



BOOK REVIEWS

Handbook of X-ray Spectrometry—Methods and Techniques: R. E. VAN GRIEKEN and A. A. MARKOWICZ, Dekker, New York, 1993. Pages xiv + 704. US\$195.00. ISBN 0-8247-8483-9.

This reference book forms part of a series on Practical Spectroscopy.

Although the basic theory and practice of X-ray Fluorescence Spectrometry is very well established and documented, it is still a very widely used technique as a method of elemental analysis. In addition, developments in primary radiation sources and experimental methods have led to a number of relatively recent specialized applications. This hand-book, in a series of chapters written by different authors, attempts to bring XRF and related techniques within the scope of a single reference volume.

Chapter 1 forms an excellent review of the X-ray physics underpinning X-ray emission spectrometry. Chapters 2 and 3 are devoted to wavelength and energy dispersive XRF resulting from X-ray excitation, these being the most commonly used techniques. Although, inevitably, much old ground is covered here, nevertheless the chapters contain much useful information and highlight recent instrument developments. A very useful chapter follows on spectrum evaluation and analysis which should allow users to understand and optimize parameters in the software packages rather than treating the whole system as an unadjustable 'black box'. Chapters 5 and 6 relate to quantitative analysis for infinitely thick and intermediate thickness samples, respectively and Chapter 13 (which might have been better placed directly after Chapters 5 and 6) discusses sample preparation. There then follow chapters on specialized applications, *viz*: Radioisotope Analysis, Synchrotron Radiation-Induced X-ray Emission (including EXAFS and XANES), Total Reflection XRF, Polarized Beam X-ray Fluorescence, Particle-induced X-ray Emission Analysis (PIXE) and Electron-induced X-ray Emission.

All chapters contain a large number of references and although there is some overlapping material between chapters, each chapter is reasonably complete in itself. Although a given laboratory may not be interested in all the information in the hand-book, it nevertheless provides a most useful review and should have an essential place on the shelf of any laboratory practising X-ray emission spectrometry and related topics.

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Applied Biopharmaceutics and Pharmacokinetics, Third Edition: L. SHARGEL and A. B. C. YU, Prentice-Hall International, London, 1993. Pages: xxii + 625. £30.00. ISBN 0-8385-0239-3.

The third edition of this textbook follows the successful format of previous editions. It starts with a review of the mathematical foundations of pharmacokinetics. This will be of particular benefit to students approaching the subject for the first time. In the third edition this chapter has been expanded to include some basic statistics. Subsequent chapters give comprehensive coverage of pharmacokinetic concepts and their application to both the clinical setting and research and development. As in previous editions of the textbook good use is made of illustrative examples and this edition includes an increased number of questions designed to promote reflection and provide practice in problem solving. Complete answers are provided for all numerical problems.

One of the strengths of the previous edition was the emphasis on relating pharmacokinetic models and processes to human physiology. The third edition has expanded on this with increased coverage of the physiological aspects of biopharmaceutics and pharmacokinetics. It includes new material on physiological models. Also new to the third edition are an appendix dealing with the application of computers to pharmacokinetics and another giving pharmacokinetic parameters for some commonly used drugs. This textbook does not, however, provide detailed information on the pharmacokinetics of specific drugs.

The authors suggest that this textbook is primarily intended for pharmacy students. It is certainly particularly relevant to both undergraduate and postgraduate pharmacists with the inclusion of new material on the application of biopharmaceutics and pharmacokinetics to drug research and development and chapters on bioavailability and bioequivalence, modified-release drug products and targeted drug delivery systems. I would suggest, however, that this textbook would be useful to anyone interested in the clinical application of pharmacokinetics.

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