Molecular Crystals and Liquid Crystals Science and Technology. Section A. Molecular Crystals and Liquid Crystals

Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/gmcl19

Book Review

Version of record first published: 24 Sep 2006

To cite this article: (2001): Book Review, Molecular Crystals and Liquid Crystals Science and Technology. Section A. Molecular Crystals and Liquid Crystals, 363:1, 211-212

To link to this article: http://dx.doi.org/10.1080/10587250108025271

Mol. Cryst. Liq. Cryst., Vol. 363, pp. 211-212
Reprints available directly from the publisher
Photocopying permitted by license only

Book Review

"Principles and Methods in Supramolecular Chemistry" by Hans-Jörg Schneider and Anatoly K. Yatsimirsky, John Wiley & Sons, Chichester, U.K., New York, 1999; ISBN 0–471–97253–3 (paperback); xii + 350 pages; 135 DM; 69.02 Euro; 120 SFR.

Supramolecular chemistry is an important area of chemistry, but what exactly is it? In their book "Principles and Methods in Supramolecular Chemistry", Schneider and Yatsimirsky focus almost exclusively on the area of host-guest chemistry, with only brief mention made of areas such as self-assembly and crystal engineering. As such, the title may be misleading to some readers, but this high degree of focus allows the authors to describe their chosen subject area with satisfying breadth and depth.

The book begins with an introduction of basic physical concepts such as entropy and enthalpy of complexation, receptor preorganization and cooperativity. Next, the fundamentals of intermolecular forces and medium effects are discussed. The largest section of the book, and perhaps the most useful, deals with the quantification of host-guest energetics. This section provides a rigorous and in-depth approach to both the experimental and mathematical tools required for measuring host-guest interactions, and is essential reading to anyone working in the field of host-guest chemistry. It is also an excellent resource for people who are considering research in the area; it will help in avoiding a number of common pitfalls. The next section of the book provides concise summaries of more specialized topics such as dynamics of recognition processes, surfactant-based systems, molecular imprinting and inclusion chemistry. The final section provides a highly useful discussion of applications for synthetic receptors, providing some insight into pragmatic applications for these systems.

Overall, this book is an excellent resource for researchers in the field of host-guest chemistry, as well as people who are considering moving in this direction. While the text is written as a textbook (with problems and answers provided for each chapter), the rigorous and highly physical approach taken by the authors makes this book more suitable as a reference resource, a role it fulfils admirably. What sets this book apart for the worker in the field of host-guest chemistry is the

rigorous approach to both the physical properties of these systems, as well as the methodology required to determine these properties.

Vincent Rotello
Department of Chemistry
University of Massachusetts at Amherst
Amherst, Massachussetts 01003