The claim that the book provides '... clinical investigators with an up-to-date review of our current knowledge ...' is supported by the contents to some extent, but may well cause disappointment Certainly potassium concentrations of cadavers and biopsy samples receive good coverage. However, specialists in renal pharmacology who turn to the brief section on diuretics will find reference only to amiloride, ouabain and furosemide. The last is certainly important; amiloride is hardly a front-line diuretic, although its potassium-sparing properties make it relevant to the book; reference to ouabain in the clinical context of a diuretic is, to a non-cardiologist, stretching things a little far. There is no mention of adynamia episodica hereditaria (Gamstorp's disease) or familial periodic paralysis. Both may have been considered too rare to rate mention, but they are fascinating disorders, profoundly influenced by potassium administration, which the specialist might reasonably expect to find in *Cell Potassium.* Again, for some years clinicians have looked for, and found, changes in blood cell sodium–potassium ATPase activities and in potassium and sodium ion concentrations in patients suffering from hypertension, uraemia, depressive illnesses and other disorders. This reviewer failed to find mention of these, but it could be argued that they have made a real mark on the literature only in the last few years.

On the whole this is an extremely well written book which deals with great clarity with a wide spectrum of topics. It is a book which will be welcomed by many basic scientists and, in addition, it is probably worth recommending to students of Physiology, Biochemistry and related sciences.

J. C. GILBERT

Biochemical Applications of Mass Spectrometry (First Supplementary Volume)

GEORGE R. WALLER and OTIS C. DERMER (Editors)
John Wiley and Sons, New York, 1980, pp. 1279, £81.75

As the subtitle indicates, this multi-author book is the first supplementary volume to the parent book published in 1971. Its primary objective is to review the work of the last nine years on the application of mass spectrometry to biochemical research and also bring up-to-date instrumental, computer and interpretive aspects of the technique. This is an ambitious undertaking in the light of the very large increase in the use of mass spectrometry in recent years and the wide audience at which the book is directed. Where possible, authors of the first volume were invited to update their initial contributions, and in all cases where this has been done, there is minimal repetition of information, and illustrations, tables, structures and references are consecutively numbered to the original chapters.

The material is presented in the same format as the parent book and is in three sections. The first of these deals with instrumentation, with emphasis on computer data-acquisition and -processing systems. The second section covers developments in the interpretation of mass-spectral data, and the remaining section, comprising 80% of the book, is devoted to applications. Eight new chapters have been added to this last section, including chapters on environmental sample analysis which, although not strictly biochemical in application, have biomedical implications. Other additions include a major chapter on mass-spectrometry application to clinical medicine and a chapter on the analysis of volatile compounds in man.

The book makes a significant contribution to the review literature on mass spectrometry and will give the reader an authoritative introduction to specific biochemical applications and provide material on related topics. The comprehensiveness of the text, however, has resulted in a book of high cost which will unfortunately dissuade most individuals and many libraries from ownership. Nevertheless the editors have taken full advantage of the size of this volume and provided a substantial base of well-ordered information, particularly for those of short experience in mass spectrometry, which will serve to familiarize the reader with the subject quickly and provide the necessary references for deeper investigation. The pitfall of superficiality has been avoided and, although experienced workers may not always find sufficient depth in chapters on their own specialities, the range of topics covered should prove invaluable.

Finally, one should question the necessity of compiling a book on the applications of a technique which may now be considered a routine tool for biochemists. It is true that mass spectrometry is much more widespread than it was ten years ago, but the sophisticated nature of mass-spectrometry instrumentation, the physical processes involved and the computer processing of data, promote the subject to an exciting science and one which continues to develop and expand. Although routine use may be made of mass spectrometry, new developments in the technique and its application continue to open up new avenues of research. It is important that the biochemist can reach for an up-to-date book written by leaders in the field, covering a sufficient range of topics to be useful, while the mass spectroscopist has similar access which will expand his appreciation of the potential of his technique in biochemistry.

A. M. LAWSON

Metal Ion Activation of Dioxygen

T. G. SPIRO (Editor)
J. Wiley and Sons, New York, 1980, pp. 247, £16.00

To be tired of the chemistry of oxygen is to be tired of life. Though this volume allows us only a snatched breath of the subject, it is no less invigorating for all that. The first chapter on 'Dioxygen binding to heme proteins and their synthetic analogs', by J. P. Collman, T. R. Halbert and K. S. Suslick, describes the various attempts to incorporate the presumed essentials of the globins into relatively simple molecules. The authors claim, as a postulate of bioinorganic chemistry, that relatively small metal complexes should be capable of emulating the chemistry of metallobiomolecules. The ease of attainment of this desirable goal depends, to a large extent, on the substrate; the less complicated the latter, the easier the task. Thus if dioxygen is considered to be the only substrate of dioxygen transport N-storage proteins, physiologically a gross oversimplification, then indeed many small complexes are capable of fulfilling this limited function. If dioxygen is only one of two substrates, as in peroxidases and oxygenases, then the scale of the molecular architecture will have to be greatly increased before the selectivity and specificity of the enzymes can be approached, let alone emulated. The elegance in the design of the models and the synthetic skill required and associated with the work of Collman, Traylor, Baldwin and Battersby and their colleagues have rightly elicited much admiration. One of the most

