makes extremely interesting reading, and the editors should be commended for assembling an authoritative and distinguished group of contributing authors. I strongly recommend it.

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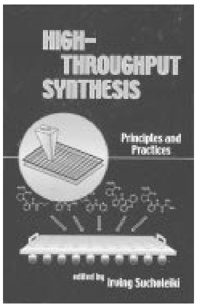
High-Throughput Synthesis. Principles and Practice. Edited by *Irving Sucholeiki*. Marcel Dekker, New York 2001. xxi + 366 pp., hardcover $ 175.00.—ISBN 0-8247-0256-5

Books on combinatorial chemistry and on high-throughput analysis do not have an easy task, as they have to contend with the interdisciplinary nature of these subjects and with the rapid pace of development. It would be very difficult to discuss these new disciplines adequately without including aspects of analytical methods, automation technology, biochemistry, and materials science.



Also proper attention must be given to the subject that forms the central core of this field, synthetic chemistry. That is now even more important, because the need to develop synthetic methods is increasingly the main bottleneck hindering the preparation of large numbers of new compounds. It is only when a reliable method for synthesizing a class of compounds has been developed that one can set up a system for high-throughput synthesis.

This new compendium on the subject of high-throughput synthesis aims to meet these requirements by a "cookbook" approach. The actual discussion chapters are very short, and offer only a superficial introduction to one aspect of the subject, rather than serving as an overview of the literature. But they are followed by a collection of case studies which give the work its uniquely useful character. These contributions have been chosen from the great wealth of published work in the field, and are presented in the form of detailed laboratory protocols in the manner of cooking recipes, including lists of the chemicals and apparatus needed. These case studies form the basis of an impressive and wide-ranging treatment of the subject. Automation aspects are discussed in detail, as also are the types of interfaces that have been developed for linking combinatorial synthesis to screening procedures based on biological or materials properties. The reader also learns something about state-of-the art techniques used in synthesis, such as high-throughput purification methods and the use of scavenging reagents.

This form of treatment based on case studies seems very appropriate, especially where it introduces routine procedures in which one can benefit from the advantage of an existing general method. This approach also has clear advantages for establishing synthetic protocols, and could be useful to chemists wishing to establish new techniques in their laboratories. However, the verdict from the standpoint of special syntheses is different. It is true that the book gives detailed descriptions of many syntheses, but the process of adapting a well worked out synthetic protocol for high-throughput use is not where the main difficulties occur in practice. Instead, from a practical viewpoint the difficulties arise mainly in the development and optimization of new synthetic routes, an aspect that is unfortunately hardly touched on in this book. It would have been more useful to place special emphasis on that aspect, for example in discussions of different types of polymer supports and linker systems, thus providing a valuable source of help for the synthetic chemist. What are the advantages and disadvantages of a particular support material? Which linkers are appropriate for which reaction conditions? The available supports and linkers are merely listed, with no attempt to describe their properties in detail. The case studies offer little help in this area. More emphasis should be placed on discussing likely problems and solutions. More information about analytical methods for monitoring reactions, especially the on-bead methods, would have been helpful. Lastly, it would have been desirable to discuss combinatorial approaches to the development and optimization of synthetic protocols.

There remains the question as to which groups of readers the book is suitable for. It cannot be recommended as an introduction to combinatorial chemistry and/or high-throughput synthesis, as the chapters are too superficial. On the other hand, for chemists who already have some basic laboratory experience in combinatorial chemistry it contains useful ideas, hints, and advice, especially about introducing new techniques for synthesis and automation. Chemists whose interest lies in solving problems of synthesis and developing effective synthetic protocols, with the aim of then applying these to high-throughput systems, will find that the book offers little help. For answers to these central questions they must refer to the specialist literature on solid-phase synthesis or combinatorial chemistry.

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NMR Imaging of Materials. By *Bernhard Blümich*. Clarendon Press, Oxford 2000. xxiii + 541 pp., hardcover £ 69.50.—ISBN 0-19-850683-X

This book, in the OUP series of monographs on "Physics and Chemistry of Materials", addresses non-medical applications of magnetic resonance imaging. The book can be roughly divided into three parts: fundamentals of NMR, the basics of MR imaging, and the use of imaging in systems other than medical or animal systems. These parts make up approximately 30, 40, and 30% of the book, respectively.

The first part (Sections 1–4) covers the general principles of NMR: the spin Hamiltonian, spin dynamics, and the basics of NMR data acquisition and processing. One of its real strengths is the special attention paid to NMR hardware and the ways in which it affects the experiment. While it would have been impossible to give a comprehensive account of the subject in just one or two sections, the book gives a good overview of NMR hardware with excellent refer-

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