

Biochemistry Seventh Edition By Berg Jeremy M Tymoczko John L Stryer Lubert 2010 Hardcover

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.

The Universal Spacetime Theory (UST) is the main subject of this book. It attempts to answer some very interesting questions related to the science and philosophy: * What is the origin of the Universe? * How was the Universe created out of nothing? * What are the structure and properties of ordinary matter that makes up less than 5% of the Universe? * What are the structure and properties of dark matter that occupies about 27% of the Universe? * What are the structure and properties of the dark energy that occupies roughly 68% of the Universe? * Is the communication possible with superluminal velocity?

Preceded by: *Discovering nutrition* / by Paul Insel ... [et al.]. 4th ed. c2013.

The second edition of this introductory textbook conveys the impact of biomedical engineering through examples, applications, and a problem-solving approach.

As the amount of information in biology expands dramatically, it becomes increasingly important for textbooks to distill the vast amount of scientific knowledge into concise principles and enduring concepts. As with previous editions, *Molecular Biology of the Cell*, Sixth Edition accomplishes this goal with clear writing and beautiful illustrations. The Sixth Edition has been extensively revised and updated with the latest research in the field of cell biology, and it provides an exceptional framework for teaching and learning. The entire illustration program has been greatly enhanced. Protein structures better illustrate structure–function relationships, icons are simpler and more consistent within and between chapters, and micrographs have been refreshed and updated with newer, clearer, or better images. As a new feature, each chapter now contains intriguing open-ended questions highlighting “What We Don’t Know,” introducing students to challenging areas of future research. Updated end-of-chapter problems reflect new research discussed in the text, and these problems have been expanded to all chapters by adding questions on developmental biology, tissues and stem cells, pathogens, and the immune system.

This book is a printed edition of the Special Issue "Metal Metabolism in Animals" that was published in *IJMS*

Computational Biomedicine unifies the different strands of a broad-ranging subject to demonstrate the power of a tool that has the potential to revolutionise our understanding of the human body, and the therapeutic strategies available to maintain and protect it.

Karp’s *Cell Biology*, Global Edition continues to build on its strength at connecting key concepts to the experiments that reveal how we know what we know in the world of Cell Biology. This classic text explores core concepts in considerable depth, often adding experimental detail. It is written in an inviting style to assist students in handling the plethora of details encountered in the Cell Biology course. In this edition, two new co-authors take the helm and help to expand upon the hallmark strengths of the book, improving the student learning experience.

This book is a printed edition of the Special Issue "Host-Guest Polymer Complexes" that was published in *Polymers*

Over the recent years, medicinal chemistry has become responsible for explaining interactions of chemical molecule processes such that many scientists in the life sciences from agronomy to medicine are engaged in medicinal research. This book contains an overview focusing on the research area of enzyme inhibitor and activator, enzyme-catalyzed biotransformation, usage of microbial enzymes, enzymes associated with programmed cell death, natural products as potential enzyme inhibitors, protease inhibitors from plants in insect pest management, peptidases, and renin-angiotensin system. The book provides an overview on basic issues and some of the recent developments in medicinal science and technology. Especially, emphasis is devoted to both experimental and theoretical aspect of modern medicine. The primary target audience for the book includes students, researchers, chemists, molecular biologists, medical doctors, pharmacologists, and professionals who are interested in associated areas. The textbook is written by international scientists with expertise in biochemistry, enzymology, molecular biology, and genetics, many of which are active in biochemical and pharmacological research. I would like to acknowledge the authors for their contribution to the book. We hope that the textbook will enhance the knowledge of scientists in the complexities of some medical approaches; it will stimulate both professionals and students to dedicate part of their future research in understanding relevant mechanisms and applications of pharmacology.

"Planetary Astrobiology provides an accessible, interdisciplinary gateway to the frontiers of knowledge in astrobiology via results from the exploration of our own solar system and exoplanetary systems"--

