



Advanced Materials Science and Engineering of Carbon

By Michio Inagaki Ph.D., Feiyu Kang Ph.D., Masahiro Toyoda Ph.D.,
Hidetaka Konno Ph.D.

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Carbon materials are exceptionally diverse in their preparation, structure, texture, and applications. In *Advanced Materials Science and Engineering of Carbon*, noted carbon scientist Michio Inagaki and his coauthors cover the most recent advances in carbon materials, including new techniques and processes, carbon materials synthesis, and up-to-date descriptions of current carbon-based materials, trends and applications.

Beginning with the synthesis and preparation of nanocarbons, carbon nanotubes, and graphenes, the book then reviews recently developed carbonization techniques, such as templating, electrospinning, foaming, stress graphitization, and the formation of glass-like carbon. The last third of the book is devoted to applications, featuring coverage of carbon materials for energy storage, electrochemical capacitors, lithium-ion rechargeable batteries, and adsorptive storage of hydrogen and methane for environmental protection, photocatalysis, spilled oil recovery, and nuclear applications of isotropic high-density graphite.

- A progression from synthesis through modern carbonization techniques to applications gives you a thorough understanding of carbon materials
- Covers a wide range of precursor materials, preparation techniques, and characteristics to inspire your own development of carbonization techniques, carbon materials and applications
- Applications-oriented chapters include timely content on hot topics such as the engineering of carbon nanofibers and carbon materials for various energy-related applications

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Editorial Review

Review

"I recommend this book without hesitation to all interested in carbon materials, particularly to those entering the field. It is written at a level appropriate to researchers with a chemistry, physics, or materials background."--*MRS Bulletin*, November 2014

About the Author

Michio Inagaki is a famous carbon material scientist, who obtained his PhD degree from Nagoya University in 1963. He has worked on carbon materials for more than 50 years. In 2011, he won the Peter A. Throver Award for Exceptional Contribution to the International Carbon Community.

Feiyu Kang received his PhD from The Hong Kong University of Science and Technology in 1997. He is honorary editorial advisory board of international journal CARBON, Joint Chairmen of international symposiums: CARBON2002 (Beijing), Carbon2011 (Shanghai) and 15th International Symposium on Intercalation Compounds (ISIC15), Coordinators of international research projects: Professor M. Inagaki (NSFC-JSPS) and Professor I. Mochida (JST-MOST).

Prof. Kang has investigated graphite and carbon materials since 1988. His research interest includes nano-carbon materials, graphite producing process, porous carbon and nuclear graphite. Prof. Kang had published more than 200 scientific papers and 3 books.

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