porate much of the detailed mechanistic and structural information generated over the course of the last two decades, as well as showing how this data has been used to develop highly effective medicines. For example, the importance of the transition-state mimetic as a critical pharmacophore in the development of potent HIV protease inhibitors is well documented in the entry for lopinavir.

Therapeutics for the treatment of malignant disease are covered in Part V, and the authors outline the major small-molecule advances. The impact that natural products have made on the field of oncology medicines is illustrated by several pertinent examples (e.g., vinblastine, paclitaxel).

The final chapter (Part VI) is concerned with the development of drugs that act on the nervous system. Pain (analgesia) treatments are grouped together, including thorough coverage of the opiate (morphine) and barbiturate (sodium thiopental) drug classes. This is then followed by the last pharmacological overview, which covers neurotransmitters and neurotransmission. This chapter then breaks from format by describing several different drug classes grouped together for CNS disorders (instead of the previous format of one molecule per drug class). For example, there is a general section on antidepressants, in which examples of MAO inhibitors, tricyclics, and SSRIs are all grouped together. As acknowledged by the authors, this is a consequence of the relative dearth of treatments for neurodegenerative and psychiatric diseases.

The authors intend this monograph to be of interest to a broad readership, from the active practitioner of life sciences and medicine to the educated and interested lay person. It is the authors' desire that this book will enhance public understanding of medical science, and specifically of pharmaceutical research. Another significant objective of this work is to stimulate the interest of students of the life sciences to consider a career in the health and medical fields, so that the momentum of advances outlined herein can be sustained indefinitely. Finally, this book acknowledges the tremendous difficulty associated with the discovery of novel drugs, and is intended to pay tribute to the creativity, talent, and effort of the teams of scientists and physicians that have produced these medicines.

Overall, *Molecules and Medicine* accomplishes the objective of astutely, yet concisely, describing the discovery of small-molecule medicines, while focusing on the essential chemical features of each drug. This monograph could serve as a superb guidebook for a university course on medicinal chemistry as applied to the pharmaceutical industry. Additionally, this book should be utilized by all scientists, especially medicinal chemists, who are embarking on careers in drug discovery, and in that respect *Molecules and Medicine* fills a significant void and should be of tremendous value.

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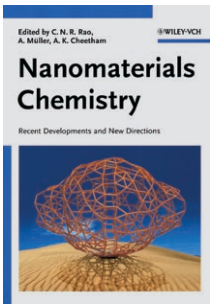
Nanomaterials Chemistry



Recent Developments and New Directions. Edited by *C. N. R. Rao*, *Achim Müller*, and *Anthony K. Cheetham*. Wiley-VCH, Weinheim 2007. 405 pp., hardcover € 139.00.—ISBN 978-3-527-31664-9

The subject of chemical nanostructures has developed into a very wide-ranging area of activity, and is now an important field of research and teaching in chemistry and in related disciplines such as materials science, physics, electronics, and even medical science. The almost explosive growth in the amount of published work in this area has given rise to a number of specialist journals, but has also made it difficult to systematically keep pace with important trends in research. There is a need for publications that present a reliable picture of the current state of research, as well as describing important phenomena and evaluating their development potential. That need has led naturally to the plan for writing a book that should describe the current situation and be intended mainly for students, while also being useful for researchers and teachers.

The editors of this book have already taken up this challenge in 2004, with the two-volume work *Chemistry of Nanomaterials*, which provided an excellent collection of valuable individual contributions. The book reviewed here, *Nanomaterials Chemistry—Recent Developments and New Directions*, is an extension to the previous work, and summarizes the recent developments of the past 2–3 years. It also includes some new topics, such as organic nanostructures.

The first four chapters of the book are devoted to inorganic nanostructures. This area of research has grown recently, in particular through the introduction of new methods for preparing anisotropic nanostructures, a development that is given appropriate attention in this book. The advances that are described include the chemical synthesis of nanowires, the preparation and processing of carbon nanotubes, and a theoretical treatment of the growth of nanocrystals in solutions, which relates to recent experimental work. This is followed by a chapter that describes the synthesis of peptide-based nanomaterials and sketches their potential applications.

The next chapter gives an excellent introduction to the analysis of surface plasmon resonances. The authors provide a nice selection of examples, and give very good descriptions of the actual phenomenon and of the construction of one- and two-dimensional organized nanoparticle systems in the context of plasmon coupling.

The following three chapters are strongly oriented towards applications, and focus on electronic and electrochemical aspects. Specific topics covered are the applications of nanostructured hybrid materials as dielectrics, the potential uses of dendrimers in sensor technology, and a discussion about molecular approaches to the construction of organic field effect transistors.

In the chapter on supramolecular systems as a stage on the way to molecular machines, the reader learns about a number of important reactions and principles that can be used for the construction and control of these complex systems.

The final chapter is devoted to a discussion of nanoscale electronic inhomogeneities in complex oxides. Although this is an interesting and very readable part of the book, it seems rather out of place here and too specialized.

Altogether, the book is an excellent addition to the two preceding volumes. It deals with many new aspects, and represents a useful and appropriate broadening of the spectrum of topics treated in the earlier volumes. The total package of all three is a very nice work, which is suitable both for teachers and for advanced students. For researchers working on particular aspects of the field, it will serve as a valuable guide through other related areas of research.

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