

## Book Review

### Atomic Absorption Spectrometry. Second Completely Revised Edition.

Bernhard Welz. Translated by Christopher Skegg. Pp. xiv + 506. VCH. 1986. Price DM160. ISBN 3 527 26193 1 (VCH Verlagsgesellschaft); 0 89573 418 4 (VCH Publishers).

In his review of the First English Edition of the book (*Analyst*, 1977, **102**, 986), the late Professor Kirkbright remarked that "Despite the now widespread acceptance of the technique and more general understanding of its capabilities and limitations, there continues to be a need for reviews and texts which are informative with respect of the fundamental principles of atomic-absorption spectroscopy and its applications and which may also be studied by the practising analyst to provide up-to-date information concerning recent advances in instrumentation and methodology." That statement is still true today for although, for example, publications relating to the development of methods based on flames are relatively fewer than in the past, the technique is still the most widely used form of AAS and its practitioners will find this book a source of much relevant information. During the past ten years, the most significant developments in AAS have been electrothermal atomisation and hydride generation techniques which have extended the possibility of reliable analysis well into the  $\mu\text{g l}^{-1}$  range.

Further, the majority of interferences (and some of their cures!) are now known and in consequence the relative roles of the alternative procedures for atom vapour generation have become more clearly defined. On the basis of this knowledge the preferred method for a given analysis may be selected. These developments are reflected in the revised structure of the Second Edition of this book.

The book contains 11 chapters which, following an "Introduction" presenting the history of the technique and its fundamental concepts, may be grouped into three broad divisions. First, instrumental aspects are treated under the headings of "Radiation Sources," "Atomisers," "Optics" and "Analytical Measure and Readout." More general topics are discussed in chapters on "Methods, Nomenclature and Techniques," "Interferences in AAS," "Techniques of AAS" and "Related Analytical Methods." In these chapters, particular emphasis has been placed on interference problems and on overcoming them. The final chapters, which amount to approximately 40% of the text, deal with specific analyses under the headings of "The Individual Elements" and "Specific Applications." In these chapters, information is presented concerning sample preparation in addition to that on the procedures necessary to obtain an accurate

AAS determination of the analyte element. Throughout, the work is extensively documented with a total of over 2400 references, 1100 of which are in addition to those found in the First Edition. At times, there is almost a surfeit of references and the text reads more like a review of the literature than a textbook! More critical comment on the benefits and limitations of the work referenced would be appropriate. Inevitably, the reference list rapidly becomes somewhat "dated"; the most recent reference is from 1982 and the list of books and monographs is from around 1970. Nevertheless, this wealth of information will serve to alert the reader to the possible complexities of his own particular analytical problem and should prompt him to examine the current literature at first hand to determine the present "state of the art."

The author has had extensive experience in the development of instrumentation for atomic absorption spectroscopy and in its application to a wide range of analytical problems, consequently, the contents of this book are presented from the viewpoint of a practising analytical scientist and as such can be commended to those faced with the day-to-day laboratory problems of AAS and to those newly entering the field.

**J. B. Dawson**

*University of Leeds, UK*