The Fourth Edition of the compendium pools together the knowledge and experience of experts from all over the world, who are engaged in teaching and research in the field of biochemistry, medical sciences and allied disciplines. Comprising 20 sections, the present edition of the book has been substantially revised incorporating the latest research and achievements in the field. Beginning appropriately with chemical architecture of the living systems, role and significance of biochemical reactions, organization of specialised

tissues, and importance of food and nutrition, the book explores beyond traditional boundaries of biochemistry. The knowledge of various organ systems has been expanded covering their normal function, ailments and dysfunction. A chapter on Eye and Vision explaining molecular basis of cataract and glaucoma have been added. Also, the book introduces stem cells and regenerative therapy and defines molecules associated with pleasure, happiness, stress and anxiety. A Section on Gastrointestinal and Biliary System elaborates on physiology and dysfunction including fatty liver and its implications, and hepatitis viruses. The knowledge of Human Genetics and Biochemical Basis of Inheritance has been appropriately expanded to reflect the latest advances in various domains. Besides DNA fingerprinting for identity establishment, the Section discusses epigenetics, micro-RNA and siRNA including their role in gene expression, chromatin modification and its association with human diseases, and genetic engineering. It also explores emerging areas such as metabolomics and proteomics; synthetic biology; and dual use technology in bioterrorism. Due emphasis has been given to the Section on Cell Replication and Cancer. Emergence of the use of probiotics in human health has also been highlighted. Besides, an entire Section has been devoted to male and female reproductive systems, fertilization, implantation, pregnancy, lactation, and assisted reproductive technology. Immunology, including vaccines and immunization, has been given due attention with latest updates in this fast growing area. Modern medicine, despite its stupendous advances cannot provide cure for all ailments. Thus, the new edition provides knowledge of alternative medicine systems—Ayurveda, Homeopathy, Unani, Yoga and Herbal Medicine. Incorporating vast information on the latest and emerging areas, the book will be of immense value to the students of medical sciences not only in their preclinical years, but also in all phases of medical course including postgraduate education and practice. Besides, it will also serve as a valuable source to the students of biochemistry and human bi

This full-colour undergraduate textbook, based on a two semester course, presents the fundamentals of biological physics, introducing essential modern topics that include cells, polymers, polyelectrolytes, membranes, liquid crystals, phase transitions, self-assembly, photonics, fluid mechanics, motility, chemical kinetics, enzyme kinetics, systems biology, nerves, physiology, the senses, and the brain. The comprehensive coverage, featuring in-depth explanations of recent rapid developments, demonstrates this to be one of the most diverse of modern scientific disciplines. The Physics of Living Processes: A Mesoscopic Approach is comprised of five principal sections: • Building Blocks • Soft Condensed Matter Techniques in Biology • Experimental Techniques • Systems Biology • Spikes, Brains and the Senses The unique focus is predominantly on the mesoscale — structures on length scales between those of atoms and the macroscopic behaviour of whole organisms. The connections between molecules and their emergent biological phenomena provide a novel integrated perspective on biological physics, making this an important text across a variety of scientific disciplines including biophysics, physics, physical chemistry, chemical engineering and bioengineering. An extensive set of worked tutorial questions are included, which will equip the reader with a range of new physical tools to approach problems in the life sciences from medicine, pharmaceutical science and agriculture.

The purpose of the first four volumes of the Handbook of Genetics is to bring together collections of relatively short, authoritative essays or annotated compilations of data on topics of significance to geneticists. Many of the essays will deal with various aspects of the biology of certain species or species groups selected because they are favorite subjects for genetic investigation in nature or the laboratory. Often there will be an encyclopedic amount of information available on such species, with new papers appearing daily. Most of these will be written for specialists in a jargon that is bewildering to a novice, and sometimes even to a veteran geneticist working with evolutionarily distant organisms. For such readers what is needed is a written introduction to the morphology, life cycle, reproductive behavior, and culture methods for the species in question. What are its particular advantages (and disadvantages) for genetic study, and what have we learned from it? Where are the classic papers, the key bibliographies, and how does one get stocks of wild type or mutant strains? Lists giving the symbolism and descriptions for selected mutants that have been retained and are thus available for future studies are provided whenever possible. Genetic and cytological maps, mitotic karyotypes, and haploid DNA values are also included when available. Volume 4 deals with certain vertebrate species that have been studied in considerable detail from the standpoint of genetics or molecular cytogenetics. Such data are available for only a relatively few vertebrates. This volume gathers the latest exciting findings on ADP-ribosylation from renowned experts in the field. It includes ten chapters, organized into the following three thematic sections: • Evolution and detection of endogenous ADP-ribosylation • ADP-ribosylation by the ARTC family of ADP-ribosyltransferases (R-S-E ARTs) • ADP-ribosylation by the ARTD family of ADP-ribosyltransferases (H-Y-E ARTs) The book will provide readers a better understanding of ADP-ribosylating toxins and their endogenous relatives. This provides a basis for developing novel toxin-neutralizing drugs and drugs targeting endogenous ADP-ribosyltransferase relatives.

