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Book Review

Advances in Chromatography Volume 34
P.R. Brown and E. Grushka (Eds)
Marcel Dekker, Inc., New York, 1994
ISBN: 0-8247-9087-1.
Price $165; 456 pages.

Volume 34 in this series maintains the high quality of the previous members of the series. The stated aim of this series is to provide 'current, critical reviews of the most important developments in chromatographic science'. This present volume contains five contributions covering aspects of Capillary Electrophoresis (CE), Gas Chromatography (GC/MI/IR), High-Performance Liquid Chromatography (HPLC) and Supercritical Fluid Chromatography (SFC) along with two chapters detailing theoretical aspects of peak overlap and uncertainty structure, information theory and optimization in quantitative analysis. Several chapters in this volume contain material that is directly relevant to areas of the pharmaceutical and biomedical sciences. Additionally, other chapters contain material on techniques and methodologies whose applications are outside these areas but which may be fruitfully applied in various aspects of such work.

The two chapters concerned with CE (High-Performance Capillary Electrophoresis of Human Serum and Plasma Proteins; Capillary Electrophoresis of Carbohydrates) demonstrate the increasing importance of this technique. Both chapters contain introductory sections which outline the basic principles of CE along with in-depth discussions of the special requirements within the specified areas.

Coleman and Goodman report on applications of the hyphenated technique of Gas Chromatography/Matrix Isolation/Infrared Spectrometry (GC/MI/IR) for the analysis of natural products. This chapter contains extensive details of the hardware required for the technique, infrared spectral data on a wide range of functional groups and a number of useful applications. Whilst reading this chapter it appeared that this technique might have potential in the study of natural products of pharmaceutical importance. Consideration of the literature indicated that such investigations have indeed been initiated. It would also seem possible, given the sensitivities indicated, that this methodology could be useful in drug metabolism studies as an aid to the identification of metabolites.

Of the remaining chapters the review by Hayashi and Matsuda on the utilisation of uncertainty structure, information theory and optimization in quantitative analysis was particularly interesting. The section concerned with the application of information theory to the optimisation of chromatographic separations introduced a concept new to this reviewer. The use of FUMI (function of mutual information) and MEI (measurement-elicited information) in a number of optimization procedures is described. These techniques would appear to complement a number of

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the established optimization techniques and in certain cases may be utilised in conjunction with these techniques. Several examples are presented that demonstrate the utilisation of this methodology to the solution of problems in pharmaceutical analysis.

The reviews presented in this book contain much useful information in the text and also valuable reference material. The highly specialised reviews are such that this book will mainly be purchased for reference libraries.

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