

BOOK REVIEW

Michael A. Peat,¹ Ph.D.

A Review of Forensic Mass Spectrometry

REFERENCE: Yinon, J., Ed., *Forensic Mass Spectrometry*, CRC Press, Inc., Boca Raton, FL, 33431-9868, 1987, 227 pp.

According to the editor, the purpose of this book is "to bring together the available information on the use of mass spectrometry in forensic science." The book certainly achieves this aim but at the expense of critical evaluation of the approaches used to solve several of the analytical problems commonly faced by forensic scientists.

The book consists of seven chapters, including ones dealing with mass spectrometry of commonly abused drugs, of drugs and toxic substances in body fluids, of explosives, and of synthetic polymers. Other chapters focus on the use of mass spectrometry in sports testing and arson analysis. There is a final chapter on miscellaneous forensic applications of mass spectrometry. All of the chapters are well written and extensively referenced. For example, those on drugs of abuse and synthetic polymers include 232 and 93 references, respectively.

It is probably this focus on compiling all the available references that reduced the critical review of the material. For example, the analysis of benzodiazepines in body fluids is discussed by Dr. Michael Klein. He describes various sophisticated mass spectrometry procedures, primarily based on negative-ion chemical ionization, without discussing the difficulties associated with performing gas chromatography/mass spectrometry (GC-MS) analysis for these widely used and abused drugs by the more commonly available electron impact procedures. Other drug groups are covered in a similar manner, which does not allow the reader the benefits of an experienced and respected worker's critical views on the selection of appropriate procedures.

A second example is the chapter by Jack Hennion, Dominique Silvestre, and George Maylin which focuses on the use of mass spectrometry in sports testing. In doing so, these authors perform a valuable service in outlining the steps necessary for establishing and documenting the correct procedure for setting up the mass spectrometer and performing a mass spectrometric analysis. However, they address the problems of steroid analysis very briefly, and this surely is the most important assay in sports testing today.

The chapters on arson analysis (by R. Martin Smith), on synthetic polymers (by Michael J. Whitehouse and Brian P. Wheals), and on explosives (by Jehuda Yinon) are extensively referenced and, for those unfamiliar with these areas, offer a valuable resource.

For forensic scientists requiring background information in the applications of mass spectrometry to forensic science, this book would serve as a useful addition, but for those expecting a more critical evaluation of the daily problems associated with such applications, it falls short.

¹Vice president of Technology, Compunchem Laboratories, P.O. Box 12652, Research Triangle Park, NC 27709.