

Lange Handbook Of Chemistry 16th Edition

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Biodeterioration of Concrete - Thomas Dyer 2017-07-12

Awareness of the importance of ensuring durability of concrete has been a growing concern of engineers, and there is now considerable understanding of the mechanisms, which cause its deterioration, and means of limiting such damage through the use of appropriate materials and approaches to design. Many of the deterioration mechanisms, which affect concrete, are the result of interaction with the non-living environment - chlorides in seawater, carbon dioxide in the atmosphere, cyclic freezing and thawing. However, living organisms can also cause damage - through both chemical and physical processes - which under the right conditions, can be severe. This book looks at all forms of concrete biodeterioration together for the first time. It examines, from a fundamental starting point, biodeterioration mechanisms, as well as the conditions which allow living organisms (bacteria, fungi, plants and a range of marine organisms) to colonise concrete. A detailed evaluation of chemical compounds produced by living organisms with respect to their interaction with the mineral constituents of concrete, and the implications it has for the integrity of structures, is also included. Approaches to avoiding biodeterioration of concrete are also covered, including selection of materials, mix proportioning, design, and use of protective systems.

Handbook of Inorganic Compounds - Dale L. Perry 2016-04-19

This updated edition of the Handbook of Inorganic Compounds is the perfect reference for anyone that needs property data for compounds, CASRN numbers for computer or other searches, a consistent tabulation of molecular weights to synthesize inorganic materials on a laboratory scale, or data related to physical and chemical properties. Fully revised *Redox Flow Batteries* - Huamin Zhang 2017-11-22

Flow batteries have received attention in large-scale energy storage due to their flexible design, high safety, high energy efficiency, and environmental friendliness. In recent years, they have been rapidly developed and tested in a variety of scales that prove their feasibility and advantages of use. As energy becomes a global focus, it is important to consider flow battery systems. This book offers a detailed introduction to the function of different kinds of redox flow batteries, including vanadium flow batteries, as well as the electrochemical processes for their development, materials and components, applications, and near future prospects. Redox Flow Batteries: Fundamentals and Applications will give readers a full understanding of flow batteries from fundamentals to commercial applications.

A Microscale Approach to Organic Laboratory Techniques - Donald L. Pavia 2016-12-05

Featuring new experiments unique to this lab textbook, as well as new and revised essays and updated techniques, this Sixth Edition provides the up-to-date coverage students need to succeed in their coursework and future careers. From biofuels, green chemistry, and nanotechnology, the book's experiments, designed to utilize microscale glassware and equipment, demonstrate the relationship between organic chemistry and everyday life, with project-and biological or health science focused experiments. As they move through the book, students will experience traditional organic reactions and syntheses, the isolation of natural products, and molecular modeling. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Smart Nanoparticles Technology - Abbass A. Hashim 2012-04-18

In the last few years, Nanoparticles and their applications dramatically diverted science in the direction of brand new philosophy. The properties of many conventional materials changed when formed from nanoparticles. Nanoparticles have a greater surface area per weight than larger particles which causes them to be more reactive and effective than other molecules. In this book, we (InTech publisher, editor and authors) have invested a lot of effort to include 25 most advanced technology chapters. The book is organised into three well-heeled parts. We would like to invite all Nanotechnology scientists to read and share the knowledge and contents of this book.

Biological and Biomedical Coatings Handbook - Sam Zhang 2011-05-24

Written in a versatile, contemporary style that will benefit both novice and expert alike, *Biological and Biomedical Coatings Handbook*, Two-Volume Set covers the state of the art in the development and implementation of advanced thin films and coatings in the biological field. Consisting of two volumes—*Processing and Characterization* and *Applications*—this handbook details the latest understanding of advances in the design and performance of biological and biomedical coatings, covering a vast array of material types, including bio-ceramics, polymers, glass, chitosan, and nanomaterials. Contributors delve into a wide range of novel techniques used in the manufacture and testing of clinical

applications for coatings in the medical field, particularly in the emerging area of regenerative medicine. An exploration of the fundamentals elements of biological and biomedical coatings, the first volume, *Processing and Characterization*, addresses: Synthesis, fabrication, and characterization of nanocoatings The sol-gel method and electrophoretic deposition Thermal and plasma spraying Hydroxyapatite and organically modified coatings Bioceramics and bioactive glass-based coatings Hydrothermal crystallization and self-healing effects Physical and chemical vapor deposition Layered assembled polyelectrolyte films With chapters authored by world experts at the forefront of research in their respective areas, this timely set provides searing insights and practical information to explore a subject that is fundamental to the success of biotechnological pursuits.

