clearly that the book is about synthetic methods and not only about how compounds are formed. Unsaturation is one of the great themes of organic chemistry, whether one is talking about the reactivity of organic compounds or about their structures or physical properties. "Organicists" will continue to carry out research on this subject as long as organic chemistry exists as a branch of chemistry. Finally, it is important to keep in mind that not just the best, but the only possible attitude for chemists is that it does not matter whether the spirit of the times is dominated by the search for new structures or by the search for practical applications.

My only criticism of the book (which, incidentally, has a comprehensive index) is about the title. I would have called this volume "Carbon-Rich Compounds, I", because I think it goes without question that a second volume will soon be necessary in such a rapidly developing field as this.

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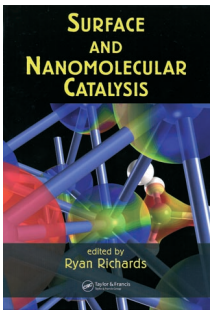
Surface and Nanomolecular Catalysis



Edited by *Ryan Richards*. CRC/Taylor & Francis 2006. 544 pp., hardcover £97.00.—ISBN 1-57444-481-6

In recent years, new instrumentation and experimental techniques that allow scientists to observe chemical reactions and determine molecular properties on the nanoscale have been developed and applied to study catalytic solids at work. This development has expanded our current view of the fundamentals of this field of science and technology, which contributes significantly to the quality of our everyday lives. Furthermore, many of the concepts of nanotechnology have to be translated not only for modeling catalysts, but also for designing and constructing real-life solids with well-defined catalytic functions on the kilogram and tonne scales. Such an endeavor requires a profound chemical knowledge. Insightful textbooks may help us by bringing together different areas and up-to-date expertise of catalysis research in a single volume.

As the title suggests, the new book *Surface and Nanomolecular Catalysis*, edited by Ryan Richards, contains a series of chapters devoted to catalyst characterization, synthesis, surface science, combinatorial catalysis, and a wide variety of catalysis applications. As mentioned by the editor in the foreword, "few terms have been more commonly used and abused in the scientific literature than *nano*". Since heterogeneous catalysts are nanomaterials that literally work, it was in my opinion not necessary to use the term "nanomolecular catalysis", since "molecular catalysis" already implies catalysis concepts on the nanoscale. This small comment aside, I have been impressed by the scientific content, overall quality, and scope of this attractively produced book, and would rate the individual chapters from good to truly excellent. The best and most refreshing contributions are Chapter 3 on "Colloidal Nanoparticles in Catalysis", Chapter 4 on "Microporous and Mesoporous Catalysis", Chapter 10 on "Understanding Catalytic Reaction Mechanisms", Chapter 12 on "Heterogeneous Photocatalysis", and Chapter 14 on "Asymmetric Catalysis by Heterogeneous Catalysts".

As often with multi-author books, the detailed level of each chapter varies significantly, and consequently it is not always clear what is the entrance level of a given chapter. For people not yet familiar with catalysis, the book is not easy to read, and a first introduction to catalysis is clearly needed. All this can be judged from the level at which the authors have chosen to write their introductions, whether it is Masters or PhD student level. In this respect, I was delighted to see that each chapter has at the end a series of questions/problems, although the level of these ranges from merely reproducing knowledge to solving an insightful case study. It is clear that the latter is my preference when using a specific chapter for teaching students. It would also have been good if each chapter had a "further reading" section; unfortunately this has only been done for Chapter 4.

Another point that I have noticed is that some chapters (more specifically those on texturology and skeletal catalysts) do not really fit within the scope of the book, and to omit these would not have made the book weaker. At a more detailed level, I have noticed that the journal abbreviations used in the different chapters are not consistent (e.g., *The Journal of Molecular Catalysis A: Chemical*), and also some figures are not well reproduced (mainly in Chapter 10). The book would also have benefited from a general appendix, especially when it is used in university courses (e.g., with regard to terms and abbreviations in Chapter 4). A final point of criticism is that the material in the chapter on characterization, although this is nicely written as a stand-alone contribution, would have been better if incorporated within the individual chapters on materials synthesis, as has already been partially done by the authors themselves. There is some overlap, for example, on the use of infrared spectroscopy and probe molecules in acid–base characterization of metal oxides and zeolites (page 12 in Chapter 1, pages 50–51 in Chapter 2, and pages 132–134 in Chapter 4).

Summarizing, this is a very interesting contribution, which gives up-to-date views on a wide variety of catalysis topics and their important contributions to different areas of technology. *Surface and Nanomolecular Catalysis* is certainly a valuable book for everyone with an interest in molecular views of heterogeneous catalysis. Furthermore, a selection of individual chapters can be used as a basis for university courses on catalysis at the Masters and PhD student level.

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DOI: 10.1002/anie.200685450

