1. Record Nr. UNINA9911018965903321 Autore Fu Yongzhu Titolo Rechargeable Organic Batteries: Materials, Mechanisms, and Prospects Pubbl/distr/stampa Newark:,: John Wiley & Sons, Incorporated,, 2024 ©2024 **ISBN** 9783527839131 3527839135 9783527839117 3527839119 Edizione [1st ed.] 1 online resource (305 pages) Descrizione fisica Altri autori (Persone) LiXiang TangShuai GuoWei Disciplina 621.312424 Soggetti Electric batteries Energy storage Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Cover -- Title Page -- Copyright -- Contents -- Preface -- Chapter 1 Necessity and Advantages of Developing Rechargeable Organic Batteries -- 1.1 Current Electrochemical Energy Storage Technologies -- 1.2 Rechargeable Organic Batteries -- 1.3 Goal, Scope, and Organization of this Book --1.3.1 Working Principles and 1.3.2 A Selection of an Organic Electrode Fundamental Properties --1.3.3 EES Applications --1.3.4 Practical Applications --1.3.5 Key Challenges -- Acknowledgments -- References -- Chapter 2 Redox Mechanisms and Characterization Methods of Organic Electrode Materials -- 2.1 Introduction -- 2.2 Carbonyl Materials --2.2.1 Redox Mechanisms --2.2.2 Characterization Methods -- 2.3 Organosulfide Materials --2.3.1 Redox Mechanisms --Redox Mechanisms of ntype Organosulfides --2.3.1.2 Redox Mechanisms of pType Organosulfides --2.3.2 Characterization Methods -- 2.4 Radical Materials --2.4.1 Redox Mechanisms --2.4.2 Characterization Methods -- 2.5 NContaining Active Materials

Sommario/riassunto

This book, 'Rechargeable Organic Batteries: Materials, Mechanisms, and Prospects' by Yongzhu Fu, Xiang Li, Shuai Tang, and Wei Guo, explores the development and potential of organic batteries as an alternative to traditional lithium-ion batteries. It addresses the necessity and advantages of using organic compounds in battery technology, offering insights into their renewable nature and structural stability. The text delves into redox mechanisms, organic electrode materials, and the challenges and prospects of integrating these systems into energy storage solutions. Aimed at researchers and professionals in battery technology and energy storage, it provides a comprehensive understanding of organic cathodes, anodes, and the future landscape of energy storage technologies.