Electron Flow in Organic Chemistry - Paul H. Scudder 2013-01-09

Sets forth the analytical tools needed to solve key problems in organic chemistry With its acclaimed decision-based approach, *Electron Flow in Organic Chemistry* enables readers to develop the essential critical thinking skills needed to analyze and solve problems in organic chemistry, from the simple to complex. The author breaks down common mechanistic organic processes into their basic units to explain the core electron flow pathways that underlie these processes. Moreover, the text stresses the use of analytical tools such as flow charts, correlation matrices, and energy surfaces to enable readers new to organic chemistry to grasp the fundamentals at a much deeper level. This Second Edition of *Electron Flow in Organic Chemistry* has been thoroughly revised, reorganized, and streamlined in response to feedback from both students and instructors. Readers will find more flowcharts, correlation matrices, and algorithms that illustrate key decision-making processes step by step. There are new examples from the field of biochemistry, making the text more relevant to a broader range of readers in chemistry, biology, and medicine. This edition also offers three new chapters: Proton transfer and the principles of stability Important reaction archetypes Qualitative molecular orbital theory and pericyclic reactions The text's appendix features a variety of helpful tools, including

a general bibliography, quick-reference charts and tables, pathway summaries, and a major decisions guide. With its emphasis on logical processes rather than memorization to solve mechanistic problems, this text gives readers a solid foundation to approach and solve any problem in organic chemistry.

Chemical Feed Field Guide for Treatment Plant Operators -

Michael G. Barsotti 2011-01-12

Purification of Laboratory Chemicals - W.L.F. Armarego 2009-07-23

A best seller since 1966, Purification of Laboratory Chemicals keeps engineers, scientists, chemists, biochemists and students up to date with the purification of the chemical reagents with which they work, the processes for their purification, and guides reader on critical safety and hazards for the safe handling of chemicals and processes. The Sixth Edition is updated and provides expanded coverage of the latest chemical products and processing techniques, safety and hazards. The book has been reorganised and is now fully indexed by CAS Registry Numbers. Compounds are now grouped to make navigation easier and literature references for all substances and techniques have been added, and ambiguous alternate names and cross references have been removed. The only comprehensive chemical purification reference, a market leader since 1966, Amarego delivers essential information for research and industrial chemists, pharmacists and engineers: '... (it) will be the most commonly used reference book in any chemical or biochemical laboratory' (MDPI Journal) An essential lab practice and procedures manual. Improves efficiency, results and safety by providing critical information for day-to-day lab and processing work. Improved, clear organization and new indexing delivers accurate, reliable information on processes and techniques of purification along with detailed physical properties. The Sixth Edition has been reorganised and is fully indexed by CAS Registry Numbers; compounds are now grouped to make navigation easier; literature references for all substances and techniques have been added; ambiguous alternate names and cross references removed; new chemical products and processing techniques

are covered; hazards and safety remain central to the book.

Membrane Distillation - Kang-Jia Lu 2019-10-28

This book aims to elaborate the basics and recent advances of membrane distillation (MD) as the same shows promise for seawater desalination and wastewater treatment. Starting with fundamentals of MD processes, including the heat and mass transfer analysis, energy evaluation and mathematical modelling, text includes engineering and molecular design of MD membranes. Various types of hybrid systems, including freeze desalination (FD)-MD, MD-crystallization (MDC), pressure retarded osmosis (PRO)-MD and forward osmosis (FO)-MD, will be discussed in this book. Further, it summarizes the future of MD from both industrial and academic perspectives along with energy sources and economic analysis.

Experimental Organic Chemistry: A Miniscale & Microscale Approach - John C. Gilbert 2015-01-01

Perform chemistry experiments with skill and confidence in your organic chemistry lab course with this easy-to-understand lab manual. EXPERIMENTAL ORGANIC CHEMISTRY: A MINISCALE AND MICROSCALE APPROACH, Sixth Edition first covers equipment, record keeping, and safety in the laboratory, then walks you step by step through the laboratory techniques you'll need to perform all experiments. Individual chapters show you how to use the techniques to synthesize compounds and analyze their properties, complete multi-step syntheses of organic compounds, and solve structures of unknown compounds. New experiments in Chapter 17 and 18 demonstrate the potential of chiral agents in fostering enantioselectivity and of performing solvent-free reactions. A bioorganic experiment in Chapter 24 gives you an opportunity to accomplish a mechanistically interesting and synthetically important coupling of two α -amino acids to produce a dipeptide. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Review of Physiological Chemistry - Harold Anthony Harper 1977

