

## Chromatography

This book is a shortened and updated edition of the comprehensive work by Robert L. Wixom and Charles W. Gehrke entitled *Chromatography—A Century of Discovery (1900–2000)—The Bridge to the Sciences & Technology* (Elsevier, Amsterdam 2001).

There are very few fields that have had such an enormous expansion and range of applications as chromatography, as a separation and analytical method. Although the pioneering work was performed during the first half of the 20th century, the major breakthroughs occurred in the second half, mainly during the late 1970s and the 1980s.

How did it happen that that such revolutionary results were achieved during this particular period? What were the underlying platforms, the fundamentals, and the drivers? What were the reasons for the rapid technology transfer and the widespread growth of applications? These are the most important questions that the interested reader wants to know about. Also another question might arise: what is the challenge for chromatography in the future, in particular its impact in the life sciences?

This revised version by D. L. Chance and T. P. Mawhinney (the two main authors R. L. Wixom and C. W. Gehrke died in 2009) has a title slightly different from that of the previous book: *Chromatography—A Science of Discovery*. This choice for the title is not only typical for chromatography, but appears to be a phenomenon that applies to all sciences.

The core of the book consists of Chapters 1–5, 10, and 11 by R. L. Wixom and C. W. Gehrke, with the following (slightly abbreviated) titles: “A New Discipline of Science”, “A Unified Science”, “Paradigm Shifts”, “The Trails of Research”, “Today’s Chromatographers”, “The Chromatography Story”, and “Perspectives for the Future”. The secondary part (Chapters 6–9) overviews the development of chromatography in various areas, such as column technology and validation, and in fields such as environmental, space, biological and medical sciences, pharmaceutical analysis, environmen-

tal substances and natural products, chemical analysis, and synthesis.

The first part of the book, including Chapters 1 to 5, appears to be the most solid and informative for the reader. Chapter 1 presents the definitions of chromatography, discusses the fundamental processes and concepts, and highlights the bridging function of chromatography to other fields. Chapter 2 discusses a particular aspect of chromatography—that of a unified science. In this context, the monograph *Unified Separation Science*, by J. C. Giddings (John Wiley & Sons, New York, 1991), provides a much more profound answer and treatment of the issues involved. One must read Chapters 4 and 5, where the relevant Nobel laureates and their contributions are discussed, followed by a description of the ground-breaking research and fields of application.

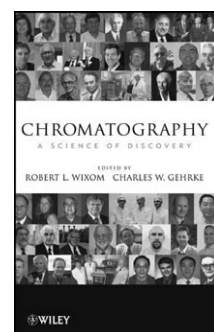
The second part, including Chapters 6 to 11, presents an attempt to briefly highlight the most important achievements of chromatography in various scientific disciplines and application areas. Regrettably, this part lacks a comprehensive and critical treatment of the achievements of chromatography. The discussion of the most important applications of liquid chromatography, namely those in pharmaceutical analysis, is much too short. Furthermore, the role of metabonomics and metabolomics is not presented as it should be. The impact of chromatography in the life sciences, in particular through the various “omics” approaches, is not covered adequately, nor is the importance of preparative and process chromatography in the separation and purification of value-added products. These omissions should be thoroughly rectified when a new edition is prepared.

The book is of great interest for all readers involved in natural science, and will also be valuable for engineers and advanced students to understand the progress that has been achieved in chromatographic separation methods on the analytical, preparative, and process scales.

Klaus K. Unger

Institut für Anorganische und Analytische Chemie  
Johannes Gutenberg-Universität Mainz (Germany)

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