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Principles of Adsorption Chromatography, Vol. 3 of *Chromatographic Science Series*, L. R. SNYDER, Marcel Dekker, New York and Edward Arnold, London, 1968, 413 pp., price $ 17.50.

This book goes a long way to filling an obvious gap in the literature available on adsorption chromatography, particularly liquid chromatography. SNYDER commences by giving a brief but reasonably lucid account of the chromatographic process and techniques of separation. This chapter includes sections on sample migration, band spreading, resolution and separation together with gradient elution and gradient development as techniques for separation. The general aspects of adsorption have been considered starting with types of adsorption and continuing with an account of the forces involved in adsorption and the part played by London forces and specific interactions such as hydrogen bonding, electrostatic etc. A quantitative account of the Langmuir isotherm has been given together with a very brief description of more complex isotherms. The adsorption of polyatomic and organic molecules has been given a reasonably detailed account considering the scope of the book.

The importance of sample size in adsorption chromatography is discussed in the light of isotherm linearity and it is to Dr. SNYDER's credit that a clear picture emerges of the problems involved in this aspect of adsorption chromatography. A complete chapter is given to bed efficiency in liquid chromatography and includes an up-to-date general account of the contributions to the HETP equation and specific reference to column and thin layer chromatography has also been included.

The general role of the adsorbent type and activity has been considered in detail and includes topics such as surface area, water content, pore diameter and ionization effects. The dependence of sample adsorption on adsorbent activity is discussed and methods of adsorbent standardization have been described. A detailed account of specific adsorbents has also been given and includes silica, alumina and charcoal.

In liquid chromatography the solvent not only acts as a carrier but takes part in the separation process. Dr. SNYDER reserves a complete chapter to discuss this very important topic. Solvent mixtures and prediction of solvent strength have been given adequate coverage and should be of help to a majority of liquid chromatographers.

A brief account of gas–solid chromatography has also been included in this book but is only a token contribution, its main asset being the literature references.

Sample structure receives a generous allowance of two chapters dealing with primary and secondary effects. Considering the importance of the sample this allowance is not over-ambitious, and, in fact, satisfactorily covers most of the important aspects of sample structure as a separation parameter. The book concludes with chapters dealing with the role of temperature as a separation variable, instrumentation and some special techniques including sample identification.

Dr. SNYDER's book should appeal, not only to the expert, but also to the average chromatographer who would like to know a little about what is going on inside his adsorption column.

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