Real Life Applications Of Chromatography

HPLC
Multidimensional Liquid Chromatography
Practical Gas Chromatography
Forensic Applications of High Performance Liquid Chromatography
Practical HPLC Methodology and Applications
Forensic Applications of High Performance Liquid Chromatography
Multidimensional Chromatography
High-Performance Gradient Elution
Affinity Chromatography
Forensic Applications of Gas Chromatography
Two-Dimensional Liquid Chromatography
Planar Chromatography - Mass Spectrometry
Practical Thin-Layer Chromatography
Multivariate Methods in Chromatography
Hydrophilic Interaction Chromatography
Liquid Chromatography Time-of-Flight Mass Spectrometry
Encyclopedia of Chromatography (Print)
Chromatography and Its Applications
Analytical Techniques in the Oil and Gas Industry for Environmental Monitoring
Handbook Of Size Exclusion Chromatography And Related Techniques
Practical Application of Supercritical Fluid Chromatography for Pharmaceutical Research and Development
GC / MS
Gas Chromatography
Charged Aerosol Detection for Liquid Chromatography and Related Separation Techniques
Liquid Chromatography
Handbook of Chromatography
Scale-Up and Optimization in Preparative Chromatography
Introduction to Mass Spectrometry
Static Headspace-Gas Chromatography
Targeted Biomarker Quantitation by LC-MS

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2017-06-06 John Maclane Chromatography has many roles in forensic science, ranging from toxicology to environmental analysis. In particular, high-performance liquid chromatography (HPLC) is a primary method of analysis in many types of laboratories. Maintaining a balance between practical solutions and the theoretical considerations involved in HPLC analysis, Forensic Applications of High Performance Liquid Chromatography uses real-life examples likely to be found within a forensic science laboratory to explain HPLC from a forensic perspective.

2017-05-30 Paul H. Gamache The first book devoted exclusively to a highly popular, relatively new detection technique Charged Aerosol Detection for Liquid Chromatography and Related Separation Techniques presents a comprehensive review of CAD theory, describes its advantages and limitations, and offers extremely well-informed recommendations for its practical use. Using numerous real-world examples based on contributors' professional experiences, it provides priceless insights into the actual and potential applications of CAD across a wide range of industries. Charged aerosol detection can be combined with a variety of separation techniques and in numerous configurations. While it has been widely adapted for an array of industrial and research applications with great success, it is still a relatively new technique, and its fundamental performance characteristics are not yet fully understood. This book is intended as a tool for scientists seeking to identify the most effective and efficient uses of charged aerosol detection for a given application. Moving naturally from basic to advanced topics, the author relates fundamental principles, practical uses, and applications across a range of industrial settings, including pharmaceuticals, petrochemicals, biotech, and more. Offers timely, authoritative coverage of the theory, experimental techniques, and end-user applications of charged aerosol detection Includes contributions from experts from various fields of applications who explore CAD's advantages over traditional HPLC techniques, as well its limitations Provides a current theoretical and practical understanding of CAD, derived from authorities on aerosol technology and separation sciences Features numerous real-world examples that help relate fundamental properties and general operational variables of CAD to its performance in a variety of conditions Charged Aerosol Detection for Liquid Chromatography and Related Separation Techniques is a valuable resource for scientists who use chromatographic techniques in academic research and across an array of industrial settings, including the biopharmaceutical, biotechnology, biofuel, chemical, environmental, and food and beverage industries, among others.

2014-11-05 Katja Dettmer-Wilde Gas chromatography continues to be one of the most widely used analytical techniques, since its applications today expand into fields such as biomarker research or metabolomics. This new practical textbook enables the reader to make full use of gas chromatography. Essential fundamentals and their implications for the practical work at the instrument are provided, as well as details on the instrumentation such as inlet systems, columns and detectors. Specialized techniques from all aspects of GC are introduced ranging from sample preparation, solvent-free injection techniques, and pyrolysis GC, to separation including fast GC and comprehensive GCxGC and finally detection, such as GC-MS and element-specific detection. Various fields of application such as enantiomer, food, flavor and fragrance analysis, physicochemical measurements, forensic toxicology, and clinical analysis are discussed as well as cutting-edge application in metabolomics is covered.

