

Free Essentials Of Chemical Reaction Engineering

Today's Definitive, Undergraduate-Level Introduction to Chemical Reaction Engineering Problem-Solving For 30 years, H. Scott Fogler's Elements of Chemical Reaction Engineering has been the #1 selling text for courses in chemical reaction engineering worldwide. Now, in Essentials of Chemical Reaction Engineering, Second Edition, Fogler has distilled this classic into a modern, introductory-level guide specifically for undergraduates. This is the ideal resource for today's students: learners who demand instantaneous access to information and want to enjoy learning as they deepen their critical thinking and creative problem-solving skills. Fogler successfully integrates text, visuals, and computer simulations, and links theory to practice through many relevant examples. This updated second edition covers mole balances, conversion and reactor sizing, rate laws and stoichiometry, isothermal reactor design, rate data collection/analysis, multiple reactions, reaction mechanisms, pathways, bioreactions and bioreactors, catalysis, catalytic reactors, nonisothermal reactor designs, and more. Its multiple improvements include a new discussion of activation energy, molecular simulation, and stochastic modeling, and a significantly revamped chapter on heat effects in chemical reactors. To promote the transfer of key skills to real-life settings, Fogler presents three styles of problems: Straightforward problems that reinforce the principles of chemical reaction engineering Living Example Problems (LEPs) that allow students to rapidly explore the issues and look for optimal solutions Open-ended problems that encourage students to use inquiry-based learning to practice creative problem-solving skills About the Web Site (umich.edu/~elements/5e/index.html) The companion Web site offers extensive enrichment opportunities and additional content, including Complete PowerPoint slides for lecture notes for chemical reaction engineering classes Links to additional software, including Polymath, MATLAB, Wolfram Mathematica, AspenTech, and COMSOL Multiphysics Interactive learning resources linked to each chapter, including Learning Objectives, Summary Notes, Web Modules, Interactive Computer Games, Computer Simulations and Experiments, Solved Problems, FAQs, and links to LearnChemE Living Example Problems that provide more than 75 interactive simulations, allowing students to explore the examples and ask "what-if" questions Professional Reference Shelf, containing advanced content on reactors, weighted least squares, experimental planning, laboratory reactors, pharmacokinetics, wire gauze reactors, trickle bed reactors, fluidized bed reactors, CVD boat reactors, detailed explanations of key derivations, and more Problem-solving strategies and insights on creative and critical thinking Register your product at informit.com/register for convenient access to downloads, updates, and/or corrections as they become available.

Essentials of Microbiology is an extensive guide to all aspects of microbiology covering immunology, bacteriology, virology, medical mycology, diagnostic medical microbiology, and many miscellaneous infections. Microbiologists have made significant contributions to basic biological sciences as well as in the applied areas of public health and medical sciences, agriculture, industry and environmental sciences. The most dramatic current development in applied microbiology is due to development of genetic engineering and recombinant DNA technology. Life is governed by a relatively small number of molecular reactions that exploit a limited variety of simple concepts. However, their combination has led to an amazing chemical diversity which is still beyond the reach of the microbiologists even in the most complex supra-molecular systems, despite a huge set of synthetic methods. Microbiology is the study of microorganisms, which are microscopic, unicellular, and cell-cluster organisms. This includes eukaryotes such as fungi and protists, and prokaryotes. Viruses and prions, though not strictly classed as living organisms, are also studied. Microbiology typically includes the study of the immune system, or Immunology. This book will be useful to researchers, teachers and students of microbiology, botany, zoology and agriculture.

