

IN MEMORIAM

To the memory of Professor Lachezar Angelov Petrov



Professor Lachezar Angelov Petrov, PhD, DSc, corresponding member of the Bulgarian Academy of Sciences (BAS), passed away unexpectedly on 18th July 2023 after a severe brain stroke. He was a reputed scientist in the field of catalysis and international catalysis community.

Lachezar Petrov was born on 2nd February 1939 in Sofia. He graduated from Institute of Chemical Technology, currently University of Chemical Technology and Metallurgy, in Sofia in 1962. In 1965, he joined the Institute of Organic Chemistry at BAS as a full-time graduate student. Since 1969, he has been a research assistant and in the same year received his PhD in Chemical Kinetics and Catalysis from the same institution. In 1977, he was elected a senior research associate.

Since 1983, L. Petrov has worked at the Institute of Kinetics and Catalysis of the BAS, now Institute of Catalysis. In 1988, he obtained his DSc degree, and the following year was elected full professor at the same institute. He specialized in Catalysis Institute, Novosibirsk (Russia, 1969), Tokyo Institute of Technology (Japan, 1971), Catalytic Research Centre at Sumitomo Chemicals, Niihama (Japan, 1972), and University of Bremen (Germany, 1976). He made long-term scientific visits to the USA, Germany, Spain, Israel, France, China, Brazil, Saudi Arabia, and Zambia. In 2008, he was elected a

corresponding member of the Bulgarian Academy of Sciences.

He successively held the positions of scientific secretary of the Unified Centre for Chemistry at BAS (1978–1988), department head (from 1983), deputy director (1983–1989; 1995–1997), and director of the Institute of Catalysis in Sofia (1989–1993; 1997–2007).

Prof. L. Petrov's scientific interests include kinetics and mechanisms of heterogeneous catalytic reactions over metal, metal oxide, and zeolite catalysts in stationary and non-stationary conditions; application of catalysis in petrochemicals and oil refining, catalyst deactivation; catalyst carriers, and synthesis and application of zeolites in catalysis. Second, efforts were being made to look into application of catalysis for environmental protection: hydrodesulfurization of oil fractions, complete oxidation of organic compounds and carbon monoxide, reduction of NO_x gases, desulfurization of gasolines, purification of sulfide-polluted wastewater. Further research comprised applied catalysis as kinetic models of industrial catalytic processes, development of industrial catalysts, methods of industrial-scale catalyst testing, automation of kinetic systems for research; methods for building kinetic models; oscillating reactions; ceramic fibres: refractories and additives for composite materials.

The main scientific contributions of Prof. Lachezar Petrov involve mathematical modelling of heterogeneous catalytic reaction kinetics under stationary and non-stationary conditions; studies of heterogeneous catalytic reaction mechanisms; studies of the influence of composition on the structure and properties of heterogeneous catalysts; photocatalysis; development and implementation of production technologies of industrial catalysts; and instrumentation and automation of kinetic studies.

Lachezar Petrov is one of the authors of the national program 'Kinetics and Catalysis' and one of the founders of the Bulgarian industry for the production of industrial catalysts. Under his leadership, a number of technologies for the production of industrial catalysts and carriers and catalytic processes for their use were developed and put into practice.

L. Petrov took active part in teaching and learning activities. He gave lectures in the Faculty of Chemistry and Pharmacy of St. K. Ohridski University of Sofia, Faculty of Chemistry of P. Hilendarski University of Plovdiv, V. Levski National Military University at Veliko Tarnovo, Bremen University (Germany), Israel Technion Institute of Technology, Haifa (Israel), University of Zambia, Lusaka (Zambia), European Institute of Chemistry, Polymers, Materials, Strasbourg (France), National Centre in Catalysis, Chinese Academy of Sciences, Dalian (China), Federal University of San Carlos, San Carlos (Brazil). He also held the Chair of Catalysis at King Abdulaziz University, Jeddah (Saudi Arabia). He was the supervisor of 11 doctoral students, 7 postdoctoral fellows, and 8 visiting specialists.

Prof. Lachezar Petrov is the author and co-author of about 300 scientific works, 8 books, 2 textbooks, and 20 patents and author's certificates. His scientific achievements find wide international resonance and recognition. They have been cited about 2000 times. With his participation, 27 technologies for producing catalysts, catalyst carriers, adsorbents, catalytic technologies, and scientific instruments were developed and implemented. In most cases, he was the head of the work teams.

Prof. L. Petrov was a member of the editorial boards of 6 international and 3 Bulgarian scientific journals. For 10 years, he was the editor-in-chief of the journal *Chemistry and Industry (Khimiya & Industriya, Sofia)*. He was the editor of nine books with works presented at international scientific events, as well as invited editor in international journals.

Since 1992, L. Petrov has been a member of the Russian Academy of Natural Sciences. For three times he was a reviewer for the Nobel Committee in Chemistry, three times for the Third World Academy of Sciences, for international and national foundations, for the European Science Foundation,

for many international journals, and for doctoral theses in France, Sweden, and Finland.

Prof. L. Petrov was a member and vice-chairman (1996–2007) of the Union of Chemists in Bulgaria. Since 1992, he was the president of the Bulgarian Catalysis Society, a member of the Council of the European Federation of Catalysis Societies (since 1993) and member of its Executive Council (2003–2005). He was also a member of the Council of the International Federation of Catalysis Societies since 1996. He was an expert of the International Centre for Science and High Technologies, ICS-UNIDO Trieste (1997–2005), vice president of the Balkan Association for Environmental Protection (B.EN.A) and co-chair of its Bulgarian branch, a member of the International Supervisory Committee of the State Key Laboratory of Catalysis, Chinese Academy of Sciences, Dalian, China (since 2006).

He was a member of the organizing committees of more than 70 international forums, including multiple European and international congresses on catalysis; he was the chair of the Organizing Committee of the Seventh European Congress on Catalysis held in 2005 in Sofia.

Prof. Lachezar Petrov is a knight of the orders Cyril and Methodius and 1300 Years of the Bulgarian State. He is the winner of a gold medal from Plovdiv International Fair in 1980, a silver medal from National Technical University of Ukraine, a bronze medal from Bulgarian Patent Institute, a Prof. Dr. Asen Zlatarov gold medal of the Federation of Scientific and Technical Unions, a Marin Drinov Honorary Medal with ribbon of BAS, and many international awards. He was elected an Honorary Member of the Union of Chemists in Bulgaria.

Prof. L. Petrov was a man with broad cultural interests, an excellent organizer, and a wonderful colleague and friend.

Chavdar Bonev