2009-05-06 Imma Ferrer Time of flight mass spectrometry identifies the elements of a compound by subjecting a sample of ions to a strong electrical field. Illuminating emerging analytical techniques in high-resolution mass spectrometry, Liquid

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Chromatography Time-of-Flight Mass Spectrometry shows readers how to analyze unknown and emerging contaminants—such as antibiotics, steroids, analgesics—using advanced mass spectrometry techniques. The text combines theoretical discussion with concrete examples, making it suitable for analytical chemists, environmental chemists, organic chemists, medicinal chemists, university research chemists, and graduate and post-doctorate students.

2020-09-01 Melissa N. Dunkle A thorough introduction to environmental monitoring in the oil and gas industry Analytical Techniques in the Oil and Gas Industry for Environmental Monitoring examines the analytical side of the oil and gas industry as it also provides an overall introduction to the industry. You'll discover how oil and natural gas are sourced, refined, and processed. You can learn about what's produced from oil and natural gas, and why evaluating these sourced resources is important. The book discusses the conventional analyses for oil and natural gas feeds, along with their limitations. It offers detailed descriptions of advanced analytical techniques that are commercially available, plus explanations of gas and oil industry equipment and instrumentation. You'll find technique descriptions supplemented with a list of references as well as with real-life application examples. With this book as a reference, you can prepare to apply specific analytical methods in your organization's lab environment. Analytical Techniques can also serve as your comprehensive resource on key techniques in the characterization of oil and gas samples, within both refinery and environmental contexts. Understand of the scope of oil and gas industry techniques available Consider the benefits and limitations of each available process Prepare for applying analytical techniques in your lab See real examples and a list of references for each technique Read descriptions of off-line analytics, as well as on-line and process applications As a chemist, engineer, instructor, or student, this book will also expand your awareness of the role these techniques have in environmental monitoring and environmental impact assessments.

2017-06-29 Shirley Bayne Chromatography has many roles in forensic science, ranging from toxicology to environmental analysis. In particular, high-performance liquid chromatography (HPLC) is a primary method of analysis in many types of laboratories. Maintaining a balance between practical solutions and the theoretical considerations involved in HPLC analysis, Forensic Applications of High Performance Liquid Chromatography uses real-life examples likely to be found within a forensic science laboratory to explain HPLC from a forensic perspective. Focusing chiefly on the reverse phase HPLC mode of separation, this volume examines: The history of HPLC and the theory behind the separation process The requirements for successful analysis and best practice tips The modes of separation and detection most appropriate for forensic science applications HPLC method development and evaluation The quality aspects of laboratory operation Troubleshooting HPLC systems and analyses Applications of HPLC within the field of forensic science Designed as a textbook for university students studying analytical chemistry, applied chemistry, forensic chemistry, or other courses with an element of HPLC within the course curriculum, this volume is also an invaluable guide for those in the early stages of their forensic analysis careers. An instructor's manual with lecture slides, test bank, objectives, and exercises is available with qualifying course adoption

1985-11-22 P. Mohr Affinity Chromatography combines theoretical aspects and practical applications-providing a solid understanding of affinity principles on a molecular level. Beginning with the historical background of affinity chromatography, this single-source volume discusses matrix supports and the insertion of spacers ... the chemical and physicochemical features of the adsorption and elution step ... immunoassay technology and separation of viruses and cells ... variants of affinity chromatography other than biospecific ... related

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techniques including affinity electrophoresis ... and much more. Written by leading experts in the field, Affinity Chromatography contains convenient features such as a concise outline format-summarizing useful information; numerous illustrations-clarifying fundamental and methodical factors; easy-to-read tables-for a quick understanding of vital material; current references-facilitating continuing study. Providing stimulation for the development of new affinity methods, this important volume is mandatory for analytical chemists, chromatographers, biochemists, biologists, microbiologists, pharmacists, and students in advanced undergraduate- and graduate-level analytical and preparative chemistry courses. Book jacket.

