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 Fluid Mechanics for Chemical Engineers
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 Chemical Engineering Volume 2
 Chemical Engineering Reference Manual
 The Business Analyst's Handbook
 Gas Turbine Engineering Handbook
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FITZPATRICK KENNY

Chemical Process Engineering McGraw Hill Professional
 Learn and apply heat and mass transfer principles to real-world chemical engineering problems This hands-on textbook provides a concept-based introduction to heat and mass transfer procedures and lays out the foundation to practical applications in a broad range of fields relevant to chemical and biochemical processing. Written by a recognized academic and experienced author, *Heat and Mass Transfer for Chemical Engineers: Principles and Applications* contains comprehensive discussions on conductive and diffusive processes and the engineering correlations between momentum, heat, and mass transfer. Readers will get Mathematica workbooks that facilitate calculations and explore trends. The book refers extensively to Perry's Chemical Engineers' Handbook, Ninth Edition for data and correlations. Coverage includes: Introduction to heat and mass

transfer Thermal conductivity Steady-state, one-dimensional heat conduction Combined conductive and convective heat transfer Multidimensional and transient heat conduction Convective heat transfer Thermal design of heat exchangers Fick's law and diffusivity One-dimensional, multi-dimensional, and transient diffusion Convective mass transfer Design of packed gas absorption and stripping columns Multicomponent diffusion and coupled mass transfer processes Mass transfer with chemical reaction

Fluid Flow for the Practicing Chemical Engineer John Wiley & Sons

This second edition contains extensive new coverage of both microfluidics and computational fluid dynamics, systematically demonstrating CFD through detailed examples using FlowLab and COMSOL Multiphysics. The chapter on turbulence has been extensively revised to address more complex and realistic challenges, including turbulent mixing and recirculating flows"--Jacket.

Applied Thermodynamics McGraw Hill Professional

Taking greater advantage of powerful computing capabilities over the last several years, the development of fundamental information and new models has led to major advances in nearly every aspect of chemical engineering. Albright's Chemical Engineering Handbook represents a reliable source of updated methods, applications, and fundamental concepts that will continue to play a significant role in driving new research and improving plant design and operations. Well-rounded, concise, and practical by design, this handbook collects valuable insight from an exceptional diversity of leaders in their respective specialties. Each chapter provides a clear review of basic information, case examples, and references to additional, more in-depth information. They explain essential principles, calculations, and issues relating to topics including reaction engineering, process control and design, waste disposal, and electrochemical and biochemical engineering. The final chapters cover aspects of patents and intellectual property, practical communication, and ethical considerations that are most relevant to engineers. From fundamentals to plant operations, Albright's Chemical Engineering Handbook offers a thorough, yet succinct guide to day-to-day methods and calculations used in chemical engineering applications. This handbook will serve the needs of practicing professionals as well as students preparing to enter the field.

Industrial Chemical Process Design, 2nd Edition Course Technology

This book teaches the fundamentals of fluid flow by including both theory and the applications of fluid flow in chemical engineering. It puts fluid flow in the context of other transport phenomena such as mass transfer and heat transfer, while covering the basics, from elementary flow mechanics to the law of conservation. The book then examines the applications of fluid flow, from laminar flow to filtration and ventilation. It closes with a discussion of special topics related to fluid flow, including environmental concerns and the economic reality of fluid flow applications.

Process Dynamics and Control McGraw Hill Professional

Concentrated treatment of all aspects of technology and handling directly related to the products of electrolysis. Thoroughly up to date and should become the standard reference in its field.

Chemical Engineering Design McGraw Hill Professional

Fundamentals of Chemical Engineering Thermodynamics is the clearest and most well-organized introduction to thermodynamics theory and calculations for all chemical engineering undergraduates. This brand-new text makes thermodynamics far easier to teach and learn. Drawing on his award-winning courses at Penn State, Dr. Themis Matsoukas organizes the text for more effective learning, focuses on "why" as well as "how," offers imagery that helps students conceptualize the equations, and illuminates thermodynamics with relevant examples from within and beyond the chemical engineering discipline. Matsoukas presents solved problems in every chapter, ranging from basic calculations to realistic safety and environmental applications.

