

be well advised to look elsewhere. Because of the book's content and style, it will command a place in any large, comprehensive science based library.

David W. Taylor
John F. Kennedy

Multidimensional Chromatography: Techniques and Applications. Edited by H. J. Cortes, Marcel Dekker Inc., New York, 1990. viii + 378 pp. Price: \$99.75. ISBN 0 8247 9136 8.

Chromatographic techniques have aided the carbohydrate researcher in the characterization of carbohydrates and glycoproteins with regards to structural studies and molecular weight/size determinations. The present knowledge on the action and specificity of carbohydrate hydrolyzing enzymes were also elucidated with these separation cum analytical techniques. Many of these studies involved the collection and concentration of chromatographic fractions and the further fractionation and analysis of these individual functions. Such techniques were laborious, time-consuming and, in some cases, required significant amounts (milligram to gram level) of the samples. As basic investigations become more advanced and analysis becomes more complex, analytical tools are required to have even lower detection limits and greater resolving power.

Multidimensional chromatography is a technique in which fractionation is carried out by continuous serial application of more than one separation mechanism, whilst maintaining the integrity of separation achieved in one stage through to the next stage. This procedure, therefore, reduces analysis time and, at the same time, enhances resolution and sensitivity, in particular, of very complex mixtures.

This book is a timely and comprehensive summary of all the important aspects of multidimensional separations (i.e. theoretical aspects, instrumentation and applications), in the hope to promote the technique, which although extremely powerful and not at all very recent and untried, is still under-utilized.

This book opens with the definition and theoretical information of multiple dimensions in analytical separation. Following chapters deal with the more established multidimensional techniques involving thin-layer, gas and liquid chromatography. Recent developments such as the coupling of liquid chromatography (LC) to gas chromatography (GC),

multidimensional supercritical fluid chromatography (SFC) as well as supercritical fluid extractions with GC, are also discussed. The concluding chapter is dedicated to the instrumentation of multidimensional systems. Every chapter concludes with future prospects and developments for each respective technique.

Considering the contents (aided with well presented diagrams and comprehensible, albeit a bit lacking in enthusiasm, style of the authors) the editors would definitely attract more application of multidimensional chromatography and consequently, development in instrumentation and/or vice versa. The book is, therefore, highly recommended to both experienced analysts and chromatographers in almost any field of research and industry and as an introduction to those who wish to apply this powerful technique.

Vivian M. Cabalda
John F. Kennedy