

## Book &amp; Media Reviews

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**The Essence of Chromatography**

by Colin F. Poole

Elsevier: Amsterdam, 2003. 925 pp. ISBN 0-444-50199-1,  
\$89 (paper).reviewed by David T. Harvey

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With *The Essence of Chromatography*, Colin F. Poole provides a comprehensive survey of the current practice of chromatography. Originally intended as a revision of *Chromatography Today*, his earlier work co-authored with Salwa K. Poole, the author takes a fresh approach to the subject and succeeds in providing a useful reference for academic and industrial chromatographers, or for those students and scientists wishing to develop a deeper understanding of this broad field.

For the purpose of this review it is convenient to divide the text into three parts: a general introduction to chromatographic theory, detailed reviews of important chromatographic techniques, and miscellaneous topics. The text begins with a single chapter covering basic chromatographic theory, including the theoretical treatment of band broadening and resolution, as well as general quantitative principles. Poole's approach to the material is traditional but quite thorough. Readers already familiar with chromatographic terms and principles will appreciate Poole's succinct review; however, for novice users of chromatography, Poole's treatment, which assumes familiarity with the terminology of chromatography, is probably too advanced.

Following this introductory chapter, Poole covers gas chromatography, liquid chromatography, thin-layer chromatography, supercritical fluid chromatography, and capillary-electromigration separation techniques in eight chapters (given the breadth of information, GC and LC merit two chapters each). Each technique receives a thorough treatment of basic theoretical principles, basic instrumental design, method development, and optimization strategies. Although texts devoted to single chromatographic techniques may pro-

vide more detailed coverage, no other text provides this level of comprehensive coverage.

Finally, in three concluding chapters, Poole covers more general topics, including qualitative and quantitative spectroscopic detection using mass spectrometry, Fourier transform infrared spectrometry, and nuclear magnetic resonance spectroscopy, the separation of stereoisomers, and laboratory-scale preparative chromatography. Poole's choice to include the latter two topics makes this text particularly attractive to those academic and industrial users of chromatography who are not trained in analytical chemistry.

As with any comprehensive text, *The Essence of Chromatography* must balance the difficult task of providing enough information to be of use to readers, while avoiding needless repetition or becoming so encyclopedic that readers lose hope of ever finding the information they are seeking. For the most part Poole handles these problems admirably. Each chapter is well organized and the author's modular approach facilitates the easy location of topics. Most readers will find the detailed chapter outlines more useful than the index. The inclusion of cross-references within each chapter minimizes redundancy and simplifies the connections between related topics. The inclusion of extensive end-of-chapter references (more than 3800!) provides a useful resource to the chromatographic literature. Some obvious topics are omitted, most notably sample preparation and applications, but their omission is minor given the scope of the text and the availability of other, more focused texts in these areas.

*The Essence of Chromatography* could serve as a suitable textbook for a graduate-level course on separation science and should be a welcome addition to academic libraries. Undergraduate students who have completed a course in instrumental analysis will find this text to be a useful resource, but the level of presentation is too advanced for other undergraduate students.

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