Handbook of Chemical Engineering Calculations Elsevier

From the fundamentals to details on computer applications and control, this handbook provides unrivaled, state-of-the-art coverage of all aspects of chemical engineering. The seventh edition is completely updated and includes new topics such as biochemical engineering, waste management, plant safety, analysis of plant performance, and handling of hazardous materials. Over 1,700 illus. Copyright © Libri GmbH. All rights reserved.

Perry's Chemical Engineers' Handbook Elsevier

The Gas Turbine Engineering Handbook has been the standard

for engineers involved in the design, selection, and operation of gas turbines. This revision includes new case histories, the latest techniques, and new designs to comply with recently passed legislation. By keeping the book up to date with new, emerging topics, Boyce ensures that this book will remain the standard and most widely used book in this field. The new Third Edition of the Gas Turbine Engineering Hand Book updates the book to cover the new generation of Advanced gas Turbines. It examines the benefit and some of the major problems that have been encountered by these new turbines. The book keeps abreast of the environmental changes and the industries answer to these new regulations. A new chapter on case histories has been added to enable the engineer in the field to keep abreast of problems that are being encountered and the solutions that have resulted in solving them. - Comprehensive treatment of Gas Turbines from Design to Operation and Maintenance. In depth treatment of Compressors with emphasis on surge, rotating stall, and choke; Combustors with emphasis on Dry Low NOx Combustors; and Turbines with emphasis on Metallurgy and new cooling schemes. An excellent introductory book for the student and field engineers - A special maintenance section dealing with the advanced gas turbines, and special diagnostic charts have been provided that will enable the reader to troubleshoot problems he encounters in the field - The third edition consists of many Case Histories of Gas Turbine problems. This should enable the field engineer to avoid some of these same generic problems

Gas-Solid Operations and Equipment John Wiley & Sons

This edition includes new topics such as biochemical engineering and waste management, plant safety and analysis of plant performance, computer applications, expert systems, material and energy balance, and the handling of hazardous materials.

The AIChE Pocket Handbook McGraw Hill Professional

Diagnose and Troubleshoot Problems in Chemical Process Equipment with This Updated Classic! Chemical engineers and plant operators can rely on the Third Edition of A Working Guide to Process Equipment for the latest diagnostic tips, practical examples, and detailed illustrations for pinpointing trouble and correcting problems in chemical process equipment. This updated classic contains new chapters on Control Valves, Cooling Towers, Waste Heat Boilers, Catalytic Effects, Fundamental Concepts of Process Equipment, and Process Safety. Filled with worked-out calculations, the book examines everything from trays, reboilers, instruments, air coolers, and steam turbines...to fired heaters, refrigeration systems, centrifugal pumps, separators, and compressors. The authors simplify complex issues and explain the technical issues needed to solve all kinds of equipment problems. Comprehensive and clear, the Third Edition of A Working Guide to Process Equipment features: Guidance on diagnosing and troubleshooting process equipment problems Explanations of how theory applies to real-world equipment operations Many useful tips, examples, illustrations, and worked-out calculations New to this edition: Control Valves, Cooling Towers, Waste Heat Boilers, Catalytic Effects, and Process Safety Inside this Renowned Guide to Solving Process Equipment Problems • Trays • Tower Pressure • Distillation Towers • Reboilers • Instruments • Packed Towers • Steam and Condensate Systems • Bubble Point and Dew Point • Steam Strippers • Draw-Off Nozzle Hydraulics • Pumparounds and Tower Heat Flows • Condensers and Tower Pressure Control • Air Coolers • Deaerators and Steam Systems • Vacuum Systems • Steam Turbines • Surface Condensers • Shell-and-Tube Heat Exchangers • Fire Heaters • Refrigeration Systems • Centrifugal Pumps • Separators • Compressors • Safety • Corrosion • Fluid Flow • Computer Modeling and Control • Field Troubleshooting Process Problems

Fluid Mechanics for Chemical Engineers Elsevier

This Book Presents A Systematic Account Of The Concepts And Principles Of Engineering Thermodynamics And The Concepts And Practices Of Thermal Engineering. The Book Covers Basic Course Of Engineering Thermodynamics And Also Deals With The Advanced Course Of Thermal Engineering. This Book Will Meet The Requirements Of The Undergraduate Students Of Engineering And Technology Undertaking The Compulsory Course Of Engineering Thermodynamics. The Subject Matter Of Book Is Sufficient For The Students Of Mechanical Engineering/Industrial-Production Engineering, Aeronautical Engineering, Undertaking Advanced Courses In The Name Of Thermal Engineering/Heat Engineering/ Applied Thermodynamics Etc. Presentation Of The Subject Matter Has Been Made In Very Simple And Understandable Language. The Book Is Written In SI System Of Units And Each Chapter Has Been Provided With Sufficient Number Of Typical Numerical Problems Of Solved And Unsolved Questions With Answers.

