

## Book Reviews

**Size Exclusion Chromatography.** Edited by B. J. Hunt and S. R. Harding, Blackie & Son Limited, London, 1988. x + 286 pp. ISBN 0-216-92494-4. Price £49.00.

Polymers are part of our everyday life. They range from the type of synthetic polymer which is used to make car tyres, to the biopolymer used as a gelling agent in so many of our processed foods. Their chemical composition is important in determining their use, but physical properties such as molecular weight are of equal if not greater importance for predicting their behaviour under certain conditions. Whereas the chemical composition of a polymer molecule is usually fairly well-known, characteristics such as molar mass have hitherto been a little more difficult to determine, using quite complicated measurements such as osmotic pressure or light-scattering, etc. Size exclusion chromatography (SEC) is a fairly rapid and simple method for the determination of polymer molecular weight and is used on a routine basis in quality control laboratories as well as for research purposes.

There is already quite a large number of texts concerned with liquid chromatography in general and SEC in particular. So why the need for a new publication? A general book on liquid chromatography will only give a general overview of each technique, thus missing a more detailed discussion on one particular method. Many of the books involved with SEC only, are theoretical rather than practically based. *Size Exclusion Chromatography* is aimed mainly at the practising chromatographer. The book is divided into three parts. The first, the fundamentals of SEC, deals with theory, instrumentation and data analysis. The second, and perhaps most important part, deals with the applications of SEC for

copolymer analysis, small molecules and high temperature and aqueous SEC. In the third part of the book, the reader is made familiar with alternatives to SEC, namely field flow fractionation, supercritical fluid chromatography and hydrodynamic chromatography. It is unusual that a book concerned with SEC should give the reader an insight into alternative methods, but this approach can only be recommended since SEC may not be the best method for a particular application.

The book is generally well written and researched and provides valuable information for all those involved with SEC. It is not only aimed at the practising chromatographer, but will also be of great help to the newcomer to this technique. The text includes a large number of illustrations of both instrumentation and chromatograms and each chapter contains extensive up-to-date references. The book will be a useful addition to the library of any polymer scientist be it for research or routine analysis.

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**John F. Kennedy**

**One and Two Dimensional NMR Spectroscopy.** By Atta-ur-Rahaman, Elsevier Science Publishers, Amsterdam and New York, 1989. xx + 578 pp. ISBN 0-444-87316-3. Price \$US186.75/Dfl. 355.00.

During the last decade the field of nuclear magnetic resonance spectroscopy has undergone a rapid development with the advent of new one- and two-dimensional techniques. As a consequence, there has arisen a need for an authoritative text on the theory and practice of multipulse experiments, which at the same time is comprehensible to the practical organic chemist and which describes the immense usefulness of the new techniques. The author has written a text which admirably fulfils these needs. In this volume the discussion of such routine subjects as factors governing chemical shifts and coupling constant values is avoided — they are included in many NMR textbooks published during the last two decades. The emphasis has rightly been given to describing recent developments, and the practical applications to solving the structures of complex organic molecules.

The wide scope of this book comprises 14 chapters, discussing *inter alia* the basic principles of modern NMR spectroscopy; spin-echo and polarisation transfer; the nuclear Overhauser effect; basic principles of two-dimensional NMR spectroscopy; heteronuclear and homonuclear