

IN MEMORIAM

EMIL CHIFU (1925-1997)

The eminent Romanian scientist Professor Emil Chifu died on April 1, 1997, at age 72. He was a great physicochemist and a world-renowned scientist in the field of the modern science of colloid, surfaces and membrane phenomena.

Born on 17 July 1925 in Herța, Dorohoi, belonging then to Romania, Emil Chifu is originate from a modest family of craftsworker.

In 1949, after graduating with merit diploma from Faculty of Chemistry, specialty physical chemistry, at the University of Cluj, he began his scientific and academic career in the Department of Physical Chemistry at this University, occupying all the didactic degrees: assistant professor, reader, lecturer and since 1970 professor. Concurrently, from 1951 to 1953, Emil Chifu worked in the Institute of Chemistry, a branch of the Romanian Academy of Sciences in Cluj. He received his PH.D. from the University of Cluj.

He gained scholarships in Russia at the University "M. V. Lomonosov", Moscow (1966), in Italy at the University of Florence (1967), in Germany at the University of Tübingen (1976).

Dean of the Faculty of Chemistry at the V. Babeș University, Cluj (1958-1959), substitute dean of the Faculty of Chemistry at the Babeș-Bolyai University, Cluj (1959-1962), head of the Chair of Physical Chemistry (1970-1977), head of the Chair of Physical, Organic and Technological Chemistry (1985-1990).

Since 1973 he was a doctorate supervisor in the following specialties physical chemistry, biophysics and biochemical physics.

Professor Chifu was awarded the first Prize for his outstanding scientific achievements in the field of chemistry (1967) and appointed to the Distinguished Professor (1980), by the Romanian Ministry of Education. In 1983, he was awarded the Gheorghe Spacu Prize by the Academy of Science in Romania for his theory and novel experiments on colloidal systems and thin films. He was specially invited to the Workshop "In memoriam R. Defay", at the Université Libre de Bruxelles, Belgium (1990) and at the Université de Provence, Institut Universitaire Systèmes Thermiques Industriels, UA CNRS, France (1991).

He was a member of the New York Academy of Sciences, the Planetary Society of Pasadena, USA, the Italian Society of Chemistry, Rome, Italy, and the Romanian Society of Colloids and Surface Science and the Thermodynamic Division of the Romanian Academy of Sciences.

Professor Chifu made essential contributions to the teaching of colloid science by lecturing over 30 years on this subject and with his book "Colloidal Chemistry", published in 1969. Recently, he finished a fully revised and updated edition of this book (in press) including his standard work on modern surface science and new approaches to the thermodynamics and hydrodynamics of thin films. This new edition features several new chapters on extended treatment of films at liquid-air and liquid-liquid interfaces, molecular interactions in mixtures of surfactants, micellization processes, macromolecular films and optical properties of Langmuir-Blodgett films, which reflect his pioneering work in the field. Unfortunately, he did not live to see the publication of this updated and extended Colloidal Chemistry edition.

Emil Chifu became world-wide known for his work on the physical and chemical properties of liquids and thin films, which examined hydrodynamics and surface mobility of surfactant solutions. This work, particularly the original research towards the stability of thin films, their properties in microgravity conditions, the behaviour of liquids under the action of surface tension gradients caused by various surfactants or by temperature differences in both normal and microgravity conditions, surface flow of liquids in the absence of gravity, gained international recognition and was selected and approved in 1978 by National Aeronautics and Space Administration (NASA) of the USA for the international cooperation between NASA and the University of Cluj-Napoca. This work has important applications in the space technology of liquids, and in the modeling of deformations at biological surfaces.

In pioneering work, he initiated studies of the biophysical properties of biologically active compounds, such as lecithins, fatty acids, carotenoids, vitamins, and drugs, developing new experimental methods and ingenious techniques based on original ideas. From 1981, part of this work has been accomplished in collaboration with King's College, University of London, UK, and has important applications to food and pharmaceutical industries, and to biomedical research. From 1989, important contributions on biophysical properties of drugs, nucleation and relaxation phenomena, collapse mechanism and stability of thin films were developed in cooperation with the State University of New York at Buffalo, USA, and have significant applications in biosensors and biomedical technology. His studies on mineral processing, flotation, mass transfer through interfaces are widely appreciated.

In recent years, he devoted his time to study the adsorption of biosurfactants at fluid interfaces and the molecular interactions among drugs and natural membrane constituents, with the major goal to evaluate their structure and function relationships. In all these areas he developed theories and experimental methods and techniques based on his original ideas.

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The research efforts of Professor Chifu have been characterized by originality of his theoretical developments, based on physical, chemical and mathematical concepts, and the great consistency in solving scientific problems, and ingenuity in setting experiments to analyze complex phenomena.

The activities of Professor Chifu in the organization of scientific meetings have been extensive. Since 1980, he organized and supervised conferences on colloidal chemistry, surface and membrane science and interfacial phenomena. These conferences were attended by leading scientists in the field and enjoyed international recognition.

Professor Chifu performed great service to the creation and development of the international cooperation on colloid, surface and membrane science and contributed very much to useful and friendly relations between scientist.

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LIST OF PUBLICATIONS

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