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End-User Training for Sci-Tech Databases Ellis Mount 2019-12-20 This book, first published in 1990, analyses how to train end-users to search with both natural language and controlled vocabularies in the sciences, describes a planning assessment for implementing end-user searching in a sci-tech organization, examines how the scientists at a major industrial research organization have begun to do more online searching with the encouragement of the information center, and explores the proactive role that medical libraries have taken in training health care professionals to search MEDLINE.

Chemical Literature and Its Use Marion Emeline Sparks 1919

Algebra, Arithmetic and Geometry with Applications Chris Christensen 2011-06-27

Proceedings of the Conference on Algebra and Algebraic Geometry with Applications, July 19 – 26, 2000, at Purdue University to honor Professor Shreeram S. Abhyankar on the occasion of his seventieth birthday. Eighty-five of Professor Abhyankar's students, collaborators, and colleagues were invited participants. Sixty participants presented papers related to Professor Abhyankar's broad areas of mathematical interest. Sessions were held on algebraic geometry, singularities, group theory, Galois theory, combinatorics, Drinfeld modules, affine geometry, and the Jacobian problem. This volume offers an outstanding collection of papers by expert authors.

Moving Finite Element Method Maria do Carmo Coimbra 2016-11-30 This book focuses on process simulation in chemical engineering with a numerical algorithm based on the moving finite element method (MFEM). It offers new tools and approaches for modeling and simulating time-dependent problems with moving fronts and with moving boundaries described by time-dependent convection-reaction-diffusion partial differential equations in one or two-dimensional space domains. It provides a comprehensive account of the development of the moving finite element method, describing and analyzing the theoretical and practical aspects of the MFEM for models in 1D, 1D+1d, and 2D space domains. Mathematical models are universal, and the book reviews successful applications of MFEM to solve engineering problems. It covers a broad range of application algorithm to engineering problems, namely on separation and reaction processes presenting and discussing relevant numerical applications of the moving finite element method derived from real-world process simulations.

Introduction to Modeling and Numerical Methods for Biomedical and Chemical Engineers

Edward Gatzke 2022-09-04 This textbook introduces the concepts and tools that biomedical and chemical engineering students need to know in order to translate engineering problems into a numerical representation using scientific fundamentals. Modeling concepts focus on problems that are directly related to biomedical and chemical engineering. A variety of computational tools are presented, including MATLAB, Excel, Mathcad, and COMSOL, and a brief introduction to each tool is accompanied by multiple computer lab experiences. The numerical methods covered are basic linear algebra and basic statistics, and traditional methods like Newton's method, Euler Integration, and trapezoidal integration. The book presents the reader with numerous examples and worked problems, and practice problems are included at the end of each chapter.

Multi-objective Optimization: Techniques And Applications In Chemical Engineering (Second Edition) Rangaiah Gade Pandu 2016-12-22 Optimization is now essential in the design, planning and operation of chemical and related processes. Although process optimization for multiple objectives was studied in the 1970s and 1980s, it has attracted active research in the last 15 years, spurred by the new and effective techniques for multi-objective optimization (MOO). To capture this renewed interest, this monograph presents recent research in MOO techniques and applications in chemical engineering. Following a brief introduction and review of MOO applications in chemical engineering since 2000, the book presents selected MOO techniques and many chemical engineering applications in detail. In this second edition, several chapters from the first edition have been updated, one chapter is completely revised and three new chapters have been added. One of the new chapters describes three MS Excel programs useful for MOO of application problems. All the chapters will be of interest to researchers in MOO and/or chemical engineering. Several exercises are included at the end of many chapters, for use by both practicing engineers and students.

