

Classical Split Splitless Injection

The second edition of *Gas Chromatography and Mass Spectrometry: A Practical Guide* follows the highly successful first edition by F.G. Kitson, B.S. Larsen, and C.N. McEwen (1996), which was designed as an indispensable resource for GC/MS practitioners regardless of whether they are a novice or well experienced. The Fundamentals section has been extensively reworked from the original edition to give more depth of an understanding of the techniques and science involved with GC/MS. Even with this expansion, the original brevity and simple didactic style has been retained. Information on chromatographic peak deconvolution has been added along with a more in-depth understanding of the use of mass spectral databases in the identification of unknowns. Since the last edition, a number of advances in GC inlet systems and sample introduction techniques have occurred, and they are included in the new edition. Other updates include a discussion on fast GC and options for combining GC detectors with mass spectrometry. The section regarding GC Conditions, Derivatization, and Mass Spectral Interpretation of Specific Compound Types has the same number of compound types as the original edition, but the information in each section has been expanded to not only explain some of the spectra but to also explain why certain fragmentations take place. The number of Appendices has been increased from 12 to 17. The Appendix on Atomic Masses and Isotope Abundances has been expanded to provide tools to aid in determination of elemental composition from isotope peak intensity ratios. An appendix with examples on "Steps to follow in the determination of elemental compositions based on isotope peak intensities" has been added. Appendices on whether to use GC/MS or LC/MS, third-party software for use in data analysis, list of information required in reporting GC/MS data, X+1 and X+2 peak relative intensities based on the number of atoms of carbon in an ion, and list of available EI mass spectral databases have been added. Others such as the ones on derivatization, isotope peak patterns for ions with Cl and/or Br, terms used in GC and in mass spectrometry, and tips on setting up, maintaining and troubleshooting a GC/MS system have all been expanded and updated. Covers the practical instruction necessary for successful operation of GC/MS equipment Reviews the latest advances in instrumentation, ionization methods, and quantitation Includes troubleshooting techniques and a variety of additional information useful for the GC/MS practitioner A true benchtop reference A guide to a basic understanding of the components of a Gas Chromatograph-Mass Spectrometer (GC-MS) Quick References to data interpretation Ready source for information on new analyses

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

This book enables the reader to gain a rapid understanding of GC/MS analysis through a basic knowledge of the fundamental principles, linking these with simple and practical applications in the field of industrial medicine and analysis of drugs. Additional information from other specialist fields is also provided with the aim of helping the analyst to understand their relevance to the interpretation of results. The book describes efficient methods of sample preparation and quality assurance and provides information on epidemiology and pharmacology, without which drug screening is impossible. This comprehensive overview is mainly written for the practical analyst in the clinical laboratory but it is equally suited for teaching purposes.

General concepts in column chromatography -- The column in gas chromatography -- Instrumental aspects of gas chromatography -- The column in liquid chromatography -- Instrumental aspects of liquid chromatography -- Thin-layer chromatography -- Supercritical fluid chromatography -- Capillary-electromigration separation techniques -- Spectroscopic detectors for identification and quantification -- Separation of stereoisomers -- Laboratory-scale preparative chromatography.

This volume provides an overview of the state of the art in gas chromatography with an emphasis on new technologies. The authors-all drawn from respected industrial and academic laboratories-consider developments in gas chromatographic techniques over the last decade.

Application areas are addressed within individual chapters.

A convenient source of information for workers in analytical chemistry, experimental biology, physics, and engineering, this Second Edition stands as a quick reference source and clear guide to specific chromatographic techniques and principles-providing a basic introduction to the science and technology of the method, as well as additional references on the theory and methodology for analysis of specific chemicals and applications in a range of industries.

