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Materials Count - Committee on Material Flows Accounting of Natural Resources, Products, and Residuals 2004-02-12
The rising population and industrial growth place increasing strains on a variety of material and energy resources. Understanding how to make the most economically and environmentally efficient use of materials will require an understanding of the flow of materials from the time a material is extracted through processing, manufacturing, use, and its ultimate destination as a waste or reusable resource. **Materials Count** examines the usefulness of creating and maintaining material flow accounts for developing sound public policy, evaluates the technical basis for material flows analysis, assesses the current state of material flows information, and discusses who should have institutional responsibility for collecting, maintaining, and providing access to additional data for material flow accounts.
Chemical Engineering - J H Harker 2012-12-02
Richardson et al provide the student of chemical engineering with full worked solutions to the problems posed in **Chemical Engineering Volume 2 "Particle Technology and Separation**

Processes" 5th Edition, and **Chemical Engineering Volume 3 "Chemical and Biochemical Reactors & Process Control" 3rd Edition**. Whilst the main volumes contains illustrative worked examples throughout the text, this book contains answers to the more challenging questions posed at the end of each chapter of the main texts. These questions are of both a standard and non-standard nature, and so will prove to be of interest to both academic staff teaching courses in this area and to the keen student. Chemical engineers in industry who are looking for a standard solution to a real-life problem will also find the book of considerable interest. * Contains fully worked solutions to the problems posed in **Chemical Engineering Volumes 2 and 3** * Enables the reader to get the maximum benefit from using **Volumes 2 and 3** * An extremely effective method of learning **Chemical Reaction Engineering II** -

Slow is Beautiful - Cecile Andrews 2006-10-01
We're hammered, we're slammed, we're out of control. Happiness is on the decline in the most affluent country in the world, and Americans are troubled by the destructiveness of a lifestyle

devoted to money and status. Yet no one seems to have a clue how to exit from the fast lane. *Slow is Beautiful* analyzes the subtle consumer and political and corporate forces stamping the joy from our existence and provides a vision of a more fulfilling life through the rediscovery of caring community, unhurried leisure, and life-affirming joie de vivre. The book discusses:

- The frantic time poverty plaguing everyone—a poverty that is being challenged by the growing slow life movement whose message is reverberating around the world
- The need to build a culture of connection with both people and the planet by challenging the consumer society and re-creating vibrant life in our local communities
- The creation of a different experience of time where we live life in slower, more reflective ways, savoring our lives and recapturing exuberance and laughter

Offering inspiration and concrete ideas, *Slow is Beautiful* will appeal to a broad audience of baby boomers nearing retirement, harried professionals with a social conscience, the one-time “middle class,” and twenty- to thirty-somethings who are now facing the sobering realities of constricted choices.

Chemical Process Principles Charts - Olaf Andreas Hougen 1964

Dust Explosion Dynamics - Russell A. Ogle
2016-09-10

Dust Explosion Dynamics focuses on the combustion science that governs the behavior of the three primary hazards of combustible dust: dust explosions, flash fires, and smoldering. It explores the use of fundamental principles to evaluate the magnitude of combustible dust hazards in a variety of settings. Models are developed to describe dust combustion phenomena using the principles of thermodynamics, transport phenomena, and chemical kinetics. Simple, tractable models are described first and compared with experimental data, followed by more sophisticated models to help with future challenges. Dr. Ogle introduces the reader to just enough combustion science so that they may read, interpret, and use the scientific literature published on combustible dusts. This introductory text is intended to be a practical guide to the application of combustible dust models, suitable for both students and

experienced engineers. It will help you to describe the dynamics of explosions and fires involving dust and evaluate their consequences which in turn will help you prevent damage to property, injury and loss of life from combustible dust accidents. Demonstrates how the fundamental principles of combustion science can be applied to understand the ignition, propagation, and extinction of dust explosions. Explores fundamental concepts through model-building and comparisons with empirical data. Provides detailed examples to give a thorough insight into the hazards of combustible dust as well as an introduction to relevant scientific literature

Process Modeling, Simulation, and Control for Chemical Engineers - William L. Luyben 1990

The purpose of this book is to convey to undergraduate students an understanding of those areas of process control that all chemical engineers need to know. The presentation is concise, readable and restricted to only essential elements. The methods presented have been successfully applied in industry to solve real problems. Analysis of closedloop dynamics in the time, Laplace, frequency and sample-data domains are covered. Designing simple regulatory control systems for multivariable processes is discussed. The practical aspects of process control are presented sizing control valves, tuning controllers, developing control structures and considering interaction between plant design and control. Practical simple identification methods are covered.

