1. Record Nr. UNINA9910449847803321

Titolo	Lithium-ion batteries [[electronic resource]] : solid-electrolyte interphase / / editors Perla B. Balbuena, Yixuan Wang
Pubbl/distr/stampa	London, : Imperial College Press, c2004
ISBN	1-281-86664-4 9786611866648 1-86094-644-5
Descrizione fisica	1 online resource (424 p.)
Altri autori (Persone)	BalbuenaPerla B WangYixuan
Disciplina	621.31242
Soggetti	Electrolytes - Conductivity Lithium cells Electrochemistry 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.
Nota di contenuto	CONTENTS; Preface; Chapter 1. SEI on lithium, graphite, disordered carbons and tin-based alloys Emanuel Peled and Diana Golodnitsky; Chapter 2. Identification of surface films on electrodes in non-aqueous electrolyte solutions: spectroscopic, electronic and morphological studies Doron Aurbach and Yaron S. Cohen; Chapter 3. Spectroscopy studies of solid-electrolyte interphase on positive and negative electrodes for lithium ion batteries Zhaoxiang Wang, Xuejie Huang and Liquan Chen Chapter 4. Scanning probe microscopy analysis of the SEI formation on graphite anodes Minoru Inaba and Zempachi Ogumi Chapter 5. Theoretical insights into the SEI composition and formation mechanism: density functional theory studies Yixuan Wang and Perla B. Balbuena; Chapter 6. Continuum and statistical mechanics-based models for solid-electrolyte interphases in lithium-ion batteries Harry J. Ploehn, Premanand Ramadass, Ralph E. White, Diego Altomare and Perla B. Chapter 7. Development of new anodes for rechargeable lithium

batteries and their SEI characterization by Raman and NEXAFS spectroscopy Giselle Sandi Chapter 8. The cathode-electrolyte interface in a Li-ion battery Kristina Edstrom, Torbjorn Gustafsson and Josh Thomas; Chapter 9. Theoretical studies on the solvent structure and association properties, and on the Li-ion solvation: implications for SEI layer phenomena Yixuan Wang and Perla B. Balbuena; Index

Sommario/riassunto

This invaluable book focuses on the mechanisms of formation of a solid-electrolyte interphase (SEI) on the electrode surfaces of lithium-ion batteries. The SEI film is due to electro chemical reduction of species present in the electrolyte. It is widely recognized that the presence of the film plays an essential role in the battery performance, and its very nature can determine an extended(or shorter) life for the battery. In spite of the numerous related research efforts, details on the stability of the SEI composition andits influence on the battery capacity are still controversial. Thisbook carefu