

K. Vytřas

Modern Electroanalytical Methods

International Conference, 19th to 23rd September 1999 Seč, Czech Republic

In 1959, Jaroslav Heyrovský was awarded the Nobel Prize for his discovery and development of the polarographic methods of analysis. It is well known that Professor Bohumil Kučera of Prague once suggested to the young Jaroslav Heyrovský that he should study certain irregularities in connection with the capillarity of mercury and attempt to disclose their origin. This was one of the innumerable small problems constituting science at that time. Heyrovský let the mercury flow through a glass capillary and weighed the drops. This was a slow and tedious method, and he decided instead to measure the electric current obtained when he put a voltage between the mercury in the capillary and that collecting at the bottom. Heyrovský found that this device could be used for something much more important than the original problem. It could be used to detect the most diverse substances dissolved in water, and moreover, to determine their concentrations. Heyrovský together with his Japanese collaborator Shikata built an apparatus, the so-called polarograph, which automatically recorded how electric current varied with the voltage applied. Together with many other collaborators at home and abroad, he disclosed the theoretical foundations of the method and elaborated numerous modifications that were extremely valuable not only for analytical determinations but also for special kinds of investigations.

The contemporary importance of polarography lies probably less in its direct analytical use than in the fact that it has stimulated the development of many fields in which oxidation-reduction processes are involved. This

is a very wide area, ranging from diverse technological applications to biology and medicine. Moreover, the experimental practice and the techniques derived from polarography has inspired numerous theoretical studies of electrochemical processes and lent themselves to experimental verification of theoretical considerations. Nowadays, voltammetric methods are indispensable for the study of solid state electrochemical reactions and this field is in rapid development.

In order to commemorate the 40th anniversary of the Nobel Prize award to Jaroslav Heyrovský, the University of Pardubice, the J. Heyrovský Institute of Physical Chemistry and Charles University, together with the Czech Chemical Society, organized the international conference "Modern Electroanalytical Methods" which took place from the 19th to the 23rd September, 1999, in the East-Bohemian small town of Seč in the picturesque hilly region of the so-called Iron Mountains. Its program consisted of 15 plenary lectures, 27 oral contributions and 88 posters. More than 100 participants from 24 countries made the organizers happy that the undertaking was fully successful, both scientifically and socially. Some of the conference contributions close to solid state electrochemistry are presented here.

K. Vytřas (✉)
Department of Analytical Chemistry,
University of Pardubice, nam.Cs.Legii 565,
532 10 Pardubice, Czech Republic
e-mail: Karel.Vytras@upce.cz