2000-12-21 Joel K. Swadesh Product specifications, regulatory constraints, and tight production schedules impose considerable pressures on separation scientists in industry. The first edition of HPLC: Practical and Industrial Applications helped eliminate the need for extensive library or laboratory research when confronting a problem, an unfamiliar technique, or work in a new area. Its plain language, comprehensive coverage of separation topics, and practical organization made it an accessible and convenient reference manual for anyone working in or just entering the field. Since its publication in 1997, however, much has changed. The areas of mass spectroscopy, electrophoretic separations, and ultra-micro separations have blossomed, focus on quality control has intensified, and the literature has grown significantly. The Second Edition incorporates all of these changes and more. It is now fully current, with chapter supplements that include updated references and discussions of techniques. This book examines analytical HPLC as it is actually used in industry. Whether you are just entering industry, switching from one industry to another, or simply enjoy understanding how things are made, HPLC: Practical and Industrial Applications will help you solve problems and get up to speed in new areas quickly, comfortably, and with a genuine sense of mastery.

2012-06-19 Colin Poole A single source of authoritative information on all aspects of the practice of modern gas chromatography, from theory, to methods, to selected applications. It also provides access to core data for practical work, comparison of results, and decision making and facilitates the search for sources in related areas of study.

2003-11-04 Chi-San Wu Documenting critical advances in this rapidly evolving field, the Second Edition highlights the need for new applications and technologies that assist in the determination of molecular weight and molecular weight distributions of polymers in an accurate, efficient manner. This volume presents the latest findings from a international team of specialists and continues to inspire and extend practical applications of size exclusion chromatography (SEC). It includes six new chapters covering high-speed size exclusion chromatography, SEC of low molecular weight materials, and the extended family of techniques, from two-dimensional liquid chromatography to high osmotic pressure chromatography.

2008-05-09 Steven A. Cohen Multidimensional Liquid Chromatography (MDLC) is a very powerful separation technique for analyzing exceptionally complex samples in one step. This authoritative reference presents a number of recent contributions that help define the current art and science of MDLC. Topics covered include instrumentation, theory, methods development, and applications of MDLC in the life sciences and in industrial chemistry. With the information to help you perform very difficult separations of complex samples, this reference includes chapters contributed by leading experts or teams of experts.

2015-11-18 Teresa Kowalska Planar Chromatography–Mass Spectrometry focuses on a relatively new approach to chemical analysis in general, and to separation science in particular. It is the first book to systemically cover the theoretical background, techniques, instrumentation,

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and practical applications of planar chromatography–mass spectrometry as a hyphenated tool of analytical chemistry. It also examines the high and as-yet unexploited potential of planar chromatography–mass spectrometry for analytical use in scientific investigations. This book overviews the combination of planar chromatography, a relatively simple and cost-effective separation step for determining complex mixtures of compounds, with mass spectrometry, an efficient, highly instrumental, and relatively expensive technique that enables rapid identification of separated chemical species. It covers electrophoretic–mass spectrometry methods and applications, which are considered planar chromatographic techniques and are increasingly being exploited in proteomic and molecular biology studies as well as for medical diagnostic purposes. It also provides a selection of applications, such as drug control and forensic and food analysis, including more difficult substances such as carbohydrates and lipids. The book advocates growth in using planar chromatography–mass spectrometry in laboratories that have appropriate equipment but have not yet employed the techniques in combination. It also describes the use of a relatively inexpensive commercial system that can be adopted by laboratories currently working without the coupled methodology. Aiming to improve power and efficiency when other analytical methods are inadequate, Planar Chromatography–Mass Spectrometry encourages separation science practitioners in academia and industry to combine the two methods for enhanced results.

1996-05-29 Bernard Fried Practical Thin-Layer Chromatography provides thorough coverage of the principles, practices, and applications of thin-layer chromatography (TLC) for important sample and compound types. This information is directed specifically at workers in the most active scientific fields.

