

1. Record Nr.	UNINA9910146269003321
Titolo	HPLC made to measure [[electronic resource]] : a practical handbook for optimization // edited by Stavros Kromidas
Pubbl/distr/stampa	Weinheim, : Wiley-VCH [Chichester, : John Wiley, distributor], c2006
ISBN	1-281-31169-3 9786611311698 3-527-61197-5 3-527-61199-1
Descrizione fisica	1 online resource (789 p.)
Altri autori (Persone)	KromidasStavros
Disciplina	543.0894 543.84
Soggetti	High performance liquid chromatography - Methodology Liquid chromatography Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	HPLC Made to Measure; Foreword; Preface; Contents; List of Contributors; Structure of the Book; 1 Fundamentals of Optimization; 1.1 Principles of the Optimization of HPLC Illustrated by RP-Chromatography; 1.1.1 Before the First Steps of Optimization; 1.1.2 What Exactly Do We Mean By "Optimization"?; 1.1.3 Improvement of Resolution ("Separate Better"); 1.1.3.1 Principal Possibilities for Improving Resolution; 1.1.3.2 What has the Greatest Effect on Resolution?; 1.1.3.3 Which Sequence of Steps is Most Logical When Attempting an Optimization?; 1.1.3.4 How to Change k, , and N 1.1.3.4.1 Isocratic Mode1.1.3.4.2 Gradient Mode; 1.1.3.4.3 Acetonitrile or Methanol?; 1.1.4 Testing of the Peak Homogeneity; 1.1.5 Unknown Samples: "How Can I Start?"; Strategies and Concepts; 1.1.5.1 The "Two Days Method"; 1.1.5.2 "The 5-Step Model"; 1.1.6 Shortening of the Run Time ("Faster Separation"); 1.1.7 Improvement of the Sensitivity ("To See More", i.e. Lowering of the Detection Limit); 1.1.8 Economics in HPLC ("Cheaper Separation"); 1.1.9 Final Remarks and Outlook;

References; 1.2 Fast Gradient Separations; 1.2.1 Introduction; 1.2.2 Main Part; 1.2.2.1 Theory; 1.2.2.2 Results
1.2.2.2.1 General Relationships; 1.2.2.2.2 Short Columns, Small Particles; 1.2.2.2.3 An Actual Example; 1.2.2.3 Optimal Operating Conditions and Limits of Currently Available Technology; 1.2.2.4 Problems and Solutions; 1.2.2.4.1 Gradient Delay Volume; 1.2.2.4.2 Detector Sampling Rate and Time Constant; 1.2.2.4.3 Ion Suppression in Mass Spectrometry; References; 1.3 pH and Selectivity in RP-Chromatography; 1.3.1 Introduction; 1.3.2 Main Section; 1.3.2.1 Ionization and pH; 1.3.2.2 Mobile Phase and pH; 1.3.2.2.1 Buffer Capacity
1.3.2.2.2 Changes of pK and pH Value in the Presence of an Organic Solvent; 1.3.2.3 Buffers; 1.3.2.3.1 Classical HPLC Buffers; 1.3.2.3.2 MS-Compatible pH Control; 1.3.2.4 Influence of the Samples; 1.3.2.4.1 The Sample Type: Acids, Bases, Zwitterions; 1.3.2.4.2 Influence of the Organic Solvent on the Ionization of the Analytes; 1.3.3 Application Example; 1.3.4 Troubleshooting; 1.3.4.1 Reproducibility Problems; 1.3.4.2 Buffer Strength and Solubility; 1.3.4.3 Constant Buffer Concentration; 1.3.5 Summary; References; 1.4 Selecting the Correct pH Value for HPLC; 1.4.1 Introduction
1.4.2 Typical Approaches to pH Selection; 1.4.3 Initial pH Selection; 1.4.4 Basis of pK(a) Prediction; 1.4.5 Correction of pH Based on Organic Content; 1.4.6 Optimization of Mobile Phase pH Without Chemical Structures; 1.4.7 A Systematic Approach to pH Selection; 1.4.8 An Example - Separation of 1,4-Bis[(2-pyridin-2-ylethyl)thio]butane-2,3-diol from its Impurities; 1.4.9 Troubleshooting Mobile Phase pH; 1.4.10 The Future; 1.4.11 Conclusion; References; 1.5 Optimization of the Evaluation in Chromatography; 1.5.1 Evaluation of Chromatographic Data - An Introduction; 1.5.2 Working Range
1.5.3 Internal Standard

Sommario/riassunto

The only topical HPLC book to focus on optimization, this volume addresses the needs of HPLC users who wish to constantly improve their methods, in particular in terms of throughput, accuracy and cost-effectiveness. This handbook features contributions from such bestselling authors as John W. Dolan, Michael McBrien, Veronika R. Meyer, Uwe D. Neue, Lloyd R. Snyder, and Klaus K. Unger, as well as from scientists working for major companies, including Agilent, AstraZeneca, Merck, Schering, Tosoh Biosep, VWR, and Waters. It covers essential aspects of optimization in general, optimization in
