded the roof of MSU buildings

in the city center and extinguished incendiary bombs that fell on the university. Nina Vladimirovna was awarded medals "For Defense of Moscow," "Forty Years of Victory in the Great Patriotic War 1941–1945," "Fifty Years of Victory in the Great Patriotic War 1941–1945." Her scientific, pedagogical, and organizational activities were also marked with medals and honorary signs: "Veteran of Labor," "In Memory of 850 years of Moscow," "For Progress in the Field of Higher Education." In 2002, Nina Vladimirovna was given a title "Honored Researcher of Moscow University."

Nina Vladimirovna was a highly cultured person with wide interests, enjoyed reading books on history, ancient architecture, was always au courant of all political news, assessing them from her own position. All who met Nina Vladimirovna knew that she is always ready to give warm and effective support and help people in difficult situations, even if this concerned their personal affairs and health.

Studies by Nina Vladimirovna Fedorovich made a very substantial contribution to the development of electrochemical kinetics. Her pupils and co-workers, everyone who met her will always remember her.

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