Using the Biological Literature - Diane Schmidt 2014-04-14

The biological sciences cover a broad array of literature types, from younger fields like molecular biology with its reliance on recent journal articles, genomic databases, and protocol manuals to classic fields such as taxonomy with its scattered literature found in monographs and journals from the past three centuries. *Using the Biological Literature: A Practical Guide, Fourth Edition* is an annotated guide to selected resources in the biological sciences, presenting a wide-ranging list of important sources. This completely revised edition contains numerous new resources and descriptions of all entries including textbooks. The guide emphasizes current materials in the English language and includes retrospective references for historical perspective and to provide access to the taxonomic literature. It covers both print and electronic resources including monographs, journals, databases, indexes and abstracting tools, websites, and associations—providing users with listings of authoritative informational resources of both classical and recently published works. With chapters devoted to each of the main fields in the basic biological sciences, this book offers a guide to the best and most up-to-date resources in biology. It is appropriate for anyone interested in searching the biological literature, from undergraduate students to faculty, researchers, and librarians. The guide includes a supplementary website dedicated to keeping URLs of electronic and web-based resources up to date, a popular feature continued from the third edition.

Environmental Analysis and Technology for the Refining Industry - James G. Speight 2005-09-02

A timely, hands-on guide to environmental issues and regulatory standards for the petroleum industry. Environmental analysis and testing methods are an integral part of any current and future refining activities. Today's petroleum refining industry must be prepared to meet a growing number of challenges, both environmental and regulatory. *Environmental Analysis and Technology for the Refining Industry* focuses on the analytical issues inherent in any environmental monitoring or cleanup program as they apply to today's petroleum industry, not only during the refining process, but also

during recovery operations, transport, storage, and utilization. Designed to help today's industry professionals identify test methods for monitoring and cleanup of petroleum-based pollutants, the book provides examples of the application of environmental regulations to petroleum refining and petroleum products, as well as current and proposed methods for the mitigation of environmental effects and waste management. Part I introduces petroleum technology, refining, and products, and reviews the nomenclature used by refiners, environmental scientists, and engineers. Part II discusses environmental technology and analysis, and provides information on environmental regulation and the impact of refining. Coverage includes: *

- * In-depth descriptions of analyses related to gaseous emissions, liquid effluents, and solid waste
- * A checklist of relevant environmental regulations
- * Numerous real-world examples of the application of environmental regulations to petroleum refining and petroleum products
- * An analysis of current and proposed methods of environmental protection and waste management

Natural Gas - James G. Speight 2007-10-01

Natural gas represents nearly one-quarter of the world's energy resources. More than half of American homes rely on it as their main heating fuel. It serves as the raw material necessary in everyday paints, plastics, medicines and explosives. It produces the cleanest of all fossil fuels. It is natural gas—and everybody should acquire a basic understanding of it. This valuable easy-to-use reference supplies all the basics that every person should know about the natural gas industry. Introductory engineers, managers and analysts will benefit from this informative, practical handbook. Natural gas remains a vital component of all energy sources, and with an increasing demand for information on this useful energy source, *Natural Gas: A Basic Handbook* is an essential tool for anyone involved in the energy industry.

White's Handbook of Chlorination and Alternative Disinfectants - Black & Veatch Corporation 2011-09-20

New edition covers the latest practices, regulations, and alternative disinfectants. Since the publication of the Fourth Edition of

White's Handbook of Chlorination and Alternative Disinfectants more than ten years ago, the water industry has made substantial advances in their understanding and application of chlorine, hypochlorite, and alternative disinfectants for water and wastewater treatment. This Fifth Edition, with its extensive updates and revisions, reflects the current state of the science as well as the latest practices. Balancing theory with practice, the Fifth Edition covers such important topics as: Advances in the use of UV and ozone as disinfectants Alternative disinfectants such as chlorine dioxide, iodine, and bromine-related products Advanced oxidation processes for drinking water and wastewater treatment New developments and information for the production and handling of chlorine Latest regulations governing the use of different disinfectants For each disinfectant, the book explains its chemistry, effectiveness, dosing, equipment, and system design requirements. Moreover, the advantages and disadvantages of each disinfectant are clearly set forth. References at the end of each chapter guide readers to the primary literature for further investigation. Authored and reviewed by leading experts in the field of water and wastewater treatment, this Fifth Edition remains an ideal reference for utilities, regulators, engineers, and plant operators who need current information on the disinfection of potable water, wastewater, industrial water, and swimming pools.

