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Nota di contenuto	Fundamentals and Applications of Organic Electrochemistry: Synthesis, Materials, Devices; Contents; About the Authors; Preface; Introduction; 1. Fundamental Principles of Organic Electrochemistry: Fundamental Aspects of Electrochemistry Dealing with Organic Molecules; 1.1 FORMATION OF ELECTRICAL DOUBLE LAYER; 1.2 ELECTRODE POTENTIALS (REDOX POTENTIALS); 1.3 ACTIVATION ENERGY AND OVERPOTENTIAL; 1.4 CURRENTS CONTROLLED BY ELECTRON TRANSFER AND MASS TRANSPORT; References; 2. Method for Study of Organic Electrochemistry: Electrochemical Measurements of Organic Molecules; 2.1 WORKING ELECTRODES 2.2 REFERENCE ELECTRODES2.3 AUXILIARY ELECTRODES; 2.4 SOLVENTS AND SUPPORTING ELECTROLYTES; 2.5 CELLS AND POWER SOURCES; 2.6 STEADY-STATE AND NON-STEADY-STATES POLARIZATION CURVES; 2.7 POTENTIALS IN ELECTROCHEMICAL MEASUREMENTS; 2.8 UTILIZATION OF VOLTAMMETRY FOR THE STUDY OF ORGANIC ELECTROSYNTHESIS; 2.8.1 Voltammetric Analysis for Selective Electrosynthesis; 2.8.2 Clarification of the Reaction Mechanism; 2.8.3 Voltammetry for

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	Selection of Mediator; 2.8.4 Voltammetry for Selection of Electrode Material; References; 3. Methods for Organic Electrosynthesis; 3.1 SELECTION OF ELECTROLYTIC CELLS 3.2 CONSTANT CURRENT ELECTROLYSIS AND CONSTANT POTENTIAL ELECTROLYSIS3.3 DIRECT ELECTROLYSIS AND INDIRECT ELECTROLYSIS; 3.4 ELECTRODE MATERIALS AND REFERENCE ELECTRODES; 3.5 ELECTROLYTIC SOLVENTS AND SUPPORTING ELECTROLYTES; 3.6 STIRRING; 3.7 TRACKING OF REACTANT AND PRODUCT; 3.8 WORK-UP, ISOLATION AND DETERMINATION OF PRODUCTS; 3.9 CURRENT EFFICIENCY AND EFFECT OF THE POWER UNIT; References; 4. Organic Electrode Reactions; 4.1 GENERAL CHARACTERISTICS OF ELECTRODE REACTIONS; 4.2 MECHANISM OF ORGANIC ELECTRODE REACTIONS; 4.3 CHARACTERISTICS OF ORGANIC ELECTROLYTIC REACTIONS; 4.3 CHARACTERISTICS OF ORGANIC ELECTROLYTIC REACTIONS; 4.3.1 Umpolung 4.3.2 Selectivity.4.3.2.1 Chemoselectivity; 4.3.2.2 Reaction Pathway Selectivity; 4.3.2.3 Regioselectivity; 4.3.2.4 Stereoselectivity; 4.3.2.5 Selectivity Depending on Electrode Materials; 4.4 MOLECULAR ORBITALS AND ELECTRONS RELATED TO ELECTRON TRANSFER; 4.5 ELECTROAUXILIARIES; 4.5.1 Electroauxiliaries Based on Molecular Orbital Interactions; 4.5.2 Electroauxiliaries Based on Readily Electron- Transferable Functional Groups; 4.5.3 Electroauxiliaries Based on Intermolecular Coordination Effects 4.6 REACTION PATTERN OF ORGANIC ELECTRODE REACTIONS4.6.1 Transformation Type; 4.6.4 Substitution Type; 4.6.5 Substitutive Exchange Type; 4.6.6 Elimination Type; 4.6.7 Dimerization Type; 4.6.8 Crossed Dimerization; 4.6.9 Cyclization Type; 4.6.10 Polymorphism Formation Type; 4.6.11 Polymerization Type; 4.6.12 Cleavage Type; 4.6.13
	Metalation Type; 4.6.14 Asymmetric Synthesis Type; 4.7 ELECTROCHEMICALLY GENERATED REACTIVE SPECIES; 4.7.1 Carbon Species; 4.7.1.1 Anodically Generated Carbon Species 4.7.1.2 Cathodically Generated Carbon Species
Sommario/riassunto	This textbook is an accessible overview of the broad field of organic electrochemistry, covering the fundamentals and applications of contemporary organic electrochemistry. The book begins with an introduction to the fundamental aspects of electrode electron transfer and methods for the electrochemical measurement of organic molecules. It then goes on to discuss organic electrosynthesis of molecules and macromolecules, including detailed experimental information for the electrochemical synthesis of organic compounds and conducting polymers. Later chapters highlight new methodology for organic