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The Book Corner

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THE BOOK CORNER

ADVANCES IN CHROMATOGRAPHY, J. Calvin Giddings, E. Grushka and P. R. Brown, Editors, Marcel Dekker, Inc., New York, 1992, Volume 31 and 32, 416 pages. Price: \$150.00 (U.S. and Canada), \$172.50 (all other countries).

These are two well written volumes discussing current topics of interest to chromatographers and analytical chemists. They are a good addition to the separation science reference library.

Volume 31 Table of Contents:

1. **Fundamentals of Nonlinear Chromatography: Prediction of Experimental Profiles and Band Separation**, A. M. Katti and G. A. Guiochon, (1).
2. **Problems in Aqueous Size Exclusion Chromatography**, P. L. Dubin, (119).
3. **Chromatography on Thin Layers Impregnated with Organic Stationary Phases**, J. Gasparic, (153).
4. **Countercurrent Chromatography for the Purification of Peptides**, M. Knight, (253).
5. **Boronate Affinity Chromatography**, R. P. Singhal and S. S. M. DeSilva, (293).
6. **Chromatographic Methods for Determining Carcinogenic Benz(c)acridine**, N. Motohashi, K. Kamata, and R. Meyer, (337).

Volume 32 Table of Contents:

1. **Porous Graphitic Carbon in Biomedical Applications**, C-K. Lim, (1).
2. **Tryptic Mapping by Reversed Phase Liquid Chromatography**, M. W. Dong, (21).

3. **Determination of Dissolved Gases in Water by Gas Chromatography**, K. Robards, V. R. Kelly, and E. Patsalides, (53).
4. **Separation of Polar Lipid Classes into Their Molecular Species Components by Planar and Column Liquid Chromatography**, V. P. Pchelkin and A. G. Vereshchagin, (87).
5. **The Use of Chromatography in Forensic Science**, J. Hubball, (131).
6. **HPLC of Explosives Materials**, J. B. F. Lloyd, (173).

LIQUID CHROMATOGRAPHY IN BIOMEDICAL ANALYSIS, edited by T. Hanai, published by Elsevier Science Publishers, Amsterdam, The Netherlands and New York, 1991, XII + 296 pp., ISBN: 0-444-87451-8. Price: US\$154.50/DFL. 270.00.

This book represents Volume 50 for the series *Journal of Chromatography Library*. The book discusses various aspects of the application of liquid chromatography in analysis of several biomedically important classes of compounds such as the amino acids, fatty acids, catecholamines, nucleotides, prostaglandins, steroid hormones, etc. Other chapters in the book discuss topics related to sample pre-treatment, pre- and post-column derivatization, detection and quantitation. The book consists of 12 chapters with the following titles:

1. **Liquid chromatography in biomedical analysis: Basic approach.**
2. **Optimization of liquid chromatography for biomedically important compounds.**
3. **Amino acids.**
4. **Analysis of bile acids by high-performance liquid chromatography.**
5. **Carbohydrates.**
6. **Catecholamines.**
7. **Fatty acids.**
8. **Nucleotides.**
9. **Porphyrins.**
10. **Prostaglandins.**
11. **Steroid hormones.**
12. **Miscellaneous (catecholamine metabolites and indolacetic acid).**

There is a list of pertinent references at the end of each chapter. The book is a welcome addition to the series of Journal of Chromatography Library, and would be useful to scientists and researchers dealing with applications of liquid chromatography in clinical and biomedical analysis.

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COMPLEXATION CHROMATOGRAPHY, Edited by D. Cagniant, Volume 57, Chromatographic Science Series, J. Cazes, Editor, Marcel Dekker, Inc., New York, 1992, 312 pages. Price: \$99.75 (U.S. and Canada), \$114.50 (all other countries).

The interaction of solute molecules with liquid phase and/or solid phase is of prime importance in chromatographic separations. Among the possible interaction mechanisms, those involving the transfer of electrons between pairs of molecules, each acting as either donor or acceptor, are the basis of a great many chromatographic methods. As early as 1955, Bradford applied silver nitrate dissolved in polyethylene glycol as the stationary phase in the separation of saturated and unsaturated hydrocarbons using gas chromatography. This event marked the beginning of argentation chromatography, which has found many applications in the separation of olefinic compounds in mixtures of varying complexity.

In 1961, Helfferich described the substitution of metal-ion-coordinated ammonia molecules in a resin phase for organic diamine molecules. He was the first to propose the term "ligand exchange", thus giving rise to ligand-exchange chromatography. Since this pioneering work, various types of ligand-exchange processes have been developed and are well covered in the literature, particularly by one of the contributors to this book (V.A. Davankov).

When π donor-acceptor interactions occur between π -electron donating and withdrawing aromatic or heterocyclic compounds, charge-transfer complexes are obtained, as is well documented in classic organic chemistry and biochemistry. The fundamentals of these interactions were covered in the literature as early as the 1960s by several authors, notably Mulliken (1969). Their utilization in chromatography gave rise to charge-transfer adsorption chromatography. These three fundamental aspects of molecular interactions have been brought together in this book under the general title complexation chromatography.

Generously referenced with over 1300 bibliographic citations, Complexation Chromatography is timely reading for analytical and organic chemists and

biochemists; environmental, pharmaceutical, and nutritional analysts; chromatographers; petroleum product control engineers; and graduate students in these disciplines. In summary, this is an excellent book and reference.

Table of Contents:

1. **Complexation in Chromatography**, L. Nondek, (1).
2. **Survey of Packings in Donor-Acceptor Complex Chromatography**, G. Felix, (33).
3. **Charge-Transfer Chromatography: Application of the Determination of Polycyclic Aromatic Compounds, Aromatic Amines and Azaarenes, and Biological Compounds**, D. Cagniant, (97).
4. **Argentation Chromatography: Application to the Determination of Olefins, Lipids, and Heteroatomic Compounds**, D. Cagniant, (149).
5. **Ligand-Exchange Chromatography of Chiral Compounds**, V.A. Davankov, (197).
6. **Special Topics: Applications of Complexation Chromatography to the Analysis of Coal and Petroleum Products**, D. Cagniant, (247).