

HOMAGE to Professor Petre T. Frangopol at his 75th Anniversary



It is a great privilege to be Guest Editor for this Special Issue of *Revista de Chimie* dedicated to Petre Frangopol's 75th Anniversary. Prof. Petre Frangopol is a remarkable scientific personality, with a career spanning over fifty years. He authored more than 200 scientific articles (with more than 500 citations¹ and a Hirsh index of 12^{1,2}), has developed several chemistry and biophysics labs in Romania, and has been extremely active in promoting quality and transparency in the Romanian scientific system.

Petre Frangopol was born in Constanta, port at the Black Sea, on May 26, 1933. After graduating from the high school 'Mircea cel Batran' in 1951 he moved to Iasi, where he studied chemical engineering at the Polytechnic Institute. In 1956 Petre Frangopol worked for a short period of time at the 'Petrochim' Institute in Ploiesti; he was then selected to join a special one-year program in Physics and Nuclear Technology at the newly founded Institute of Atomic Physics (IAP) in Bucharest-Magurele. Between 1958 and 1964 he worked in the organic chemistry lab of Prof. Costin D. Nenitescu at the Polytechnic Institute of Bucharest.

Already at this early stage of his career Petre Frangopol brought important contributions to the Romanian science – in 1960 he prepared, for the first time in Romania, I-131, which is widely used in Romania for treating diseases of the thyroid (*Revista de Chimie (Bucure^oti)* 12: 706-708, 1961). The article by Petre Frangopol describing the preparation of I-131 had been translated in *Internat. Chem. Eng.* 2: 357, 1962. In 1961-1963 he worked on the production of organic scintillators in an effort to eliminate the import of these compounds. Moreover, in 1963-1965 Petre Frangopol coordinated a multidisciplinary program on the use of organic compounds as cooling agents for nuclear reactors (*Rev. Roum. Phys.* 11: 937, 1966).

Petre Frangopol asserted his PhD dissertation in 1968 with work on the stable free radicals of diaryl-nitrogen done under Prof. Giorgio Ostrogovich at the Polytechnic Institute of Timisoara. Later on during his career Petre Frangopol has gained international recognition with his careful work on organic stable free radicals, which is cited in books of organic chemistry and free radicals – 'Organic Chemistry of Stable Free Radicals', by A. R. Forrester, J. M. Hay, and R. H. Thomson, Academic Press, 1968; 'Free Nitroxyl Radicals', by E. G. Rozantsev, Plenum Press, N.Y., 1970; 'Dolgojivu^ocie radicali', by E. G. Rozantsev, Nauka, Moscova, 1972.

Petre Frangopol was the recipient of two prestigious post-doctoral fellowships, from the National Research Council Canada, Division of Chemistry, Ottawa (1969-1970), and a Humboldt Dozentenstipendium (1972). In 1971-1972 he worked as a post doctoral research associate at the George Washington University, Washington, D.C., USA, on a project financed by NASA.

After completing the post-doctoral research abroad, in 1973 Petre Frangopol returned to IAP in Bucharest-Magurele as head of the lab of organic labelled compounds, and then as a senior research officer (1974-1994). During the IAP years Petre Frangopol established new techniques and directions of research in Romania – the production of radioactive pharmaceutical compounds Ga-67 and In-111 used in cancer diagnostic; preparation of tetradeutero-N-hydroxy-succinimide; preparation of pyridinium salts with a marked physiological activity; synthesis of C14-labelled compounds, measuring of their reactivity and reaction mechanisms.

The work on the C-14 labelled compounds led to the development of a new direction of research in Romania: the C-14 method for determining the primary productivity of plankton in the Romanian aquatic ecosystem. Since 1999, Petre Frangopol is a member of the International Oceanographic Institute, the Black Sea Operational Center.

