

## NEKROLOG

## OBITUARY

**Mirko Mirnik**  
(1917–1999)

Professor Mirko Mirnik was born in Celje (Slovenia) on January 31, 1917 and he died in Zagreb on October 23, 1999. He attended primary school in Celje, where he also completed secondary school in 1936. In 1941, he graduated from the Department of Chemical Engineering of the Technical Faculty, University of Zagreb. He got his doctor's degree in 1951 by defending his doctoral thesis entitled »*Physical and Chemical Investigations of the Conditions for Formation of Silver Iodide Precipitate*« at the Faculty of Natural Sciences and Mathematics, where he worked with Božo Težak (1907–1980). He habilitated in 1953. From 1941 to 1943 as

well as from 1945 to 1946, he worked as student tutor and teaching assistant in the Analytical Chemistry Laboratory, Department of Chemical Engineering of the Technical Faculty, and from 1943 to 1945 as a chemist in the Industrial Research Institute of Zagreb. He was appointed teaching assistant in the Laboratory of Physical Chemistry, Faculty of Natural Sciences and Mathematics, in 1946, assistant professor in 1955, associate professor in 1959, and full professor in 1963. In 1975, he was elected head of the Laboratory of Physical Chemistry, which position he held up to the expiry of his legal term of office in 1982. He retired in 1987.

He taught courses in analytical chemistry, physical chemistry, notably electrochemistry, physical-chemical methods in analytical chemistry and radiochemistry. As a research professor at the Rugjer Bošković Institute, he founded the Radiochemical Laboratory and Electrochemical Laboratory. He

also established the Laboratory for Radiochemistry and initiated crystallographic research of precipitates. His duties at the Rugjer Bošković Institute included those of laboratory leader, head of the Department of Chemistry and president of the Institute Council. He remained associated with the Rugjer Bošković Institute until 1975.

As the first radiochemist in our country, he served for several years as a part-time sanitary inspector for protection from ionizing radiation. From 1957 to 1987 he lectured and from 1973 to 1987 ran the postgraduate course in Chemistry and Radiochemistry at the Faculty of Natural Sciences and Mathematics. He was a member of the Editorial Board of *Croatica Chemica Acta* and in 1960 secretary of the First Conference on Pure and Applied Chemistry in Croatia. He shared the 1965 Croatian national award for science »Rugjer Bošković« with Radoslav Despotović, Marko Herak and Ranko Wolf.

For secondary schools, he devised a practical semimicro experiment kit for general chemistry. This enabled pupils to make experiments on their own without special chemical laboratories. He spent five months of the school year 1952/53 specializing in radiochemistry in England (Cambridge, London, Birmingham, Harwell), six months in 1955 at the Instituut voor Chemisch Onderzoek (Amsterdam), and two months in 1957 and again two months in 1974 in the USA (Bethlehem, Boston, Cambridge, New York, Philadelphia, Pittsburgh, Potsdam, Princeton, Rochester, Tallahassee). He spent a year (1974–1975) as guest-researcher at the Institut für Physikalische Chemie, Universität Erlangen-Nürnberg where, jointly with Professor Göhr and his associates, he developed a new, improved cell for measuring the impedance spectra of first and second order electrodes. During 1964–1965, he served as adviser to the Middle East Radio-Isotope Center for the Arab Countries (Cairo, Egypt) in a mission of the International Atomic Energy Commission (Vienna).

All his experimental and theoretical research was aimed to explain the phenomena of colloid chemistry, chemistry of electrolytes and interfacial phenomena at the solid/liquid interface of highly dispersed solid phases. In his theoretical papers, he consistently proposed a point charge model for adsorbed ions and chemically bound ionogenic radicals on colloid particles. Using this model, he aimed to provide theoretical explanations for the major phenomena in colloid chemistry, such as counterion exchange, coagulation kinetics of small and large aggregates, peptization, the so-called »isoelectric coagulation«, ion adsorption on colloid particles, aging or recrystallization of ionic precipitates, surface potentials, electrokinetic phenomena and formation of colloid crystals.

Professor Mirnik was a skilful and inovative experimentalist. For example, when using a silver/silver iodide electrode to determine the charge of

silver iodide particles, he got the idea to treat the electrode with wax. The reproducibility was substantially improved and Mirnik was cited as being the first to have made (by chance) the ionic selective electrode.

Professor Mirnik was actively engaged in research until he died. A month before he passed away, he attended a conference in the Republic of Ireland. This was the 13<sup>th</sup> Conference of the European Colloid and Interface Society (Dublin, September 12–17, 1999). There he delivered a talk (*Electrostatic and Chemical Interactions of Ions in Electrolytes and in Ionic Point Charge Double Layers*) and presented two posters. Ten days before he died (Friday, October 15), we had an animated discussion about his latest paper, which he wanted to submit to *Croatica Chemica Acta*. Two days later (Sunday, October 17), there was a phone call informing me that Professor Mirnik would miss our meeting scheduled for the coming Monday to continue our discussion because he had had an accident. And then came the sad message on Saturday, October 23, that Professor Mirnik had died of a heart attack.

Professor Mirnik will be remembered as a fanatic of science and a daring man. His exploits and mishaps in skiing, sailing and horse-riding were legendary. I remember one evening long ago when I was sitting on a rock somewhere by the open sea close to the Kornati Islands. The evening was foggy and I was waiting, after day-long fishing, for local fishermen to come and take me to the island of Ugljan. Suddenly, out of the fog, appeared a small rubber dinghy and who was in it? Professor Mirnik, all alone, was boating and enjoying the open sea. He brought his rubber dinghy to the rock, we talked a little and then after a while he said good-bye and disappeared in the fog. All I can say is that I liked Professor Mirnik and admired his uncompromisingness in defending his ideas.

*Nenad Trinajstić*