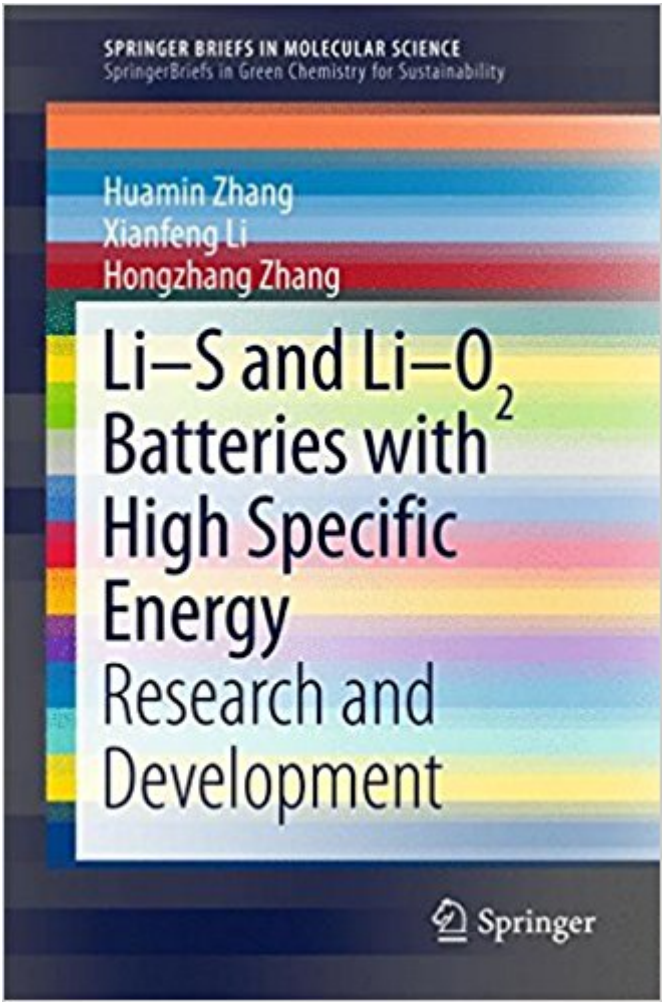
Li-S And Li-O2 Batteries With High Specific Energy: Research And Development (SpringerBriefs In Molecular Science)



Synopsis

This brief reviews the fundamentals, recent developments, challenges and prospects of Li-S and Li-O2 batteries, including fundamental research and potential applications. It starts with a brief overview encompassing the current state of Li-S and Li-O2 battery technology. It then provides general information on Li-S and Li-O2 batteries, including the electrochemical processes and battery components. The following sections focus on the historical and recent development of Li-S and Li-O2 batteries respectively, offering detailed insights into the key material development, cell assembly, diagnostic test and mechanism of electrolyte decomposition. Lastly, it focuses on the main promising applications of Li-S and Li-O2 batteries together with their challenges and potential

Book Information

Series: SpringerBriefs in Molecular Science

Paperback: 48 pages

Publisher: Springer; 1st ed. 2017 edition (November 8, 2016)

Language: English

ISBN-10: 9811007446

ISBN-13: 978-9811007446

Product Dimensions: 6.1 x 0.1 x 9.2 inches

Shipping Weight: 2.9 ounces (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #2,094,954 in Books (See Top 100 in Books) #81 inÂ Books > Science & Math > Chemistry > Electrochemistry #199 inÂ Books > Engineering & Transportation > Engineering > Materials & Material Science > Testing #321 inÂ Books > Science & Math > Technology > Nanotechnology

Customer Reviews

This brief reviews the functions, recent developments, challenges and prospects of the Li/S and Li/O2 batteries, including the fundamental knowledge, research status, potential applications etc. It starts with a brief overview and encompasses the current state of Li/S and Li/O2 battery technology. Then it provides the basic knowledge about Li/S and Li/O2 batteries, including the electrochemical processes and the battery components. The following chapters focus on the historical and recent development of the Li/S and Li/O2 batteries respectively, giving detailed information about the key materials development, cell assembly, testing diagnosis and degradation mechanism. Finally, the main potential applications of Li/S and Li/O2 batteries together with their challenge and perspectives

are discussed.

Huamin Zhang obtained his doctorate from Kyushu University (Japan), in 1988. He spent about 12 years at Dalian University of Technology (China), SUN-CHEMIE (Japan) and Osaka Gas Inc. (Japan). He currently is a full Professor at Dalian Institute of Chemical Physics (DICP), Chinese Academy of Sciences. He severs as the advisor of energy storage division, chief scientist of 973 National Project on Flow Battery and CTO of Dalian Rongke Power Co., Ltd. His research interests mainly focus on the topic of energy and energy storage, e.g. fuel cells, flow batteries and batteries with high specific energy density. Professor Zhang has co-authored more than 260 research papers published in refereed journals and holds more than 150 patents. Xianfeng Li received his PhD in Polymer Chemistry form Jilin University in 2006. After three yearsâ ™ postdoctoral work at KULeuven University, he joined DICP in 2009. He currently is a full professor at DICP. He currently serves as the Director of Energy Storage Division at DICP. His research interests include functional membranes for different applications. He has authored more than 90 peer-reviewed papers in the field of membrane. Hongzhang Zhang received his PhD from DICP in 2013. He joined the Energy Storage Division of DICP at 2013. He currently serves as the head of innovative battery group, with major research interests in Li-Air and Li-S batteries.

Technologies Lithium Batteries: Science and Technology Batteries for Sustainability: Selected Entries from the Encyclopedia of Sustainability Science and Technology Lithium Metal Anodes and Rechargeable Lithium Metal Batteries (Springer Series in Materials Science) Nanoscale Technology for Advanced Lithium Batteries (Nanostructure Science and Technology) Advanced Batteries: Materials Science Aspects High Blood Pressure Cure: How To Lower Blood Pressure Naturally in 30 Days (Alternative Medicine, Natural Cures, Natural Remedies, High Blood Pressure ... Cures for High Blood Pressure, High Bl) Presbyopia Research: From Molecular Biology to Visual Adaptation (Perspectives in Vision Research)