

Book Reviews

Principles and Methods in Supramolecular Chemistry

H.-J. Schneider and A.K. Yatsimirsky; John Wiley and Sons, Ltd, Chichester, 2000, xii + 349 pages, ISBN 0-471-97253-3, £39-95

In recent years supramolecular chemistry has developed into one of the most actively researched fields of chemistry. Its relatively late development is due to its need for a solid basis of synthetic methodologies in order to produce the required building blocks. The construction and characterisation of such supramolecular assemblies presents novel challenges due to their greater complexity. This necessitates the availability of powerful instrumental techniques for the elucidation of their structural, dynamic and physicochemical characteristics. This volume aims to present a systematic and condensed overview of supramolecular chemistry, which is extremely diverse and somewhat overwhelming for the novice, by providing both the theoretical background and the practical methodologies. Particular emphasis is given to the underlying principles and to methods which play an important role in the design, characterisation, and applications of supramolecular complexes.

'Principles and Methods in Supramolecular Chemistry' is divided into nine chapters, and begins by covering the basic concepts of host–guest complexation with examples from ionophore chemistry, and a comprehensive overview of non-covalent interactions and organic host–guest complexes. Other chapters include the energetics of supramolecular complexes, structural methods, the dynamics of supramolecular systems, surfactant-based supramolecular systems and dendrimers, and shape recognition and solid-state inclusion complexes. Emphasis is placed upon the characterisation of such complexes throughout, with discussion of potentiometry, polarography, cyclic voltammetry, conductometry, spectroscopy (UV, IR, fluorescence, chiroptical methods, NMR and MS), calorimetry, microscopy (STM, AFM, CFM and SNOM), and molecular modelling. The final chapter focuses upon selected applications of synthetic supramolecular systems, and covers chiral discrimination, self-organisation processes, supramolecular catalysis, analytical applications (optical and electrochemical devices), molecular switches and supramolecular photochemistry, and membrane transport. Each chapter includes an exercise (with answers) section, which provides some training ground. A web page also accompanies this volume, which provides access to typical supramolecular structures and compliments points and problems within the text.

It is important that individuals entering the field have at

their disposal a clear and thorough presentation of the principles and methods available for the study of supramolecular species and processes. This volume provides entry into the numerous and various methodologies available and puts them into perspective. The contents should help the reader to design host compounds for specific targets, to check their performance, and to understand and to optimise supramolecular systems for a range of applications. It is therefore recommended as essential reading for graduates and researchers in this area.

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Good Laboratory Practices

Alex D. Kanarek; Drug and Market Development Publications, 2000, 124 pages, ISBN 1-57936-146-3, \$295

A Guide to Good Laboratory Practices, subtitled for start-up and growing laboratories in industry and academia. This manual initially discusses the need for quality assurance in research and development and outlines the aims that need to be met. Also the cost of non-compliance incurred by repetition of experimental work to comply with appropriate standards necessary for post laboratory development.

The current regulatory bodies for different countries are listed, their respective guidelines being inter-changeable due to co-operation through the Organisation for Economic Co-operation and Development (OECD). The regulations for the USA, OECD (to which countries in the EEC subscribe) and Japan are listed in the extensive appendix.

Each critical compliance issue is outlined in several