

Chapter 10, but the chapter suffers a little from a lack of consistency in the presentation. Chapter 11 deals with the less familiar chemistry of coinage metal NHC complexes and their role in catalysis, and also discusses the special role of Ag-NHC complexes in the preparation of other metal-carbene complexes.

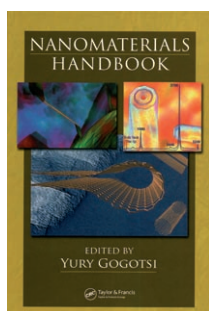
The monograph concludes with a “metal-free” chapter, which deals with NHCs as highly versatile organocatalysts. The authors provide an overview of different types of catalysts, methods for their preparation, and their reactive properties. A large part of the chapter deals with transesterification reactions, and the related important topic of living ring-opening polymerizations, which implicates some omissions in other fields. It would have been useful also to give the nonspecialist reader more background information on the many different mechanisms that are described; for example, their similarities could be pointed out.

To summarize, this book can be recommended for all who have an interest in N-heterocyclic carbenes and their versatile chemistry. Even though the book does not cover all possible applications and structural features, Steven P. Nolan has delivered a well-written monograph that sheds light on the great diversity and potential developments of this rapidly growing research area.

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Nanomaterials Handbook



Edited by Yuri Gogotsi. CRC Press/Taylor & Francis, Boca Raton 2006. 792 pp., hardcover \$ 149.95.—ISBN 0-8493-2308-8

It is difficult to comment on the quality of a book that is written by 62 different authors and consists of 27 chapters. On the other hand, it must also have been difficult for the editor to put together a sufficiently comprehensive collection of information on nanomaterials, including preparation methods, properties, and applications, to form a work deserving the title *Nanomaterials Handbook*. The editor has collected a large number of review-type articles from scientists working on different aspects of nanoscience to achieve this goal, and it has indeed worked out very well. The topics are not randomly chosen but somehow related to each other. Also, in most cases the research results reported by the contributors extend well beyond their own research. Furthermore, the layout is attractive and the figures and graphics are well reproduced, resulting in a book that is very pleasant to read.

After a few introductory chapters, the editor devotes about the first third of the book to carbon nanomaterials. The topics covered in these first eight chapters include various aspects of fullerenes, carbon nanotubes, carbon whiskers, nanodiamonds, and carbides. This is followed by just a few chapters (100 pages) on one-dimensional inorganic nanostructures, including semiconductors, oxides, and boron nitrides. The following seven chapters deal with physical and structural properties in complex nanomaterials, and cover topics such as melting and sintering, elastic properties

of nanolayers, grain boundaries, and structural stability. The last third of the book consists of eight chapters that discuss technological applications based on the special properties of nanoscale materials. Here the reader can learn how nanofibers or nanoporous materials are made, and how nanomaterials can be used in composites, for drug delivery, and in devices such as field emission displays and electrochemical cells. In the latter part, the applications discussed are again mainly based on carbon materials.

Each chapter starts with a table of contents, which is followed by a short abstract and a short introduction to the particular field. This is a big advantage for the reader, who gets an initial overview of the topic and an impression of what the chapter contains. On average the chapters are 20 pages in length and contain about 100 references. In total the book contains an impressive number of more than 2500 references, which shows the enormous increase of scientific interest in nanomaterials, and surely justifies its collection in the present form. As is usual in a book that consists of a collection of review-type articles, there are no cross-references, but the editor has provided an index with more than 1000 keywords to guide the reader to the desired topics.

In summary, the book covers fundamental physical and technological aspects of nanomaterials. It is not a handbook in the classical sense, with tables systematically listing materials properties and methods of characterization. Instead, it shows the current state of research in various areas of nanoscience by presenting a selection of recent results. As the main emphasis is on carbon materials, it is mainly suitable for scientists or engineers who want to get a broad overview or collection of recent research in this area.

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