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Environmental Analysis and Technology for the Refining Industry Springer Nature  
This volume presents a unique and comprehensive glimpse of current and emerging issues of concern related to potable water. The themes discussed include: (1) historical perspective of the evolution of drinking water science and technology and drinking water standards and regulations; (2) emerging contaminants, water distribution problems and energy demand for water treatment and transportation; and (3) using alternative water sources and methods of water treatment and distribution that could resolve current and emerging global potable problems. This volume will serve as a valuable resource for researchers and environmental engineering students interested in global potable water sustainability and a guide to experts affiliated with international agencies working toward providing safe water to global communities.

Smart Nanoparticles Technology CRC Press  
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. Electrolytes for Electrochemical Supercapacitors Cengage Learning  
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

**Membranes, Hybrid Systems and Pilot Studies** CRC Press  
A timely, hands-on guide to environmental issues and regulatorystandards for the petroleum industry  
Environmental analysis and testing methods are an integral part ofany current and future refining activities. Today's petroleumrefining industry must be prepared to meet a growing number ofchallenges, both environmental and regulatory. Environmental Analysis and Technology for the Refining Industryfocuses on the analytical issues inherent in any environmentalmonitoring or cleanup program as they apply to today's petroleumindustry, not only during the refining process, but also duringrecovery operations, transport, storage, and utilization. Designedto help today's industry professionals identify test methods formonitoring and cleanup of petroleum-based pollutants, the bookprovides examples of the application of environmental regulationsto petroleum refining and petroleum products, as well as currentand proposed methods for the mitigation of environmental effectsand waste management. Part I introduces petroleum technology, refining, and products, andreviews the nomenclature used by refiners, environmentalscientists, and engineers. Part II discusses environmentaltechnology and analysis, and provides information on environmentalregulation 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 environmentalregulations to petroleum refining and petroleum products \* An analysis of current and proposed methods of environmentalprotection and waste management

**Experimental Organic Chemistry: A Miniscale & Microscale Approach** John Wiley & Sons  
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.

**Foundations of College Chemistry** McGraw-Hill Companies  
Open CHEMISTRY: THE MOLECULAR SCIENCE, Fifth Edition and take a journey into the beautiful domain of chemistry, a fascinating and powerfully enabling experience! This easy-to-read text gives learners the solid foundation needed for success in science and engineering courses. Every Problem-Solving Example includes a Strategy and Explanation section, which clearly describes the strategy and approach chosen to solve the problem. In addition, an annotated art program emphasizes the three concept levels in a pedagogically sound approach to understanding molecules, concepts, and mathematical equations. Success is within your grasp with CHEMISTRY: THE MOLECULAR SCIENCE, Fifth Edition. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

**Hydrometallurgy of Rare Earths** McGraw Hill Professional  
"Compatible with standard taper miniscale, 14/10 standard taper microscale, Williamson microscale. Supports guided inquiry"--Cover.

**Two-dimensional Materials** John Wiley & Sons  
Hydrometallurgy of Rare Earths: Extraction and Separation provides the basic knowledge for rare earth extraction and separation, including flow sheet selection criteria and related technology. The book includes the latest research findings on all rare earth separation processes, methods of controlling operation costs, and strategies that help lower wastewater and waste solid discharge. It discusses many real process parameters and actual situations in rare earth separation plants, also examining the basic principles, technologies, process parameters and advances and achievements in the area of rare earth extraction and separation. In addition, the book covers extraction separation theory as developed by Professor Guanxian Xu and Professor Chunhua Yan and the creative use of a computational simulation program to replace the bench scale and pilot plant tests and directly design rare earth extraction separation processes. Outlines the theory of solvent extraction and separation of rare earths (REs) Provides the necessary tools for a REs separation plant design Includes a unique simulation program for the calculation of all process parameters Includes Chinese nomenclature that is useful for identifying the various processes, also comparing it to the global literature

**Advances in Clean Hydrocarbon Fuel Processing** CRC Press  
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 proceedures 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.

**Ultra-High Temperature Materials** I CRC Press  
There is a queue, the phone is ringing, the photocopier has jammed and your enquirer is waiting for a response. You are stressed and you can feel the panic rising. Where do you go to find the information you need to answer the question promptly and accurately? Answering queries from users is one of the most important services undertaken by library and information staff. Yet it is also one of the most difficult, least understood subjects. There are still very few materials available to help frontline staff - often paraprofessional - develop their reader enquiry skills. This award-winning sourcebook is an essential guide to where to look to find the answers quickly. It is designed as a first point of reference for library and information practitioners, to be depended upon if they are unfamiliar with the subject of an enquiry - or wish to find out more. It is arranged in an easily searchable, fully cross-referenced A-Z list of around 150 of the subject areas most frequently handled at enquiry desks. Each subject entry lists the most important information sources and where to locate them, including printed and electronic sources, relevant websites and useful contacts for referral purposes. The authors use their extensive experience in reference work to offer useful tips, warn of potential pitfalls, and spotlight typical queries and how to tackle them. This new edition has been brought right up-to-date with all sources checked for currency and many new ones added. The searchability is enhanced by a comprehensive index to make those essential sources even easier to find - saving you valuable minutes! Readership: Offering quick and easy pointers to a multitude of information sources, this is an invaluable reference deskbook for all library and information staff in need of a speedy answer, in reference libraries, subject departments and other information units.

**A Decision-Based Guide to Organic Mechanisms** Springer  
In this volume, operators, engineers, and researchers present information about all aspects of current processing technologies for nickel and cobalt, as well as emerging technologies for both metals. Contributions from industry and academia encompass metallurgical aspects of metals commonly associated with nickel and cobalt, such as copper and platinum group metals (PGMs). Specific focus areas of the collection include, but are not limited to mineral processing, metallurgy of nickel and cobalt ores, battery materials, recycling, recovery of associated byproducts and PGMs, and sulfide and laterite processing.

**Purification of Laboratory Chemicals** American Library Association  
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

**New and Future Developments in Catalysis** Springer  
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.

**Membrane Distillation** CRC Press

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.

**CRC Handbook of Basic Tables for Chemical Analysis** Elsevier

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

**Lange's Handbook of Chemistry, Seventeenth Edition** Springer

This book describes origin and characteristics of the Earth's thermal field, thermal flow propagation and some thermal phenomena in the Earth. Description of thermal properties of rocks and methods of thermal field measurements in boreholes, underground, at near-surface conditions enables to understand the principles of temperature field acquisition and geothermal model development. Processing and interpretation of geothermal data are shown on numerous field examples from different regions of the world. The book warps, for instance, such fields as analysis of thermal regime of the Earth's crust, evolution and thermodynamic conditions of the magma-ocean and early Earth atmosphere, thermal properties of permafrost, thermal waters, geysers and mud volcanoes, methods of Curie discontinuity construction, quantitative interpretation of thermal anomalies, examination of some nonlinear effects, and integration of geothermal data with other geophysical methods. This book is intended for students and researchers in the field of Earth Sciences and Environment studying thermal processes in the Earth and in the subsurface. It will be useful for specialists applying thermal field analysis in petroleum, water and ore geophysics, environmental and ecological studies, archaeological prospection and climate of the past.

*White's Handbook of Chlorination and Alternative Disinfectants* BoD – Books on Demand

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  $\alpha$ -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.

**Electron Flow in Organic Chemistry** AIHA

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.

**With Thermodynamics, Chemical Kinetics and Mass Transfer** CRC Press

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.

**Processing and Characterization** John Wiley & Sons

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](http://www.mhprofessional.com/Langes)) • General Information and Conversion Tables (available online at [www.mhprofessional.com/Langes](http://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.