Microfluidics and Nanofluidics - Mohsen Sheikholeslami Kandelousi
2018-08-22

In the present book, various applications of microfluidics and nanofluidics are introduced. Microfluidics and nanofluidics span a broad array of disciplines including mechanical, materials, and electrical engineering, surface science, chemistry, physics and biology. Also, this book deals with transport and interactions of colloidal particles and biomolecules in microchannels, which have great importance to many microfluidic applications, such as drug delivery in life science, microchannel heat exchangers in electronic cooling, and food processing industry. Furthermore, this book focuses on a detailed description of the thermal transport behavior, challenges and implications that involve the development and use of HTFs under the influence of atomistic-scale

structures and industrial applications.

CRC Handbook of Basic Tables for Chemical Analysis - Thomas J. Bruno
2010-12-13

Winner of an Outstanding Academic Title Award for 2011! Researchers in organic chemistry, chemical engineering, pharmaceutical science, forensics, and environmental science make routine use of chemical analysis, but the information these researchers need is often scattered in different sources and difficult to access. The CRC Handbook of Basic Tables

Analytic Combustion - Anil Waman Date 2020-03-09

This book is intended to serve as a textbook for advanced undergraduate and graduate students as well as professionals engaged in application of thermo-fluid science to the study of combustion. The relevant thermo-chemistry and thermo-physical data required for this study are provided in the 6 appendices along with appropriate curve-fit coefficients. To facilitate gradual learning, two chapters are devoted to thermodynamics of pure and gaseous mixture substances, followed by one chapter each on chemical equilibrium and chemical kinetics. This material when coupled with a dedicated chapter on understanding of equations governing transport of momentum, heat and mass in the presence of chemical reactions provides adequate grounding to undertake analysis of practical combustion equipment, of premixed and diffusion flames as well as of solid particle and liquid droplet combustion. The learnings from the aforementioned chapters are taken to a uniquely strong chapter on application case studies, some of which have special relevance for developing countries.

Techniques in Organic Chemistry - Jerry R. Mohrig 2010-01-06

"Compatible with standard taper miniscale, 14/10 standard taper microscale, Williamson microscale. Supports guided inquiry"--Cover.

Chemical Literacy and Writing Chemical Reactions - Nikolay Gerasimchuk 2022-09-12

Writing chemical reactions in general and inorganic chemistry is not a trivial task. However, writing reactions for chemical processes correctly is a clear indicator of proficiency and competence in a subject.

Unfortunately, very few students grasp the concept of the correct writing of chemical reactions quickly, and so are unable to move through topics of general, analytical, and inorganic chemistry freely. Because the ability to write and balance different types of chemical reactions is a fundamental issue, this becomes a key question of chemical literacy. The successful writing of chemical reactions includes two components: the prediction of products of these reactions and their possible variations, and balancing these reactions providing a material balance between starting compounds and reactions' products. This book explores that element of the teaching of the fundamentals of chemical literacy: writing complete equations of chemical reactions and balancing them. It contains 49 figures, 22 schemes and 12 tables, and 93 problems (with answers). This book will be very useful for high school students interested in chemical sciences, higher education teachers, students in colleges and universities majoring in chemistry and biochemistry, and chemistry professional working in industry. It also contains information about properties of the most common elements and applications of a variety of their chemical compounds.

Two-dimensional Materials - Pramoda Kumar Nayak 2016-08-31

There are only a few discoveries and new technologies in materials science that have the potential to dramatically alter and revolutionize our material world. Discovery of two-dimensional (2D) materials, the thinnest form of materials to ever occur in nature, is one of them. After isolation of graphene from graphite in 2004, a whole other class of atomically thin materials, dominated by surface effects and showing completely unexpected and extraordinary properties, has been created. This book provides a comprehensive view and state-of-the-art knowledge about 2D materials such as graphene, hexagonal boron nitride (h-BN), transition metal dichalcogenides (TMD) and so on. It consists of 11 chapters contributed by a team of experts in this exciting field and provides latest synthesis techniques of 2D materials, characterization and their potential applications in energy conservation, electronics, optoelectronics and biotechnology.