Atlas of the Vascular Plants of Texas: Ferns, gymnosperms, monocots - Billie Lee Turner 2003

Vital and Health Statistics - 1964

Chemical Reaction Engineering - Martin Schmal
2014-04-04

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

Chemical Engineering Design - Ray Sinnott
2005-07-01

Chemical Engineering Design is one of the best-known and widely adopted texts available for students of chemical engineering. It deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised throughout, the fourth edition covers the latest aspects of process design, operations, safety, loss prevention and equipment selection, among others.

Comprehensive and detailed, the book is supported by problems and selected solutions. In addition the book is widely used by professionals as a day-to-day reference. Best selling chemical engineering text Revised to keep pace with the latest chemical industry changes; designed to see students through from undergraduate study to professional practice End of chapter exercises and solutions

Signals and Systems - Tarun Kumar Rawat 2010
Signals and Systems is a comprehensive textbook designed for undergraduate students of engineering for a course on signals and systems. Each topic is explained lucidly by introducing the concepts first through abstract mathematical reasoning and illustrations, and then through solved examples-

A novel financial risk assessment model for companies based on heterogeneous information and aggregated historical data - Dan-Ping Li

The financial risk not only affects the development of the company itself, but also affects the economic development of the whole society; therefore, the financial risk assessment of company is an important part. At present, numerous methods of financial risk assessment have been researched by scholars. However, most of the extant methods neither integrated fuzzy sets with quantitative analysis, nor took into account the historical data of the past few years. To settle these defects, this paper proposes a novel financial risk assessment model for companies based on heterogeneous multiple-criteria decision-making (MCDM) and historical data.

Acting in the Night - Alexander Nemerov
2010-09-01

What can the performance of a single play on one specific night tell us about the world this event inhabited so briefly? Alexander Nemerov takes a performance of Macbeth in Washington,

DC on October 17, 1863—with Abraham Lincoln in attendance—to explore this question and illuminate American art, politics, technology, and life as it was being lived. Nemerov's inspiration is Wallace Stevens and his poem "Anecdote of the Jar," in which a single object organizes the wilderness around it in the consciousness of the poet. For Nemerov, that evening's performance of Macbeth reached across the tragedy of civil war to acknowledge the horrors and emptiness of a world it tried and ultimately failed to change.

MATERIALS SCIENCE AND ENGINEERING - V. RAGHAVAN 2015-05-01

This well-established and widely adopted book, now in its Sixth Edition, provides a thorough analysis of the subject in an easy-to-read style. It analyzes, systematically and logically, the basic concepts and their applications to enable the students to comprehend the subject with ease. The book begins with a clear exposition of the background topics in chemical equilibrium, kinetics, atomic structure and chemical bonding. Then follows a detailed discussion on the structure of solids, crystal imperfections, phase diagrams, solid-state diffusion and phase transformations. This provides a deep insight into the structural control necessary for optimizing the various properties of materials. The mechanical properties covered include elastic, anelastic and viscoelastic behaviour, plastic deformation, creep and fracture phenomena. The next four chapters are devoted to a detailed description of electrical conduction, superconductivity, semiconductors, and magnetic and dielectric properties. The final chapter on 'Nanomaterials' is an important addition to the sixth edition. It describes the state-of-art developments in this new field. This eminently readable and student-friendly text not only provides a masterly analysis of all the relevant topics, but also makes them comprehensible to the students through the skillful use of well-drawn diagrams, illustrative tables, worked-out examples, and in many other ways. The book is primarily intended for undergraduate students of all branches of engineering (B.E./B.Tech.) and postgraduate students of Physics, Chemistry and Materials Science. KEY FEATURES • All relevant units and constants listed at the beginning of each chapter

- A note on SI units and a full table of conversion factors at the beginning
- A new chapter on 'Nanomaterials' describing the state-of-art information
- Examples with solutions and problems with answers
- About 350 multiple choice questions with answers