Biotechnology and Biopharmaceuticals: Transforming Proteins and Genes into Drugs, Second Edition addresses the pivotal issues relating to translational science, including preclinical and clinical drug development, regulatory science, pharmaco-economics and cost-effectiveness considerations. The new edition also provides an update on new proteins and genetic medicines, the translational and integrated sciences that continue to fuel the innovations in medicine, as well as the new areas of therapeutic development including cancer vaccines, stem cell therapeutics, and cell-based therapies.

This book covers the latest information on the anatomic features, underlying physiologic mechanisms, and treatments for diseases of the heart. Key chapters address animal models for cardiac research, cardiac mapping systems, heart-valve disease and genomics-based tools and technology. Once again, a companion of supplementary videos offer unique insights into the working heart that enhance the understanding of key points within the text. Comprehensive and state-of-the-art, the Handbook of Cardiac Anatomy, Physiology and Devices, Third Edition provides clinicians and biomedical engineers alike with the authoritative information and background they need to work on and implement tomorrow's generation of life-saving cardiac devices.

??University Science Books????

Written for majors and advanced non-majors, the Sixth Edition of Nutrition provides a modern, comprehensive introduction to nutrition concepts, guidelines, and functions. Its student-focused approach provides readers with the knowledge they need to make informed decisions about their overall nutrition.

This book provides a unique frame work for examining acute lung syndromes that arise from hematologic disorders or is defined by a hematologic abnormality as a key feature. Acute lung processes arising from hematologic disorders can present as life-threatening conditions, and as such, the pulmonary physician or critical care physician are often directly involved in care or called upon to provide expertise. Chapters are organized into three sections, each with an emphasis on pathogenesis and current understanding of mechanisms. The text begins with the central theme of the lungs as the direct interface between the external environment and blood, description of individual components of the hematopoietic system, their function and relevance to the lungs. The second section outlines both benign and malignant primary hematologic disorders that can lead to acute pulmonary manifestations. The final section focuses on acute lung syndromes stemming from complications of transfusion and treatment. Chapters are presented in an easy-to-access format, providing information on diagnosis, management, and outcomes. This is a valuable resource for pulmonary fellows in training, pulmonologists, critical care physicians, and physicians involved in caring for patients in the ICU.

The new edition has been significantly revised to include an expanded problem section at the end of each chapter with more quantitative examples and some clinical problems where appropriate. The clinical physiology chapter is now broken into several short chapters.

In its 19th edition, the book continues to provide a comprehensive coverage on the basic principles of plant physiology. It focuses on the concepts of plant physiological form & functions as well as processes in crop production. Besides fulfilling the needs of undergraduate students, this book will be useful to postgraduate students and also to those appearing in various competitive examinations.