2017-07-31 Naidong Weng The first book to offer a blueprint for overcoming the challenges to successfully quantifying biomarkers in living organisms The demand among scientists and clinicians for targeted quantitation experiments has experienced explosive growth in recent years. While there are a few books dedicated to bioanalysis and biomarkers in general, until now there were none devoted exclusively to addressing critical issues surrounding this area of intense research. Target Biomarker Quantitation by LC-MS provides a detailed blueprint for quantifying biomarkers in biological systems. It uses numerous real-world cases to exemplify key concepts, all of which were carefully selected and presented so as to allow the concepts they embody to be easily expanded to future applications, including new biomarker development. Target Biomarker Quantitation by LC-MS primarily focuses on the assay establishment for biomarker quantitation—a critical issue rarely treated in depth. It offers comprehensive coverage of three core areas of biomarker assay establishment: the relationship between the measured biomarkers and their intended usage; contemporary regulatory requirements for biomarker assays (a thorough understanding of which is essential to producing a successful and defendable submission); and the technical challenges of analyzing biomarkers produced inside a living organism or cell. Covers the theory of and applications for state-of-the-art mass spectrometry and chromatography and their applications in biomarker analysis Features real-life examples illustrating the challenges involved in target biomarker quantitation and the innovative approaches which have been used to overcome those challenges Addresses potential obstacles to obtain effective biomarker level and data interpretation, such as specificity establishment and sample collection Outlines a tiered approach and fit-for-purpose assay protocol for target biomarker quantitation Highlights the current state of the biomarker regulatory environment and protocol standards Target Biomarker Quantitation by LC-MS is a valuable resource for bioanalytical scientists, drug metabolism and pharmacokinetics scientists,

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clinical scientists, analytical chemists, and others for whom biomarker quantitation is an important tool of the trade. It also functions as an excellent text for graduate courses in pharmaceutical, biochemistry and chemistry.

2001-06-29 Jack Cazes This practical, single-volume source collects up-to-date information on chromatographic techniques and methodologies for the solution of analytical and preparative problems applicable across a broad spectrum of disciplines including biotechnology, pharmaceuticals, environmental sciences, polymers, food additives and nutrients, pathology, toxicology, fossil fuels, and nuclear chemistry. It highlights real-world applications, easy-to-read fundamentals of problem solving and material identification methods, and detailed references. Written by over 180 esteemed international authorities and containing over 300 chapters, 2600 works cited, and 1000 drawings, equations, tables, and photographs, the Encyclopedia of Chromatography covers high-performance liquid, thin-layer, gas, affinity, countercurrent, supercritical fluid, gel permeation, and size exclusion chromatographies as well as capillary electrophoresis, field-flow fractionation, hyphenated techniques, and more. PRINT/ONLINE PRICING OPTIONS AVAILABLE UPON REQUEST AT e-reference@taylorandfrancis.com

2007-01-09 Lloyd R. Snyder Gradient elution demystified Of the various ways in which chromatography is applied today, few have been as misunderstood as the technique of gradient elution, which presents many challenges compared to isocratic separation. When properly explained, however, gradient elution can be less difficult to understand and much easier to use than often assumed. Written by two well-known authorities in liquid chromatography, High-Performance Gradient Elution: The Practical Application of the Linear-Solvent-Strength Model takes the mystery out of the practice of gradient elution and helps remove barriers to the practical application of this important separation technique. The book presents a systematic approach to the current understanding of gradient elution, describing theory, methodology, and applications across many of the fields that use liquid chromatography as a primary analytical tool. This up-to-date, practical, and comprehensive treatment of gradient elution: * Provides specific, step-by-step recommendations for developing a gradient separation for any sample * Describes the best approach for troubleshooting problems with gradient methods * Guides the reader on the equipment used for gradient elution * Lists which conditions should be varied first during method development, and explains how to interpret scouting gradients * Explains how to avoid problems in transferring gradient methods With a focus on the use of linear solvent strength (LSS) theory for predicting gradient LC behavior and separations by reversed-phase HPLC, High-Performance Gradient Elution gives every chromatographer access to this useful tool.

1998-09-01 Wilfried M.A. Niessen This volume comprehensively relates developments, principles, and applications of combined liquid chromatography-mass spectrometry and other techniques such as capillary electrophoresis and supercritical fluid chromatography combined with mass spectrometry. It covers historical developments, currently important interfaces and technologies, and LC-MS applications in environmental analysis, pharmaceuticals and bioanalysis, and additional fields. It offers in-depth coverage of interfaces and technologies currently important in the laboratory, especially electrospray and APCI, contains an expanded applications section, and provides over 2200 references, tables, equations, and drawings.