"The book contains twenty three chapters written by experts on the subject is structured in two parts: the first one describes the role of the latest developments in analytical and bioanalytical techniques, and the second one deals with the most innovative applications and issues in food analysis. The two first introductory chapters about sampling technique, from basic one to the most recent advances, which is still a food challenge because is responsible of the quality and assurance of the analysis, and on data analysis and chemometrics are followed by a review of the most recently applied techniques in process (on-line) control and in laboratories for the analysis of major or minor compounds of food. These techniques ranged from the non-invasive and non-destructive ones, such as infrared spectroscopy, magnetic resonance and ultrasounds, to emerging areas as nanotechnology, biosensors and electronic noses and tongues, including those already well-established in food analysis, such as chromatographic and electrophoretic techniques. These chapters also include two important tools for solving problems in chemical and biological analysis such as mass spectrometry and molecular-based techniques"--

Basic Gas Chromatography, Third Edition provides a brief introduction to GC following the objectives for titles in this series. It should appeal to readers with varying levels of education and emphasizes a practical, applied approach to the subject. : This book provides a quick need-to-know introduction to gas chromatography; still the most widely used instrumental analysis technique, and is intended to assist new users in gaining understanding quickly and as a quick reference for experienced users. The new edition provides updated chapters that reflect changes in technology and methodology, especially sample preparation, detectors and multidimensional chromatography. The book also covers new detectors recently introduced and sample preparation methods that have become much more easily accessible since the previous edition.

The use of Compound-specific Stable Isotope Analysis (CSIA) is increasing in many areas of science and technology for source allocation, authentication, and characterization of transformation reactions. Until now, there have been no textbooks available for students with an analytical chemical background or basic introductory books emphasising the instrumentation and theory. This book is the first to focus solely on stable isotope analysis of individual compounds in sometimes complex mixtures. It acts as both a lecture companion for students and a consultant for advanced scientists in fields including forensic and environmental science. The book starts with a brief history of the field before going on to explain stable isotopes from scratch. The different ways to express isotope abundances are introduced together with isotope effects and isotopic fractionation. A detailed account of the required technical equipment and general procedures for CSIA is provided. This includes sections on derivatization and the use of

microextraction techniques in GC-IRMS. The very important topic of referencing and calibration in CSIA is clearly described. This differs from approaches used in quantitative analysis and is often difficult for the newcomer to comprehend. Examples of successful applications of CSIA in food authenticity, forensics, archaeology, doping control, environmental science, and extraterrestrial materials are included. Applications in isotope data treatment and presentation are also discussed and emphasis is placed on the general conclusions that can be drawn from the uses of CSIA. Further instrumental developments in the field are highlighted and selected experiments are introduced that may act as a basis for a short practical course at graduate level. The bible of gas chromatography-offering everything the professional and the novice need to know about running, maintaining, and interpreting the results from GC Analytical chemists, technicians, and scientists in allied disciplines have come to regard Modern Practice of Gas Chromatography as the standard reference in gas chromatography. In addition to serving as an invaluable reference for the experienced practitioner, this bestselling work provides the beginner with a solid understanding of gas chromatographic theory and basic techniques. This new Fourth Edition incorporates the most recent developments in the field, including entirely new chapters on gas chromatography/mass spectrometry (GC/MS); optimization of separations and computer assistance; high speed or fast gas chromatography; mobile phase requirements: gas system requirements and sample preparation techniques; qualitative and quantitative analysis by GC; updated information on detectors; validation and QA/QC of chromatographic methods; and useful hints for good gas chromatography. As in previous editions, contributing authors have been chosen for their expertise and active participation in their respective areas. Modern Practice of Gas Chromatography, Fourth Edition presents a well-rounded and comprehensive overview of the current state of this important technology, providing a practical reference that will greatly appeal to both experienced chromatographers and novices.

Because of the development of commercial hormone assays the need for a pure methodology book has been overlooked. There is a need for advice about commercial assays as well as protocols for manual assays that can offer greater specificity or sensitivity. Hormone Assays in Biological Fluids fills this need and provides a range of methods for the different hormones, and also highlights the pitfalls of current measurement approaches and solutions to the difficulties of hormone measurement. It will save analysts time in deciding which is the best method to use and will help avoid many of the most common and time wasting mistakes. Commercial assays both manual and automated, are available for the majority of hormones, still there is confusion over the reliability and specificity of these methods. This text presents a guide to both commercial assays and manual assays thereby assuring specificity and accuracy of measurement. Analysts will find in this book clear guidance on the best method to use for their particular study. Hormone Assays in Biological Fluids will also prove to be an invaluable tool for pharmacologists involved in clinical trials, students, and practicing physicians: It will help researchers choose the best method for their particular research purposes, and be applicable to a wide range of scientists, including biochemists, immunologists, physiologists, pharmacologists and research clinicians who are involved in endocrine research.

