



Dr. Nicolae IONESCU



Dr. NICULAE I. IONESCU

Niculae I. Ionescu, honorary researcher at “Ilie Murgulescu” Institute of Physical Chemistry” of the Roumanian Academy and former scientific director of the institute turned eighty years old on May 10, 2013.

His scientific personality, his contributions to keep the ideas of the founder of the modern school of Physical Chemistry in Roumania, Professor Ilie Murgulescu, in the Center of Physical Chemistry and after 1990 in the institute and his scientific activity have been recognized and appreciated in the national and international scientific community.

Dr. Nicolae I. Ionescu was born in Bucharest. After finishing Gheorghe Sincai high school in Bucharest, he graduated from the Faculty of Chemistry of the Bucharest University in 1957 and from the Faculty of Physics and Mathematics of the same University in 1962.

In 1969, he obtained his PhD in chemistry with a thesis concerning gas adsorption on thin clean metallic films. The scientific adviser, in the Department of Physical Chemistry of the Faculty of Chemistry from the Bucharest University, was Professor Ilie Murgulescu.

Being awarded with a Humboldt fellowship, Dr. Ionescu spent 12 months in 1970-1971 in the Institute of Physical Chemistry of the Göttingen University-Germany and he was the first Roumanian researcher accepted to work in “the house of Nernst”. His activity there and the obtained results were recognized by the Humboldt Foundation and also in scientific meetings and journals. After 1990, several resumptions of this fellowship afforded research stages in the Institute of Applied and Physical Chemistry of Bremen University, Germany. Other stages in the neighbouring countries helped Dr. Ionescu to establish very good contacts with prestige research groups from abroad and cooperation in modern topics of physical chemistry.

After a period between 1957-1962 in the Institute of Medicine and Pharmacy from Bucharest where he was involved in teaching and research activities concerning biological physical chemistry and electron microscopy, the rest of his entire scientific life was linked to the Center of Physical Chemistry transformed after 1990 in institute.

In 1969, Dr. N.I. Ionescu was appointed head of the Chemical Kinetics Laboratory. He had this position until 1990, when he became Scientific Director of “Ilie Murgulescu” Institute of Physical Chemistry, being active in this function until his retirement in 2005. After this date, Dr. N.I. Ionescu remained in the institute as honorary researcher.

N.I. Ionescu attracted many talented people to work in his research group, the purpose of studies being theoretical and experimental investigations on fundamental chemical kinetics, catalysis and combustion. His remarkable scientific activity, his broad scientific horizon, his equilibrium and management capacity were a help in establishing the actual profile of “Ilie Murgulescu” Institute of Physical Chemistry, in accord to new challenges and trends of physical chemistry.

Dr. Ionescu’s investigations on physical chemistry cover a broad realm. The main results were obtained in the fields of gas adsorption on metals, fast reactions in the gas phase and heterogeneous solid-gas reactions. The main objective of his research activity was the study concerning the strong and weak interactions of gases with solid surfaces, aiming at elucidating the importance of elementary adsorption act, followed sometimes by reaction in simple catalytic events. Through these themes he brought conclusive original contributions opening new working directions.

In gas adsorption on thin clean metallic films, he was the first to verify the hypothesis of surface demetallization. He introduced a new class of models based on superficial reactions to explain the observed kinetic laws and also realized a new transient method for the determination of the “spillover effect”. In the kinetics of gas-phase reactions, he started in 1975 the study of gas explosions as a model of fast reactions, in cooperation with the Department of Physical Chemistry of Bucharest University. In the dynamics of solid-

gas reactions, Dr. Ionescu investigated the lower olefin oxidation underlying the role of new phase formation reflected in variations of lattice parameters, in mobility of charge carriers and in electrons or vacancies transfer at interfaces. The use of metal oxides as chemical sensors and the conversion of methanol to olefins have been investigated as well, revealing the importance of cations with variable valence, especially of molybdates and the existence of redox mechanism. In the field of oscillatory reactions, he described a new oscillating system based on SnO₂ and, for the first time, oscillations using an industrial catalyst. In biological physical chemistry he studied the influence of some metallic ions on viruses' components and the electron microscopy of viruses and their nucleic acids.

The long term activity of Dr. Ionescu and his deep involvement in basic topics of physical chemistry is substantiated by his publication list, which includes 5 volumes issued at the Roumanian Academy Publishing House and more than 260 scientific papers, some 200 of them published in ISI quoted journals, and 1 patent.

More than 150 scientific communications have been presented at national and international meetings in several countries. Dissemination of original results has been made also through many invited lectures in foreign universities and institutes from Azerbaidjan, Bulgaria, Germany, Hungary, Netherlands, Portugal, Russia, Ukraine.

Between 1995-2005, Dr. N.I. Ionescu was Director of several national grants, of a contract with Deutsche Forschungsgemeinschaft from Germany and took part to a research contract financed by the World Bank and the Roumanian Government in the field of gas-phase explosions of fuel-air mixtures. He was also a member of larger research teams in two main projects of the Roumanian Academy in the field of nanomaterials and risk factors.

Dr. Ionescu coordinated many bilateral cooperations with universities and institutes from Berlin, Bremen, Budapest, Prague, Moscow and Szeged.

In 1991 Dr. N.I. Ionescu became PhD adviser. Since then, 14 young researchers have received their PhD title under his tutorship. Two researchers have been distinguished by the Roumanian Academy with prizes in chemical sciences for their results and another, under common trusteeship with an institute from Lyon, was awarded with a prize in France for the PhD thesis results.

Between 1984 and 1990, Dr. Ionescu was honorary secretary of the Chemical Science Section of the Roumanian Academy. In this quality, he organized the sessions of communications in this section. After 1990, he organized several times round tables with the topic "Oscillatory reactions", held in Bucharest with the support of the Roumanian Academy.

Dr. Ionescu is member of the editorial board of *Revue Roumaine de Chimie* and *Roumanian Chemical Quaterly Reviews* (1993-2000) and of *Buletinul Societății de Chimie din România* (1993-1997) and reviewer for many important journals published in Roumania and abroad.

He has been a member of the Bunsen Society for Physical Chemistry-Germany since 1992 to present, of the Roumanian Chemical Society since 1991 to present as a founder member and of the Roumanian Catalysis Society.

For this obtained results, Dr. Ionescu was distinguished by the Roumanian Academy with the prizes "Gheorghe Spacu" (1969) and "Nicolae Teclu" (1985). He received the Honour Diploma from the Roumanian Chemical Society in 2004 for the contribution brought to the promotion of chemistry in Roumania and the "Academic Merit Diploma" conferred by the Roumanian Academy in 2013 for excellent contributions to the development of physico-chemical research in Roumania.

At his 80th anniversary, his many friends and colleagues expressed him the best wishes for a long healthy life in the many happy years to come.

Dr. Domnina Razus