Rules of Thumb for Chemical Engineers Pearson Education

Up-to-Date Coverage of All Chemical Engineering Topics—from the Fundamentals to the State of the Art Now in its 85th Anniversary Edition, this industry-standard resource has equipped generations of engineers and chemists with vital information, data, and insights. Thoroughly revised to reflect the latest technological advances and processes, Perry's Chemical Engineers' Handbook, Ninth Edition, provides unsurpassed coverage of every aspect of chemical engineering. You will get comprehensive details on chemical processes, reactor modeling, biological processes, biochemical and membrane separation, process and chemical plant safety, and much more. This fully updated edition covers: Unit Conversion Factors and Symbols • Physical and Chemical Data including Prediction and Correlation of Physical Properties • Mathematics including Differential and Integral Calculus, Statistics, Optimization • Thermodynamics • Heat and Mass Transfer • Fluid and Particle Dynamics • Reaction Kinetics • Process Control and Instrumentation • Process Economics • Transport and Storage of Fluids • Heat Transfer Operations and Equipment • Psychrometry, Evaporative Cooling, and Solids Drying • Distillation • Gas Absorption and Gas-Liquid System Design • Liquid-Liquid Extraction Operations and Equipment • Adsorption and Ion Exchange • Gas-Solid Operations and Equipment • Liquid-Solid Operations and Equipment • Solid-Solid Operations and Equipment • Chemical Reactors • Bio-based Reactions and Processing • Waste Management including Air, Wastewater and Solid Waste Management* Process Safety including Inherently Safer Design • Energy Resources, Conversion and Utilization* Materials of Construction

Working Guide to Process Equipment, Third Edition McGraw-Hill Professional Publishing

The field of chemical engineering is in constant evolution, and access to information technology is changing the way chemical engineering problems are addressed. Inspired by the need for a user-friendly chemical engineering text that demonstrates the real-world applicability of different computer programs, Introduction to Software for Chemical Engi

Chemical Engineering Volume 2 McGraw Hill Professional

The new 4th edition of Seborg's Process Dynamics Control provides full topical coverage for process control courses in the chemical engineering curriculum, emphasizing how process control and its related fields of process modeling and optimization are essential to the development of high-value products. A principal objective of this new edition is to describe modern techniques for control processes, with an emphasis on complex systems necessary to the development, design, and operation of modern processing plants. Control process

instructors can cover the basic material while also having the flexibility to include advanced topics.

Chemical Engineering Reference Manual William Andrew Development of a new chemical plant or process from concept evaluation to profitable reality is often an enormously complex problem. Generally, a plant-design project moves to completion through a series of stages which may include inception, preliminary evaluation of economics and market, data development for a final design, final economic evaluation, detailed engineering design, procurement, erection, startup, and production. The general term plant design includes all of the engineering aspects involved in the development of either a new, modified, or expanded industrial plant. In this context, individuals involved in such work will be making economic evaluations of new processes, designing individual pieces of equipment for the proposed new ventures, or developing a plant layout for coordination of the overall operation. Because of the many design duties encountered, the engineer involved is many times referred to as a design engineer. If the latter specializes in the economic aspects of the design, the individual may be referred to as a cost engineer. On the other hand, if he or she emphasizes the actual design of the equipment and facilities necessary for carrying out the process, the individual may be referred to as a process design engineer. The material presented in this book is intended to aid the latter in developing rapid chemical designs without becoming unduly involved in the often complicated theoretical underpinnings of these useful notes, charts, tables, and equations.

