BOOK REVIEWS

Introduction to Mass Spectrometry - Second Edition
by J Throck Watson
Published by Raven Press, New York, 1985, XII, 351p
Price: US$49.00
ISBN 0-88167-081-2

In the second edition of this text "Introduction to Mass Spectrometry", Professor Watson has provided an up-to-date account of the art of mass spectrometry. It is not a volume recommended as the first offer to a novice either for a technician or for an undergraduate, but suggest it is more suitable for perusal by workers experienced in fields other than mass spectrometry in order that they gain a rapid insight into particular techniques and the associated jargon.

The first three chapters on applications could be of particular use for example, to referees of papers where mass spectrometry is a minor part of the subject matter or to a co-ordinator of grant applications. The Author does rather jump in at the deep end with considerable reference to later chapters which provide more detailed explanations of terms and techniques.

The following four chapters on instrument design are an extensive review which should be of value to the non-specialist who is involved in decisions concerning the purchase of equipment associated with mass spectrometers. To the specialist they are a guide to the production of lucid descriptions of mass spectrometers and for the uninitiated, for example, when making a case for purchase of the equipment.

Sample handling, sources of error, and quantitative procedures, topics which for many readers are the most important, have been relegated to three somewhat meagre final chapters. This is the vital information which over the years service mass spectroscopists must impart to each generation of post-graduates who provide samples carefully covered with parafilm, in phosphate buffer solution at one picogram per millilitre with no authentic standard, for urgent quantitative analysis. This part of the text could usefully have been made as extensive as that on instrumentation.

In general, the arrangement of the subject matter in this book is idiosyncratic: the injunction "in medias res" does not, I feel, apply to text books, thus, although an informative text, this is not a primary

source for teaching but a useful companion and reference. The most profitable place perhaps for such a text is on the general reading shelves of a science library where it might capture a convert to mass spectrometry.

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29 January, 1986

The Experimental Basis for Absorbed-Dose Calculations in Medical Uses of Radionuclides

NCRP Report No. 83 September 30, 1985 pp 109
Pub: National Council on Radiation Protection and Measurements, Bethesda, MD 20814 USA
Price: $13.00US
ISBN 0-913392-76-6

"The Experimental Basis for Absorbed-Dose Calculations in Medical Uses of Radionuclides" is one of five new publications from the National Council on Radiation Protection and Measurements and continues the series of high standard publications from the NCRP.

It achieves admirably its intended purpose, that is "to review the current status of the methods used to estimate the radiation absorbed doses to humans from internally deposited radionuclides". The introduction and historical discussion of dose calculation methods leads logically to the MIRD formalism and the need to estimate cumulative activities in body organs (Chapters 1 - 3). Compartmental modelling is mentioned, but no mathematical treatment is given, nor is there any comment on measurements of activity excreted from the body, or how such measurements might be used to build up a picture of the time course of activity in 'source' regions. Presumably the authors considered this point outside their remit. Chapter 4 discusses the current techniques for in-vivo measurements of activity, concluding that positron tomography provides the most accurate quantitative technique available and in Appendix A a complete formalism for non-tomographic, dual opposed systems is developed. Chapter 5 discusses in-vivo measurements of absorbed dose while Chapter 6 compares measurements with calculated values.