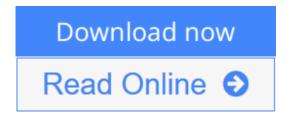


### **Graphene: Energy Storage and Conversion Applications (Electrochemical Energy Storage and Conversion)**

By Zhaoping Liu, Xufeng Zhou



**Graphene: Energy Storage and Conversion Applications (Electrochemical** Energy Storage and Conversion) By Zhaoping Liu, Xufeng Zhou

Suitable for readers from broad backgrounds, Graphene: Energy Storage and Conversion Applications describes the fundamentals and cutting-edge applications of graphene-based materials for energy storage and conversion systems. It provides an overview of recent advancements in specific energy technologies, such as lithium ion batteries, supercapacitors, fuel cells, solar cells, lithium sulfur batteries, and lithium air batteries. It also considers the outlook of industrial applications in the near future. Offering a brief introduction to the major synthesis methods of graphene, the text details the latest academic and commercial research and developments, covering all potential avenues for graphene's use in energy-related areas.



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#### **Editorial Review**

#### Review

"This is a well-planned and well-organized book. The authors are certainly experts in their fields and know these topics well. All the chapters are well thought through and flow well. It is a good educational book for any material scientist or engineer who is trying to learn the fundamentals of graphene as well as its applications in energy storage and conversion."

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?Prithu Mukhopadhyay, Ph.D, Founding Editor, Plasticstrends.net; Senior Scientist, IPEX Technologies, Inc., Montreal, Québec, Canada

#### About the Author

**Zhaoping Liu** holds a Ph.D from the University of Science and Technology of China, Hefei. He is currently the director and professor of the Advanced Li-ion Battery Engineering Lab at the Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences. He previously worked as a postdoctoral researcher in the National Institute for Material Science, Tsukuba, Japan, and the State University of New York at Binghamton, USA. His research interests include Li-ion batteries and graphene materials. He has published more than 70 peer-reviewed papers with a total citing of more than 3,000, and has received more than 100 patents.

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Fuqiang Huang is a professor at the Shanghai Institute of Ceramics, Chinese Academy of Sciences. He holds a Ph.D from Beijing Normal University, China. He has published more than 300 papers and 150 patents; is a recipient of many awards; and was previously a research associate at the University of Michigan, Ann Arbor, USA; postdoctoral fellow at Northwestern University, Evanston, Illinois; principal scientist in R&D at Osram Sylvania, Inc.; and research staff member at the University of Pennsylvania, Philadelphia, USA. His work concentrates on thin-film semiconductor photovoltaic (PV) cells, key solar materials, and new solar materials for new-concept PV cells.

Jinli Qiao is a professor, Ph.D supervisor, and disciplines leader at Donghua University, China. She holds a Ph.D from Yamaguchi University, Japan. Previously she was a research scientist and principal investigator at the National Institute of Advanced Industrial Science and Technology, Japan. Her research includes supercapacitors and PEM fuel cell and CO<sub>2</sub> electroreduction catalysts/membranes. Widely published, she has had projects funded by the Chinese government, including the National Natural Science Foundation of China and the International Academic Cooperation and Exchange Program of Shanghai Science and Technology Committee. She is IAOEES vice-chairman/vice-president and an active ECS, ECSJ, CAHE, and ACS member.

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