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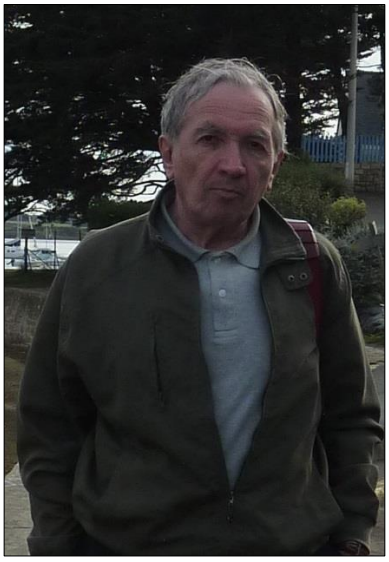
In memoriam



PROFESSOR FLORIN EMILIAN DANEȘ

(1935 - 2021)

Professor Florin Emilian Daneș was born in Bucharest, in 1935. His parents were teachers in a village from Olt river valley. He was a student of the high schools in Bucharest Mihai Viteazu (1945-50), then Gheorghe Lazăr (1950-1952). During 1952–1957 he studied at the Faculty of Industrial Chemistry of the Bucharest Polytechnic Institute. During 1952–1957 he studied at the Faculty of Industrial Chemistry of the Bucharest Polytechnic Institute. In 1957 he graduated from the Faculty with specialization in Inorganic Chemical Technology, benefiting during the last 6 semesters from a Republican Scholarship. In the meantime, he married a college classmate and in 1962 had a son. Subsequently, between 1964 and 1968, he completed a PhD in Science, completed with a thesis on the kinetics of ion exchange on synthetic zeolites, at the Institute of Technological Chemistry in Halle (in the German Democratic Republic - the then name of East Germany), related to Martin Luther University, UML, Halle and Wittenberg. On this occasion, he was awarded the UML Research Prize for 1968, first class.

Between 1958 and 1984 he was a teacher at the Polytechnic Institute of Bucharest, at the Department of Physical Chemistry (later became Physical and General Chemistry) depending on the Faculty of Industrial Chemistry.

He was an assistant professor until 1960, head of works between 1960 and 1970, then associate professor until his final departure from Romania in 1984. His courses, in Physical Chemistry and Materials Chemistry, were held only at the faculties of Metallurgy and Electronics. During these 27 years his didactic contacts with the students of the Faculty of Industrial Chemistry were limited mainly to the assignment of seminar and laboratory works. However, he managed to attract deserving students from the 5th year to an optional Catalysis course, for which he later co-mentored the diploma project (MS for Mihaela Mihalcu-Drăgănoiu), or mentor (MS for Andrei Leonida). The existence of Student Scientific Circles, however, allowed him to detect promising elements among students in Industrial Chemistry, who later became academics and researchers emeritus in Romania or abroad (Mircea Banciu, Mihaela Mihalcu-Drăgănoiu, Andrei Leonida, Mihai Scârlete or Ligia Gheorghiță) or to contribute to the formation of young teachers of the department (Eleonora-Mihaela Ungureanu).

In 1985 he successfully passed, at the School of Electrochemistry and Electrometallurgy at INPG at the National Polytechnic Institute in Grenoble, an HDR exam, Habilitation à Diriger des Recherches "ability to conduct (scientific) research".

On three occasions, he was employed in industrial or mixed enterprises (production and education), with mainly research tasks: from October 1957 to September 1958, at the State Industrial Enterprise (IIS) "Reactivul" in Bucharest, where he worked In addition to the advanced purification of mineral salts, between November 1984 and June 1985 he worked in the Research Laboratory of the Merlin-Gerin

plant (now Schneider Electric) in Grenoble, in the field of good conductive materials and from September to November 1988, at the Institute of Nuclear Magnetic Resonance of CNRS (Nantes) he dealt with the determination by NMR analysis of the transfer properties in composites, with complementary tasks of university education. Thus, after the Examination to Qualify to Conduct Scientific Research, he was reintegrated into university education, this time in France. He worked at:

-Laboratory of Photochemistry and Electrochemistry of the Joseph Fourier University of Grenoble (as an associate professor, 1985/6),

-Molecular Dynamics Laboratory of the University of West Brittany in Brest (1986/7; associate professor, then professor),

-Membrane Separation Laboratory of the National School of Chemistry in Rennes (professor 1987/8),

-Department of Thermics of the School of Engineering "ISITEM", later attached to EPUN (École Polytechnique de l'Université de Nantes) between 1988 and retirement (2004), as a professor (tenured since 1990) of thermodynamics, scientific calculus, statistics and energy optimization.

In 2004 he retired to Nantes and settled in the Grenoble area, where his son (computer scientist) lives with his family. His activity of general interest was limited in France to the participation in the Research Council (Conseil de Recherche) of the Universities of Brest and then Nantes, as well as in some associations aiming at the connections of Romanians in France with the country of origin. / Romania "or the cult association" All Saints ". Since 2000, he has collaborated intensively with colleagues from the Department of Physical Chemistry and Electrochemistry in order to develop new editions of (lithographed) textbooks of physical chemistry in Romanian, French and English.

Professor Daneș's field of predilection was the quantitative treatment -in a vision of optimization under constraints of uncertainty and judicious use of available experimental data - of the speed and balance of processes, complex or combined, of:

-physical or chemical transformation,

-transfer of mass, heat or electrical charge between phases,

-homogeneous transport of these three quantities.

Professor Daneș has conducted 15 doctoral theses on conductive heat transfer in Nantes, about 25 contractual research projects applied in materials and processes of physical or chemical transformation in Bucharest and Nantes for electronic, electrical, automotive enterprises (Renault), shipbuilding, rubber (Vibrachoc). He led a European contract for the manufacture of heat-conducting polymeric composites, with the participation of production and research companies in France, Germany, Sweden, Denmark and Finland. He was the holder of 3 patents, author of over 130 publications in specialized international journals, 16 books in 20 editions (some examples can be found in Figure 1) and about 180 papers at congresses and conferences.

He was a member of the French Thermal Society and of some French Study Groups, such as the one for Thermal Contact Resistors and the one for New Physical Concepts in Energy.

Published books

Specialty high school level

Daneş F., Mihăilescu V. „Chimie fizică (Physical Chemistry)", Edit. Didactică şi Pedagogică, Bucharest, 1961; 2nd Ed. (Mihăilescu V., Daneş F.), 1968.

Vlănţoiu G., Daneş F., Ispas P. „Elemente de chimie fizică şi analitică (Elements of physical and analytical chemistry)", Edit. Didactică şi Pedagogică, Bucharest, 1964.

Level of engineering students

Daneş F., Daneş S., Petrescu V. „Curs de chimie fizică pentru Facultatea de metalurgie. Vol. 1. Termodinamică (Physical chemistry course for the Faculty of Metallurgy. Vol. 1. Thermodynamics)", Polytechnic Institute of Bucharest, 1977.

Daneş F., Daneş S., Petrescu V. „Curs de chimie fizică pentru Facultatea de metalurgie. Vol. 2.

Termodinamică statistică, cinetică fizică, ştiinţa suprafeţelor şi electrochimie (Physical chemistry course for the Faculty of Metallurgy. Vol. 2. Statistical thermodynamics, physical kinetics, surface science and electrochemistry)", Polytechnic Institute of Bucharest, 1979.

Daneş F., Daneş S., Petrescu V. „Termodinamică chimică (Chemical Thermodynamics)", Polytechnic Institute of Bucharest, 1981.

Landauer O., Mateescu C., Daneş F., Iulian O., „Îndrumar de lucrări practice de Chimie Fizică (Guide to practical works in Physical Chemistry)", Polytechnic Institute of Bucharest, 1982. The work has known three other previous editions from 1959, 1964 and 1975 in which Costeanu G. and / or Adorian I. appear as authors instead of Landauer O. and / or Iulian O.