„Oft kopiert, nie erreicht.“ Biologen heute Seit vier Jahrzehnten prägt dieses außergewöhnliche Lehrbuch weltweit die Lehre der Biochemie. Die überaus klare und präzise Art der Darstellung, die Aktualität, die ausgefeilte Didaktik und die Verständlichkeit sind zu Markenzeichen dieses von Lehrenden wie Lernenden hoch geschätzten Standardwerkes geworden. Sie zeichnen auch die nun vorliegende achte Auflage aus, die erneut die Brücke von den biologischen und chemischen Grundlagen zu den physiologischen und medizinischen Fragestellungen schlägt. Zu den wichtigsten Neuerungen und Verbesserungen der vollständig überarbeiteten Neuauflage zählen: Kapitel 5: erweiterte Darstellung von Massenspektrometrie, Proteinmasse, Proteinidentität und Proteinsequenz Kapitel 9: neuer Abschnitt zu krankheitsauslösenden Mutationen in Hämoglobingenen, neue Fallstudie zu Thalassämien Kapitel 13: neue Fallstudie zu Proteinkinase-A-Mutationen und Cushing Syndrom Kapitel 14: erweiterte Darstellung zu Vorstufen von Verdauungsenzymen und zur Proteinverdauung im Dünndarm, neue Fallstudien zu Proteinverdauung im Magen und zur Zöliakie Kapitel 15: neuer Abschnitt zu den Grundfunktionen des Energiestoffwechsels, erweiterte Darstellung zu Phosphaten in biochemischen Prozessen Kapitel 16: neue Fallstudien zu exzessiver Fructoseaufnahme und zu schnellwachsenden Zellen und aerober Glykolyse Kapitel 29: neue Fallstudien zu Phosphatidylcholin, zur Regulation des LDL-Rezeptor-Kreislaufs und zum klinischen Management von Cholesterinwerten Kapitel 30: neue Fallstudie zu Blutspiegelwerten der Aminotransferase als diagnostischer Prädiktor Stimmen zu früheren Auflagen: Der Stryer ist der "Goldstandard" für Biochemie-Lehrbücher. Prof. Dr. Michael Rychlik, TU München Aktuell, didaktisch hervorragend präsentiert, bietet der "Stryer" einen umfassenden Überblick über das Feld und ist als Nachschlagewerk unverzichtbar. Prof. Dr. Dieter Adam, Universität Kiel Dieses Lehrbuch gibt Studierenden am Anfang ihrer Ausbildung einen hervorragenden Einstieg in die Biochemie, ist aber genauso für Fortgeschrittene ideal. Prof. Dr. Mike Boysen, Universität Göttingen Der Klassiker, er ist und bleibt in der Breite und Tiefe und seinem sehr guten didaktischen Aufbau unübertroffen! Ein Muss für jeden Studierenden und Dozenten im Umfeld biomedizinischer Studiengänge. Prof. Dr. Robert Fürst, Universität Frankfurt Trotz der unglaublichen Detailfülle vermittelt der Stryer Verständnis für die Zusammenhänge in der Biochemie. Prof. Dr. Katja Gehrig, Universität Mainz Biochemie anschaulich gemacht: So sollte ein Lehrbuch sein ... Dieses Buch nimmt jedem Studierenden die Angst vor der Biochemie! Prof. Dr. Wolf-Michael Weber, Universität Münster Als Lehrbuchautor packt einen beim Studium des Stryer der Neid. So schöne Fotos, so gekonnte, bunte, eingängige Zeichnungen, soviel Grips, so wenige Fehler. Laborjournal

In this book, renowned scientists describe how cholesterol interacts with various proteins. Recent progress made in the high-resolution visualization of cholesterol-protein interactions using crystallography and cryogenic electron microscopy has substantially advanced the knowledge of critical features. These features enable specific recognition of the cholesterol molecule by proteins, a process that was built on earlier studies using binding assays, computational modeling and site-directed mutagenesis. Direct Mechanisms in Cholesterol Modulation of Protein Function offers comprehensive insights into the current understanding of cholesterol-driven modulation of protein function via direct sensing. Its nine chapters are organized into two distinct parts. In the first part, the chapters introduce the reader to the general characteristics of cholesterol binding sites in proteins. This part starts with a tour into common cholesterol recognition motifs, followed by an overview of the major classes of steroid-binding proteins. It then continues with two chapters that present a comprehensive analysis of molecular and structural characteristics of cholesterol binding sites in transmembrane and soluble protein domains. In the second part of the book, examples of cholesterol binding sites and consequences of specific cholesterol recognition for protein function are presented for G protein-coupled receptors, ion channels and cholesterol-transporting proteins. The book is valuable for undergraduate and graduate students in biochemistry and nutrition, as well as basic science and medical researchers with a keen interest in the biophysical properties of cholesterol and physiological consequences of cholesterol presence in biological systems.

"With contributions from over 75 of the foremost experts in the field, the third edition of best-selling Respiratory Care: Principles and Practice represents the very best in clinical and academic expertise. Taught in leading respiratory care programs, it continues to be the top choice for instructors and students alike. The Third Edition includes numerous updates and revisions that provide the best foundational knowledge available as well as new, helpful instructor resources and student learning tools. Respiratory Care: Principles and Practice, Third Edition incorporates the latest information on the practice of respiratory care into a well-organized, cohesive, reader-friendly guide to help students learn to develop care plans, critical thinking skills, strong communication and patient education skills, and the clinical leadership skills needed to succeed. This text provides essential information in a practical and manageable format for optimal learning and retention. Including a wealth of student and instructor resources, and content cross-referencing the NBRC examination matrices, Respiratory Care: Principles and Practice, Third Edition is the definitive resource for today's successful respiratory care

practitioner"--Publisher's description.

Biochemistry W. H. Freeman Biochemistry W. H. Freeman

Karp's Cell and Molecular Biology delivers a concise and illustrative narrative that helps students connect key concepts and experimentation, so they better understand how we know what we know in the world of cell biology. This classic text explores core concepts in considerable depth, often adding experimental detail. It is written in an inviting style and at mid-length, to assist students in managing the plethora of details encountered in the Cell Biology course. The 9th Edition includes two new sections and associated assessment in each chapter that show the relevance of key cell biology concepts to plant cell biology and bioengineering.