A contribution to the ongoing debate about how to manage the growing risks of anthropogenic chemicals in the environment, Essentials of Toxic Chemical Risk weaves together coverage of the science that underlies toxic chemical risk assessment, the physiological and molecular bases of chemical toxicity, the process of assessing toxic chemical risk to human health and the environment, and the strategies employed in managing it. The book links toxic chemical risk to the real world of people and communities confronted with the vexing problem of how to deal with products that make their lives better but that also harbor a potential for harm. The book introduces the basics of toxicology from a risk assessment perspective, using a jargon-free, journalistic style that makes scientific concepts accessible to a wide audience without "dumbing down" the science. It covers the fate and transport of chemicals in the environment, dose-effect, animal toxicity testing, human epidemiology, the uptake, distribution, and elimination of toxic chemicals including first-order rate constants and calculations of body burdens, and the cellular basis of cancer and other diseases that can be caused by toxic chemicals. The book also introduces risk management and discusses the balance between precaution and socio-economic benefits, as embodied by the Toxic Substances Control Act, the Canadian Environmental Protection Act, and the European Union's innovative REACH directive (Registration, Evaluation, Authorization, and Restriction of chemicals). Putting equal emphasis on the twin issues of risk assessment and risk management, the author has carefully selected topics that shed light on risk management decisions and cover ecotoxicology and organismic toxicology. The book provides a thorough introduction to the science of toxicology and to the policy debates and scientific uncertainties that make risk management a work in progress.

Today's top athletes understand that meeting one's nutritional needs is critical when competing. Those who perform heavy physical activity must receive an increased level of nutrients, fluid and energy. This book offers a concise introduction to the links between nutrition and physical performance.

Written by experienced authors and practising teachers the Essentials student book matches the OCR specifications for A2 Biology and Human Biology.

Learn Chemical Reaction Engineering through Reasoning, Not Memorization Essentials of Chemical Reaction Engineering is the complete, modern introduction to chemical reaction engineering for today's undergraduate students. Starting from the strengths of his classic Elements of Chemical Reaction Engineering, Fourth Edition, in this volume H. Scott Fogler added new material and distilled the essentials for undergraduate students. Fogler's unique way of presenting the material helps students gain a deep, intuitive understanding of the field's essentials through reasoning, using a CRE algorithm, not memorization. He especially focuses on important new energy and safety issues, ranging from solar and biomass applications to the avoidance of runaway reactions. Thoroughly classroom tested, this text reflects feedback from hundreds of students at the University of Michigan and other leading universities. It also provides new resources to help students discover how reactors behave in diverse situations-including many realistic, interactive simulations on DVD-ROM. New Coverage Includes Greater emphasis on safety: following the recommendations of the Chemical Safety Board (CSB), discussion of crucial safety topics, including ammonium nitrate CSTR explosions, case studies of the nitroaniline explosion, and the T2 Laboratories batch reactor runaway Solar energy conversions: chemical, thermal, and catalytic water spilling Algae production for biomass Steady-state nonisothermal reactor design: flow reactors with heat exchange Unsteady-state nonisothermal reactor design with case studies of reactor explosions About the DVD-ROM The DVD contains six additional, graduate-level chapters covering catalyst decay, external diffusion effects on heterogeneous reactions, diffusion and reaction, distribution of residence times for reactors, models for non-ideal reactors, and radial and axial temperature variations in tubular reactions. Extensive additional DVD resources include Summary notes, Web modules, additional examples, derivations, audio commentary, and self-tests Interactive computer games that review and apply important chapter concepts Innovative "Living Example Problems" with Polymath code that can be loaded directly from the DVD so students can play with the solution to get an innate feeling of how reactors operate A 15-day trial of Polymath(tm) is included, along with a link to the Fogler Polymath site A complete, new AspenTech tutorial, and four complete example problems Visual Encyclopedia of Equipment, Reactor Lab, and other intuitive tools More than 500 PowerPoint slides of lecture

notes Additional updates, applications, and information are available at www.umich.edu/~essen and www.essentialsofcre.com.

Discusses biochemistry for elementary and advanced teaching.