Finite Rotations in Structural Mechanics Wojciech Pietraszkiewicz 2013-03-12 The deformation near a material particle of the classical continuum is produced by successive superposition of a rigid-body translation, a pure stretch along principal directions of strain and a rigid-body rotation of those directions. The rotational part of deformation is particularly important in the non-linear analysis of thin-walled solid structures such as beams, thin-walled bars, plates and shells, since in this case finite rotations may appear even if the strains are infinitesimal. It seems that the research concerning the application of finite rotations is carried out independently in different fields of structural mechanics. Theoretical and numerical methods developed and the results obtained for a particular type of the structure or for a particular material behaviour not always are used to analyse similar problems for other types of structures or for another material behaviour. Since the research in this field had been growing rapidly, it was decided to organize an informal international meeting, under the auspices of the European Mechanics Committee, entitled: Euromech Colloquium 197 "Finite Rotations in Structural Mechanics". The meeting was held on 17 - 20 September 1985 in Jablonna, a small suburban area of Warsaw.

Chemical Engineering in the Pharmaceutical Industry David J. am Ende 2019-04-23 A guide to the development and manufacturing of pharmaceutical products written for professionals in the industry, revised second edition The revised and updated second edition of Chemical Engineering in the Pharmaceutical Industry is a practical book that highlights chemistry and chemical engineering. The book's regulatory quality strategies target the development and manufacturing of pharmaceutically active ingredients of pharmaceutical products. The expanded second edition contains revised content with many new case studies and additional

example calculations that are of interest to chemical engineers. The 2nd Edition is divided into two separate books: 1) Active Pharmaceutical Ingredients (API's) and 2) Drug Product Design, Development and Modeling. The active pharmaceutical ingredients book puts the focus on the chemistry, chemical engineering, and unit operations specific to development and manufacturing of the active ingredients of the pharmaceutical product. The drug substance operations section includes information on chemical reactions, mixing, distillations, extractions, crystallizations, filtration, drying, and wet and dry milling. In addition, the book includes many applications of process modeling and modern software tools that are geared toward batch-scale and continuous drug substance pharmaceutical operations. This updated second edition: Contains 30 new chapters or revised chapters specific to API, covering topics including: manufacturing quality by design, computational approaches, continuous manufacturing, crystallization and final form, process safety Expanded topics of scale-up, continuous processing, applications of thermodynamics and thermodynamic modeling, filtration and drying Presents updated and expanded example calculations Includes contributions from noted experts in the field Written for pharmaceutical engineers, chemical engineers, undergraduate and graduate students, and professionals in the field of pharmaceutical sciences and manufacturing, the second edition of Chemical Engineering in the Pharmaceutical Industry focuses on the development and chemical engineering as well as operations specific to the design, formulation, and manufacture of drug substance and products.

The Complex Variable Boundary Element Method T. V. Hromadka 2013-03-12 The Complex Variable Boundary Element Method or CVBEM is a generalization of the Cauchy integral formula into a boundary integral equation method or BIEM. This generalization allows an immediate and extremely valuable transfer of the modeling techniques used in real variable boundary integral equation methods (or boundary element methods) to the CVBEM. Consequently, modeling techniques for dissimilar materials, anisotropic materials, and time advancement, can be directly applied without modification to the CVBEM. An extremely useful feature offered by the CVBEM is that the produced approximation functions are analytic within the domain enclosed by the problem boundary and, therefore, exactly satisfy the two-dimensional Laplace equation throughout the problem domain. Another feature of the CVBEM is the integrations of the boundary integrals along each boundary element are solved exactly without the need for numerical integration. Additionally, the error analysis of the CVBEM approximation functions is workable by the easy-to-understand concept of relative error. A sophistication of the relative error analysis is the generation of an approximative boundary upon which the CVBEM approximation function exactly solves the boundary conditions of the boundary value problem' (of the Laplace equation), and the goodness of approximation is easily seen as a closeness-of-fit between the approximative and true problem boundaries.