Gas chromatography is widely used in applications involving food analysis. Typical applications pertain to the quantitative and/or qualitative analysis of food composition, natural products, food additives, and flavour and aroma components. Providing an up-to-date look at the significant advances in the technology, this book includes details on novel sample preparation processes; conventional, high-speed multidimensional gas chromatography systems, including preparative instrumentation; gas chromatography-olfactometry principles; and, finally, chemometrics principles and applications in food analysis. Aimed at providing the food researcher or analyst with detailed analytical information related to advanced gas chromatography technologies, this book is suitable for professionals and postgraduate students learning about the technique in the food industry and research. Sample preparation is an essential step in many analyses. This book approaches the topic of sample preparation in chromatography in a methodical way, viewing it as a logical connection between sample collection and analytical chromatography. Providing a guide for choosing the appropriate sample preparation for a given analysis, this book describes various ways to process the sample, explaining the principle, discussing the advantages and disadvantages, describing the applicability to different types of samples, and showing the fitness to specific chromatographic determinations. The first part of the book contains an overview of sample preparation showing its relation to sample collection and to the core chromatographic analysis. The second part covers procedures that do not use chemical modifications of the analyte and includes methods for sample dissolution, concentration and cleanup designed mainly for modifying the initial matrix of the sample. This part starts with conventional separations such as filtration and distillation and finishes with more advanced techniques such as solid phase extraction and electroseparations. The third part gives a description of the chemical modifications that can be performed on a sample either for fractionation purposes or to improve a specific property of the analyte. This part includes derivatizations, polymer chemical degradations, and pyrolysis.

Presents contemporary methods of measuring optical properties, moisture, ash content, and other physical characteristics of food and evaluates techniques used to trace nutrient analytes ranging from peptides, proteins, and enzymes to aroma compounds to carbohydrates and starch.

EPA and DHA omega-3 fatty acids are contained in oily fish, such as salmon, lake trout, tuna and herring. These fatty acids are not essential to the diet; however, scientific evidence indicates that these fatty acids may be very beneficial in reducing Coronary Heart Disease among other things. This book brings together some of the recent studies on this important and interesting substance.

Compiled by the editor of Dekker's distinguished Chromatographic Science series, this reader-friendly reference is as a unique and stand-alone guide for anyone requiring clear instruction on the most frequently utilized analytical instrumentation techniques. More than just a catalog of commercially available instruments, the chapters are wri

This comprehensive and unique handbook of split and splitless injection techniques has been completely revised and updated. This new edition offers: - New insights concerning sample evaporation in the injector - Information about matrix effects - A new chapter on injector design The real processes within the injector are for the first time visualized and explained by the CD-ROM included in the book. Furthermore the reader will understand the concepts of injection techniques and get a knowledge of the sources of error. The handbook also includes many practical guidelines. From reviews of former editions: "This substantial book is on injection techniques alone, which ... demonstrates this can have many pitfalls ... no one should be allowed to direct a laboratory doing quantitative analysis by GC without first being thoroughly familiar with this book ..." The Analyst "This is a detailed reference volume filled with practical suggestions and techniques for managing split and splitless injection in the day-to-day world of the working gas chromatographer. It will be useful ... for anyone who must work hands-on with GC." Journal of High Resolution

Chromatography

The most important advantage [of this text] is that it has not only been written for the practitioner, but also the analyst who wishes to familiarize himself with any or all the aspects of GC/MS' - AFS - Advances In Food Sciences. This is an updated edition of its bestselling predecessor, Handbook of GC/MS: Fundamentals and Applications that offers broad coverage of the subject, from sample preparation to the evaluation of MS-Data. This edition boasts several new chapters, including Automated Solvent Extraction (ASE), Hyphenation with Isotope Ratio MS, and the TOF-technique