Thermophysical Properties of Chemicals and Hydrocarbons - Carl

L. Yaws 2014-06-20

Compiled by an expert in the field, the book provides an engineer with data they can trust. Spanning gases, liquids, and solids, all critical properties (including viscosity, thermal conductivity, and diffusion coefficient) are covered. From C1 to C100 organics and Ac to Zr inorganics, the data in this handbook is a perfect quick reference for field, lab or classroom usage. By collecting a large - but relevant - amount of information in one source, the handbook enables engineers to spend more time developing new designs and processes, and less time collecting vital properties data. This is not a theoretical treatise, but an aid to the practicing engineer in the field, on day-to-day operations and long range projects. Simplifies research and significantly reduces the amount of time spent collecting properties data. Compiled by an expert in the field, the book provides an engineer with data they can trust in design, research, development and manufacturing. A single, easy reference for critical temperature dependent properties for a wide range of hydrocarbons, including C1 to ClOO organics and Ac to Zr inorganics. *Review of Physiological Chemistry* - Harold Anthony Harper 1965

Evidence-based Chiropractic Practice - Michael T. Haneline 2006-08

This text informs readers about the procedures involved in the practice of evidence-based chiropractic, background information that is needed to obtain and interpret chiropractic evidence, as well as practical examples to assist with implementation.

Reference Sources for Small and Medium-sized Libraries, Eighth Edition - Jack O'Gorman 2014-02-25

Focusing on new reference sources published since 2008 and reference titles that have retained their relevance, this new edition brings O'Gorman's complete and authoritative guide to the best reference sources for small and medium-sized academic and public libraries fully up to date. About 40 percent of the content is new to this edition. Containing sources selected and annotated by a team of public and academic librarians, the works included have been chosen for value and expertise in specific subject areas. Equally useful for both library patrons

and staff, this resource Covers more than a dozen key subject areas, including General Reference; Philosophy, Religion, and Ethics; Psychology and Psychiatry; Social Sciences and Sociology; Business and Careers; Political Science and Law; Education; Words and Languages; Science and Technology; History; and Performing Arts Encompasses database products, CD-ROMs, websites, and other electronic resources in addition to print materials Includes thorough annotations for each source, with information on author/editor, publisher, cost, format, Dewey and LC classification numbers, and more Library patrons will find this an invaluable resource for current everyday topics. Librarians will appreciate it as both a reference and collection development tool, knowing it's backed by ALA's long tradition of excellence in reference selection.

Lange's Handbook of Chemistry, 70th Anniversary Edition - James Speight 2005-01-10

A standard reference for chemists for 70 years, this new Sixteenth Edition features an enormous compilation of facts, data, tabular material, and experimental findings in every area of chemistry. Included in this massive compendium are listings of the properties of approximately 4,400 organic and 1,400 inorganic compounds. This Sixteenth Edition offers 40% new or extensively revised content and starting with this edition, the author includes equations that allow users to calculate important values such as temperature and pressure. Contents: Organic Compounds * General Information, Conversion Tables, and Mathematics * Inorganic Compounds * Properties of Atom, Radicals, and Bonds * Physical Properties * Thermodynamic Properties * Spectroscopy * Electrolytes, Electromotive Force and Chemicals * Physicochemical Relationships * Polymers, Rubbers, Fats, Oils, and Waxes * Practical Laboratory Information

14th International Symposium on Process Systems Engineering - Yoshiyuki Yamashita 2022-06-24

14th International Symposium on Process Systems Engineering, Volume 49 brings together the international community of researchers and engineers interested in computing-based methods in process

engineering. The conference highlights the contributions of the PSE community towards the sustainability of modern society and is based on the 2021 event held in Tokyo, Japan, July 1-23, 2021. It contains contributions from academia and industry, establishing the core products of PSE, defining the new and changing scope of our results, and covering future challenges. Plenary and keynote lectures discuss real-world challenges (globalization, energy, environment and health) and contribute to discussions on the widening scope of PSE versus the consolidation of the core topics of PSE. Highlights how the Process Systems Engineering community contributes to the sustainability of modern society Establishes the core products of Process Systems Engineering Defines the future challenges of Process Systems Engineering