Master's degree

-Daneş F. „Utilisation rationnelle de l'énergie et méthodes d'analyse énergétique" pb. ISITEM/ Univ. Nantes/ Franţa 1999.

-Daneş F. „Cinétique chimique pour D.E.A." pb. EPUN/ Univ. Nantes/ Franţa 2001.

Higher level

-Sternberg S., Daneş F. „Termodinamica chimică aplicată (Applied chemical thermodynamics)" pb. Editura Academiei (Academy Publishing House), Bucharest 1978.

-Daneş F., Daneş S. „Echilibrul chimic şi calcularea lui (Chemical equilibrium and its calculation)" pb. Editura Tehnică (Technical Publishing House), Bucharest 1983.

-Daneş F., Ungureanu E. "Cinetica transformărilor fizico-chimice (Kinetics of physico-chemical transformations)", AGIR Publishing House, Bucharest 2009.

-Daneş F., Garnier B. "Maîtrise de l'utilisation de l'énergie-bilans et utilisation efficiente et rationnelle, illustrés par des exemples et exercices corrigés" Ed. Ellipses, Paris 2012.

-Daneş F., Daneş S., Petrescu V., Ungureanu E.-M. "Termodinamică chimică (Chemical termodynamics)", AGIR Publishing House, Bucharest 2013.

-Daneş F., Daneş S., Petrescu V., Ungureanu E.-M. "Chimie fizică moleculară (Molecular physical chemistry)", AGIR Publishing House, Bucharest 2016.

-Daneş F., Daneş S., Petrescu V., Ungureanu E.-M. "Thermodynamique chimique", AGIR Publishing House, Bucharest 2018.

-Daneş F., Daneş S., Petrescu V., Ungureanu E.-M. "Molecular physical chemistry", Ed. Springer, 2021.

Figure 1

Significant works

1.K. PILCHOWSKI, FLORIN DANEŞ, F. WOLF, *Zur Ermittlung von Diffusionskoeffizienten in Festkörpern aus Sorptionsdaten,* Colloid and Polymer Science 230(2):328-336 · January 1969
2.FLORIN DANEŞ, The *batch process application to ion exchange unit operation-I,* Chemical Engineering Science 26(8):1277-1287 · August 1971
3.FLORIN DANEŞ, DAN GEANĂ, *Calculation of equilibrium composition in gaseous systems with simultaneous chemical reactions at high pressures,* Revista de Chimie, Bucharest, Original Edition-**30**(3):244-248 · March 1979
4.DAN GEANĂ, FLORIN DANEŞ, *An analysis of the effect of input data changes on the chemical equilibrium composition,* Revue Roumaine de Chimie 26(11):1365-1376 · November 1981
5.DAN GEANĂ, FLORIN DANEŞ, *Application of Kuhn-Tucker conditions to the problem of chemical and phase equilibrium,* Revue Roumaine de Chimie 27(9):1009-1023 · September 1982
6.J. Y. CALVES, FLORIN DANEŞ, EMILIE GENTRIC, Y. LIJOUR, A. SANFELD, P. SAUMAGNE, *Co(II) Extraction by sodium di(2-ethylhexyl) phosphate at the water/toluene interface: phase structure and aggregation in relation to the kinetics of complexation,* DOI: 10.1007/BFb0114204
7.FLORIN DANEŞ, ERIC SAINT-AMAN, L. Coudurier, *Etude thermodynamique de la decomposition thermique des hydrates du chlorure de magnesium ,* Journal of Thermal Analysis 34(3):821-833 · May 1988
8.J. Y. CALVES, F. DANEŞ, EMILIE GENTRIC, Y. LIJOUR, P. SAUMAGNE, *Kinetics and instabilities in the extraction of Co(II) by sodium di-(2-ethylhexyl) phosphate at the water/toluene interface: II. Spontaneous turbulence induced by interfacial reactions,* Journal of Colloid and Interface Science 129(1):130–138 · April 1989
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15.M. BELGHALI, FLORIN DANEȘ, *Load effects on thermal resistance and on microgeometry of metal contacts: Thermal and profilometric study*, Revue Générale de Thermique 35(409):28-38 · January 1996
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24.FLORIN DANEȘ, BERTRAND GARNIER, THIERRY DUPUIS, *Predicting, Measuring, and Tailoring the Transverse Thermal Conductivity of Composites from Polymer Matrix and Metal Filler*, International Journal of Thermophysics 24(3):771-784 · January 2003
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29.D. SAKAMI, A. LAHMAR, Y. SCUDELLER, FLORIN DANEȘ, J. P. BARDON, *Thermal contact resistance and adhesion studies on thin copper films on alumina substrates*, Journal of Adhesion Science and Technology 15(12):1403-1416 · April 2012

