

1. Record Nr.	UNINA9910830997203321
Autore	Dong M. W
Titolo	Modern HPLC for practicing scientists // by Michael Dong
Pubbl/distr/stampa	Hoboken, N.J., : Wiley-Interscience, 2006
ISBN	1-119-29360-X 1-280-45047-9 9786610450473 0-470-24575-1 0-471-97310-6 0-471-97309-2
Descrizione fisica	1 online resource (306 p.)
Disciplina	543.0894 615.19 615/.19
Soggetti	High performance liquid chromatography Drugs - Analysis
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	MODERN HPLC FOR PRACTICING SCIENTISTS; CONTENTS; Preface; 1 Introduction; 1.1 Introduction; 1.1.1 Scope; 1.1.2 What Is HPLC?; 1.1.3 A Brief History; 1.1.4 Advantages and Limitations; 1.2 Modes of HPLC; 1.2.1 Normal-Phase Chromatography (NPC); 1.2.2 Reversed-Phase Chromatography (RPC); 1.2.3 Ion-Exchange Chromatography (IEC); 1.2.4 Size-Exclusion Chromatography (SEC); 1.2.5 Other Separation Modes; 1.3 Some Common-Sense Corollaries; 1.4 How to Get More Information; 1.5 Summary; 1.6 References; 2 Basic Terms and Concepts; 2.1 Scope; 2.2 Basic Terms and Concepts 2.2.1 Retention Time (t(R)), Void Time (t(M)), Peak Height (h), and Peak Width (w(b)) 2.2.2 Retention Volume (V(R)), Void Volume (V(M)), and Peak Volume; 2.2.3 Retention Factor (k); 2.2.4 Separation Factor (a); 2.2.5 Column Efficiency and Plate Number (N); 2.2.6 Peak Volume; 2.2.7 Height Equivalent to a Theoretical Plate or Plate Height (HETP or H); 2.2.8 Resolution (R(s)); 2.2.9 Peak Symmetry: Asymmetry Factor (A

(s) and Tailing Factor (T(f)); 2.3 Mobile Phase; 2.3.1 General Requirements; 2.3.2 Solvent Strength and Selectivity; 2.3.3 Buffers; 2.3.4 Acidic Mobile Phases
2.3.5 Ion-Pairing Additives 2.3.6 High pH Mobile Phase; 2.3.7 Other Operating Parameters: Flow Rate (F) and Column Temperature (T); 2.4 The Resolution Equation; 2.5 The Van Deemter Equation; 2.6 Isocratic vs. Gradient Analysis; 2.6.1 Peak Capacity (n); 2.6.2 Key Gradient Parameters (Initial and Final Solvent Strength, Gradient Time [t(G)], and Flow Rate); 2.6.3 The 0.25Dt(G) Rule: When Is Isocratic Analysis More Appropriate?; 2.7 Concept of Orthogonality; 2.8 Sample Capacity; 2.9 Glossary of HPLC Terms; 2.10 Summary and Conclusion; 2.11 References; 3 HPLC Columns and Trends; 3.1 Scope
3.2 General Column Description and Characteristics 3.2.1 Column Hardware-Standard vs. Cartridge Format; 3.3 Column Types; 3.3.1 Types Based on Chromatographic Modes; 3.3.2 Types Based on Dimensions; 3.3.3 Column Length (L); 3.4 Column Packing Characteristics; 3.4.1 Support Type; 3.4.2 Particle Size (d(p)); 3.4.3 Surface Area and Pore Size (d(pore)); 3.4.4 Bonding Chemistries; 3.4.5 Some General Guidelines for Bonded Phase Selection; 3.5 Modern HPLC Column Trends; 3.5.1 High-Purity Silica; 3.5.2 Hybrid Particles; 3.5.3 Novel Bonding Chemistries; 3.5.4 Fast LC; 3.5.5 Micro LC; 3.5.6 Monoliths
3.6 Guard Columns 3.7 Specialty Columns; 3.7.1 Bioseparation Columns; 3.7.2 Chiral Columns; 3.7.3 Application-Specific Columns; 3.8 Column Selection Guides; 3.9 Summary; 3.10 References; 3.11 Internet Resources; 4 HPLC Instrumentation and Trends; 4.1 Introduction; 4.1.1 Scope; 4.1.2 HPLC Systems and Modules; 4.2 HPLC Solvent Delivery Systems; 4.2.1 High-Pressure and Low-Pressure Mixing Designs in Multisolvent Pumps; 4.2.2 System Dwell Volume; 4.2.3 Trends; 4.3 Injectors and Autosamplers; 4.3.1 Operating Principles of Autosamplers; 4.3.2 Performance Characteristics and Trends; 4.4 Detectors
4.5 UV/VIS Absorbance Detectors

Sommario/riassunto

A comprehensive yet concise guide to Modern HPLC. Written for practitioners by a practitioner, *Modern HPLC for Practicing Scientists* is a concise text which presents the most important High-Performance Liquid Chromatography (HPLC) fundamentals, applications, and developments. It describes basic theory and terminology for the novice, and reviews relevant concepts, best practices, and modern trends for the experienced practitioner. Moreover, the book serves well as an updated reference guide for busy laboratory analysts and researchers. Topics covered include: HPLC operation <li