Chemistry Essentials For Dummies (9781119591146) was previously published as Chemistry Essentials For Dummies (9780470618363). While this version features a new Dummies cover and design, the content is the same as the prior release and should not be considered a new or updated product. Whether studying chemistry as part of a degree requirement or as part of a core curriculum, students will find Chemistry Essentials For Dummies to be an invaluable quick reference guide to the fundamentals of this often challenging course. Chemistry Essentials For Dummies contains content focused on key topics only, with discrete explanations of critical concepts taught in a typical two-semester high school chemistry class or a college level Chemistry I course, from bonds and reactions to acids, bases, and the mole. This guide is also a perfect reference for parents who need to review critical chemistry concepts as they help high school students with homework assignments, as well as for adult learners headed back into the classroom who just need to a refresher of the core concepts. The Essentials For Dummies Series Dummies is proud to present our new series, The Essentials For Dummies. Now students who are prepping for exams, preparing to study new material, or who just need a refresher can have a concise, easy-to-understand review guide that covers an entire course by concentrating solely on the most important concepts. From algebra and chemistry to grammar and Spanish, our expert authors focus on the skills students most need to succeed in a subject.

Matter has several forms, and these can be changed physically or chemically. This science book will dive deep into the topic of physical and chemical change with the intent of fueling your child's appreciation of this unique scientific truth. This book has been created to match your fourth grader's academic needs. Grab a copy today.

Chemical Reaction Engineering: Essentials, Exercises and Examples presents the essentials of kinetics, reactor design and chemical reaction engineering for undergraduate students. Concise and didactic in its approach, it features over 70 resolved examples and many exercises. The work is organized in two parts: in the first part kinetics is presented. This book is the first to detail the chemical changes that occur in deforming materials subjected to unequal compressions. While thermodynamics provides, at the macroscopic level, an excellent means of understanding and predicting the behavior of materials in equilibrium and non-equilibrium states, much less is understood about nonhydrostatic stress and interdiffusion at the chemical level. Little is known, for example, about the chemistry of a state resulting from a cylinder of deforming material being more strongly compressed along its length than radially, a state of non-equilibrium that remains no matter how ideal the cylinder's condition in other respects. M. Brian Bayly here provides the outline of a comprehensive approach to gaining a simplified and unified understanding of such phenomena. The author's perspective differs from those commonly found in the technical literature in that he emphasizes two little-used equations that allow for a description and clarification of viscous deformation at the chemical level. Written at a level that will be accessible to many non-specialists, this book requires only a fundamental understanding of elementary mathematics, the nonhydrostatic stress state, and chemical potential. Geochemists, petrologists, structural geologists, and materials scientists will find Chemical Change in Deforming Materials interesting and useful.

Essentials of Computational Chemistry provides a balanced introduction to this dynamic subject. Suitable for both experimentalists and theorists, a wide range of samples and applications are included drawn from all key areas. The book carefully leads the reader through the necessary equations providing information explanations and reasoning where necessary and firmly placing each equation in context.

Concise introductory textbook on the petrology of igneous and metamorphic rocks for one-semester courses. Topics are organized around the types of rocks to expect in tectonic environments, rather than around rock classifications. Application boxes engage students by showing how petrology connects to wider aspects of geology. Includes end-of-chapter exercises.

This newest addition to the best-selling Microbiology: Laboratory Theory & Application series of manuals provides an excellent value for courses where lab time is at a premium or for smaller enrollment courses where customization is not an option. The Essentials edition is intended for courses populated by nonmajors and allied health students and includes exercises selected to reflect core microbiology laboratory concepts.

Appropriate for a one-semester undergraduate or first-year graduate course, this text introduces the quantitative treatment of chemical reaction engineering. It covers both homogeneous and heterogeneous reacting systems and examines chemical reaction engineering as well as chemical reactor engineering. Each chapter contains numerous worked-out problems and real-world vignettes involving commercial applications, a feature widely praised by reviewers and teachers. 2003 edition.

This textbook covers the fundamentals of physical chemistry, explaining the concepts in an accessible way and guiding the readers in a step-by-step manner. The contents are broadly divided into two sections: the classical physico-chemical topics (thermodynamics, kinetics, electrochemistry, transport, and catalysis), and the fabric of matter and its interactions with radiation. Particular care has been taken in the presentation of the algebraic parts of physico-chemical concepts, so that the readers can easily follow the explanations and re-work relevant discussion and derivations with pen and paper. The book is accompanied by a rich mathematical appendix. Each chapter includes a selection of (numerical) exercises and problems, so that students can practice and apply the learned topics. An appendix with solutions allows for controlling the learning success.

