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Book Reviews

High-Performance Liquid Chromatography Advances and Perspectives, Vol. 5. Edited by Csaba Horvath, Harcourt Brace Jovanovich, London, 1988. ix + 331 pp. ISBN 0-12-312205-8. Price: £47.00.

Over the years, high-performance liquid chromatography (HPLC) has become an integral component of every analytical and research laboratory. With the advances in instrumentation and column engineering, different modes of chromatography have developed, allowing HPLC to find application in practically all branches of science and technology, and the search for more novel applications continues to fully explore its potential.

'High-Performance Liquid Chromatography, Advances and Perspectives', is the fifth in the series of publications which provides an up-to-date account of developments in HPLC. This volume highlights one of the more recently improved and very timely techniques — that of bioseparation. The separation of biomolecules and biopolymers has gained extreme importance as an industrial separation process in biotechnology because the method allows the analysis, isolation and purification of these labile materials in their native form.

Despite recent interest in resin stationary phases, silica seems to remain the column for biomolecules. The discussion on the evolution of the various novel bonded silica phases and their applications provides a better understanding of the surface properties of the column and existing chromatographic interactions. The introduction of high-performance affinity chromatography (HPAC) has considerably improved the selectivity of HPLC. Based on the concept of the traditional affinity chromatography, the development of HPAC is vividly elucidated including the selection and preparation of supports and applications particularly relevant to bioprocess technology. A detour from the linear

elution chromatography, is a nonlinear elution mode called high-performance displacement chromatography which is designed more for preparative and production-scale separation. A comprehensive review of the historical development of this technique is presented culminating with its present potential advantages.

The comprehensive presentation of each topic, aptly supported by tables and figures, provides a complete picture of each technique presented. A novice or an experienced chromatographer will find this book a useful guide and source of reference on HPLC.

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Principles of Polymer Systems, 3rd Edition. By Ferdinand Rodriguez, Hemisphere Publishing Corporation, New York, 1989. xiv + 640 pp. ISBN 0-891-16176-7. Price £35.00.

The use of polymers has increased significantly in the last few years, mainly with the advancement of biotechnology. Several industries use polymers as raw material for the manufacture of their products, and these industries can be identified as carbohydrates/polysaccharides, rubber, plastics, fibres, coating and adhesives. This book relates the behaviour of polymer systems whenever possible to examples from everyday experience, since many of the things we use, such as clothing, food and even our bodies are made up of polymer systems.

The applied chemistry and physics of polymers, including carbohydrates, lagged behind the technology for many years. Many contributions in this field were made following the macromolecular hypothesis proposal by Standinger in 1920, such as the studies of Emil Fisher on proteins, Meyer and Mark on cellulose, Carothers on poly-condensation, Ziegler in 1950 on synthetic catalysts, up until the discovery of large single crystals of high polymers a few years later.

This book gives a general view on polymer studies and basically elaborates on the kind of polymers contained in two broad classes; carbon chain polymers and heterochain polymers. Its contents include; Basic Structures of Polymers, Properties of Polymers, Degradation and Stabilization of Polymer Systems, Fabrication Process, Carbon Chain Polymers, Heterochain Polymers and Analysis and Identification of Polymers.