Process Calculations - V. Venkataramani 2011

Chemical and Catalytic Reaction

Engineering - James J. Carberry 1976

Murder by Injection - Eustace Clarence Mullins 2016-04-21

The present work, the result of some forty years of investigative research, is a logical progression from my previous books: the expose of the international control of monetary issue and banking practices in the United States; a later work revealing the secret network of organizations through which these alien forces wield political power-the secret committees, foundations, and political parties through which their hidden plans are implemented; and now; to the most vital issue of all, the manner in which these depredations affect the daily lives and health of American citizens. Despite the great power of the hidden rulers, I found that only one group has the power to issue life or death sentences to any American-our nation's physicians. I discovered that these physicians, despite their great power, were themselves subjected to very strict controls over every aspect of their professional lives. These controls, surprisingly enough, were not wielded by any state or federal agency, although almost every other aspect of American life is now under the absolute control of the bureaucracy. The physicians have their own autocracy, a private trade association, the American Medical Association. This group, which is headquartered in Chicago, Illinois, had gradually built up its power until it assumed total control over medical schools and the accreditation of physicians. The trail of these manipulators led me straight to the same lairs of the international conspirators whom I had exposed in previous books. I knew that they had already looted America, reduced its military power to a dangerously low level, and imposed bureaucratic controls on every American. I now discovered that their conspiracies also directly affected the health of

every American. This conspiracy has resulted in a documented decline in the health of our citizens. We now rank far down the list of civilized nations in infant mortality and other significant medical statistics. I was able to document the shocking record of these cold-blooded tycoons who not only plan and carry out famines, economic depressions, revolutions and wars, but who also find their greatest profits in their manipulations of our medical care. The cynicism and malice of these conspirators is something beyond the imagination of most Americans. They deliberately mulct our people of millions of dollars each year through "charitable" organizations and then use these same organizations as key groups to bolster their Medical Monopoly. Fear and intimidation are the basic techniques by which the conspirators maintain their control over all aspects of our health care, as they ruthlessly crush any competitor who challenges their profits. As in other aspects of their "behavioural control" over the American people, their most constantly used weapon against us is their employment of federal agents and federal agencies to carry out their intrigues. The proof of this operation may be the most disturbing revelation of my work.

Separation Processes - C. Judson King
2013-12-18

Originally published: New York: McGraw-Hill, 1971. 2nd ed. Includes a new introduction.

Chemical Engineering Volume 2 - J H Harker
2013-10-22

Chemical Engineering Volume 2 covers the properties of particulate systems, including the character of individual particles and their behaviour in fluids. Sedimentation of particles, both singly and at high concentrations, flow in packed and fluidised beds and filtration are then examined. The latter part of the book deals with separation processes, such as distillation and gas absorption, which illustrate applications of the fundamental principles of mass transfer introduced in Chemical Engineering Volume 1. In conclusion, several techniques of growing importance - adsorption, ion exchange, chromatographic and membrane separations, and process intensification - are described. A logical progression of chemical engineering concepts, volume 2 builds on fundamental

principles contained in Chemical Engineering volume 1 and these volumes are fully cross-referenced. Reflects the growth in complexity and stature of chemical engineering over the last few years. Supported with further reading at the end of each chapter and graded problems at the end of the book.

□□□□ - R. K. Sinnott 2000

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Plant Contamination - Craig Mc Farlane

1994-10-12

This book describes the physiological and anatomical principles and the chemical and physical factors that determine uptake, translocation, accumulation, loss, and metabolism of anthropogenic chemicals in plants. Expert authors in the fields of biology, chemistry, ecology, environmental physics, and biochemistry provide recently developed methods and models for estimation of the behavior of environmental chemicals in the soil-plant-air system-information that is essential in the hazard assessment of new and existing chemicals.

Chemical Engineering, Volume 3 - D G Peacock

2012-12-02

The publication of the third edition of 'Chemical Engineering Volume 3' marks the completion of the re-orientation of the basic material contained in the first three volumes of the series. Volume 3 is devoted to reaction engineering (both chemical and biochemical), together with measurement and process control. This text is designed for students, graduate and postgraduate, of chemical engineering.

Essentials of Chemical Reaction Engineering - H. Scott Fogler 2017-10-26

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.