Carefully prepared illustrative color images make this book a great support for teaching physical chemistry to undergraduate students. This textbook mainly addresses undergraduate students in life sciences, biochemistry or engineering, offering them a comprehensive and comprehensible introduction for their studies of physical chemistry. It

will also appeal to undergraduate chemistry students as an accessible introduction for their physical chemistry studies.

Alligator Metabolism: Studies on Chemical Reactions in Vivo presents a summary of research in vivo on the metabolism of alligators. The volume contains updates of earlier investigations which were presented in Biochemistry of the Alligator, a Study of Metabolism in Slow Motion (1964). Since then, with the aid of better equipment and better methods, it seemed time to correlate and summarize the findings of researchers who have used this remarkable experimental animal with profit. The primary purpose of almost all the research was not to determine the nature of the alligator, but to understand biochemical reactions in vivo and the alligator was a means to that end. The book begins with a chapter on natural history for those scientists, wild-life experts, alligator farmers, zoo keepers etc., whose primary interest is in the nature and habits of the intact alligator. This is followed by separate chapters that deal with metabolic rate, anaerobic glycolysis, digestion-growth-protein synthesis, carbohydrate metabolism, amino acid metabolism, respiration and acid-base balance, and kidney function.

Essentials of Medical Biochemistry, Second Edition: With Clinical Cases is the most condensed, yet detailed biochemistry overview available on the topic. It presents contemporary coverage of the fundamentals of biochemistry, emphasizing relevant physiologic and pathophysiologic biochemical concepts. Pivotal clinical case studies aid in understanding basic science in the context of diagnosis and treatment of human diseases, and the text illuminates key topics in molecular immunology and hemostasis. Users will find basic and fundamental concepts that will aid students and professionals in biochemistry, medicine, and other healthcare disciplines. The text is a useful refresher that will help users meet USMLE and other professional licensing examination requirements, providing thorough introductions, key points, multicolored illustrations of chemical structures and figures, fact-filled tables, and recommended reading lists. Presents essential biochemical concepts within the context of their biological functions Contains key clinical case studies in each chapter to enhance understanding of basic science and aid in further comprehension Offers instructional overview figures, flowcharts, tables and multicolored illustrations Includes integrated, recommended reading reference lists within the text Provides an online ancillary package inclusive of PowerPoint images and more than 500 study questions to aid in comprehension and USMLE exam preparation

"This excellent work fills the need for an upper-level graduate course resource that examines the latest biochemical, biophysical, and molecular biological methods for analyzing the structures and physical properties of biomolecules... This reviewer showed [the book] to several of his senior graduate students, and they unanimously gave the book rave reviews. Summing Up: Highly recommended..." CHOICE Chemical biology is a rapidly developing branch of chemistry, which sets out to understand the way biology works at the molecular level. Fundamental to chemical biology is a detailed understanding of the syntheses, structures and behaviours of biological macromolecules and macromolecular lipid assemblies that together represent the primary constituents of all cells and all organisms. The subject area of chemical biology bridges many different disciplines and is fast becoming an integral part of academic and commercial research. This textbook is designed specifically as a key teaching resource for chemical biology that is intended to build on foundations laid down by introductory physical and organic chemistry courses. This book is an invaluable text for advanced undergraduates taking biological, bioorganic, organic and structural chemistry courses. It is also of interest to biochemists and molecular biologists, as well as professionals within the medical and pharmaceutical industry. Key Features: A comprehensive introduction to this dynamic area of chemistry, which will equip chemists for the task of understanding and studying the underlying principles behind the functioning of biological macro molecules, macromolecular lipid assemblies and cells. Covers many basic concepts and ideas associated with the study of the interface between chemistry and biology. Includes pedagogical features such as: key examples, glossary of equations, further reading and links to websites. Clearly written and richly illustrated in full colour.