2013-06-04 Michelle Groves Carlin Several areas of forensic science use the technique of gas chromatography, ranging from fire analysis to the investigation of fraudulent food and perfumes. Covering the essentials of this powerful analytical technique, Forensic Applications of Gas Chromatography explains the theory and shows applications

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of this knowledge to various realms of forensic science. Topics include: A brief introduction to gas chromatography and its use in forensic science Various components that make up the gas chromatographic instrumentation The theory of the separation process, along with the chemistry underpinning the process Method development, with a specific example of a separation of eight different compounds using a gas chromatography-flame ionization detector Quality assurance and method validation—with information applicable to many types of analytical testing laboratories Troubleshooting in gas chromatography systems New developments in gas chromatography and advances in columns and detectors Real examples supplement the text, along with questions in each chapter. The book includes examples of applications of gas chromatography in drugs, toxicology, fire, paint, food, and fragrance. Each application is presented as an individual case study with specific focus on a particular sample preparation technique. This allows each technique to be discussed with respect to its theory, instrumentation, solvent selection, and function, as appropriate. Each case study provides readers with suitable practical information to allow them to perform experiments in their own laboratory either as part of a practical laboratory class or in a research context. The final chapter provides answers to the questions and encourages further study and discussion.

2020-03-11 Charles G. Smith Handbook of Chromatography features tables and chromatograms, theoretical discussions, and practical applications on the topic. Tables and chromatograms are based on polymer analyses abstracted from literature references dating from 1981-1991. Compounds presented in the tables and chromatograms include residual monomers, plasticizers, additives, antioxidants, and products from the thermal degradation (pyrolysis) of a broad range of synthetic polymers. Theoretical discussions focus on new developments in the respective areas of gas, pyrolysis-gas, liquid, and size exclusion chromatographic separations. Capillary column technology, inverse gas chromatography (IGC), supercritical fluid extractions (SFE), and supercritical fluid chromatography (SFC) are also covered. A Practical Applications subsection provides a list of commercial suppliers of column packings and packed columns for gas and liquid chromatography. The book will be an excellent reference for chromatographers, organic chemists, and analytical chemists.

1993-05-06 Brian A. Bidlingmeyer Of related interest. Trace and Ultratrace Analysis by HPLC Satinder Ahuja Written by a leading scientist in the field, this monograph provides the first definitive and technically up-to-date treatment of the theory, equipment, and applications of chemistry's most powerful reliable analytical technique. Coverage includes an encyclopedic compendium of common substances that require trace and ultratrace analysis, and features clear discussion of such important topics as considerations for HPLC equipment, sensitive detectors, sample preparation, method development, selectivity and computer-based optimizations, optimizing detectability, and much more. 1991 (0 471-51419-5) 432 pp. High Performance Liquid Chromatography in Biotechnology Edited by William S. Hancock Analytical chemists, biochemists, and chemical engineers will find this up-to-date guide to HPLC's recent developments essential for enhancing on-the-job technical expertise. Extensive coverage includes the broad applications of HPLC, ranging from major chromatographic techniques (including reversed phase, ion exchange, affinity and hydrophobic interaction chromatography) to specific separations such as those in monoclonal antibody and nucleic acid purification. Techniques for quality control programs and advanced technology are also discussed. 1990 (0 471-82584-0) 564 pp. Unified Separation Science J. Calvin Giddings This advanced text/monograph brings together for the first time the variety of techniques used for chemical separations by outlining their common

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underlying mechanisms. The mass transport phenomena underlying all separation processes are developed in a simple physical-mathematical form, facilitating analysis of alternative separation techniques and the factors integral to separation power. The first six chapters provide background material applicable to a wide range of separation methods, while the final five chapters illustrate specific techniques and methods. 1991 (0 471-52089-6) 320 pp.

2020-07-13 Oliver Jones This book addresses the growing interest in the field of two-dimensional liquid chromatography (2DLC), a powerful approach to increasing resolution, available peak capacity, and selectivity in analytical chromatography. 2DLC is suitable for many applications, including in the pharmaceutical and polymer industries and the omic sciences (metabolomics, lipidomics and proteomics). Thanks to recent advances in technology and software the instrumentation needed to perform 2D-LC is broadly available to the analytical community in both industry and academia. Indeed, the technique can now be considered ready for application in R&D as well as in QA and QC labs, yet it is not widely known about outside academic laboratories and is rarely taught at the undergraduate level. This book outlines the main principles and features of 2D-LC (including comprehensive and heart-cutting modes, method development and real world applications) to enable modern analysts to start using this fascinating technique. The book offers an ideal starting point for those wishing to get into 2D-LC and will also be of interest to more experienced scientists in the field.