Advances in Clean Hydrocarbon Fuel Processing - M. Rashid Khan 2011-09-23

Conventional coal, oil and gas resources used worldwide for power production and transportation are limited and unsustainable. Research and development into clean, alternative hydrocarbon fuels is therefore aimed at improving fuel security through exploring new feedstock conversion techniques, improving production efficiency and reducing environmental impacts. Advances in clean hydrocarbon fuel processing provides a comprehensive and systematic reference on the range of alternative conversion processes and technologies. Following introductory overviews of the feedstocks, environmental issues and life cycle assessment for alternative hydrocarbon fuel processing, sections go on to review solid, liquid and gaseous fuel conversion. Solid fuel coverage includes reviews of liquefaction, gasification, pyrolysis and biomass catalysis. Liquid fuel coverage includes reviews of sulfur removal, partial oxidation and hydroconversion. Gaseous fuel coverage includes reviews of Fischer-Tropsch synthesis, methanol and dimethyl ether production, water-gas shift technology and natural gas hydrate conversion. The final section examines environmental degradation issues in fuel processing plants as well as automation, advanced process control and process modelling techniques for plant optimisation Written by an

international team of expert contributors, *Advances in clean hydrocarbon fuel processing* provides a valuable reference for fuel processing engineers, industrial petrochemists and energy professionals, as well as for researchers and academics in this field. A comprehensive reference on the range of alternative conversion processes and technologies Provides an overview of the feedstocks, environmental issues and life cycle assessments for alternative hydrocarbon fuel processing, including a review of the key issues in solid, liquid and gaseous fuel conversion Examines automation, advanced process control and process modelling techniques for plant optimisation

A Strategy for Assessing and Managing Occupational Exposures - William H. Bullock 2006

Basics of Analytical Chemistry and Chemical Equilibria - Brian M. Tissue 2013-06-06

Enables students to progressively build and apply new skills and knowledge Designed to be completed in one semester, this text enables students to fully grasp and apply the core concepts of analytical chemistry and aqueous chemical equilibria. Moreover, the text enables readers to master common instrumental methods to perform a broad range of quantitative analyses. Author Brian Tissue has written and structured the text so that readers progressively build their knowledge, beginning with the most fundamental concepts and then continually applying these concepts as they advance to more sophisticated theories and applications. *Basics of Analytical Chemistry and Chemical Equilibria* is clearly written and easy to follow, with plenty of examples to help readers better understand both concepts and applications. In addition, there are several pedagogical features that enhance the learning experience, including: Emphasis on correct IUPAC terminology "You-Try-It" spreadsheets throughout the text, challenging readers to apply their newfound knowledge and skills Online tutorials to build readers' skills and assist them in working with the text's spreadsheets Links to analytical methods and instrument suppliers Figures illustrating principles of analytical chemistry and chemical equilibria End-of-chapter

exercises *Basics of Analytical Chemistry and Chemical Equilibria* is written for undergraduate students who have completed a basic course in general chemistry. In addition to chemistry students, this text provides an essential foundation in analytical chemistry needed by students and practitioners in biochemistry, environmental science, chemical engineering, materials science, nutrition, agriculture, and the life sciences.

Histological and Histochemical Methods, fifth edition - John Kiernan 2015-06-08

This fifth edition of *Histological and Histochemical Methods* continues to provide a clear and consistent introduction to the techniques, description and analysis of the chemical and physical principles of fixation, tissue processing, staining, enzyme location, immunohistochemistry and other key procedures. The overall structure of the book remains unchanged, but the content has been heavily revised to update the techniques used in line with recent technological advances. Additionally, there are new sections on: Artefacts and troubleshooting Methods for microorganisms and fungi in sections Methods for various pigments and mineral deposits in tissues Methods for skeletal elements (bone, cartilage) in whole-mounts *Histological and Histochemical Methods 5e* is essential reading for students, lecturers, researchers and professionals using histological and histochemical techniques. From reviews: "Histological and Histochemical Methods is a tour de force wholly suited to the modern age of histology and Professor Kiernan has triumphed again. To cover so much ground clearly and concisely while including the justification of the underlying chemistry makes this book unique. There should not be a histology laboratory or an undergraduate library that does not own a copy." *Biotechnic & Histochemistry* 2016, 91(2): 145. "This book should be present on the bookshelves of every research or analysis laboratory where histology and histochemistry are routinely used, as an essential reference source of basic and practical information for scientists and technicians." *European Journal of Histochemistry*, 2016, vol. 60.