"The fourth edition of Elements of Chemical Reaction Engineering is a completely revised version of the book. It combines authoritative coverage of the principles of chemical reaction engineering with an unsurpassed focus on critical thinking and creative problem solving, employing open-ended questions and stressing the Socratic method. Clear and organized, it integrates text, visuals, and computer simulations to help readers solve even the most challenging problems through reasoning, rather than by memorizing equations."--BOOK JACKET.

An introduction to pharmaceutical chemistry for undergraduate pharmacy, chemistry and medicinal chemistry students. Essentials of Pharmaceutical Chemistry is a chemistry introduction that covers all of the core material necessary to provide an understanding of the basic chemistry of drug molecules. Now a core text on many university courses, it contains numerous worked examples and problems. The 4th edition includes new chapters on Chromatographic Methods of Analysis, and Medicinal Chemistry - The Science of Drug Design.

The Definitive, Fully Updated Guide to Solving Real-World Chemical Reaction Engineering Problems For decades, H. Scott Fogler's Elements of Chemical Reaction Engineering has been the world's dominant text for courses in chemical reaction engineering. Now, Fogler has created a new, completely updated fifth edition of his internationally respected book. The result is a refined book that contains new examples and problems, as well as an updated companion Web site. More than ever, Fogler has successfully integrated text, visuals, and computer simulations to help both undergraduate and graduate students master all of the field's fundamentals. As always, he links theory to practice through many relevant examples, ranging from standard isothermal and non-isothermal reactor design to applications, such as solar energy, blood clotting, and drug delivery, and computer chip manufacturing. To promote the transfer of key skills to real-life settings, Fogler presents the following three styles of problems: 1. Straightforward problems that reinforce the

principles of chemical reaction engineering 2. Living Example Problems (LEPs) that allow students to rapidly explore the issues and look for optimal solutions 3. Open-ended problems that encourage students to practice creative problem-solving skills ABOUT THE WEB SITE The companion Web site offers extensive enrichment opportunities and additional content, including Complete PowerPoint slides for lecture notes for chemical reaction engineering classes. Links to additional software, including POLYMATH(tm), Matlab(tm), Wolfram Mathematica(tm), AspenTech(tm), and COMSOL(tm). Interactive learning resources linked to each chapter, including Learning Objectives, Summary Notes, Web Modules, Interactive Computer Games, Solved Problems, FAQs, additional homework problems, and links to Learncheme. Living Example Problems that provide more than eighty interactive simulations, allowing students to explore the examples and ask "what-if" questions. The LEPs are unique to this book. Professional Reference Shelf, which includes advanced content on reactors, weighted least squares, experimental planning, laboratory reactors, pharmacokinetics, wire gauze reactors, trickle bed reactors, fluidized bed reactors, CVD boat reactors, detailed explanations of key derivations, and more. Problem-solving strategies and insights on creative and critical thinking.

Wax Deposition: Experimental Characterizations, Theoretical Modeling, and Field Practices covers the entire spectrum of knowledge on wax deposition. The book delivers a detailed description of the thermodynamic and transport theories for wax deposition modeling as well as a comprehensive review of laboratory testing for the establishment of appropriate field control strategies. Offering valuable insight from academic research and the flow assurance industry, this balanced text: Discusses the background of wax deposition, including the cause of the phenomenon, the magnitude of the problem, and its impact on petroleum production Introduces laboratory techniques and theoretical models to measure and predict key parameters of wax precipitation, such as the wax appearance temperature and the wax precipitation curve Explains how to conduct and interpret laboratory experiments to benchmark different wax deposition models, to better understand wax deposition behaviors, and to predict wax deposit growth for the field Presents various models for wax deposition, analyzing the advantages and disadvantages of each and evaluating the differences between the assumptions used Provides numerous examples of how field management strategies for wax deposition can be established based on laboratory testing and modeling work Wax Deposition: Experimental Characterizations, Theoretical Modeling, and Field aids flow assurance engineers in identifying the severity and controlling the problem of wax deposition. The book also shows students and researchers how fundamental principles of thermodynamics, heat, and mass transfer can be applied to solve a problem common to the petroleum industry.