With a keen interest in chemical compounds with biomedical applications, Petre Frangopol further broadened the research topics in his IAP lab to biophysics and biophysical chemistry. His contributions to the development of biophysics research in Romania are indeed substantial. Petre Frangopol worked on understanding how local anesthetics (procaine, lidocaine, tetracaine) and some of the well-known Romanian pharmaceutical products from Gerovital and Aslavitall, influence the physical-chemical properties of biological membranes. Petre Frangopol established the first lab of medical physics in Romania, and the second lab of biophysics (Faculty of Physics, 'Alexandru Ioan Cuza' University of Iasi). These labs were supported by grants from international funding agencies – the International Atomic Energy Agency (1995-1997), the European Union programs Copernicus (1995-1998) and Tempus (1994-1999), and by the Soros Foundation

(1992-1993). During his tenure as Associate Professor at the 'Alexandru Ioan Cuza' University of Iasi, Petre Frangopol initiated and edited a series of 6 issues of 'Current Topics in Biophysics' with invited contributors from Romania and from abroad. At the University of Cluj he contributed to the lab of physical chemistry with equipment of \$200.000 from a grant that was ranked first by the National University Research Council (CNCSIS). In 1997-1999 he was Associate Professor of Biophysics and Biophysical Chemistry at the Western University 'Vasile Goldis', Faculty of Medicine, Department of Biophysics, Arad, Romania.

Over the years, Petre Frangopol initiated and organized or co-organized numerous scientific meetings - the multidisciplinary seminars at IFA; four national conferences of the chemical physics program (1986-1989); the 8th workshop 'Balkan Days of Biochemistry and Biophysics' (Cluj, 1990, with Vasile V. Morariu). He is also a member of the Editorial Board of *Scientometrics* (Springer), the *Journal of Radioanalytical and Nuclear Chemistry* (Springer), and of *Revista de Politica Stiintei si Scientometrie* (CNCSIS, Bucharest).

In recognition for his important contributions to the Romanian biophysics research, in 1990 Petre Frangopol received the 'Constantin Miculescu' award of the Romanian Academy of Sciences for his work on the biophysics of the interaction of Romanian drugs with cellular membranes; in 2006. In 2006, the National Institute of Physics and Nuclear Engineering 'Horia Hulubei' awarded Petre Frangopol the 'Horia Hulubei' diploma for his outstanding contribution to the development of the IAP. Petre Frangopol is also a member of the German Chemical Society (since 1971), of the Romanian Chemical Society, and of the Romanian Biophysical Society.

Petre Frangopol is a great advocate of quality and transparency in the Romanian scientific system. His contribution to making possible the access of Romanian scientists to Science Citation Index (published by the Institute of Scientific Information of Philadelphia) was essential; the database is managed by the CNCSIS. In the more recent years Petre Frangopol became well known to the Romanian scientific community through his articles on science policy in Romania. These articles were published in the newspaper 'Romania Libera', and then collected in three books on 'Mediocrity and excellence, a radiography of Romanian research', which is now at the third volume (vol. 1, "Albatros" Publishing House, Bucharest, 2002; vol. 2, "Casa Cartii de Stiinta" Publishing House, Cluj-Napoca, 2005). In 2004 Petre Frangopol published a book in which he presented the achievements of Romanian mathematicians, physicists and chemists with outstanding results ("Elite ale Cercetatorilor din Romania, Matematica - Fizica - Chimie", "Casa Carpi de tinza" Publishing House, Cluj-Napoca).

Since 2000 Petre Frangopol is a scientific Counselor at CNCSIS. In 2006 he became a member of the Presidential Commission for the analysis and the elaboration of the policies in the fields of education and research.

The broad scientific interests of Petre Frangopol are illustrated by the topics of the contributions to this special issue. I thank all collaborators and former students of Petre Frangopol, who accepted with enthusiasm the invitation to contribute with an article to the Special Issue. I am grateful to Dr. eng. Petru Filip, Senior Editor of *Revista de Chimie*, for his support and for hosting the special issue.

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