Supramolecular Chemistry. By J. W. Steed, J. L. Atwood. Wiley: New York, **2000**, paperback, £ 29.95, ISBN 0-471-98791-3, 772 pp.

The rapid rise in exploitation of the principles of supramolecular chemistry over the last 20 years, which has driven the development of several new fields including biomimicry and molecular-level devices, is leading increasingly to the inclusion of these principles in undergraduate courses. A comprehensive textbook aimed at this and researchers new to the field has, until now, been lacking. 'Supramolecular Chemistry' seeks to address this by defining the subject broadly and providing a concise, readable introduction to its different aspects.

The opening chapter provides a clear description of the evolution of supramolecular chemistry from the principles of enzyme-substrate complexes and coordination chemistry. It classifies the forces which control intermolecular interactions, and details the rationale behind the design of a supramolecular system.

A chapter on supramolecular chemistry in biological systems follows, highlighting the roles of the tetrapyrrole macrocycles and DNA. Supramolecular methods for developing therapies based on DNA intercalators are also included.

As befits the relative focus in the literature the following section of cation-binding hosts is extensive (106pp) in comparison to that on anion-binding hosts (52pp). In both cases binders are classified by type and sections on crown ethers, lariat ethers, cryptands, spherands, calixarenes and siderophores are included in the former, while the latter are classified into biological hosts, protonated cation-binders, organometallic, neutral and anticrown binders. In many cases examples of the application of each type of interaction are given, including the development of sensors and ion transport systems.

A chapter on the role of crystal engineering and the design of functional organic solids for non-linear optics and chirality induction includes systems controlled by hydrogen bonding and π-π stacking is followed by a thorough treatment of template strategies used in the synthesis of ligands and self-assembling complexes.

The two following chapters on molecular devices and biological mimics highlight some of the most interesting chemical literature in the field in recent years. In particular, the extension of the concepts of supramolecular chemistry to the development of functional molecular devices using supramolecular photochemistry, switchable systems and molecular wires and the enhanced understanding of enzyme and haem analogues through supramolecular biochemistry are important inclusions.

The closing chapter examines the role of liquid interfaces, crystals and clathrates, their discovery, structure and properties and describes applications in liquid crystalline displays.

While the scope of this text is very broad the authors provide a good level of detail of synthetic strategies employed to realise different classes of compound. Reaction schemes and diagrams are clearly presented where appropriate and references to primary and review literature are up-to-date and plentiful.

An additional web resource is available which provides 3-dimensional visualisations via Chime, though many sections, such as answers to problems in the text, are still incomplete. The visualisations are, however, very useful as they allow a degree of insight which is difficult to convey on the printed page.

In summary, this text is a welcome, timely and valuable publication. It is an excellent introduction to the principles and major applications of supramolecular chemistry and, while more advanced treatments of specialist areas of the subject have been published, is likely to become a key recommended text for undergraduate syllabi, which cover this important field.

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