At a time when U.S. high school students are producing low scores in mathematics and science on international examinations, a thorough grounding in physical chemistry should not be considered optional for science undergraduates. Based on the author's thirty years of teaching, Essentials of Physical Chemistry merges coverage of calculus with chemistry and molecular physics in a friendly yet thorough manner. Reflecting the latest ACS guidelines, the book can be used as a one or two semester course, and includes special topics suitable for senior projects. The book begins with a math and physics review to ensure all students start on the same level, and then discusses the basics of thermodynamics and kinetics with mathematics tuned to a level that stretches students' abilities. It then provides material for an optional second semester course that shows students how to apply their enhanced mathematical skills in a brief historical development of the quantum mechanics of molecules. Emphasizing spectroscopy, the text is built on a foundation of quantum chemistry and more mathematical detail and examples. It contains sample classroom-tested exams to gauge how well students know how to use relevant formulas and to display successful understanding of key concepts. Coupling the development of mathematical skills with chemistry concepts encourages students to learn mathematical derivations Mini-biographies of famous scientists make the presentation more interesting from a "people" point of view Stating the basic concepts of quantum chemistry in terms of analogies provides a pedagogically useful technique Covering key topics such as the critical point of a van der Waals gas, the Michaelis–Menten equation, and the entropy of mixing, this classroom-tested text highlights applications across the range of chemistry, forensic science, pre-medical science and chemical engineering. In a presentation of fundamental topics held together by clearly established mathematical models, the book supplies a quantitative discussion of the merged science of physical chemistry.

From basic nutrition principles to the latest nutrition therapies for common diseases, Williams' Essentials of Nutrition & Diet Therapy, 11th Edition offers a solid foundation in the fundamental knowledge and skills you need to provide effective patient care. Authors Eleanor Schlenker and Joyce Gilbert address nutrition across the lifespan and within the community, with an emphasis on health promotion and the effects of culture and religion on nutrition. Evidence-based information, real-world case scenarios, colorful illustrations, boxes, and tables help you learn how to apply essential nutrition concepts and therapies in clinical practice. Key terms identified in the text and defined on the page help reinforce critical concepts. Case studies illustrate key concepts in authentic, "real-life" scenarios that reinforce learning and promote nutritional applications. Evidence-Based Practice boxes summarize current research findings. Diet-Medication Interactions boxes provide diet-warnings related to specific prescription drugs. Focus on Culture boxes introduce you to cultural competence and the special nutritional needs, health problems, and appropriate interventions applicable to different cultural, ethnic, racial and age groups. Health Promotion section devoted solely to health promotion and wellness stresses healthy lifestyle choices and prevention as the best "medicine." Focus on Food Safety boxes alert you to food safety issues related to a particular nutrient, age group, or medical condition. Complementary and Alternative Medicine (CAM) boxes offer uses, contraindications, and advantages/disadvantages of common types of herbs and supplements and potential interactions with prescription or over-the-counter medications. Perspective in Practice boxes supply you with practice elements for nutrition education. Websites of Interest call-outs cite key websites with suggestions for further study and exploration of various nutrition topics at the end of each chapter. NEW! Clinical nutrition chapters cover the latest guidelines and medications. NEW! MyPlate replaces former Food Guide Pyramid.

NEW! Dietary Guidelines for Americans reflect 2010 changes. UPDATED! Review questions emphasize critical thinking. NEW! Streamlined content provides the essentials of nutrition and diet therapy.

Provides an overview of the rapidly evolving field of genomics with coverage of nucleic acid technologies, proteomics and bioinformatics. It includes chapters on applications in human health, agriculture and comparative genomics and also contains two chapters on the legal and ethical issues of genomics, a topic that is becoming increasingly important as genomics moves out of the laboratory into practical applications.