Synthetic Fuels Handbook - James Speight 2008-06-22

Capitalize on the Vast Potential of Alternative Energy Sources Such as

Fuel Cells and Biofuels Synthetic Fuels Handbook is a comprehensive guide to the benefits and trade-offs of numerous alternative fuels, presenting expert analyses of the different properties, processes, and performance characteristics of each fuel. It discusses the concept systems and technology involved in the production of fuels on both industrial and individual scales. Written by internationally renowned fuels expert James G. Speight, this vital resource describes the production and properties of fuels from natural gas and natural gas hydrates...tar sand bitumen...coal...oil shale...synthesis gas...crops...wood sources...biomass...industrial and domestic waste...landfill gas...and much more. Using both U.S. and SI units, Synthetic Fuels Handbook features: Information on conventional and nonconventional fuel sources Discussion of the production of alternative fuels on both industrial and individual scales Analyses of properties and uses of gaseous, liquid, and solid fuels from different sources Comparison of properties of alternative fuels with petroleum-based fuels Discover All the Benefits and Trade-Offs of Synthetic Fuels • Fuel sources: conventional and nonconventional • Natural gas and natural gas hydrates • Petroleum and heavy oil • Tar sand bitumen • Coal • Oil shale • Synthesis gas • Crops • Wood sources • Biomass • Industrial and domestic waste • Landfill gas • Comparison of the properties and uses of gaseous fuels from different sources • Comparison of the properties and uses of liquid fuels from different sources • Comparison of the properties and uses of solid fuels from different sources

Ultra-High Temperature Materials I - Igor L. Shabalin 2014-05-16 This exhaustive work in three volumes with featuring cross-reference system provides a thorough overview of ultra-high temperature materials - from elements and chemical compounds to alloys and composites. Topics included are physical (crystallographic, thermodynamic, thermo-physical, electrical, optical, physico-mechanical, nuclear) and chemical (solid-state diffusion, interaction with chemical elements and compounds, interaction with gases, vapours and aqueous solutions) properties of the individual physico-chemical phases and multi-phase materials with melting (or sublimation) points over or about 2500 °C. The first volume

focuses on carbon (graphite/graphene) and refractory metals (W, Re, Os, Ta, Mo, Nb, Ir). The second and third volumes are dedicated solely to refractory (ceramic) compounds (oxides, nitrides, carbides, borides, silicides) and to the complex materials - refractory alloys, carbon and ceramic composites, respectively. It will be of interest to researchers, engineers, postgraduate, graduate and undergraduate students in various disciplines alike. The reader is provided with the full qualitative and quantitative assessment for the materials, which could be applied in various engineering devices and environmental conditions at ultra-high temperatures, on the basis of the latest updates in the field of physics, chemistry, materials science, nanotechnology and engineering.

Foundations of College Chemistry, Alternate - Morris Hein 2010-01-26

Learning the fundamentals of chemistry can be a difficult task to undertake for health professionals. For over 35 years, this book has helped them master the chemistry skills they need to succeed. It provides them with clear and logical explanations of chemical concepts and problem solving. They'll learn how to apply concepts with the help of worked out examples. In addition, Chemistry in Action features and conceptual questions checks brings together the understanding of chemistry and relates chemistry to things health professionals experience on a regular basis.

Electromagnetic Radiation in Analysis and Design of Organic Materials - Dana Ortansa Dorohoi 2017-01-27

Bridging condensed matter physics, photochemistry, photophysics, and materials science, Electromagnetic Radiation in Analysis and Design of Organic Materials: Electronic and Biotechnology Applications covers physical properties of materials in the presence of radiation from across the electromagnetic spectrum. It describes the optical, spectral, thermal, and morphological properties of a wide range of materials and their practical implications in electronic and biotechnologies. It discusses recent advances in the use of radiation in analysis of materials and design for advanced applications. The book contains experimental and theoretical issues that reflect the impact of radiation on materials

characteristics highlighting their ease of analysis or adaptation for applications as optical filters, drug delivery systems, antimicrobial layers, amphetamine detectors, or liquid crystal displays.

