

Book Reviews

Handbook of GC/MS Fundamentals and Applications. By Hans-Joachim Hübschmann. Wiley-VCH, Weinheim, Germany. 2001. xvi + 591 pp. 17.5 × 24.5 cm. ISBN 3-529-30170-4. \$150.00.

This excellent text is divided into five chapters: Introduction, Basics, Evaluation of GC/MS Analysis, Applications, and Glossary. The first chapter presents an interesting short history of the development of GC/MS methods. The second chapter begins the technical discussion of GC/MS. This chapter, of approximately 200 pages, is subdivided into four topics: sample preparation, gas chromatography, mass spectrometry, and special aspects of GC/MS coupling. Each topic is further divided into a number of subtopics that are focused on specific points associated with the major topic. For example, the major topic, mass spectrometry, is broken down into 12 subtopics, including resolution in mass spectrometry, chemical ionization, electron impact ionization, and mass calibration. Each section is very well referenced and contains excellent illustrations to aid the reader in understanding the detailed discussion found in the text. The text contains a very large number (approximately 100) of example mass spectra from various literature sources. These spectra provide the reader with a clear insight into the analysis being discussed, as well as valuable reference spectra for newcomers in the field to aid them in reproducing these experiments.

In my opinion, students new to the art, as well as seasoned veterans, will find Chapter 3, Evaluation of GC/MS Analysis, and Chapter 4, Applications, to be the most interesting and useful of the five chapters. Topics discussed in these two chapters include various library search procedures, isotope patterns, fragmentation and rearrangement reactions, drugs, explosives, chemical warfare agents, limits of detection, sensitivity, contamination of soils and water, detection of cannabis consumption, detection of morphine derivatives, and systematic toxicological chemical analysis, to name a few. This is a truly excellent reference book for all scientists involved in the application of GC/MS methods to investigation of chemical problems. The text provides a very strong foundation to GC/MS that is appropriate as an introductory text for a beginning graduate course in the subject. However, the book goes far beyond this; it is a true "handbook" that will earn its place beside the instrument, where it will be used daily.

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