This monograph is the first easy-to-read-and-understand book on prion proteins' molecular dynamics (MD) simulations and on prions' molecular modelling (MM) constructions. It enables researchers to see what is crucial to the conformational change from normal cellular prion protein (PrP^C) to diseased infectious prions (PrP^{Sc}), using MD and MM techniques. As we all know, prion diseases, caused by the body's own proteins, are invariably fatal and highly infectious neurodegenerative diseases effecting humans and almost all animals for a major public health concern. Prion contains no nucleic acids and it is a misshapen or conformation-changed protein that acts like an infectious agent; thus prion diseases are called "protein structural conformational" diseases. PrP^C is predominant in α -helices but PrP^{Sc} are rich in β -sheets in the form as amyloid fibrils; so very amenable to be studied by MD techniques. Through MD, studies on the protein structures and the structural conversion are very important for revealing secrets of prion diseases and for structure-based drug design or discovery. Rabbits, dogs, horses and buffaloes are reported to be the few low susceptibility species to prion diseases; this book's MD studies on these species are clearly helpful to understand the mechanism underlying the resistance to prion diseases. PrP(1-120) usually has no clear molecular structures; this book also studies this unstructured region through MD and especially MM techniques from the global optimization point of view. This book is ideal for practitioners in computing of biophysics, biochemistry, biomedicine, bioinformatics, cheminformatics, materials science and engineering, applied mathematics and theoretical physics, information technology, operations research, biostatistics, etc. As an accessible introduction to these fields, this book is also ideal as a teaching material for students.

Interdisciplinary knowledge is becoming increasingly important to the modern scientist. This invaluable textbook covers bioanalytical chemistry (mainly the analysis of proteins and DNA) and explains everything for the non-biologist. Electrophoresis, mass spectrometry, biosensors, bioassays, DNA and protein sequencing are not necessarily all included in conventional analytical chemistry textbooks. The book describes the basic principles and the applications of instrumental and molecular methods. It is particularly useful to chemistry and engineering students who already have some basic knowledge about analytical chemistry. This revised second edition contains a new chapter on optical spectroscopy, and updated methods and new references throughout. Andreas Manz received the 2015 Inventor Award for "Lifetime Achievement" from the European Patent Office. Petra S Dittrich will be presented with the Heinrich-Emanuel-Merck Award 2015 at EuroAnalysis2015 Conference.

Biochemical reactions, which facilitate metabolic and / or photosynthetic changes in each life form through the actions of enzymes, make all life possible. This insightful volume considers the various types, causes, and results of different reactions that operate at the cellular level and beyond to sustain biological activity. Readers will explore the early discoveries of the first biochemists and trace these developments and their impact to the latest advancements in and applications of biochemistry, ultimately leading to a deeper understanding of life on Earth.

Using natural products and developing pharmaceutical drugs are emerging topics to reduce blood cholesterol levels for preventing heart disease and stroke. Covering recent progresses in cholesterol-lowering drugs and therapy, this book describes the natural and pharmaceutical products that are in clinical uses to lower cholesterol and lipids and compares these drugs in responses to different diseases such as homozygous familial hypercholesterolemia, atherosclerosis, cardiovascular disease, and cancer. The relationship between ethnicity and cholesterol-lowering drug responses is also reviewed. Each chapter is a building block for the book, but each individual chapter is also a complete subject package for the readers. Researchers from basic and clinic science interested in lipid and cholesterol metabolism, regulation, and lowering will find this book very useful. Features: - Up-to-date information of the molecular mechanisms of cholesterol lowering, the drugs from natural and pharmaceutical products, and their associated therapeutic strategies in human diseases. - Discussion of the pathogenesis of several human diseases, which are associated with high cholesterol levels and evaluation of the results of different cholesterol-lowering drug treatment in these diseases. - Discussion of the combinations of cancer chemotherapy and cholesterol lowering in potential cancer treatment and cancer prevention by cholesterol-lowering drugs. - Critical analysis of the effect of ethnicity on responses to cholesterol-lowering drug therapy leading to rational dose adjustment of cholesterol-lowering drugs for different people use.

