



# Analytical Electrochemistry

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Wiley-VCH, 2006. Book Condition: New. Brand New, Unread Copy in Perfect Condition. A+ Customer Service! Summary: Preface. Abbreviations and Symbols. 1. Fundamental Concepts. 1.1 Why Electroanalysis? 1.2 Faradaic Processes. 1.2.1 Mass-Transport-Controlled Reactions. 1.2.1.1 Potential-Step Experiment. 1.2.1.2 Potential-Sweep Experiments. 1.2.2 Reactions Controlled by the Rate of Electron Transfer. 1.2.2.1 Activated Complex Theory. 1.3 Electrical Double Layer. 1.4 Electrocapillary Effect. 1.5 Supplementary Reading. Problems. References. 2. Study of Electrode Reactions and Interfacial Properties. 2.1 Cyclic Voltammetry. 2.1.1 Data Interpretation. 2.1.1.1 Reversible Systems. 2.1.1.2 Irreversible and Quasi-reversible Systems. 2.1.2 Study of Reaction Mechanisms. 2.1.3 Study of Adsorption Processes. 2.1.4 Quantitative Applications. 2.2 Spectroelectrochemistry. 2.2.1 Experimental Arrangement. 2.2.2 Principles and Applications. 2.2.3 Electrochemiluminescence. 2.2.4 Optical Probing of Electrode-Solution Interfaces. 2.3 Scanning Probe Microscopy. 2.3.1 Scanning Tunneling Microscopy. 2.3.2 Atomic Force Microscopy. 2.3.3 Scanning Electrochemical Microscopy. 2.4 Electrochemical Quartz Crystal Microbalance. 2.5 Impedance Spectroscopy. Examples. Problems. References. 3. Controlled-Potential Techniques. 3.1 Chronoamperometry. 3.2 Polarography. 3.3 Pulse Voltammetry. 3.3.1 Normal-Pulse Voltammetry. 3.3.2 Differential-Pulse Voltammetry. 3.3.3 Square-Wave Voltammetry. 3.3.4 Staircase Voltammetry. 3.4 AC Voltammetry. 3.5 Stripping Analysis. 3.5.1 Anodic Stripping Voltammetry. 3.5.2 Potentiometric Stripping Analysis. 3.5.3 Adsorptive Stripping Voltammetry and Potentiometry. 3.5.4 Cathodic Stripping Voltammetry. 3.5.5 Abrasive Stripping

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