STUDIA UNIVERSITATIS BABEŞ-BOLYAI, CHEMIA, LII, 3, 2007

## IN MEMORIAM

# PROFESSOR EMIL CHIFU
# (1925-1997)

Professor Emil Chifu was born on July 17, 1925 in Herta, county of Dorohoi, Romania (today, Ukraine). He died on April 1, 1997, in Cluj-Napoca.

He was a scientific personality of high professional standards, one of the creators of the modern science of the colloids, of the membrane surfaces and phenomena, fields in which his works brought him international recognition.

Born in a modest family of handicraftsmen, he graduated with ''distinction'' all school grades, completing his academic studies with «distinction and diploma of merit» at the Faculty of Science of the University of Cluj, department of Chemistry (1950). Appointed laboratory assistant as soon as 1949 at the same faculty, Emil Chifu dedicated himself to the didactic and scientific activity, which he combined in a creative manner, which allowed him to go through all the stages of the university career and, as a result of various exams, reached the position of outstanding university professor.

His didactic activity was reflected in the publishing of a series of textbooks and course books for students, as well as of the treatise ''Colloidal Chemistry'' (The Didactic and Pedagogic Publishing House, Bucharest, 1969). The new version of the book he left in the form of an unfinished manuscript, completed and finished by his collaborators, appeared under the title "Chemistry of the Colloids and of the Interfaces'' (The University Press, Cluj-Napoca, 2000), after the author's death. Both editions of the treatise are addressed in a highly competent way, to chemists, physicists, biologists, engineers, biotechnologists, those working in industry, pharmaceuticals, nanomedicine, nanoscience, nanotechnology and to all those interested in the fundamental and applicative research of the physical chemistry of surfaces and interfacial phenomena.

He taught the courses of Chemical and Engineering Thermodynamics, Colloidal Chemistry, Chemistry of Colloids and of the Surfaces, Physical Chemistry. The scientific rigor of his lectures, the exigency towards the students, and last but not least, the propriety of the Romanian language spoken from the teaching desk, has brought him the respect of many generations of students. He coordinated over 80 diploma papers and more than 20 papers of specialization in Physical-Chemistry. Seven doctoral theses were drawn up and defended under his coordination. In 1967, as a token of the appreciation, the Ministry of Education awarded him the First

Prize for outstanding activity in the field of Chemistry and he concluded his career (he retired in 1990) with the title of outstanding university professor, working, even afterwards, as a consultant professor (1990-1997).

Between 1970 and 1991 he was the head of the department of Physical Chemistry at the Babes-Bolyai University in Cluj-Napoca.

The scientific activity of Professor Chifu was carried on based on his studies initiated with the drawing up of his doctoral thesis entitled ''A Study on the Superficial Mobility of Solutions'' (1965). The development and the thorough study of these were outlined in the publishing of over 160 scientific original papers. He published in national journals such as The Chemistry Magazine (Bucharest), Revue Roumaine de Chimie, Studia Univ. Babes-Bolyai, J. Colloid & Surf. Chem. Assoc., but he also published more than 40 papers in prestigious publications from abroad, such as Ann. Chim (Rome), Gazzetta Chim. Italiana, J. Colloid Interface Sci., (USA), Biochim. Biophys. Acta, Chem. Phys Lipids, Langmuir (USA), Progr. Colloid Polym. Sci., Colloids & Surfaces, Biochemical J. The original research on the stability of thin films and on their properties in conditions of microgravity, the examination of the behavior of liquids under the action of superficial tension gradients caused by various surfactants or by differences in temperature, under normal conditions, or in conditions of microgravity have been nationally and internationally appreciated. Thus, in 1983, together with the research team, he was awarded the «Gheorghe Spacu» Prize of the Romanian Academy for the group of papers: «The Physical Chemistry of Interfacial Films», and in 1978, after a rigorous selection process, NASA of USA accepted to have the original research entitled: «Surface Flow of Liquids in the Absence of Gravity» tested in outer space. Professor Emil Chifu thus became the first Romanian whose proposal had been accepted and implemented on DDM (Drop Dynamic Module) in the 3rd mission of the Space Lab (1981). This spatial experiment opened the way to some important applications in the spatial technology of liquid behavior, as well as in the modeling of biological surfaces.

Researcher continuously animated by the aspiration to ever enlarged knowledge, Professor Chifu also initiated studies on the properties of active biologic compounds, such as: lecithins, fatty acids, carotenoids, vitamins, drugs, as well as on their interactions with the constituents of natural membranes. His research team, a real school created years ago, successfully develops and deepens these studies even now.

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- **E. Chifu,** I. Stan and M. Tomoaia-Cotisel, "Marangoni flow and convective diffusion on a free drop", *Rev. Roum. Chim.,* **50** (4), 297-303 (2005).
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A brilliant professor and scientist, he was one of the creators of the modern science of colloids, surfaces, membrane and interfacial phenomena as well as of nanotechnology, hydrodynamics and nanostructured thin layers [see *Journal of Colloid and Interface Science*, **195**, 271 (1997)].

Not less important in his biography were the specializations abroad and the contacts with personalities of the international scientific life. A member of various Romanian and International scientific societies, he collaborated with scientists from the Universities of London, Moscow, Florence, Tübingen, Buffalo. He also took part with plenary conferences and communications to international workshops in his line of study (in Belgium at the Free University of Brussels, in France at the University of Provence, Marseille). At home, he organized and supervised conferences on Colloidal Chemistry, Physical Chemistry, Chemistry of Membranes and Interfacial Phenomena.