Why does a man who is well into his retirement take up a new career as a massage therapist? What can massage offer to society? How does one go about learning it? Sam Wong deals with these and other intriguing questions in this book. He provides an authentic account of learning and blending Western massage and Chinese tui na, highlights the role of inspiring teachers in helping him to become a massage therapist, and documents the effectiveness of massage as an alternative treatment for fibromyalgia and other chronic pains. Sam's insights on tui na in traditional Chinese medicine are fascinating and unique.

For four decades, this extraordinary textbook played an pivotal role in the way biochemistry is taught, offering exceptionally clear writing, innovative graphics, coverage of the latest research techniques and advances, and a signature emphasis on physiological and medical relevance. Those defining features are at the heart of this edition. See what's in the LaunchPad

Pharmaceutics is one of the most diverse subject areas in all of pharmaceutical science. In brief, it is concerned with the scientific and technological aspects of the design and manufacture of dosage forms or medicines. An understanding of pharmaceutics is therefore vital for all pharmacists and those pharmaceutical scientists who are involved with converting a drug or a potential drug into a medicine that can be delivered safely, effectively and conveniently to the patient. Now in its fourth edition, this best-selling textbook in pharmaceutics has been brought completely up to date to reflect the rapid advances in delivery methodologies by eye and injection, advances in drug formulations and delivery methods for special groups (such as children and the elderly), nanomedicine, and pharmacognosy. At the same time the editors have striven to maintain the accessibility of the text for students of pharmacy, preserving the balance between being a suitably pitched introductory text and a clear reflection of the state of the art. provides a logical, comprehensive account of drug design and manufacture includes the science of formulation and drug delivery designed and written for newcomers to the design of dosage forms New to this edition New editor: Kevin Taylor, Professor of Clinical Pharmaceutics, School of Pharmacy, University of London. Twenty-two new contributors. Six new chapters

covering parenteral and ocular delivery; design and administration of medicines for the children and elderly; the latest in plant medicines; nanotechnology and nanomedicines, and the delivery of biopharmaceuticals. Thoroughly revised and updated throughout.

Petroleum refining and process engineering is constantly changing. No new refineries are being built, but companies all over the world are still expanding or re-purposing huge percentages of their refineries every year, year after year. Rather than building entirely new plants, companies are spending billions of dollars in the research and development of new processes that can save time and money by being more efficient and environmentally safer. Biodesulfurization is one of those processes, and nowhere else it is covered more thoroughly or with more up-to-date research of the new advances than in this new volume from Wiley-Scrivener. Crude oil consists of hydrocarbons, along with other minerals and trace elements. Sulfur is the most abundant element after carbon and hydrogen, then comes after it nitrogen, and they usually concentrated in the higher boiling fractions of the crude oil. The presence of sulfur compounds causes the corrosion of refining facilities and catalysts poisoning. Moreover, the presence of nitrogen-compounds directly impacts the refining processes via; poisoning the cracking catalysts and inhibiting the hydrodesulfurization catalysts. In addition, both have bad impacts on the environment, throughout the sulfur and nitrogen oxide emissions. Removing this sulfur and nitrogen from the refining process protects equipment and the environment and creates a more efficient and cost-effective process. Besides the obvious benefits to biodesulfurization, there are new regulations in place within the industry with which companies will, over the next decade or longer, spend literally tens, if not hundreds, of billions of dollars to comply. Whether for the veteran engineer needing to update his or her library, the beginning engineer just learning about biodesulfurization, or even the student in a chemical engineering class, this outstanding new volume is a must-have. Especially it covers also the bioupgrading of crude oil and its fractions, biodenitrogenation technology and application of nanotechnology on both bio-desulfurization and denitrogenation technologies.

Mind Maps in Biochemistry presents a series of concept and knowledge maps about biochemical compounds, systems and techniques. The book illustrates the relationships between commonly used terms in the subject to convey the meaning of ideas and concepts that facilitate a basic understanding about the subject for readers. Chapters of the book cover both basic topics (lipids, carbohydrates, proteins, nucleotides, enzymes, metabolic pathways, nutrition and physiology) as well as applied topics (clinical diagnosis, diseases, genetic engineering and molecular biology). Key Features i. Topic-based presentation over 16 chapters ii. Coverage of basic and applied knowledge iii. Detailed tables, flow diagrams and illustrations with functional information about metabolic pathways and related concepts iv. Essay and multiple-choice questions with solutions v. Exercises for students to construct their own mind maps, designed to improve analytical skills Mind Maps in Biochemistry is an ideal textbook for quick and easy learning for high school and college level students studying biochemistry as well as teachers instructing courses at these levels.

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