Stochastic Global Optimization

Energy and Chemical Engineering - Outcomes from the EFCE Energy Section in the 12th European Congress on Chemical Engineering (ECCE12) Francois M. A. Marechal 2021-07-21 Register Tulane University 1891

Collocation Techniques for Modeling Compositional Flows in Oil Reservoirs Myron B. III. Allen 2013-03-12 This investigation is an outgrowth of my doctoral dissertation at Princeton University. I am particularly grateful to Professors George F. Pinder and William G. Gray of Princeton for their advice during both my research and my writing. I believe that finite-element collocation holds promise as a numerical scheme for modeling complicated flows in porous media. However, there seems to be a "conventional wisdom" maintaining that collocation is

hopelessly beset by oscillations and is, in some way, fundamentally inappropriate for multiphase flows. I hope to dispel these objections, realizing that others will remain for further work. The U. S. National Science Foundation funded much of this study through grant number NSF-CEE-8111240. TABLE OF CONTENTS ABSTRACT ;; FOREWORD ;; ; CHAPTER ONE. THE PHYSICAL SYSTEM. 1.1 Introduction. 1 1.2 The reservoir and its contents. 5 1.3 Reservoir mechanics. 9 1.4 Supplementary constraints. 18 1.5 Governing equations. 26 CHAPTER TWO. REPRESENTING FLUID-PHASE BEHAVIOR. 39 2.1 Thermodynamics of the fluid system. 40 2.2 Standard equation-of-state methods. 45 2.3 Maxwell-set interpolation. Chemical Engineering Progress 2005

Advances in Design, Simulation and Manufacturing V Vitalii Ivanov 2022-05-24 This book reports on topics at the interface between mechanical and chemical engineering, emphasizing aspects related to design, simulation, and manufacturing. It covers recent findings concerning the mechanics of fluids, solids, and structures, and numerical and computational methods for solving coupled problems in manufacturing. Further, it reports on recent developments in chemical process technology, heat and mass transfer research, and energy-efficient technologies, describing applications in the food and energy production sector. Based on the 5th International Conference on Design, Simulation, Manufacturing: The Innovation Exchange (DSMIE-2022), held on June 7-10, 2022, in Poznan, Poland, this second volume of a 2-volume set provides academics and professionals with extensive information on trends and technologies, and challenges and practice-oriented experience in all the above-mentioned areas.

Lecture Notes in Chemical Engineering Kinetics and Chemical Reactor Design Alex De Visscher 2013-12-12 Chemical Engineering Kinetics and Reactor Design is one of the key courses in any academic Chemical Engineering studies, and it is typically offered in the third year of a Chemical Engineering undergraduate program. The main objective of this course is to learn to analyze the performance of chemical reactors, and to design them. This book covers all topics that are taught in an undergraduate course on Chemical Engineering Kinetics and Reactor Design. Starting from the study of chemical kinetics of homogeneous, noncatalytic systems, the book moves on to heterogeneous catalytic kinetics, enzymatic kinetics, and other complex systems. Armed with this knowledge, the student is taught how to describe batch reactors, continuous stirred-tank reactors, and plug-flow reactors. The book is concluded with a chapter on the determination of reaction kinetics from experimental data, and a chapter introducing advanced reactor design. While analytical solutions to reactor problems are discussed whenever they are relevant, the main focus is on numerical reactor models. All models are freely available either as Matlab code, or as an Excel file, on the series website that can be found at <http://www.lecturenotesonline.com>

Practical Aspects of Chemical Engineering Marek Ochowiak 2018-02-07 This book focuses on Chemical Engineering and Processing, covering interdisciplinary innovation technologies and sciences closely related to chemical engineering, such as computer image analysis, modelling and IT. The book presents interdisciplinary aspects of chemical and biochemical engineering interconnected with process system engineering, process safety and computer science.

Heat Flow Through Extended Surface Heat Exchangers M. Manzoor 2013-03-13 Nuclear Science Abstracts 1958

16th European Symposium on Computer Aided Process Engineering and 9th International Symposium on Process Systems Engineering Wolfgang Marquardt 2006-08-02 This proceedings book contains the papers presented at the joint conference event of the 9th