The importance of accurate sample preparation techniques cannot be overstated--meticulous sample preparation is essential. Often overlooked, it is the midway point where the analytes from the sample matrix are transformed so they are suitable for analysis. Even the best analytical techniques cannot rectify problems generated by sloppy sample pretreatment. Devoted entirely to teaching and reinforcing these necessary pretreatment steps, Sample Preparation Techniques in Analytical Chemistry addresses diverse aspects of this important measurement step. These include: * State-of-the-art extraction techniques for organic and inorganic analytes * Sample preparation in biological measurements * Sample pretreatment in microscopy * Surface enhancement as a sample preparation tool in Raman and IR spectroscopy * Sample concentration and clean-up methods * Quality control steps Designed to serve as a text in an undergraduate or graduate level curriculum, Sample Preparation Techniques in Analytical Chemistry also provides an invaluable reference tool for analytical chemists in the chemical, biological, pharmaceutical, environmental, and materials sciences.

This is an easily-accessible two-volume encyclopedia summarizing all the articles in the main volumes Kirk-Othmer Encyclopedia of Chemical Technology, Fifth Edition organized alphabetically. Written by prominent scholars from industry, academia, and research institutions, the Encyclopedia presents a wide scope of articles on chemical substances, properties, manufacturing, and uses; on industrial processes, unit operations in chemical engineering; and on fundamentals and scientific subjects related to the field.

Highlighting the key aspects and latest advances in the rapidly developing field of molecular catalysis, this book covers new strategies to investigate reaction mechanisms, the enhancement of the catalysts' selectivity and efficiency, as well as the rational design of well-defined molecular catalysts. The interdisciplinary author team with an excellent reputation within the community discusses experimental and theoretical studies, along with examples of improved catalysts, and their application in organic synthesis, biocatalysis, and supported organometallic catalysis. As a result, readers will gain a deeper understanding of the catalytic transformations, allowing them to adapt the knowledge to their own investigations. With its ideal combination of fundamental and applied research, this is an essential reference for researchers and graduate students both in academic institutions and in the chemical industry. With a foreword by Nobel laureate Roald Hoffmann.

Basic Multidimensional Gas Chromatography is aimed at the next generation of multidimensional gas chromatography users who will require basic training in the fundamentals of both GC and GCxGC. This book fills the current need for an inexpensive, straightforward guidebook to get new users started. It will help new users determine when to add or purchase a multidimensional system and teach them to optimize and maximize the capability of each system. Readers will also learn to select specific modes for each portion of a multidimensional analysis. This ideal resource is a concise, hard-hitting text that provides the facts needed to get users up and running. Provides a comprehensive and fundamental introduction to multidimensional gas chromatography Assists readers in determining when to add or purchase a multidimensional system Explains how a given system can be used to its maximum capacity and how users should choose specific modes for different portions of multidimensional analysis

Leading the way for analytical chemists developing new techniques. Introductory Price Available! Order your print copy before 30th April 2016 and save! £650 / \$1,075 / €799 List price thereafter: £735 / \$1,210 / €899 This new comprehensive 5 volume set on separation science provides a much needed research-level text for both academic users and researchers who are working with and developing the most current methods, as well as serving as a valuable resource for graduate and post-graduate students. Comprising of five topical volumes it provides a comprehensive overview of the subject, highlighting aspects that will drive research in this field in the years to come. Volume 1: Liquid Chromatography Volume 2: Special Liquid Chromatography Modes and Capillary Electromigration Techniques Volume 3: Gas, Supercritical and Chiral Chromatography Volume 4: Chromatographic and Related Techniques Volume 5: Sample Treatment, Method Validation, and Applications Key Features: - Comprises over 2,100 pages in 5 volumes – available in print and online - Edited by an international editorial team which has both prominent and experienced senior researchers as well as young and dynamic rising stars - Individual chapters are labeled as either introductory or advanced, in order to guide readers in finding the content at the appropriate level - Fully indexed with cross referencing within and between all 5 volumes

