books

Mass spectrometry — the Swansea proceedings

Advances in Mass Spectrometry 1985, Parts A & B, edited by J. F. J. Todd, Wiley, 1986. £ 195.00 (1661 pages) ISBN 0-471-90831-2

Advances in Mass Spectrometry, Vol. 10, presents the proceedings of the Tenth International Mass Spectrometry Conference, held at Swansea in September 1985. This series is an informative collection of articles on mass spectrometric research in the preceding years. The volume consists of two books. Part A (565 pp) contains the text of the 5 plenary and 26 keynote lectures from leading scientists in the various fields, while part B (1096 pp) contains all the other oral and poster presentations.

Part B has been divided into 14 sections: liquid chromatography–mass spectrometry, gas chromatography–mass spectrometry, ion structures and mechanisms, instrumentation and novel techniques, laser-induced ionization and excitation, high-temperature studies and inorganic analysis, isotopic measurements, cluster ions, physical and theoretical, data processing, biomedical applications, pyrolysis mass spectrometry, new spectra, tandem mass spectrometry and desorption ionization. The contributions are limited to a maximum size of 2 pages and their quality varies considerably. Some authors have managed to formulate their findings well in spite of the limited space, whilst others have restricted themselves mainly to references. In some of these contributions the authors have tried to cram in so much information that the figures have become too small for normal reading. The list of the contents of part B given in part A does not completely agree with that given in part B. Quite a number of contributions from the section tandem mass spectrometry have been removed to the category new spectra, a section which can be considered as a compilation of material that is not easily classified. Fortunately the elaborate subject index allows the user to easily find his subject of interest or at least some useful references.

Part A contains reviews on the subjects mentioned above. The contribution of E. C. Horning on the applicatons of mass spectrometry in biology, pharmacology and medicine is an incomplete historical review of instrumentation and methods applied in this field. Mechanistic aspects of organic mass spectrometry are reviewed by H. Schwarz in an elegant contribution that focuses on the relationship between keto- and enol-type ions. J. C. Lorquet et al. discuss the impressive developments in the more fundamental aspects of gas phase ion chemistry in case studies of $H_2CO^{+\cdot}$ and $CH_3ONO^{+\cdot}$. J. F. J. Todd reviews the instrumentation. I particularly enjoyed his clearly written and well illustrated section on ion transport methods in sector and hybrid instruments. Clusters and macromolecules is the topic of a fine contribution by P. J. Derrick where, for instance, the occurrence of 'magic numbers' in the mass spectra of inert gas clusters is explained.

The 26 keynote lectures in section 2 are generally well written articles which I think would be of benefit to both beginning and more experienced mass spectrometrists.

In conclusion, I found Vol. 10 of Advances in Mass Spectrometry to be a very useful book to get up-to-date information on the impressive developments in various aspects of mass spectrometry, though Part B is best considered as a compilation of 515 abstracts with useful information and reference data.

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A scholarly reference book

Electroanalysis — Theory and Applications in Aqueous and Non-aqueous Media and in Automated Chemical Control, by E. A. M. F. Dahmen, Elsevier, 1986. Dfl. 375.00 (US$ 166.75) (xvi + 384 pages) ISBN 0-444-42534-9

The author justifies the writing and publication of a book on electroanalysis by stating that there are few up-to-date comprehensive textbooks on this subject. Although this observation is correct, he has himself omitted from the bibliography to the introductory chapter at least one recent book which deserves inclusion (Plambeck, 1982).

The book consists of three parts. Part A comprises 220 pages and presents a systematic treatment of electroanalytical techniques. Part B, consisting of about 70 pages, deals with electroanalysis in non-aqueous solutions and part C is supposed to give an account of electroanalysis in automated chemical control.

The major part of the book, part A, gives a good insight into electroanalytical techniques and the underlying theoretical aspects. The text is well written but despite its length the majority of techniques are discussed only in a rather condensed way. This is mainly due to the fact that the author has not clearly differentiated between important and less important techniques. Even completely obsolete techniques have been included. For this reason it will be very difficult for the newcomer in the field to find