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Nota di contenuto	HPLC; CONTENTS; PREFACE; I HPLC PRIMER; 1 Advantages and Disadvantages of HPLC; 1.1 How It Works; 1.1.1 A Separation Model of the Column; 1.1.2 Basic Hardware: A Quick, First Look; 1.1.3 Use of Solvent Gradients; 1.1.4 Ranges of Compounds; 1.2 Other Ways to Make My Separation; 1.2.1 FPLC-Fast Protein Liquid Chromatography; 1.2.2 LC-Traditional Liquid Chromatography; 1.2.3 GLC-Gas Liquid Chromatography; 1.2.4 SFC-Supercritical Fluid Chromatography; 1.2.5 TLC-Thin Layer Chromatography; 1.2.6 EP-Electrophoresis; 1.2.7 CZE-Capillary Zone Electrophoresis; 2 Selecting an HPLC System 2.1 Characteristic Systems2.1.1 Finding a Fit: Detectors and Data Processing; 2.1.2 System Models: Gradient Versus Isocratic; 2.1.3 Vendor Selection; 2.1.4 Brand Names and Clones; 2.1.5 Hardware-Service-Support; 2.2 System Cost Estimates; 2.2.1 Type I System-QC Isocratic (Cost: 10-15,000); 2.2.2 Type II System-Research Gradient (Cost: 20-25,000); 2.2.3 Type III System-Automated Clinical (Cost: 25-35,000); 2.2.4 Type IV System-Automated Methods (Cost: 30-50,000); 2.3 Columns; 2.3.1 Sizes: Analytical and Preparative; 2.3.2 Separating Modes: Selecting Only What You Need

2.3.3 Tips on Column Use
 3 Running Your Chromatograph; 3.1 Set-up and Start-up; 3.1.1 Hardware Plumbing 101: Tubing and Fittings; 3.1.2 Connecting Components; 3.1.3 Solvent Clean-up; 3.1.4 Water Purity Test; 3.1.5 Start-up System Flushing; 3.1.6 Column Preparation and Equilibration; 3.2 Sample Preparation and Column Calibration; 3.2.1 Sample Clean-up; 3.2.2 Plate Counts; 3.3 Your First Chromatogram; 3.3.1 Reproducible Injection Techniques; 3.3.2 Simple Scouting for a Mobile Phase; 3.3.3 Examining the Chromatogram; 3.3.4 Basic Calculations of Results; II HPLC OPTIMIZATION; 4 Separation Models 4.1 Partition 4.1.1 Separation Parameters; 4.1.2 Efficiency Factor; 4.1.3 Separation (Chemistry) Factor; 4.2 Ion Exchange Chromatography; 4.3 Size Exclusion Chromatography; 4.4 Affinity Chromatography; 5 Column Preparation; 5.1 Column Variations; 5.2 Packing Materials and Hardware; 5.3 Column Selection; 6 Column Aging, Diagnosis, and Healing; 6.1 Packing Degrading-Bonded-Phase Loss; 6.2 Dissolved Packing Material-End Voids; 6.3 Bound Material; 6.4 Pressure Increases; 6.5 Column Channeling-Center-Voids; 6.6 Normal Phase, Ion Exchange, and Size Columns; 6.7 Zirconium and Polymer Columns 7 Partition Chromatography Modifications 7.1 Reverse-Phase and Hybrid Silica; 7.1.1 Ionization Suppression; 7.1.2 Ion Pairing; 7.1.3 Organic Modifiers; 7.1.4 Chelation; 7.2 Acidic Phase Silica; 7.3 Reverse-Phase Zirconium; 7.4 Partition Mode Selection; 8 "Nonpartition" Chromatography; 8.1 Ion Exchange; 8.1.1 Cationic:Weak and Strong; 8.1.2 Anionic:Weak and Strong; 8.2 Size Exclusion; 8.2.1 Organic Soluble Samples; 8.2.2 Hydrophilic Protein Separation; 8.3 Affinity Chromatography; 8.3.1 Column Packing Modification; 8.3.2 Chelation and Optically Active Columns; 9 Hardware Specifics 9.1 System Protection

Sommario/riassunto

This Second Edition of the classic handbook details how to set up an HPLC system that capitalizes on the latest innovations. It covers new techniques in high-temperature, micro-flow, and ultra-fast chromatography, the linking of an HPLC to a mass spectrometer, and more. Complete with a CD-ROM and appendices, this guide has everything chromatographers need to know to confidently separate, identify, purify, and quantify compounds. Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.