2013-07-09 J. Throck Watson Completely revised and updated, this text provides an easy-to-read guide to the concept of mass spectrometry and demonstrates its potential and limitations. Written by internationally recognised experts and utilising "real life" examples of analyses and applications, the book presents real cases of qualitative and quantitative applications of mass spectrometry. Unlike other mass spectrometry texts, this comprehensive reference provides systematic descriptions of the various types of mass analysers and ionisation, along with corresponding strategies for interpretation of data. The book concludes with a comprehensive 3000 references. This multi-disciplined text covers the fundamentals as well as recent advance in this topic, providing need-to-know information for researchers in many disciplines including pharmaceutical, environmental and biomedical analysis who are utilizing mass spectrometry

2006-05-05 Bruno Kolb STATIC HEADSPACE-GAS CHROMATOGRAPHY THE ONLY REFERENCE TO PROVIDE BOTH CURRENT AND THOROUGH COVERAGE OF THIS IMPORTANT ANALYTICAL TECHNIQUE Static headspace-gas chromatography (HS-GC) is an indispensable technique for analyzing volatile organic compounds, enabling the analyst to assay a variety of sample matrices while avoiding the costly and time-consuming preparation involved with traditional GC. Static Headspace-Gas Chromatography: Theory and Practice has long been the only reference to provide in-depth coverage of this method of analysis. The Second Edition has been thoroughly updated to reflect the most recent developments and practices, and also includes coverage of solid-phase microextraction (SPME) and the purge-and-trap technique. Chapters cover: Principles of static and dynamic headspace analysis, including the evolution of HS-GC methods and regulatory methods using static HS-GC Basic theory of headspace analysis—physicochemical relationships, sensitivity, and the principles of multiple headspace extraction HS-GC techniques—vials, cleaning, caps, sample volume, enrichment, and cryogenic techniques Sample handling Cryogenic HS-GC Method development in HS-GC Nonequilibrium static headspace analysis Determination of physicochemical functions such as vapor pressures, activity coefficients, and more Comprehensive and focused, Static Headspace-Gas Chromatography, Second Edition provides an excellent

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resource to help the reader achieve optimal chromatographic results. Practical examples with original data help readers to master determinations in a wide variety of areas, such as forensic, environmental, pharmaceutical, and industrial applications.

2013-01-22 Bernard A. Olsen Discover how to use HILIC to analyze and better understand polar compounds An increasingly popular analytical method, hydrophilic interaction chromatography (HILIC) has the ability to retain and separate polar compounds that are often difficult to analyze by reversed-phase high-performance liquid chromatography (HPLC) or other analytical methods. Offering a comprehensive review, this book enables readers to develop a fundamental understanding of how HILIC works and then apply that knowledge to develop and implement a variety of practical applications. Hydrophilic Interaction Chromatography begins with discussions of HILIC retention mechanisms, stationary phases, and general method development. This sets the foundation for the book's extensive coverage of applications. The authors address unique separation challenges for bioanalytical, environmental, pharmaceutical, and biochemical applications. Moreover, there is a thorough discussion of HILIC in two-dimensional chromatography. With contributions from leading analytical scientists who have extensive experience in HILIC as well as HPLC, Hydrophilic Interaction Chromatography serves as a practical guide for researchers, featuring: Detailed examples of HILIC methods and development approaches Thorough explanations of retention mechanisms and the impact of stationary phase and mobile phase properties on separations Step-by-step guidance for developing efficient, sensitive, and robust HILIC methods References to the primary literature at the end of each chapter Hydrophilic Interaction Chromatography is written for scientists who use or develop analytical methods for the separation of polar compounds. In particular, these researchers will discover how HILIC can be used to analyze and better understand the composition of pharmaceutical, bioanalytical, biochemical, chemical, food, and environmental samples.

2011-09-20 Marvin C. McMaster Updated and expanded, the classic guide to GC/MS helps chromatographers quickly learn to use this technique for analyzing and identifying compounds. After explaining the fundamentals, it discusses optimizing, tuning, using, and maintaining GC/MS equipment; explores advances in miniaturized and field-portable GC/MS systems and microfluidic components; and more. Complete with a CD-ROM, it covers applications in the environmental laboratory and in forensics, toxicology, and space science. This is the premier resource for professionals in those fields and for students.