Mass Spectrometry (MS) is an analytical chemistry technique that helps identify the amount and type of chemicals present in a sample by measuring the mass-to-charge ratio and abundance of gas-phase ions. In this instrumental technique, sample is converted to rapidly moving positive ions by electron bombardment and charged particles are separated according to their masses. Mass spectrum is a plot of relative abundance against the ratio of mass/charge (m/e).Â Applications of Mass Spectrometry (MS). Environmental monitoring and analysis (soil, water and air pollutants, water quality, etc.) Geochemistry â€“ age determination, soil and rock composition, oil and gas surveying. @inproceedings{Waller1980BiochemicalAO, title={Biochemical Applications of Mass Spectrometry, First Supplementary Volume}, author={George R. Waller and Otis C. Dermer}, year={1980} }.Â A supplement to the standard work, published in 1972, covering instrumentation, interpretation of spectra, and application. Save to Library. Create Alert.

Mass spectrometry is an analytical technique used for identifying the mass of a compound based on the mass-to-charge ratio of charged particles. The ratio of charge to mass of the particles is determined by passing them through an applied electric field in a mass spectrometer, which has three main modules: an ion source, a mass analyzer, and a detector. In such procedure, a sample of protein for analysis is placed in the MS instrument. A laser beam is applied to allow the sample to become ionized at MALDI-TOF mass spectrometry is a versatile analytical technique to detect and characterize mixtures of organic molecules. In Microbiology, it is being used as a rapid, accurate and cost-effective method for the identification of microorganism (bacteria, fungi and viruses). A typical experiment consists of growth of the organism (e.g. bacteria), colony selection and placement on a target, addition of matrix, and analysis with MALDI-TOF MS. These include measurements of molecular mass of biomacromolecules and determination of sequence information for proteins and polynucleotides.Â @inproceedings{Vandell2017OverviewOB, title={Overview of Biochemical Applications of Mass Spectrometry}, author={Victor E. Vandell and P. Limbach}, year={2017} }. Victor E. Vandell, P. Limbach. Published 2017. Chemistry. A broad overview is given of the main applications of mass spectrometry in biochemistry. These include measurements of molecular mass of biomacromolecules and determination of sequence information for proteins and polynucleotides. View via Publisher. Save to Library.

These include measurements of molecular mass of biomacromolecules and determination of sequence information for proteins and polynucleotides.Â @inproceedings{Vandell2017OverviewOB, title={Overview of Biochemical Applications of Mass Spectrometry}, author={Victor E. Vandell and P. Limbach}, year={2017} }. Victor E. Vandell, P. Limbach. Published 2017. Chemistry. A broad overview is given of the main applications of mass spectrometry in biochemistry. These include measurements of molecular mass of biomacromolecules and determination of sequence information for proteins and polynucleotides. View via Publisher. Save to Library. Applications of mass spectrometry to high polymers has been traditionally handicapped by an inability to volatilize the sample without decomposition and a lack of mass range in available mass spectrometers.Â Atmospheric Pressure Ionization in Mass Spectrometry; Biochemical Applications of Mass Spectrometry; Chemical Ionization in Mass Spectrometry; Chemical Structure Information from Mass Spectrometry; Fast Atom Bombardment Ionization in Mass Spectrometry; Forensic Science, Applications of Mass Spectrometry; Hyphenated Techniques, Applications of in Mass Spectrometry; Ion Molecule Reactions in Mass Spectrometry; Ion Trap Mass Spectrometers; Isotopic Labelling in Mass Spectrometry; Medical Applications of Mass Spectrometry Mass spectrometry - Mass spectrometry is an analytical method to find the molecular mass of a compound. To know the principle, diagram, working, instrumentation, applications of Mass spectrometry click here at BYJUS.Â Mass Spectrometry. Ever wondered how forensic scientists analyze the smallest of ounces of evidence they find in a crime scene? Well, with the help of mass spectrometry you can even find out about the different isotopes associated with that element. Let us learn a bit more about Mass Spectrometry. Mass Spectrometry. Mass spectrometry is an indispensable analytical tool in chemistry, biochemistry, pharmacy, medicine and many related fields of science. first time, mass spectrometry can be some biopolymers, the gas-phase ions fied as a simple and effective device for. used as a tool to observe complexes in may indeed reflect their solution-phase investigating the denaturation ofproteins. the gas phase taken from an aqueous properties (37-41), with answers to these (37, 39) where denaturation has been.Â The result of increasing the re- ciation of these ions yields fragment. mum" (FNWHM). solving power of ESI and MALDI mass masses consistent (to <0.1 Da) with their. High resolution is important for spectrometers is an increase in accuracy amino acid sequences (78). This technol Mass spectrometry is applicable across diverse fields, including forensic toxicology, metabolomics, proteomics, pharma/biopharma, and clinical research. Specific applications of mass spectrometry include drug testing and discovery, food contamination detection, pesticide residue analysis, isotope ratio determination, protein identification, and carbon dating. Listed below are some application areas in which mass spectrometry has been used to discover, deduce, and quantify sample compounds. Applications of mass spectrometry in proteomics - Characterization of proteins and protein complexes, seq