

In Memoriam of Professor Dr. Eli Ruckenstein

Professor Eli Ruckenstein, an outstanding Romanian-American scientist, passed away in September 2020, at the age of 95. He was acknowledged as one of the most prolific and creative personalities in the last 60 years in chemical engineering. Professor Ruckenstein was awarded with the most prestigious scientific honours, such as the U.S. National Medal of Science in 1999. He was also elected to the National Academy of Engineering in 1990 and to the American Academy of Arts and Sciences in 2012. He received several awards from the Romanian Academy of Science, and Doctor Honoris Causa title from the University Politehnica of Bucharest.

Professor Ruckenstein was born in 1925 in the small town Botoşani in northern Romania. His teenage years were marked by the tragedy of WW2 and anti-Semitic persecutions. Despite these, he managed by self-teaching to develop extraordinary skills in mathematics and a sharp physical insight, which later helped him to overcome brilliantly the challenges throughout his career.

Professor Ruckenstein studied Industrial Chemistry at the Polytechnic Institute of Bucharest, where he started in 1949 as assistant Professor in the Department of Chemical Engineering led at that time by Acad. Prof. Emil A. Bratu. There, he thrived in a creative and friendly atmosphere for research and teaching. Despite some difficulties, he published remarkable scientific papers in the most prestigious journals and contributed greatly to the advent of a recognized Romanian chemical engineering school. He coached the first steps in research of several enthusiastic PhD students, whom the author of these lines is a part of. I remember crossing him every morning and he would ask me with a large smile: “What’s new! There is something for you over there to read ...”. His memory was similar to a live interactive library, as can be confirmed by his later American students.

After 1970 Professor Ruckenstein started a new career in the USA, at several universities, and from 1973 worked in the University of Buffalo-Pennsylvania. His curiosity addressed the most challenging subjects of molecular phenomena, in catalysis, nanomaterials, biotechnologies, energy storage and healthcare. He authored more than 1400 papers, several books and patents, and received more than 40,000 citations. He won the most prestigious awards: from the American Institute of Chemical Engineers the Alpha Chi Sigma Award for transport phenomena and the Walker Award for catalysis; from the American Chemical Society the Kendall Award for colloids and interfaces, the Langmuir Award for polymers, the Murphree Award in Industrial and Engineering Chemistry; and the Creativity Award from the National Science Foundation.

The Romanian chemical engineering community pays tribute to the scientific legacy of Professor Ruckenstein, which will be kept alive through the many models, equations and discoveries found in his publications.

Prof. Alexandre C. Dimian – University Politehnica of Bucharest