Molecular Methods of Plant Analysis Concept of the Series The powerful recombinant DNA technology and related developments have had an enormous impact on molecular biology. Any treatment of plant analysis must make use of these new methods. Developments have been so fast and the methods so powerful that the editors of Modern Methods of Plant Analysis have now decided to rename the series Molecular Methods of Plant Analysis. This will not change the general aims of the series, but best describes the thrust and content of the series as we go forward into the new millennium. This does not mean that all chapters a priori deal only with the methods of molecular biology, but rather that these methods are to be found in many chapters together with the more traditional methods of analysis which have seen recent advances. The numbering of the volumes of the series therefore continues on from 20, which is the most recently published volume under the title Modern Methods of Plant Analysis. As indicated for previous volumes, the methods to be found in Molecular Methods of Plant Analysis are described critically, with hints as to their limitations, references to original papers and authors being given, and the chapters written so that there is little need to consult other texts to carry out the methods of analysis described. All authors have been chosen because of their special experience in handling plant material and/or their expertise with the methods described.

Advances in instrumentation and applied instrumental analysis methods have allowed scientists concerned with food and beverage quality, labeling, compliance, and safety to meet ever increasing analytical demands. Texts dealing with instrumental analysis alone are usually organized by the techniques without regard to applications. The biannual review issue of Analytical Chemistry under the topic of Food Analysis is organized by the analyte such as N and protein, carbohydrate, inorganics, enzymes, flavor and odor, color, lipids, and vitamins. Under 'flavor and odor' the subdivisions are not along the lines of the analyte but the matrix (e.g. wine, meat, dairy, fruit) in which the analyte is being determined. In "Instrumentation in Food and Beverage Analysis" the reader is referred to a list of 72 entries entitled "Instrumentation and Instrumental Techniques" among which molecular spectroscopy, chromatographic and other sophisticated separations in addition to hyphenated techniques such as GS-Mass spectrometry. A few of the entries appear under a chapter named for the technique. Most of the analytical techniques used for determination, separations and sample work prior to determination are treated in the context of an analytical method for a specific analyte in a particular food or beverage matrix with which the author has a professional familiarity, dedication, and authority. Since, in food analysis in particular, it is usually the food matrix that presents the research analytical chemist involved with method development the greatest challenge.

Though many separation processes are available for use in today's analytical laboratory, chromatographic methods are the most widely used. The applications of chromatography have grown explosively in the last four decades, owing to the development of new techniques and to the expanding need of scientists for better methods of separating complex mixtures. With its comprehensive, unified approach, this book will greatly assist the novice in need of a reference to chromatographic techniques, as well as the specialist suddenly faced with the need to switch from one technique to another.

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. The trace determination of pesticides continues to be a topic for analytical chemists working in research centres, government and universities. With four chapters devoted to chromatography-mass spectrometry methods, readers are able to understand the analytical basis, technical characteristics and possibilities to evaluate pesticides in food by gas chromatography (GC) and liquid chromatography (LC) mass spectrometry. The book also provides a well-defined and critical compilation of the sample treatment and clean-up procedures, as well as injection techniques applied in GC and LC food analysis. Finally the book deals with aspects related to analytical quality control requirements for pesticide residues, in addition to pesticide regulation aspects. * Contains specific chapters devoted to chromatography-mass spectrometry methods * Provides a well-defined and critical compilation of the sample treatment and clean-up procedures * Contains aspects related to analytical quality control requirements for pesticide residues

Ranging from elegantly simple to extremely complex, a wide variety of flavors and fragrances stimulate our senses. It is difficult to understand the myriad sensory interactions involved because of the sheer complexity of their chemical composition. The aim of this text is to describe the use of chemometric techniques for understanding these complex systems and to serve as a practical guide to the acquisition, organization and reduction of chemical and sensory data. It explains chemical, sensory and multivariate analysis tools and their application. Pertinent concepts are discussed in-depth and are sufficiently illustrated with enough original data in complementary tables and figures to provide the basis for the execution of complex studies. The book emphasizes techniques that have been proven to work rather than those that "should" work from a theoretical standpoint. The book focuses on the acquisition of quality data and the subsequent interpretation of data rather than numerical computations used in data analysis. Chemometrics: Chemical and Sensory Data is an excellent resource for students and newcomers to flavor and fragrance research, as well as for experienced workers and product development managers.

