

Springer

1st
edition

1st ed. 2016, XV, 619 p.

Printed book

Hardcover

Printed book

Hardcover

ISBN 978-3-319-19107-2

£ 139,99 | CHF 189,00 | 159,99 € |
175,99 € (A) | 171,19 € (D)

Available

Discount group

Science (SC)

Product category

Monograph

Other renditions

Softcover

ISBN 978-3-319-34929-9

Energy : Energy Storage

Julien, C., Mauger, A., Vijh, A., Zaghib, K., Sorbonne Universités, UPMC Univ. Paris 06, Paris, France

Lithium Batteries

Science and Technology

- Includes electrochemistry, materials science, and solid-state physics
- Current research on high power Li-ion batteries
- Addresses materials for all battery parts
- Discusses performance and cost of batteries
- Reviews different electrolytes

The book focuses on the solid-state physics, chemistry and electrochemistry that are needed to grasp the technology of and research on high-power Lithium batteries. After an exposition of fundamentals of lithium batteries, it includes experimental techniques used to characterize electrode materials, and a comprehensive analysis of the structural, physical, and chemical properties necessary to insure quality control in production. The different properties specific to each component of the batteries are discussed in order to offer manufacturers the capability to choose which kind of battery should be used: which compromise between power and energy density and which compromise between energy and safety should be made, and for which cycling life. Although attention is primarily on electrode materials since they are paramount in terms of battery performance and cost, different electrolytes are also reviewed in the context of safety concerns and in relation to the solid-electrolyte interface. Separators are also reviewed in light of safety issues. The book is intended not only for scientists and graduate students working on batteries but also for engineers and technologists who want to acquire a sound grounding in the fundamentals of battery science arising from the interaction of electrochemistry, solid state materials science, surfaces and interfaces.

Order online at [springer.com/booksellers](https://www.springer.com/booksellers)**Springer Nature Customer Service Center GmbH**

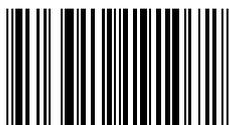
Customer Service

Tiergartenstrasse 15-17

69121 Heidelberg

Germany

T: +49 (0)6221 345-4301

row-booksellers@springernature.com

ISBN 978-3-319-19107-2 / BIC: THRH / SPRINGER NATURE: SC116000

Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add \$5.00 for shipping one book and \$ 1.00 for each additional book. Outside the US and Canada add \$ 10.00 for first book, \$5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.