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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	<p>Electrochemistry in Nonaqueous Solutions; Contents; Preface to the First Edition; Preface to the Second Edition; Part One: Fundamentals of Chemistry in Nonaqueous Solutions: Electrochemical Aspects; 1 Properties of Solvents and Solvent Classification; 1.1 Properties of Solvents; 1.1.1 Physical Properties of Solvents; 1.1.2 Chemical Properties of Solvents; 1.1.3 Structural Aspects of Solvents; 1.1.4 Toxicity and Hazardous Properties of Solvents; 1.2 Classification of Solvents; 1.3 Effects of Solvent Properties on Chemical Reactions: An Outline; References</p> <p>2 Solvation and Complex Formation of Ions and Behavior of Electrolytes 2.1 Influence of Ion Solvation on Electrolyte Dissolution; 2.2 Some Fundamental Aspects of Ion Solvation; 2.2.1 Ion-Solvent Interactions Affecting Ion Solvation; 2.2.2 Structure of Solvated Ions; 2.2.3 Ultrafast Ion Solvation Dynamics; 2.3 Comparison of Ionic Solvation Energies in Different Solvents and Solvent Effects on Ionic Reactions and Equilibria; 2.3.1 Gibbs Energies of Transfer and Transfer Activity Coefficients of Ions; 2.3.2 Prediction of Solvent Effects by the Use of Transfer Activity Coefficients</p> <p>2.4 Solvent Effects on the Complexation of Metal Ions 2.5 Selective Solvation of Ions in Mixed Solvents; 2.6 Ion Association and Solvent 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</p> <p>3.2.1 Definition of pH in Nonaqueous Solutions 3.2.2 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</p> <p>References</p> <p>Part 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</p> <p>5.4.2 SW Polarography</p>
Sommario/riassunto	<p>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.</p>