The determination of food authenticity is a vital component of quality control. Its importance has been highlighted in recent years by high-profile cases in the global supply chain such as the European horsemeat and the Chinese melamine scandals, the latter of which led to six fatalities and the hospitalization of thousands of infants. As well as being a safety concern, authenticity is also a quality criterion for food and food ingredients. Consumers and retailers demand that the products they purchase and sell are what they purport to be. This book covers the most advanced techniques used for the authentication of a vast number of products around the world. The reader will be informed about the latest pertinent analytical techniques. Chapters focus on the novel techniques and markers that have emerged in recent years. An introductory section presents the concepts of food authentication, while the second section examines in detail the analytical techniques for the detection of fraud relating to geographical, botanical, species, and processing origin and production methods of food materials and ingredients. Finally, the third section looks at consumer attitudes towards food authenticity, the application of bioinformatics to this field, and the Editor's conclusions and future outlook. Beyond being a reference for researchers working in food authentication, this book will serve as an essential resource for analytical scientists interested in the field and food scientists aiming to appreciate analytical approaches. This book will be a companion to under- and postgraduate students in their studies in food authentication, and will be useful to researchers in universities and research institutions.

Updated to reflect changes in the industry during the last ten years, The Handbook of Food Analysis, Third Edition covers the new analysis systems, optimization of existing techniques, and automation and miniaturization methods. Under the editorial guidance of food science pioneer Leo M.L. Nollet and new editor Fidel Toldra, the chapters take an in

Updated and revised throughout. Second Edition explores the chromatographic methods used for the measurement of drugs, impurities, and excipients in pharmaceutical preparations--such as tablets, ointments, and injectables. Contains a 148-page table listing the chromatographic data of over 1300 drugs and related substances--including sample matrix analyzed, sample handling procedures, column packings, mobile phase, mode of detection, and more.

Chemical Contaminants and Residues in Food, Second Edition is an invaluable tool for all industrial and academic researchers involved with food safety, from industry professionals responsible for producing safe food, to chemical analysts involved in testing the final products. This updated edition is expanded to cover the latest research and emerging issues, and has additional information useful for food safety testing. Written by an international team of expert contributors, this edition explores the entire food chain, acting as a roadmap for further research. Includes expanded coverage on risk assessment and testing technologies Presents fully updated chapters to provide the most up-to-date information in research on food chemical safety Provides new information on hot topic areas, such as food additives, mycotoxins, nanomaterials and food contact materials

The Handbook of Olive Oil presents an up-to-date view of all aspects of olive oil. It is written from an inter-disciplinary point of view and will be of use in research and development as well as in routine laboratory and process operations. This second edition includes new chapters devoted to genetic studies and agronomic aspects of new orchards and cultivars, which, in combination with the most recent biochemical studies and technological developments, explain the unique chemical composition of olive oil. The analytical aspects of the first edition are now described in six new chapters focused on the chemical compounds responsible for olive oil traceability and sensory perceptions (odor, color, and taste) utilizing chromatographic, spectroscopic, and in-tandem techniques. Nutritional and sensory aspects are the basis for the current success of virgin olive oil among consumers, and this new edition re-analyzes in two new chapters the role of lipids, in general, and olive oil, in particular, in nutrition and health. In addition, the methodologies developed for determining sensory quality, olive oil oxidation, and deep-frying are extensively described and discussed. The role of consumers in olive oil studies of marketing and acceptability is covered in a new chapter. This second edition has not ignored the fact that the popularity of olive oil has made it a preferred target for fraudsters. Deliberate mislabeling or mixtures containing less expensive edible oils are topics described in depth in two chapters devoted to traceability and adulteration. There is also a new chapter focused on the olive refining process, which is a relevant activity in the olive oil world, and another chapter displaying tables of chemical and sensory information from olive oils produced all over the world. The book is written at two levels: the main level is structured as a tutorial on the practical aspects of olive oil. A second, more methodological level, is intended for specialists in the different sciences that contribute to olive oil studies (biochemistry, chemistry, physics, statistics etc). This edition also details changes that are needed in different disciplines in order to overcome current problems and challenges.

Gas Chromatography provides a contemporary picture of the field, including fundamentals and practical applications, in a single source.

