

using spectroscopic techniques will also profit from the wealth of information provided in this novel, state-of-the-art guide.

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Understanding Mass Spectra—A Basic Approach

R.M. Smith, K.L. Busch (Eds.); xx + 290 pages, ISBN Hb 0-471-29704-6, £38.95

The interpretation of mass spectra has always been complex. Modern computing systems have taken most of the laborious work out of mass spectrometry, however, it is critical that mass spectrometrists possess the interpretative skills needed to avoid false positive identifications, overlooked unknowns, and missed research opportunities. *Understanding mass spectra—a basic approach* is a straightforward way to acquire those interpretative skills and reflects Smith's practical real-world experience in the interpretation of mass spectral data.

Understanding mass spectra—a basic approach provides a detailed overview of instrumentation, with an emphasis on a basic understanding of the theory involved. Following through the logical discussion that accompanies each example, the reader is brought through the strategies of spectral interpretation that are useful in a functioning analytical laboratory. Non-intimidating mathematical derivations are included to show that at least some theoretical underpinning of mass spectrometry is understandable without advanced mathematical training. The impact of the computer data system and modern tools such as library searches are discussed with a practical point of view. Challenging real-life problems and examples are included together with well written and easy-to-follow answers at the end of the book. Useful principles and other information needed for solvent problems are presented in convenient lists and tables. Recent inlet techniques (high-performance liquid chromatography/mass spectrometry and capillary electrophoresis/mass spectrometry), and ionisation methods (electrospray, fast atom bombardment, and laser desorption) are only briefly mentioned and descriptions of high-resolution MS and MS/MS are limited since they do not substantially alter the basic approach to mass spectral interpretation.

Understanding mass spectra—a basic approach is designed to serve equally well as a professional tutorial or

a textbook for the upper level undergraduate and post-graduate students in organic and analytical chemistry. Professional mass spectrometrists working in analytical laboratories will also benefit from reading the book.

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Carbohydrate Biotechnology Protocols

Christopher Bucke (Ed.); Humana Press, Inc., 1999, xii + 337 pages, ISBN 0-89603-563-8, US\$ 89.50

The potential commercial importance of carbohydrates is only recently being fully appreciated. Although the study of carbohydrate science has been fraught with technical difficulties, modern methods, both analytical and synthetic, are leading to the resolution of many of these problems, especially the use of enzyme technology. The use of enzymes in fermentation has resulted in the generation of polysaccharides, oligosaccharides and carbohydrate based surfactants. Other enzymatic techniques are also opening up the possibility of producing derivatives of sugars and other oligosaccharides.

Carbohydrate Biotechnology Protocols consists of timely and readily reproducible protocols, with the contributions formatted with the theoretical and commercial background of the methods, followed by lists of reagents and equipment required. Then detailed step-by-step descriptions of the methodology are given, and each chapter is concluded with notes containing numerous practical hints from experts experienced in the methods.

The key features of *Carbohydrate Biotechnology Protocols* include descriptions of methods for the production and isolation of microbial polysaccharides and the use of isolated enzymes in the synthesis and modification of polysaccharides. The core text is concerned with production of smaller carbohydrate molecules (cyclic oligosaccharides, cyclodextrins and microbial glycolipids), as well as oligosaccharides, with many different approaches to produce a large diversity of materials. Several chapters also describe new developments such as the chemo-enzymatic syntheses of complex oligosaccharides, as well as the FACE® method, a new technology coupling enzyme and physical methods to determine carbohydrate structures.

Furthermore, many of the cutting-edge techniques

described are cleaner and less costly methods, which were hitherto not available in print. Also, the protocols described allow for the development and production of a large variety of novel food additives and modifiers, as well as possible therapeutic agents. The information supplied by this detailed volume contains techniques both familiar, novel and well advanced, making it a very informative book for synthetic chemists, biochemists, fermentation biotechnologists and applied enzymologists.

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