

Book review

Electroanalytical Methods. Guide to Experiments and Applications

F. Scholz (editor) Springer Verlag, Berlin, 2002, ISBN: 3-540-42229-3, XXII + 331 pages, € 69.95, US\$69.95

This kind of bench- and textbook is intended for chemists, biochemists, biologists, and medical scientists who are also interested in using electroanalytical methods in combination with spectroscopy. The chapters entitled Electrical double layer, Thermodynamics and kinetics of electrochemical reactions, Cyclic voltammetry (with a theoretical appendix), Chronocoulometry, Impedance spectroscopy, Spectroelectrochemistry, Stripping voltammetry, Potentiometry, Electrodes, electrolytes and solvents were written by 12 different authors, but none of them is from the Heyrovsky polarographic school. Basic knowledge is presented in didactic form, including many examples of electrode processes (e.g., the polyoxotungsten-cluster-anion). However, in contrast to an earlier book (*Die Polarographie in der Medizin, Biochemie und Pharmazie*, M. Brezina and P. Zuman, Akadem. Verlagsges., Leipzig, 1956), analytical techniques in turbid solutions such as kinetic measurements in colloidal suspensions (e.g., catalytic Pd-sol reductions) or the determination of fermentation products of microorganisms are missing. In the treatment of chemical reactions as rate-determining steps, Vetter's concept is briefly described, but Kontecky's concept of "kinetic currents" for the assessment of fast

reactions was omitted. More recent applications such as polarographic measurements of photoreactions in solution and on electrodes, which was called "photopolarography" by this reviewer and is now known as photovoltammetry and splitting of molecules by ionizing radiation, are also not considered.

The final chapters present historical milestones and sources for electrochemical literature (including the internet). The historical survey is somewhat unbalanced since the following important scientists are not mentioned: J.W. Richter (1776–1810), T. Seebeck (1770–1831), A. Becquerel (1788–1878), J. Poggendorf (1796–1877), W. Thomson (1824–1907), R. Bunsen (1811–1899), E. du Bois-Reymond (1818–1896), F. Kohlrausch (1840–1910), P. Debye (1884–1966), H. Falkenhagen (1895–1969). Moreover, the list of literature could also include the classical textbooks *Polarography* by I. Kolthoff and J. Lingane (1952), *New Instrumental Methods in Electrochemistry* by P. Delahay (1954) and *Progress in Polarography* by P. Zuman (1972), as well as the new *Encyclopedia of Electrochemistry* (edited by A. Bard and M. Stratmann). Nevertheless, this book can be recommended as a useful guide for the application of electrochemical methods.

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