

Chromatographic Integration Methods. Norman Dyson, Royal Society of Chemistry, Cambridge, 1990. 180 pp. ISBN 0 8518 65879. Price: £35.00.

Although the majority of chromatographers utilise methods for the measurement of peaks either manual or electronic during the normal course of their working day, there is very little information readily available, other than in the integrator manual, to assist the analyst in making these measurements in a reproducibly/accurate/precise manner. Normally the subject is covered, if at all, in chromatographic reference books in short chapters dealing with effects of quantification. This is probably the first book specifically to deal with chromatographic integration methods and integrators and as such assist the analyst to 'extract' the maximum amount of data from each analysis and to improve the accuracy and precision of the measurements.

'Chromatographic Integration Methods' is divided into three sections: 'Theory of Peak Measurement' which details the parameters which are used for solute quantification measurements, including the relative merits of peak area vs peak height. A readable section on peak theory is included in this chapter and deals with both gaussian and exponentially modified gaussian functions and peak moments. Their applicability in both manual and digital measurement of peaks is discussed. Accuracy and precision are covered in more detail with excellent illustrations of the principles being discussed. The sources of error, including those from the chromatographic separation process, peak overlap, asymmetry and from the instrumentation, signal/noise ratio, detector signal distortion and baseline construction are all included. Experimental and results validation are also discussed in this chapter.

The second section deals with 'Manual Measurement of Peaks' including not only those based on a gaussian peak shape, but also those based on the exponentially modified gaussian peak model for the measurement of overlapping and asymmetrical peaks. The section starts with a discussion on the representation of the detector signal by a chart recorder, the basic requirements of a good chart recorder and the lack of accuracy and precision which can result in the manual measurement of a peak through inadequacies in the chart recorder. At the end of the chapter is a summary of the advantages and disadvantages of manual methods of peak measurement.

The third and final chapter, 'Digital Integrators and Peak Measurement' describes how integrators and computers work but keeps the electronics of data acquisition to a minimum. A brief history of the development of integrators is followed by a summary of the specifications of current state of the art integrators. The rest of this chapter describes the principles of digital integration, and the peak measurement parameters which must be defined. The types of error which can be

induced are reviewed including those from the integrator performance limits, incorrect programming of the integrator, and those which arise from poor chromatography.

This book sets about its task of describing the rules of integration and the implication of these rules on peak measurement in a readable and logical manner. The glossary of terms used throughout and the excellent literature reference combine to make this book a good source of information not only for the practicing chromatographer, but also for those people who wish to develop their own integrator software. This is essential reading for those who wish to maximise the amount of reproducible, accurate and precise information generated.

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Dietary Fibre: Chemical and Biological Aspects. Edited by D. A. T. Southgate, K. Waldron, I. T. Johnson and G. R. Fenwick, The Royal Society of Chemistry, Cambridge, 1990. 386 pp. ISBN 0-85186-667-0. Price £47.50.

Dietary fibre comprises a very complex and heterogeneous group of substances whose functional properties and nutritional effects vary with composition, structure and treatment of the fibre source.

The importance of the intake of dietary fibre in relation to health and disease is sustained by scientific and clinical evidence for a number of physiological effects. This has brought about the interest shown by the food manufacturing industries in the different applications of dietary fibre.

The Food Chemistry Group of the Royal Society of Chemistry held a conference in Norwich in dietary fibre, in recognition both of the important role of chemistry in the study of fibre, and of the need for coherent interdisciplinary research in this area. 'Dietary Fibre: Chemical and Biological Aspects' contains most of the papers presented at this conference. It comprises seven parts which are related to the chemistry of dietary fibre; analytical techniques; effect of fibre on the small intestine (implications for digestion and nutrient adsorption); dietary fibre in the large intestines (implications for colorectal function and energy metabolism); dietary fibre and lipid metabolism; and applications of dietary fibre in the food and pharmaceutical industries.

This book will prove useful reading for food chemists and technologists, nutritionists, biological scientists, clinicians, and the food and pharmaceutical industries.

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