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Permittivities; References; 3 Acid-Base Reactions in Nonaqueous Solvents; 3.1 Solvent Effects on Acid-base Reactions; 3.1.1 Acid-Base Reactions in Amphiprotic Solvents of High Permittivity; 3.1.2 Acid-Base Reactions in Aprotic Solvents of High Permittivity; 3.1.3 Acid-Base Reactions in Amphiprotic Solvents of Low Permittivity; 3.1.4 Acid-Base Reactions in Aprotic Solvents of Low Permittivity; 3.2 pH Scales in Nonaqueous Solutions
3.2.1 Definition of pH in Nonaqueous Solutions3.2.2 pH Windows in Nonaqueous Solvents and pH Scales Common to Multisolvents; References; 4 Redox Reactions in Nonaqueous Solvents; 4.1 Solvent Effects on Various Types of Redox Reactions; 4.1.1 Fundamentals of Redox Reactions; 4.1.2 Solvent Effects on Redox Potentials and Redox Reaction Mechanisms; 4.1.3 Dynamical Solvent Effects on the Kinetics of Redox Reactions; 4.2 Redox Properties of Solvents and Potential Windows; 4.3 Redox Titrations in Nonaqueous Solutions; 4.3.1 Titrations with Oxidizing Agents; 4.3.2 Titrations with Reducing Agents ReferencesPart Two: Electrochemical Techniques and Their Applications in Nonaqueous Solutions; 5 Overview of Electrochemical Techniques; 5.1 Classification of Electrochemical Techniques; 5.2 Fundamentals of Electrode Reactions and Current-Potential Relations; 5.2.1 Current-Potential Relation for Electron Transfer at the Electrode; 5.2.2 Current-Potential Relations and Mass Transport; 5.3 DC Polarography - Methods that Electrolyze Electroactive Species Only Partially (1); 5.4 New Types of Polarography - Methods that Electrolyze Electroactive Species Only Partially (2); 5.4.1 AC Polarography
5.4.2 SW Polarography

Sommario/riassunto

An excellent resource for all graduate students and researchers using electrochemical techniques. After introducing the reader to the fundamentals, the book focuses on the latest developments in the techniques and applications in this field. This second edition contains new material on environmentally-friendly solvents, such as room-temperature ionic liquids.