The Running of the Tide - Esther Forbes 1948

St. James Encyclopedia of Popular Culture - Thomas Riggs 2013

The St. James Encyclopedia Of Popular Culture, 2nd ed., updates and augments the over ten-year-old first edition. It includes 3,036 signed essays (300 of them new), alphabetically arranged, and written or reviewed by subject experts and edited to form a consistent, readable, and straightforward reference. The entries cover topics and persons in major areas of popular culture: film; music; print culture; social life; sports; television and radio; and art and performance (which include theater, dance, stand-up comedy, and other live performance). The entries analyze each topic or person's significance in and relevance to American popular culture; in addition to basic factual information, readers will gain perspective on the cultural context in which the topic or person has importance.

Chemical Engineering Kinetics - Joe Mauk Smith 1981

Gas-liquid Reactions - P. V. Danckwerts 1970

Chemical Engineering: Solutions to the Problems in Volume 1 - J R Backhurst 2013-10-22

This volume in the Coulson and Richardson series in chemical engineering contains full worked solutions to the problems posed in volume 1. Whilst the main volume contains illustrative worked examples throughout the text, this book contains answers to the more challenging questions posed at the end of each chapter of the main text. These questions are of both a standard and non-standard nature, and so will prove to be of interest to both academic staff teaching courses in this area and to the keen student. Chemical engineers in industry who are looking for a standard solution to a real-life problem will also find the book of considerable interest. * An invaluable source of information for the student studying the material contained in Chemical Engineering Volume 1 * A helpful method of learning - answers are explained in full

Chemical Engineering - John Metcalfe Coulson

1955

Biomarkers of Environmental Toxicants - Kun Lu 2020-10-02

Biomarkers of environmental toxicants are measures of exposures, some of which can serve to assess disease risk and inter-individual susceptibilities. Metabolites, protein and DNA adducts also serve to elucidate the mechanisms of the bioactivation and detoxication of reactive toxicant intermediates. Some environmental chemicals act as modulators of gene and protein activity, and induce the dysbiosis of the microbiome, which impacts the metabolome and overall health. In this Special Issue on "Biomarkers of Environmental Toxicants", review articles and original research studies are featured, covering the latest bioanalytical, biochemical and mass spectrometry-based technologies, to monitor exposures through targeted and non-targeted methods, and mechanistic studies that examine the biological effects of environmental toxicants in cells and humans. Diverse topics, such as exposome, microbiome, DNA/protein adducts and t-RNA modifications, as well as important environment toxicants, including heavy metals, benzene, phthalates, aldehydes, glycidol, tobacco smoke and aristolochic acids, are covered. Novel analytical methods, such as protein adductomics, DNA adduct analysis in formalin-fixed paraffin-embedded tissues, site-specific mutagenesis assay and accelerator mass spectrometry, are also included. This collection provides a valuable update of the most recent biochemical and analytical tools that employ biomarkers in toxicology research, biomarker discovery, and exposure and risk assessment in population-based studies.

Chemical Kinetics and Reaction

Mechanisms - James H. Espenson 1995

Covering chemical kinetics from the working chemist's point of view, this book aims to prepare chemists to devise experiments to test different hypothesis. A number of examples from research literature have been included.

Duty and Desire Book Club Edition - Anju Gattani 2021-01-27

To uphold family honor and tradition, Sheetal Prasad is forced to forsake the man she loves and marry playboy millionaire Rakesh Dhanraj

while the citizens of Raigun, India, watch in envy. On her wedding night, however, Sheetal quickly learns that the stranger she married is as cold as the marble floors of the Dhanraj mansion. Forced to smile at family members and cameras and pretend there's nothing wrong with her marriage, Sheetal begins to discover that the family she married into harbors secrets, lies and deceptions powerful enough to tear apart her world. With no one to rely on and no escape, Sheetal must ally with her husband in an attempt to protect her infant son from the tyranny of his family.

