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One may ask "why another book on HPLC?" The field is rapidly evolving and new information is being accumulated from a large number of original studies published in scientific and technical journals but not reviewed yet in a book. From time to time, this information needs to be collected, classified, and presented systematically. This new book describes a number of such developments that more recently started to be utilized. One additional reason for a new book is that utilization of HPLC is widespread, and a large number of readers may have different needs and interests that are not completely addressed in other books. The main purpose of the present book is to provide practical guidance in the selection of columns, or mobile phases, and of separation conditions for different types of HPLC, together with explaining why a particular selection is recommended. Another purpose is to provide criteria for selecting specific HPLC methods. For example, the present volume shows how the octanol/water partition coefficient ($\log K_{ow}$) of the analyte can be a very useful parameter for chromatographers. Discussions regarding the use of this parameter in HPLC have been previously published, but the book applies it consistently. Octanol/water partition coefficients for many molecules are readily available and are extensively used in the pharmaceutical field as well as for description of the environmental fate of compounds. A program available from the U.S. Environmental Protection Agency (EPA) containing both a database with experimental $\log K_{ow}$ values for many chemicals and a program for estimating $\log K_{ow}$

can be downloaded (free) from <http://www.epa.gov/oppt/exposure/pubs/espintro.htm>.

The main goal of the book is to provide material that describes useful information regarding HPLC. The challenge in making such a presentation is considerable and the authors took advantage of the information from a number of other books available on the market. Among such books are *Introduction to Modern Liquid Chromatography* (L. R. Snyder, J. J. Kirkland, F. W. Dolan, Wiley, 2010), *HPLC for Pharmaceutical Scientists* (K. Kozakewicz, R. LoGruto, Wiley, 2003), *HPLC Column Theory, Technology, and Practice* (O. D. Nasa, Wiley, 1997), and *Practical High-Performance Liquid Chromatography* (V. R. Meyer, Wiley, 2010). An enormous number of applications of HPLC have been published in past reviewed journals in a number of books, and on the web. These sources of information are considered more useful for finding direct applications as compared to a new book with a limited number of pages. For this reason, except for examples, the present book does not contain recipes for particular analyses.

This book starts with an introduction that provides basic information about HPLC and HPLC instrumentation. The next chapter describes common parameters used for characterization of an HPLC separation. Chapter 3 is dedicated to equilibria in HPLC, Chapter 4 discusses interactions at the molecular level that take place during different types of HPLC separations, and Chapter 5 examines the separation mechanisms in different HPLC types. In the following chapters, the material shifts toward direct applications and covers columns and