

## Book Reviews

**Principles and Applications of Stereochemistry**

M. North; Stanley Thornes (Publishers), 1998, xii + 254 pages, ISBN 0-7487-3994-7, £24.99

Stereochemistry is the relationship between the three-dimensional shape of a molecule and its chemistry. The shapes of molecules, their symmetry and the spatial arrangement between the groups they possess control almost all aspects of our lives. Understanding stereochemistry is essential for understanding most aspects of organic chemistry, as well as being crucial in many biochemical and medicinal fields, as the stereoisomers of a compound can have very different biological properties.

*Principles and Applications of Stereochemistry* covers the organic, inorganic and physical chemical aspects of stereochemistry. It explains how different properties arise from different stereochemical arrangements, and discusses implications for the preparation and analysis of complex compounds. The importance of the stereochemistry of inorganic and organometallic compounds is also likely to increase in the future, as these compounds are used as symmetric catalysts in asymmetric synthesis. This area of stereochemistry is covered in detail in this book.

The first eight chapters in this volume cover the stereochemistry of individual molecules, while the last chapters show how stereochemical knowledge can be used to predict the outcome of a variety of chemical reactions. Discussions of the energy differences which determine the shapes and ground state populations of flexible and cyclic molecules, as well as the use of spectroscopic and other quantitative information is covered. This provides invaluable insights to other aspects of molecular behaviour and construction.

This text is ideal for undergraduate students newly introduced to the field, but is also suited for more advanced levels, with topics covering diastereotopicity and catalytic asymmetric synthesis. The book contains plenty of diagrams and cross-referencing, as well as problems at the end of each chapter, to give a better idea of how the contents can be applied. Real-life applications of stereochemistry are included, as well as topics such as the origin of enantiomerically pure compounds in nature.

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**Column Handbook for Size Exclusion Chromatography**

Chi-San Wu (Ed.); Academic Press, New York, 1999, 637 pages, ISBN 0-12-765555-7, US\$140.00

Size exclusion chromatography (SEC) also known as Gel permeation chromatography (GPC) and Gel Filtration chromatography (GFC) are popular methods used for the separation of both natural and synthetic polymers, the techniques provide data on molecular weight and distribution. The column selection in such chromatography is critical to provide optimum separation. The variety of columns available is huge with many more associated applications. Columns are expensive and so before purchasing suitability such as temperature stability, solvent compatibility, separation chemistry must be considered and cost must be made.

The *Column Handbook for Size Exclusion Chromatography* is more than just a compendium of literature on commercially available columns. The usual information such as plate count, exclusion limits, and calibration curves are included. Also more in-depth information on the separation technology, continuing maintenance and quality control of columns. The handbook enables rapid column comparison and selection to be made without the tedious trawl through each separate manufacturer's literature.

Manufacturers have provided hundreds of excellent examples of how natural, synthetic and biopolymers may be separated. Experts have contributed their valuable knowledge and experience with respect to characterisation, evaluation, maintenance, selection and application of columns.

The book provides an up-to-date, clearly written and presented compendium, which is an essential reference tool for columns and associated applications. It is highly