1. Record Nr. UNINA9910253977403321

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Titolo	Lithium Metal Anodes and Rechargeable Lithium Metal Batteries / / by Ji-Guang Zhang, Wu Xu, Wesley A. Henderson
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource : illustrations (some color)
Collana	Springer Series in Materials Science, , 0933-033X ; ; 249
Disciplina	621.312424
Soggetti	Energy storage Electrochemistry Optical materials Electronic materials Renewable energy resources Energy Storage Optical and Electronic Materials Renewable and Green Energy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Introduction -- 2. Characterization and Modeling of Li Dendrite Growth -- 3. High Coulombic Efficiency Li Plating/Stripping and Dendrite Prevention -- 4. Application of Lithium Metal Anodes -- 5. Perspectives -- Index.
Sommario/riassunto	This book provides comprehensive coverage of Lithium (Li) metal anodes for rechargeable batteries. Li is an ideal anode material for rechargeable batteries due to its extremely high theoretical specific capacity (3860 mAh g-1), low density (0.59 g cm-3), and the lowest negative electrochemical potential (3.040 V vs. standard hydrogen electrode). Unfortunately, uncontrollable dendritic Li growth and limited Coulombic efficiency during Li deposition/stripping inherent in these batteries have prevented their practical applications over the past 40 years. With the emergence of post Li-ion batteries, safe and efficient operation of Li metal anode has become an enabling technology which may determine the fate of several promising candidates for the next

generation energy storage systems, including rechargeable Li-air batteries, Li-S batteries, and Li metal batteries which utilize intercalation compounds as cathodes. In this work, various factors that affect the morphology and Coulombic efficiency of Li anode are analyzed. The authors also present the technologies utilized to characterize the morphology of Li deposition and the results obtained by modeling of Li dendrite growth. Finally, recent developments, especially the new approaches that enable safe and efficient operation of Li metal anode at high current densities are reviewed. The urgent need and perspectives in this field are also discussed. The fundamental understanding and approaches presented in this work will be critical for the application of Li metal anodes. The general principles and approaches can also be used in other metal electrodes and general electrochemical deposition of metal films. Summarizes the opportunities and main challenges in the application of Li metal anodes in electrochemical devices Reveals the fundamental mechanism of metal dendrite growth during electrochemical processes Reviews the main approaches and techniques used to investigate Li metal deposition processes and Li film morphologies Suggests key areas for the further development of Li metal anodes Highlights how the general principles and approaches developed for repeated deposition/stripping of smooth Li metal films can be used in other metal electrode and general electrochemical deposition of metal films.