2022-12-02 Practical Application of Supercritical Fluid Chromatography for Pharmaceutical Research and Development provides a valuable “go-to reference for many difficult-to-solve challenges using pertinent chromatographic theory, first-hand case studies, and examples provided from academic and industry experts. This text also enables professors teaching an analytical instrumental course to introduce and instruct students about one of the most sustainable and powerful separation methods currently available. While the text has broad applicability across industrial sectors, it focuses primarily on application in the pharmaceutical industry. The book is designed to allow readers to align current HPLC/UHPLC capabilities with SFC as an orthogonal tool for project specific methods in the pharmaceutical industry. It highlights where SFC falls on the spectrum of useful chromatographic tools for routine and challenging separative methods. Experienced HPLC users who are interested in developing knowledge in orthogonal separation techniques, as well as newcomers to the field of separation science, will find this text particularly useful. Chapters address where SFC may fit the analytical needs of the pharmaceutical industry and alert the readers as to where the technique will not

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fit. Readers will gain an understanding of how and where SFC may be applied and adapted more routinely across the pharmaceutical industry as a ‘green’ way of undertaking separation opportunities and challenges. Areas within the pharmaceutical industry include early drug discovery, process chemistry, and late stage development and manufacturing. Describes approaches to SFC column and mobile phase selection for method development for both analytical and preparative tasks Gives practical examples of how analytical SFC enables the monitoring of synthetic reactions including unstable intermediates, chiral and achiral polar reactants and products across small and large modalities Provides need-focused case studies for pharmaceutical analysts, process chemists, and contract chemistry facilities that can benefit from monitoring or purifying polar intermediates, mutagenic impurities, nitrosamines and other reaction by-products including excipients and metabolites

2008-09-15 Tibor Cserhati A comprehensive, compilation and evaluation of the newest results in the field of enumerate evaluation of chromatographic data Aimed at the practicing professional, researchers and advanced students working in this area Special emphasis on practical applications While the principles of chromatography and multivariate mathematical-statistical methods are discussed separately, the book focuses on their interconnection. Written by a chromatographer for chromatographers

1989-12-11 Cortes Multidimensional Chromatography furnishes, for the first time, a comprehensive multidisciplined evaluation of state-of-the-art multidimensional chromatographic separation techniques -- including detailed discussions by leading international authorities on theoretical principles, instrumentation, and practical applications. Organized in a convenient manner, this current reference presents chapters dealing with multidimensional separations by thin-layer, gas, liquid, coupled LC-GC, supercritical fluid chromatographies, and extractions ... contains over 650 references and more than 150 illustrations ... offers large numbers of practical examples ... and introduces areas that require further study and suggest future trends. Multidimensional Chromatography is a timely, comprehensive source for analytical, bioanalytical, pharmaceutical, organic, physical, and industrial chemists and biochemists; chromatographers; pharmaceutical scientists; and professional seminars and graduate-level courses in the above disciplines. Book jacket.

2002-09-26 Anurag Rathore Presenting guidelines to predict and improve separation system performance, this book contains numerous case studies illustrating the practice of scale-up principles in process development. It offers solutions to limitations that occur in real-world purification schemes; methods to model, optimize, and characterize nonlinear separation processes; d

2012-03-16 Sasikumar Dhanarasu Chromatography is a powerful separation tool that is used in all branches of science, and is often the only means of separating components from complex mixtures. The Russian botanist Mikhail Tswett coined the term chromatography in 1906. The first analytical use of chromatography was described by James and Martin in 1952, for the use of gas chromatography for the analysis of fatty acid mixtures. A wide range of chromatographic procedures makes use of differences in size, binding affinities, charge, and other properties. Many types of chromatography have been developed. These include Column chromatography, High performance liquid chromatography (HPLC), Gas chromatography, Size exclusion chromatography, Ion exchange chromatography etc. In this book contains more details about the applications of chromatography by various research findings. Each and every topics of this book have included lists of references at the end to provide students and researchers with starting points for independent chromatography explorations. I welcome comments, criticisms, and suggestions from students, faculty and researchers.

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