Symposium on Process Systems Engineering (PSE'2006) and the 16th European Symposium on Computer Aided Process Engineering (ESCAPE-16), held in Garmisch-Partenkirchen, Germany, from July 9 – July 13, 2006. The symposium follows the first joint event PSE'97 / ESCAPE-7 in Trondheim, Norway (1997). The last two venues of the ESCAPE symposia were Barcelona, Spain (2005) and Lisbon, Portugal (2004) and the most recent PSE symposia were held in Kunming, China (2003) and Keystone, Colorado, USA (2000). The purpose of both series is to bring together the international community of researchers engineers who are interested in computing-based methods in process engineering. The main objective of the symposium is to review and present the latest developments and current state in Process Systems Engineering and Computer Aided Process Engineering. The focus of PSE'2006 / ESCAPE-16 has been on Modelling and Numerical Methods, Product and Process Design, Operations and Control, Biological Systems, Infrastructure Systems, and Business decision support. * reviews and presents the latest developments and current state of Process Systems Engineering and Computer Aided Process Engineering * contains papers presented at a joint conference event * bringing together an international community of researchers and engineers interested in computing-based methods in Process Engineering

Lecture Notes on Principles of Plasma Processing Francis F. Chen 2003-01-31 Plasma processing of semiconductors is an interdisciplinary field requiring knowledge of both plasma physics and chemical engineering. The two authors are experts in each of these fields, and their collaboration results in the merging of these fields with a common terminology. Basic plasma concepts are introduced painlessly to those who have studied undergraduate electromagnetics but have had no previous exposure to plasmas. Unnecessarily detailed derivations are omitted; yet the reader is led to understand in some depth those concepts, such as the structure of sheaths, that are important in the design and operation of plasma processing reactors. Physicists not accustomed to low-temperature plasmas are introduced to chemical kinetics, surface science, and molecular spectroscopy. The material has been condensed to suit a nine-week graduate course, but it is sufficient to bring the reader up to date on current problems such as copper interconnects, low-k and high-k dielectrics, and oxide damage. Students will appreciate the web-style layout with ample color illustrations opposite the text, with ample room for notes. This short book is ideal for new workers in the semiconductor industry who want to be brought up to speed with minimum effort. It is also suitable for Chemical Engineering students studying plasma processing of materials; Engineers, physicists, and technicians entering the semiconductor industry who want a quick overview of the use of plasmas in the industry.

Advances in Design, Simulation and Manufacturing III Vitalii Ivanov 2020-06-05 This book explores topics at the interface between mechanical and chemical engineering, with a focus on design, simulation, and manufacturing. Covering recent developments in the mechanics of solids and structures; numerical simulation of coupled problems, including wearing, compression, detonation and collision; and chemical process technologies, including ultrasonic technology, capillary rising process, pneumatic classification, membrane electrolysis and absorption processes, it reports on developments in the field of heat and mass transfer, energy-efficient technologies, and industrial ecology. Part of a two-volume set based on the 3rd International Conference on Design, Simulation, Manufacturing: The Innovation Exchange (DSMIE-2020), held on June 9-12, 2020, in Kharkiv, Ukraine, this book provides academics and professionals with extensive information on the latest trends, technologies and challenges in the field as well as practical lessons learned.

Numerical Methods and Modeling for Chemical Engineers Mark E. Davis 2013 "Geared toward advanced undergraduates or graduate students of chemical engineering studying applied mathematics, this text introduces the quantitative treatment of differential equations arising from modeling physical phenomena in chemical engineering. Coverage includes topics such as ODE-IVPs, placing emphasis on numerical methods and modeling implemented in commercial mathematical software available in 1985"--

Elementary Principles of Chemical Processes Richard M. Felder 2020-08-11 Elementary Principles of Chemical Processes, 4th Edition prepares students to formulate and solve material and energy balances in chemical process systems and lays the foundation for subsequent courses in chemical engineering. The text provides a realistic, informative, and positive introduction to the practice of chemical engineering.

A Guide to Archives and Manuscript Collections in the History of Chemistry and Chemical Technology George Tselos 1987 A thorough inventory of research resources in American repositories, the Guide lists collections in the history of chemistry and chemical engineering, the chemical and pharmaceutical industries, and a number of related chemical process industries and businesses, from personal and professional papers of chemical scientists and engineers to business records of the chemical process industries.