Chemical Engineering Design - Gavin Towler
2012-01-25

Chemical Engineering Design, Second Edition, deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised throughout, this edition has been specifically developed for the U.S. market. It provides the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. It contains new discussions of conceptual plant design, flowsheet development, and revamp design; extended coverage of capital cost estimation, process costing, and economics; and new chapters on equipment selection, reactor design, and solids handling processes. A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data, and Excel spreadsheet calculations, plus over 150 Patent References for downloading from the companion website. Extensive instructor resources, including 1170 lecture slides and a fully worked solutions manual are available to adopting instructors. This text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken, plus graduates) and lecturers/tutors, and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). New to this edition: Revised organization into Part I: Process Design, and Part II: Plant Design. The broad themes of Part I are flowsheet development, economic analysis, safety and environmental impact and optimization. Part II contains chapters on equipment design and selection that can be used

as supplements to a lecture course or as essential references for students or practicing engineers working on design projects. New discussion of conceptual plant design, flowsheet development and revamp design Significantly increased coverage of capital cost estimation, process costing and economics New chapters on equipment selection, reactor design and solids handling processes New sections on fermentation, adsorption, membrane separations, ion exchange and chromatography Increased coverage of batch processing, food, pharmaceutical and biological processes All equipment chapters in Part II revised and updated with current information Updated throughout for latest US codes and standards, including API, ASME and ISA design codes and ANSI standards Additional worked examples and homework problems The most complete and up to date coverage of equipment selection 108 realistic commercial design projects from diverse industries A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data and Excel spreadsheet calculations plus over 150 Patent References, for downloading from the companion website Extensive instructor resources: 1170 lecture slides plus fully worked solutions manual available to adopting instructors

Coulson & Richardson's Chemical Engineering - John Metcalfe Coulson 2002

Chemical Engineering Volume 2 covers the properties of particulate systems, including the character of individual particles and their behaviour in fluids. Sedimentation of particles, both singly and at high concentrations, flow in packed and fluidised beds and filtration are then examined. The latter part of the book deals with separation processes, such as distillation and gas absorption, which illustrate applications of the fundamental principles of mass transfer introduced in Chemical Engineering Volume 1. In conclusion, several techniques of growing importance - adsorption, ion exchange, chromatographic and membrane separations, and process intensification - are described. * A logical progression of chemical engineering concepts, volume 2 builds on fundamental principles contained in Chemical Engineering volume 1 and these volumes are fully cross-

referenced * Reflects the growth in complexity and stature of chemical engineering over the last few years * Supported with further reading at the end of each chapter and graded problems at the end of the book

Electronic Circuits - Donald L. Schilling 1981

Pump-and-treat Ground-water Remediation - 1996

Essentials of Chemical Reaction

Engineering - H. Scott Fogler 2011

Accompanying DVD-ROM contains many realistic, interactive simulations.

Lubricant Additives - Leslie R. Rudnick 2017-07-12

This indispensable book describes lubricant additives, their synthesis, chemistry, and mode of action. All important areas of application are covered, detailing which lubricants are needed for a particular application. Laboratory and field performance data for each application is provided and the design of cost-effective, environmentally friendly technologies is fully explored. This edition includes new chapters on chlorohydrocarbons, foaming chemistry and physics, antifoams for nonaqueous lubricants, hydrogenated styrene-diene viscosity modifiers, alkylated aromatics, and the impact of REACH and GHS on the lubricant industry.

Reaction Kinetics for Chemical Engineers - Stanley M. Walas 2013-10-22

Reaction Kinetics for Chemical Engineers focuses on chemical kinetics, including homogeneous reactions, nonisothermal systems, flow reactors, heterogeneous processes, granular beds, catalysis, and scale-up methods. The publication first takes a look at fundamentals and homogeneous isothermal reactions. Topics include simple reactions at constant volume or pressure, material balance in complex reactions, homogeneous catalysis, effect of temperature, energy of activation, law of mass action, and classification of reactions. The book also elaborates on adiabatic and programmed reactions, continuous stirred reactors, and homogeneous flow reactions. Topics include nonisothermal flow reactions, semiflow processes, tubular-flow reactors, material balance in flow problems, types of flow processes, rate of heat input, constant heat-transfer coefficient, and nonisothermal conditions. The text ponders on uncatalyzed heterogeneous reactions, fluid-phase reactions catalyzed by solids, and fixed and fluidized beds of particles. The transfer processes in granular masses, fluidization, heat and mass transfer, adsorption rates and equilibria, diffusion and combined mechanisms, diffusive mass transfer, and mass-transfer coefficients in chemical reactions are discussed. The publication is a dependable source of data for chemical engineers and readers wanting to explore chemical kinetics.