

Book Review

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(EDITOR)

Analytical methods in supramolecular chemistry

Wiley-VCH, 2007,
502 pp; price £100.00/€150.00
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Analytical Methods in Supramolecular Chemistry is priced for libraries and serious research groups in the field. But let us look at what you get for your hard-earned research grant. The editor, Christoph Schalley, has done a really excellent job bringing together contributions from leading experts who are more or less specialists in each of the techniques covered by the book. In any edited work there will always be stylistic variations and variations in quality from one chapter to the next. However, these are minimal in comparison to other works and the editor has clearly kept a tight rein on his contributors. Each of the 12 chapters are substantial treatises on modern instrumental or experimental techniques written specifically with supramolecular systems in mind, and of course well illustrated with supramolecular examples. At the time I received the book I happened to be interested in DOSY (diffusion ordered spectroscopy). I spent a reasonable amount of time looking for a nice supramolecular example of a DOSY spectrum in the literature and on google but I didn't find

one. To my pleasure I found that Schalley's book has a whole chapter on the technique written by Yoram Cohen *et al.* with just the sort of examples I wanted. DOSY is a technique that supramolecular chemists are using increasingly—one of the more exciting recent tools in our arsenal—but this is the first time I have seen it explained and illustrated in a concise but authoritative manner. The Diffusion NMR chapter is typical of the high-quality contributions in the book. If your interests happen to be in one of the topics the book covers then look no further. Immediately persuade your librarian to obtain a copy! The techniques included are as follows: determination of binding constants, isothermal titration calorimetry, extraction methods, mass spectrometry, diffusion NMR, photophysics and photochemistry, circular dichroism, crystallography, scanning probe microscopy, techniques for the characterization of synthetic ion channels and pores and theoretical methods. Of course, one can always find little things to criticize. Kari Risannen has written a nice introduction to single crystal crystallography for the uninitiated, but it is disappointing not to have seen anything about powder diffraction and maybe the 4–5 page section on crystal engineering at the end is a little brief to make much difference. On the other hand, the inclusion of techniques for the characterization

of ion channels by as well-respected an expert as Stefan Matile is a very nice choice—a topic not very familiar to many chemists but at the core of a lot of modern work in the field on ion transport. Isothermal titration calorimetry is also a good choice and the chapter by one of its leading proponents in supramolecular chemistry, Franz Schmidtchen, is a clear introduction to those wondering what the technique can do for them. The book is bound together by a necessarily selective introductory chapter by the editor. Possibly this tries to do too much in too little space, but it does serve to highlight the need for a high degree of creativity in the way in which supermolecules and supramolecular systems are studied, particularly because they are so often very challenging by virtue of their large size and high degree of complexity. In conclusion therefore, this is an excellent book. Its modular structure means that it can be read one chapter at a time according to one's interests, and it makes an ideal reference work and a source of new research ideas and directions.

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