Lange's Handbook of Chemistry, Seventeenth Edition - James Speight 2016-09-05

The Go-To Reference for Chemists for More Than 70 Years - Completely Updated to Include Today's Essential Topics Lange's Handbook of Chemistry, Seventeenth Edition is written to provide a reliable one-stop source of factual information for today's working chemist. Within its pages, you will find an unmatched compilation of facts, data, tabular material, and experimental findings that span every area of chemistry. Included in this fully updated Seventeenth Edition are listings of the properties of more than 4,000 organic and 1,400 inorganic compounds. The Seventeenth Edition is enhanced by the addition of an all-new section on Naturally Occurring Chemicals and Chemical Sources. This timely new content includes descriptions of coal, crude oil, natural gas, tar sand and tar sand bitumen, oil shale, biomass and biofuels, and minerals. Sections include: • Inorganic Chemistry • Organic Chemistry • Naturally Occurring Chemicals and Chemical Sources • Spectroscopy (available online at www.mhprofessional.com/Langes) • General Information and Conversion Tables (available online at www.mhprofessional.com/Langes) If you prefer the convenience of one authoritative resource, rather than a multitude of scattered and diverse references, Lange's Handbook of Chemistry, Seventeenth Edition belongs on your desk.

Lange's Handbook of Chemistry, 70th Anniversary Edition - James Speight 2005-01-10

A standard reference for chemists for 70 years, this new Sixteenth Edition features an enormous compilation of facts, data, tabular material, and experimental findings in every area of chemistry. Included in this massive compendium are listings of the properties of approximately 4,400 organic and 1,400 inorganic compounds. This Sixteenth Edition offers 40% new or extensively revised content and starting with this edition, the author includes equations that allow users to calculate

important values such as temperature and pressure. Contents: Organic Compounds * General Information, Conversion Tables, and Mathematics * Inorganic Compounds * Properties of Atom, Radicals, and Bonds * Physical Properties * Thermodynamic Properties * Spectroscopy * Electrolytes, Electromotive Force and Chemicals * Physicochemical Relationships * Polymers, Rubbers, Fats, Oils, and Waxes * Practical Laboratory Information

Materials Handbook - François Cardarelli 2018-07-09

The unique and practical Materials Handbook (third edition) provides quick and easy access to the physical and chemical properties of very many classes of materials. Its coverage has been expanded to include whole new families of materials such as minor metals, ferroalloys, nuclear materials, food, natural oils, fats, resins, and waxes. Many of the existing families—notably the metals, gases, liquids, minerals, rocks, soils, polymers, and fuels—are broadened and refined with new material and up-to-date information. Several of the larger tables of data are expanded and new ones added. Particular emphasis is placed on the properties of common industrial materials in each class. After a chapter introducing some general properties of materials, each of twenty-four classes of materials receives attention in its own chapter. The health and safety issues connected with the use and handling of industrial materials are included. Detailed appendices provide additional information on subjects as diverse as crystallography, spectroscopy, thermochemical data, analytical chemistry, corrosion resistance, and economic data for industrial and hazardous materials. Specific further reading sections and a general bibliography round out this comprehensive guide. The index and tabular format of the book makes light work of extracting what the reader needs to know from the wealth of factual information within these covers. Dr. François Cardarelli has spent many years compiling and editing materials data. His professional expertise and experience combine to make this handbook an indispensable reference tool for scientists and engineers working in numerous fields ranging from chemical to nuclear engineering. Particular emphasis is placed on the properties of common industrial materials in each class. After a chapter

introducing some general properties of materials, materials are classified as follows. ferrous metals and their alloys; ferroalloys; common nonferrous metals; less common metals; minor metals; semiconductors and superconductors; magnetic materials; insulators and dielectrics; miscellaneous electrical materials; ceramics, refractories and glasses; polymers and elastomers; minerals, ores and gemstones; rocks and meteorites; soils and fertilizers; construction materials; timbers and woods; fuels, propellants and explosives; composite materials; gases; liquids; food, oils, resin and waxes; nuclear materials. food materials

Encyclopaedia of Scientific Units, Weights and Measures - François Cardarelli 2012-12-06

Mankind has a fascination with measurement. Down the centuries we have produced a plethora of incompatible and duplicatory systems for measuring everything from the width of an Egyptian pyramid to the

concentration of radioactivity near a nuclear reactor and the value of the fine structure constant. With the introduction first of the metric system and of its successor the Système International d'Unités (SI), the scientific community has established a standard method of measurement based on only seven core units. The Encyclopaedia of Scientific Units, Weights and Measures converts the huge variety of units from all over the world in every period of recorded history into units of the SI. Featuring: - An A - Z of conversion tables for over 10,000 units of measurements. - Tables of the fundamental constants of nature with their units. - Listings of professional societies, and national standardization bodies for easy reference. - An extensive bibliography detailing further reading on the multifarious aspects of measurement and its units. This huge work is simply a "must have" for any reference library frequented by scientists of any discipline or by those with historical interests in units of measurement such as archaeologists.