Kinetics and Catalysis, Vol. 46, No. 5, 2005, pp. 770–771. Translated from Kinetika i Kataliz, Vol. 46, No. 5, 2005, pp. 813–814.

On the Occasion of the Seventieth Birthday of Professor Temkin

On May 31, 2005, Oleg Naumovich Temkin, a member of the editorial board of *Kinetika i Kataliz*, Honored Scientist of the Russian Federation, Doctor of Sciences in chemistry, and Professor, celebrated his 70th birthday.

After graduation from the Lomonosov Institute of Fine Chemical Technology (Moscow) in 1958, Temkin remained there to work in Professor Flid's laboratory, the Department of the Chemistry and Technology of Basic Organic Synthesis. The first study carried out by Temkin was guided by Flid and was concerned with the development of a non-mercury homogeneous catalyst for acetylene hydration. This catalyst appeared to be as active as Kucherov's catalyst and to far exceed it in selectivity and stability. Since then, the catalytic reactions of acetylene have been the main focus of Temkin's interest. The results obtained by Temkin in this area are generalized and summarized in his candidate of sciences and doctoral dissertations (defended in 1962 and 1972, respectively) and in the monographs *Kataliticheskie prevrashcheniya atsetilenovykh soedinenii v rastvorakh kompleksov metallov* (Catalytic Conversion of Acetylene Compounds in Solutions of Metal Complexes, by O.N. Temkin and R.M. Flid, 1968) and *Atsetilen: Khimiya. Mekhanizmy reaktsii. Tekhnologiya* (Acetylene: Chemistry, Reaction Mechanisms, and Technology, by O.N. Temkin, G.K. Shestakov, and Yu.A. Treger, 1991). In collaboration with his students and colleagues, Temkin has studied the mechanisms of most of the reactions of acetylene and its derivatives. He has discovered new reactions allowing a variety of difficult-to-obtain organic compounds to be synthesized from alkynes. His works in this field have lain the theoretical foundations for the catalytic chemistry of acetylene.

Another of Temkin's concerns has been the development of the theoretical foundations of homogeneous metal complex catalysis. He began research in this field in the late 1950s, when the basic concepts of metal complex catalysis were in their infancy. The main objects of these studies have been the addition of various molecules to alkynes; alkyne, olefin, and diene oxidation reactions; alkyne and alcohol carbonylation; and the oxidative chlorination of alkynes, olefins, and dienes. Temkin is known for his fundamental studies in catalysis by copper(I, II) and palladium(II, I, 0) complexes. Furthermore, he has discovered the first oscillating reaction in homogeneous organometallic catalysis. Of particular significance are his mechanistic studies of multifunctional catalytic systems.

Recognizing that reactions catalyzed by metal complexes are generally complex and multipath processes, in the late 1970s Temkin and his colleagues addressed the problem of developing a rational strategy for mechanistic studies and for the kinetic modeling of catalytic processes. Their approach consists in assuming some reaction mechanisms and discriminating between these mechanisms using original computer programs. A graph theoretical model was suggested for the mechanisms of complex reactions, and this model is now used in the classification, coding, and complexity evaluation of reaction mechanisms (see the monograph *Chemical Reaction Networks: A Graph Theoretical Approach*, by O. Temkin, A. Zeigarnik, and D. Bonchev, CRC Press, 1996).

Temkin has been the head of the Laboratory of Kinetics and Catalysis (Department of the Chemistry and Technology of Basic Organic Synthesis) for more than 30 years and has founded a scientific school in chemical kinetics and homogeneous metal complex catalysis. The works of this school have gained the recognition of the world's scientific community.

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Temkin is the author of six personal and collective monographs and more than 350 standard articles and reviews and is the owner of more than 60 inventor's certificates and patents.

Temkin has given much attention to education. He was among the first to work out a course of metal complex catalysis, and he has been giving this course at the Lomonosov State Academy of Fine Chemical Technology for many years. He has been the supervisor of 45 candidate of sciences dissertations. Three of Temkin's colleagues received doctoral degrees and proceeded to the post of Professor.

Temkin is an active science manager. He is a member of the Scientific Council for Catalysis at the Russian Acadeny of Sciences and of a number of other councils. In 1998 and 2001, he was the chairman of the steering committee of the All-Russia Young Scientists' Workshop on Catalytic Chemistry. Temkin took an active part in the formulation of the science and technology programs "High Chemical Technologies" and "New Principles and Methods of Preparing Chemical Substances and Materials." These programs made a considerable contribution to the development of new technologies and to the support of Russian scientists in 1992–1998.

Professor Temkin always infects his colleagues with persistent optimism, with faith in the potential of science, and with the belief that Russian science will rise. A man of exceptionally broad mental outlook, great erudition, and high culture, he is extraordinarily susceptible to new ideas and possesses the rare virtue of being willing to hear out and accept alternative opinions.

The Editorial Board of *Kinetika i Kataliz* (*Kinetics and Catalysis*) and colleagues heartily congratulate Prof. Temkin on his birthday and wish him good health and many new achievements.