BOOK REVIEWS

Instrumentation for Trace Organic Monitoring
Lewis Publishers, Inc., 1991

Book Review by P. H. Hemberger,
Chemical and Laser Sciences Division,
MS G740,
Los Alamos National Laboratory,
Los Alamos, NM 87545

This book is a collection of 15 articles and reviews from a symposium at the Third Chemical Congress of North America in honor of Professor Emeritus F. W. Karasek of the University of Waterloo, Canada. The book, describing instrumental techniques for organic analysis, emphasizes applications rather than physical principles. Environmental issues are stressed, although forensic, medical, and industrial problems are also discussed. The first five chapters deal with ion mobility spectrometry (IMS): applications, field evaluations, effects of compound class and functional groups on ion mobility, and use of IMS as a detector for gas chromatography, supercritical fluid chromatography, and liquid chromatography. The remaining chapters cover a range of topics, including analysis of environmental contaminants [notably the polychlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs)] by GC/mass spectrometry, high-resolution mass spectrometry (HRMS), and tandem mass spectrometry (MS/MS); and inorganic analysis by inductively coupled plasma mass spectrometry, high-performance liquid chromatography-electrospray mass spectrometry, and other techniques. Two chapters discuss separation methods, and two others are devoted to Fourier transform infrared techniques and surface acoustic wave microbalance technology.

Some problems are evident in the chapters on IMS. More discussion of the principles of the instrument and its strengths and shortcomings would help initiate to this technology. The editing is casual ("The estimated concentrated [sic] of these vapors...were estimated...") as is technical detail ("...hydronium reactant ions which have a proton affinity..."). Considering its source, this work seems not to draw on the latest work on the field. Of the 143 references in the five chapters dealing with IMS, only five were dated 1989, and no references were cited from 1990 or 1991. Further, the longest chapter in the book (54 pages) is devoted to the headspace analysis of marijuana and marijuana cigarette smoke by IMS/mass spectrometry. This topic is not as significant as others that received much less space. This chapter does, however, provide some insight into ion/molecule processes in IMS that the other IMS sections lack.

Several of the later chapters are excellent. Strong introductions and rigorous experimental and data analysis sections provide insight into important analyt-}

ical problems and into how analytical data are used to solve, or at least characterize, those problems. Chapter 6 presents a fine discussion of the elements of quality assurance and data presentation in the context of the analysis of PCDDs and PCDFs by HRMS. Low-resolution mass spectrometry, HRMS, MS/MS using a hybrid instrument, and MS/MS using a triple quadrupole instrument are compared and contrasted for the analysis of PCDDs and PCDFs in Chapter 7.

The variety of techniques and problems described in this book detract from its cohesiveness. Readers interested in a textbook approach to instrumental methods may find the title of this book misleading. The book addresses certain relevant issues in environmental analysis that would interest scientists and managers in related fields or that could be presented as "special topics" in an analytical chemistry course.

Secondary Ion Mass Spectrometry SIMS VIII
John Wiley and Sons, Inc., Chichester, UK 1992, $245.00

Book review by R. Graham Cooks,
Department of Chemistry,
Purdue University,
West Lafayette, IN 47907

It is both remarkable and unfortunate that the subject matter of this book makes up so small a fraction of the presentations made at annual ASMS conferences and of the papers published in this Journal. Those not closely acquainted with the parallel world of mass spectrometry covered in this volume should benefit from its perusal. The emphasis on quantitation, microscopic analysis, depth sampling, ultratrace analysis, and maximizing instrument performance all have implications for the practice of other forms of mass spectrometry. The wide variety of samples and analytes encountered and the increasing emphasis on the characterization of organic, polymeric, and biological materials are noteworthy. As a conference report, consisting of more than 200 papers, presented in camera-ready form, typically four pages in length, this is not the place to learn secondary ion mass spectrometry (SIMS) in a systematic fashion.

Those with a previous acquaintance with SIMS will welcome this volume. It covers the 1991 conference and in doing so provides the type of convenient archive that active researchers will want to have on their desks and within easy reach. Because it covers the entire subject, the presentations are necessarily uneven, and some longer, retrospective treatments would have been helpful; however, the main trends in the subject are
Table of Contents. The mars organic analyzer: instrumentation and methods for detecting trace organic molecules in our Solar system.

J. Kim. MOA SCIENCE The MOA is capable of determining the identity and concentration of a wide range of organic molecules including amines, amino acids, aldehydes, ketones, organic acids, thiols and polycyclic aromatic hydrocarbons (PAHs) in Martian samples with sub-part-per-billion sensitivity. Figure 1: (A) Actual integrated platform for universal sample processing and ÌµCE detection. (B) Exploded view of the chip layout, middle: photo of a finished chip. Grocery & Gourmet Food Handmade Health, Household & Baby Care Home & Business Services Home & Kitchen Industrial & Scientific Just for Prime Kindle Store Luggage & Travel Gear Magazine Subscriptions Movies & TV Musical Instruments Office Products Pet Supplies Premium Beauty Prime Video Smart Home Software Sports & Outdoors Subscribe & Save Subscription Boxes Tools & Home Improvement Toys & Games Vehicles Video Games. Bring your club to Amazon Book Clubs, start a new book club and invite your friends to join, or find a club thatâ€™s right for you for free. Explore Amazon Book Clubs. Kindle. Trace organic molecules and amino acid chirality in planetary science. A. L. Butterworth1, A. M. Stockton2, P. Turin1, M. Ludlam1, M. Diaz-Aguado1, J. Kim3, P. Willis4 and R. A. Mathies5. We explain how the NASA flight implementation process would apply specifically to ME instrumentation, and outline the scientific and technology development issues that must be addressed for ME analyses to be performed successfully on another world. We also outline research demonstrations that could be accomplished by independent researchers to help advance the TRL of ME instrumentation for future exploration missions. Organic-monitoring concerns in papermaking processes can involve the chemical balances required for both process quality and boiler water conditioning. Industrial manufacturers, drinking water facilities, and municipal wastewater managers are concerned about organic contamination ruining their water quality. Knowing the levels of organics and nutrients in source water, process flows, or effluent enables them to optimally manage the treatment and usage of water in their facility. Here are several ideas that detail how choosing the right analyzer technology can help optimize both the performance.