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High-performance liquid chromatography (HPLC) is today the premier technique for chemical analysis and related applications, with an ability to separate, analyze, and purify virtually any sample. The second edition of this book appeared in 1979, and for tens of thousands of readers it eventually became their choice of an HPLC reference book. The remarkable staying power of the second edition (with significant sales into the first decade of the present century) can be attributed to certain features which continue to be true for the present book. First, all three editions have been closely tied to short courses presented by the three authors over the past four decades, to an audience of more than 10,000 industrial, governmental, and academic chromatographers. Teaching allows different approaches to a subject to be used and evaluated, and a pragmatic emphasis is essential when dealing with practicing chromatographers as students. Second, all three editions have tried to combine practical suggestions ("how to") with a theoretical background ("why?"). First, theory and practice continue to be emphasized so that the reader can better understand and evaluate the various recommendations presented here. Finally, each of the three authors has been an active participant in HPLC research, development, and to some application throughout most of their careers.

Since the preparation of the second edition in 1979, there have been major improvements in columns and equipment, as well as numerous advances in (1) our understanding of HPLC separation, (2) our ability to solve problems that were troublesome in the past, and (3) the application of HPLC for new kinds of samples. Whereas the earlier HPLC procedures received comparable attention in the second edition, today reversed-phase chromatography (RPC) accounts for about 80% of all HPLC applications—and therefore receives major (but not exclusive) attention in the present edition. Over the past three decades, the use of HPLC for biological samples, enantiomeric (chiral) separations, and sample purification has expanded enormously, accompanied by a much better understanding of these and other HPLC applications.

Commercial HPLC columns continue to be improved, and many new kinds of columns have been introduced for specific applications, as well as for faster, trouble-free operation. Prior to 1990, HPLC method development was an uncertain process—often requiring several months for the acceptable separation of a sample.