

Oleg Naumovich Temkin Is 75

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On May 31, 2010, Oleg Naumovich Temkin, a member of the editorial board of *Kinetika i Kataliz*, Doctor of Chemistry, Professor, Meritorious Scientist of the Russian Federation, celebrated his 75th birthday.

Temkin graduated from the Moscow Institute of Fine Chemical Technology in 1958, and since then he has been working at the Department of Basic Organic Synthesis Chemistry and Technology of his alma mater (now Moscow State Academy of Fine Chemical Technology).

Temkin's scientific career has been inseparably connected with catalytic processes. His first study, carried out under the supervision of R.M. Flid, was aimed at developing a non-mercury catalyst for acetylene hydration. The catalyst designed by Temkin was non-toxic, showed the same activity as Kucherov's catalyst, and was far superior to the latter in selectivity and stability. Since then, the chemistry of acetylene and its derivatives has been among Temkin's main interests. The results obtained in this field are systematized in Temkin's candidate of sciences and doctoral dissertations (defended in 1962 and 1972, respectively) and his monographs *Kataliticheskie prevrashcheniya atsetilennykh soedinenii v rastvorakh kompleksov metallov* (Catalytic Reactions of Acetylenic Compounds in Metal Complex Solutions), co-authored by R.M. Flid (1968), and *Atsetilen: Khimiya. Mekhnizmy reaktsii. Tekhnologiya* (Acetylene: Chemistry, Reaction Mechanisms, and Technology), coauthored by G.K. Shestakov and Yu.A. Treger (1991). The Laboratory of Kinetics and Catalysis at the Department of Basic Organic Synthesis Chemistry and Technology, Moscow State Academy of Fine Chemical Technology, headed initially by R.M. Flid and, over the latest 40 years, O.N. Temkin, has elucidated the mechanism of most types of catalytic reactions of acetylene and has discovered new ways of synthesizing of rare organic compounds from alkynes. These studies have made a significant contribution to the theoretical foundations of the catalytic chemistry of alkynes.

The catalytic chemistry of alkynes is one of the most important components of the theory of metal complex catalysis, and Prof. Temkin is undoubtedly among the greatest contributors to this area of science. Since the late 1950s, when the first conceptions of metal complex catalysis were put forward, Temkin and his colleagues have investigated the mechanisms of numerous addition, oxidation, carbonylation, and



oxychlorination reactions of alkynes, alkenes, dienes, and alcohols catalyzed by copper (I), copper (II), palladium (0), palladium (I), palladium (II), mercury, rhodium(I), and rhodium(III) complexes. The studies carried out by Temkin and his team have contributed greatly to the theory of multifunctional homogeneous catalytic systems. Temkin and his coworkers discovered the oscillating synthesis of complex organic molecules, the first reaction of this kind in homogeneous metal complex catalysis.

Difficulties in mechanistic studies of multiroute catalytic reactions prompted Temkin and his colleagues in the 1970s to begin the development of a rational strategy for mechanistic studies and for construction of structural kinetic models for catalytic processes. This strategy includes making hypotheses as to the reaction mechanism and their discrimination based on purposeful experiments. For this purpose, hypothesis making methods (and original computer programs) were developed, as well as a graph theoretical model of the mech-

anisms of complex reactions, This model is used in the classification, coding, and complexity analysis of the mechanisms (see *Chemical Reaction Networks: A Graph Theoretical Approach* by O.N. Temkin, A.V. Zeigarnik, and D.G. Bonchev, CRC Press, 1996).

Prof. Temkin is the head of a scientific school successfully working in the fields of kinetics and metal complex catalysis, whose studies are highly appreciated by the world catalytic community. The results obtained by this school, as well as the analysis of the extensive literature on the subject carried out by Temkin in the latest decade, provided the basis for Temkin's fundamental monograph *Gomogennyi metal-lokompleksnyi kataliz: Kineticheskie aspekty* (Homogeneous Metal Complex Catalysis: Kinetic Aspects), published by Akademkniga, Moscow, in 2008.

The scientific publications of Temkin include 7 monographs and 356 articles and reviews. He is the author of over 60 inventor certificates and patents.

Temkin is an excellent pedagogue and brilliant lecturer. He began teaching about 50 years ago and has educated several thousands of specialists in basic organic and petrochemical technology. He is the author of the original lectures on metal complex catalysis and the theory of the mechanisms of complex reactions that are now delivered at the Moscow Acad-

emy of Fine Chemical Technology. He has been the supervisor of 45 candidate of sciences dissertations. Three of O.N. Temkin's colleagues have received the degrees of Doctor of Chemistry and Professor.

Temkin is an active science manager. He is a member of a number of dissertation councils. In 1998 and 2001, he was the chairmen of the organizing committee of the All-Russia School of Young Scientists on Catalytic Chemistry. Temkin participated actively in the development and implementation of the governmental science and technology programs "High Chemical Technologies" and "New Principles and Methods of Obtaining Chemical Compounds and Materials," which contributed significantly to the development of new technologies and to the support of Russia's scientists in 1992–1998.

Temkin is a man of great erudition, high culture, and strong intellect, and his interests are really broad. He is receptive to new ideas, highly diligent, and capable of accepting alternative opinions and admitting his own mistakes. The main traits of Temkin are his optimism and his faith in the potential of science.

The editorial board of the journal and Temkins colleagues and pupils congratulate the scientist on the occasion of his jubilee and wish him good health and further success in his creative activities.