Romanian science has lost a great MAN, but what he has created in us will always keep him alive in our memory!

Professor Emeritus Eleonora-Mihaela UNGUREANU
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Some testimonies about Professor Florin Emilian Daneș

The words are insufficient to express the great pain we feel today, on 6th of June 2021. The main author of the book xxx, Florin-Emilian DANEȘ went to heaven. He went to the stars! We will miss Florin very much. He was the learned man who knew how to answer your every question. I always mentioned "this, only Florin knows".

He has suffered a lot the last year. He was a good man, he helped everyone. Where did all that erudition, all that knowledge, all that culture that he had go?

Goodbye, dear friend of a lifetime! We will miss you enormously. God bless you!

Florin was buried on Friday June 11th 2021 at 2 pm in France, far from his birthplace, but the bells in the village of his grandparents Căinenii Mari from Vâlcea County rang at this moment, in his memory. Let's think about him!

Valeria PETRESCU and **Stoian PETRESCU**, Professor and Emeritus Professor,
Universty Politehnica of Bucharest, Romania, *v_s_p_2004@yahoo.com*

To learn a trade, in ancient times, an apprentice was given by his family to a master to live and train with him. Professor Florin Danes, like the craftsmen of times past, trained his students in physical chemistry, in how to do research, how to write a thesis, how to start a teaching career, how to play bridge, and how to lead a life of continuous learning. He taught us how and when to start sharing with our "disciples" what we learnt from him. Florin was always ready to listen, to help in a way only family is supposed to help and was "there" whenever his former students needed him. Now we must continue in a world where our Teacher is no more. Let's think about everything he gave us and be grateful that we met him and grew into our own looking up at him.

Mihaela LEONIDA, Professor, Dept. Chemistry, Biochemistry, and Physics Fairleigh Dickinson Univ. Teaneck, NJ, USA, *mleonida@fdu.edu*

I deeply regret the loss of Professor Daneș. He was an exceptional man. God rest him!

Mihaela MIHAI, Professor, Department of Chemical Engineering and Biochemistry,
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Professor Florin Emilian DANEȘ was a "Primus inter pares" among our eminent professors formed after the Second World War, influencing the Romanian School of Chemistry and in particular the Applied Sciences - Chemical Engineering one. Now this wide influence can be noticed and admired, among the chemistry professors all over the world (students or coworkers). His dimension is difficult to be described, since his work is still ongoing with several generations of chemists, acting and building a future with a profound European accent. His education of German and French origin, offered a higher "valence" to its Romanian gifted talent for teaching. His origin on the beautiful Olt Valley Romania was not by chance, since he belongs to a family with a fine tradition in teaching and clergy. Later he fulfilled the call of destiny and mentored generations of researchers or professors in France and in Romania. France was also the "adoptive mother" of our professor and offered him the life, difficult to achieve at homeland in a certain period. Like an arch between worlds and time, he initiated always the

right "thermodynamic system" for anyone, fulfilling his profound and universal beliefs in science and peoples. Professor DANEȘ is a guiding light for us forever in the endless space of universal knowledge.

Mihai Cosmin COROBEA, PhD Eng, Senior Researcher I, INCDCP-ICECHIM Bucharest, Romania,
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The following personalities and researchers sent words of appreciation and regret for the loss of Professor Florin Emilian Danes:

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