The Business Analyst's Handbook Professional Publications Incorporated

A compilation of the calculation procedures needed every day on the job by chemical engineers. Tables of Contents: Physical and Chemical Properties; Stoichiometry; Phase Equilibrium; Chemical-Reaction Equilibrium; Reaction Kinetics and Reactor Design; Flow of Fluids and Solids; Heat Transfer; Distillation; Extraction and Leaching; Crystallization; Filtration; Liquid Agitation; Size Reduction; Drying; Evaporation; Environmental Engineering in the Plant. Illustrations. Index.

Gas Turbine Engineering Handbook CRC Press

Fluid Mechanics for Chemical Engineers, third edition retains the characteristics that made this introductory text a success in prior editions. It is still a book that emphasizes material and energy balances and maintains a practical orientation throughout. No more math is included than is required to understand the concepts presented. To meet the demands of today's market, the author has included many problems suitable for solution by computer. Two brand new chapters are included. The first, on mixing, augments the book's coverage of practical issues encountered in this field. The second, on computational fluid dynamics (CFD), shows students the connection between hand and computational fluid dynamics.

Perry's Chemical Engineers' Platinum Edition John Wiley & Sons

This broad-based book covers the three major areas of Chemical Engineering. Most of the books in the market involve one of the individual areas, namely, Fluid Mechanics, Heat Transfer or Mass Transfer, rather than all the three. This book presents this material in a single source. This avoids the user having to refer to a number of books to obtain information. Most published books covering all the three areas in a single source emphasize theory rather than practical issues. This book is written with emphasis on practice with brief theoretical concepts in the form of questions and answers, not adopting stereo-typed question-answer approach practiced in certain books in the market, bridging the two areas of theory and practice with respect to the core areas of chemical engineering. Most parts of the book are

easily understandable by those who are not experts in the field. Fluid Mechanics chapters include basics on non-Newtonian systems which, for instance find importance in polymer and food processing, flow through piping, flow measurement, pumps, mixing technology and fluidization and two phase flow. For example it covers types of pumps and valves, membranes and areas of their use, different equipment commonly used in chemical industry and their merits and drawbacks. Heat Transfer chapters cover the basics involved in conduction, convection and radiation, with emphasis on insulation, heat exchangers, evaporators, condensers, reboilers and fired heaters. Design methods, performance, operational issues and maintenance problems are highlighted. Topics such as heat pipes, heat pumps, heat tracing, steam traps, refrigeration, cooling of electronic devices, NO_x control find place in the book. Mass transfer chapters cover basics such as diffusion, theories, analogies, mass transfer coefficients and mass transfer with chemical reaction, equipment such as tray and packed columns, column internals including structural packings, design, operational and installation issues, drums and separators are discussed in good detail. Absorption, distillation, extraction and leaching with applications and design methods, including emerging practices involving Divided Wall and Petluk column arrangements, multicomponent separations, supercritical solvent extraction find place in the book.

Perrys Chemical Engineers Handbook 8/e Section 23 Process Safety Gulf Professional Publishing

Designed as an undergraduate-level textbook in Chemical Engineering, this student-friendly, thoroughly class-room tested book, now in its second edition, continues to provide an in-depth

analysis of chemical engineering thermodynamics. The book has been so organized that it gives comprehensive coverage of basic concepts and applications of the laws of thermodynamics in the initial chapters, while the later chapters focus at length on important areas of study falling under the realm of chemical thermodynamics. The reader is thus introduced to a thorough analysis of the fundamental laws of thermodynamics as well as their applications to practical situations. This is followed by a detailed discussion on relationships among thermodynamic properties and an exhaustive treatment on the thermodynamic properties of solutions. The role of phase equilibrium thermodynamics in design, analysis, and operation of chemical separation methods is also deftly dealt with. Finally, the chemical reaction equilibria are skillfully explained. Besides numerous illustrations, the book contains over 200 worked examples, over 400 exercise problems (all with answers) and several objective-type questions, which enable students to gain an in-depth understanding of the concepts and theory discussed. The book will also be a useful text for students pursuing courses in chemical engineering-related branches such as polymer engineering, petroleum engineering, and safety and environmental engineering. New to This Edition • More Example Problems and Exercise Questions in each chapter • Updated section on Vapour-Liquid Equilibrium in Chapter 8 to highlight the significance of equations of state approach • GATE Questions up to 2012 with answers

Fundamentals of Chemical Engineering Thermodynamics
MCGRAWHILL

Written by a hands-on industry consultant and featuring more than 200 illustrations,