Chemicals often have a negative image among the general public. But there is no material world or indeed human beings without chemicals. The material world is operated by chemicals. The title 'Chemicals for Life and Living' implies that the material world is staged and played by chemicals. The book consists of five parts and an appendix. Part 1 – Essentials for life; Part 2 – Enhancing health; Part 3 – For the fun of life; Part 4 – Chemistry of the universe and earth, and Part 5 - Some negative effects of chemicals. The appendix gives a brief summary of what chemistry is all about, including a short chapter of chemical principles. No quantitative calculations are included in this book so that it is appealing for everyone – not just chemists.

Thermodynamics is the very basic science to appreciate all engineering disciplines, more particularly the chemical, metallurgical and mechanical engineering in terms of the efficiencies in various related operations that is why metallurgical thermodynamics has been developed specifically to understand the metallurgical engineering processes and their energy efficiencies. Any change is driven by the potential driving it. Thermodynamics is the tool to appreciate that potential and to assess the related energy efficiency. Hence thermodynamics is the basic tool that helps to assess finally the economics of any metallurgical process. The more one understands it the better. The present book attempts to explain the very basic thermodynamic concepts underlying metallurgical engineering operations and therefore the related economics.

REA's Essentials provide quick and easy access to critical information in a variety of different fields, ranging from the most basic to the most advanced. As its name implies, these concise, comprehensive study guides summarize the essentials of the field covered. Essentials are helpful when preparing for exams, doing homework and will remain a lasting reference source for students, teachers, and professionals. Chemistry includes stoichiometry, atomic structure and the periodic table, bonding, chemical formulas, chemical reactions, gases, liquids, solids, phase changes, solutions, acids and bases, chemical equilibrium, acid-base equilibrium in aqueous solutions, chemical thermodynamics, and oxidation and reduction.

Essentials of Physical Chemistry is a classic textbook on the subject explaining fundamental concepts with discussions, illustrations and exercises. With clear explanation, systematic presentation, and scientific accuracy, the book not only helps the students clear misconceptions about the basic concepts but also enhances students' ability to analyse and systematically solve problems. This bestseller is primarily designed for B.Sc. students and would equally be useful for the aspirants of medical and engineering entrance examinations.

Chemical Engineering Computation with MATLAB®, Second Edition continues to present basic to advanced levels of problem-solving techniques using MATLAB as the computation environment. The Second Edition provides even more examples and problems extracted from core chemical engineering subject areas and all code is updated to MATLAB version 2020. It also includes a new chapter on computational intelligence and: Offers exercises and extensive problem-solving instruction and solutions for various problems Features solutions developed using fundamental principles to construct mathematical models and an equation-oriented approach to generate numerical results Delivers a wealth of examples to demonstrate the implementation of various problem-solving approaches and methodologies for problem formulation, problem solving, analysis, and presentation, as well as visualization and documentation of results Includes an appendix offering an introduction to MATLAB for readers unfamiliar with the program, which will allow them to write their own MATLAB programs and follow the examples in the book Provides aid with advanced problems that are often encountered in graduate research and industrial operations, such as nonlinear regression, parameter estimation in differential systems, two-point boundary value problems and partial differential equations and optimization This essential textbook readies engineering students, researchers, and professionals to be proficient in the use of MATLAB to solve sophisticated real-world problems within the interdisciplinary field of chemical engineering. The text features a solutions manual, lecture slides, and MATLAB program files._

Filling a longstanding gap for graduate courses in the field, Chemical Reaction Engineering: Beyond the Fundamentals covers basic concepts as well as complexities of chemical reaction engineering, including novel techniques for process intensification. The book is divided into three parts: Fundamentals Revisited, Building on Fundamentals, and Beyond

The eleventh edition was carefully reviewed with an eye toward strengthening the content available in OWLv2, end-of-chapter questions, and updating the presentation. Nomenclature changes and the adoption of IUPAC periodic table conventions are highlights of the narrative revisions, along with changes to the discussion of d orbitals. In-text examples have been reformatted to facilitate learning, and the accompanying Interactive Examples in OWLv2 have been redesigned to better parallel the problem-solving approach in the narrative. New Capstone Problems have been added to a number of chapters. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

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