Record Nr. UNINA9910453245503321 Autore Pistoia G (Gianfranco) **Titolo** Lithium-ion batteries: advances and applications // Gianfranco Pistoia, Consultant, Rome, Italy Amsterdam, The Netherlands:,: Elsevier,, 2014 Pubbl/distr/stampa **ISBN** 0-444-59516-3 Edizione [First edition.] 1 online resource (659 p.) Descrizione fisica 659 Disciplina Soggetti Lithium ion batteries Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Front Cover: Lithium-Ion Batteries Advances and Applications: Nota di contenuto Copyright; Contents; Contributors; Preface; Chapter 1 - Development of the Lithium-Ion Battery and Recent Technological Trends; 1 Introduction; 2 Development of the Practical LIB; 3 Development of Cathode Materials; 4 Development of Anode Materials; 5 Development of Electrolyte Solutions; 6 Separator Technology; 7 Conclusion; References; Chapter 2 - Past, Present and Future of Lithium-Ion Batteries: Can New Technologies Open up New Horizons?; 1. Introduction; 2. How LIB was Born?; 3. Performance that Users Expect from LIB 4. Improvement of LIB5. Can New Battery Technologies Open up Novel Horizons for LIB?; 6. Conclusion; References; Chapter 3 - Fast Charging (up to 6C) of Lithium-Ion Cells and Modules: Electrical and Thermal Response and Life Cycle Tests; 1 Introduction; 2 General Considerations and Requirements; 3 Fast Charging Characteristics of Various Lithium Battery Chemistries; 4 Fast Charging Tests of 50-Ah LTO Cells and Modules: References: 4 - Nanostructured Electrode Materials for Lithium-Ion Batteries: 1 Introduction: 2 Nanoscale Effects in Intercalation-Based Electrode Materials 3 Nanostructured Lithium Metal Phosphates for Positive Electrodes4

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Sommario/riassunto

Lithium-Ion Batteries features an in-depth description of different lithium-ion applications, including important features such as safety and reliability. This title acquaints readers with the numerous and often consumer-oriented applications of this widespread battery type. Lithium-Ion Batteries also explores the concepts of nanostructured materials, as well as the importance of battery management systems. This handbook is an invaluable resource for electrochemical engineers and battery and fuel cell experts everywhere, from research institutions and universities to a