Proceedings of the 2nd Energy Security and Chemical Engineering Congress Nasrul Hadi Johari 2022-09-23 This book presents selected articles presented at the 2nd Energy Security and Chemical Engineering Congress (ESChE 2021). This collection of proceedings presents the key challenges and trends related to mechanical as well as materials engineering and technology in setting the stage for promoting the sustainable technological solution for the better world. The book discusses recent explorations and findings with regard to mechanical and materials, specifically the thermal engineering and renewable energy areas that are very relevant toward the establishment of sustainable technological solutions. This book benefits academic researchers and industrial practitioners in the field of renewable energy and material engineering for energy applications.

Chemical Kinetics Vivek Patel 2012-02-29 Chemical Kinetics relates to the rates of chemical reactions and factors such as concentration and temperature, which affects the rates of chemical reactions. Such studies are important in providing essential evidence as to the mechanisms of chemical processes. The book is designed to help the reader, particularly students and researchers of physical science, understand the chemical kinetics mechanics and chemical reactions. The selection of topics addressed and the examples, tables and graphs used to illustrate them are governed, to a large extent, by the fact that this book is aimed primarily at physical science (mainly chemistry) technologists. Undoubtedly, this book contains "must read" materials for students, engineers, and researchers working in the chemistry and chemical kinetics area. This book provides valuable insight into the mechanisms and chemical reactions. It is written in concise, self-explanatory and informative manner by a world class scientists in the field.

Differential Evolution In Chemical Engineering: Developments And Applications Gade Pandu Rangaiah 2017-05-29 Optimization plays a key role in the design, planning and operation of chemical and related processes for several decades. Techniques for solving optimization problems are of deterministic or stochastic type. Of these, stochastic techniques can solve any type of optimization problems and can be adapted for multiple objectives. Differential evolution (DE), proposed about two decades ago, is one of the stochastic techniques. Its algorithm is simple to understand and use. DE has found many applications in chemical engineering. This

unique compendium focuses on DE, its recent developments and applications in chemical engineering. It will cover both single and multi-objective optimization. The book contains a number of chapters from experienced editors, and also several chapters from active researchers in this area.

Physical Chemistry for Chemists and Chemical Engineers Alexander V. Vakhrushev
2018-09-03 This volume is based on different aspects of chemical technology that are associated with research and the development of theories for chemical engineers, helping to bridge the gap between classical analysis and modern, real-life applications. Taking an interdisciplinary approach, the authors present the current state-of-the-art technology in key materials with an emphasis on the rapidly growing technologies.

30th European Symposium on Computer Aided Chemical Engineering Sauro Pierucci
2020-10-23 30th European Symposium on Computer Aided Chemical Engineering, Volume 47 contains the papers presented at the 30th European Symposium of Computer Aided Process Engineering (ESCAPE) event held in Milan, Italy, May 24-27, 2020. It is a valuable resource for chemical engineers, chemical process engineers, researchers in industry and academia, students, and consultants for chemical industries. Presents findings and discussions from the 30th European Symposium of Computer Aided Process Engineering (ESCAPE) event Offers a valuable resource for chemical engineers, chemical process engineers, researchers in industry and academia, students, and consultants for chemical industries

Elements of Chemical Reaction Engineering H. Scott Fogler 1999 "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.

Coping with Complexity: Model Reduction and Data Analysis Alexander N. Gorban
2010-10-21 This volume contains the extended version of selected talks given at the international research workshop "Coping with Complexity: Model Reduction and Data Analysis", Ambleside, UK, August 31 – September 4, 2009. The book is deliberately broad in scope and aims at promoting new ideas and methodological perspectives. The topics of the chapters range from theoretical analysis of complex and multiscale mathematical models to applications in e.g., fluid dynamics and chemical kinetics.

Principles of Extractive Metallurgy Ahindra Ghosh 1991 The Book Attempts To Present A Comprehensive View Of Extractive Metallurgy, Especially Principles Of Extractive Metallurgy In A Concise Form. This Is The First Book In This Area Which Attempts To Do It. It Has Been Written In Textbook Style. It Presents The Various Concepts Step By Step, Shows Their Importance, Deals With Elementary Quantitative Formulations, And Illustrates Through Quantitative And Qualitative Informations. The Approach Is Such That Even Undergraduate Students Would Be Able To Follow The Topics Without Much Difficulty And Without Much Of A Background In Specialized Subjects. This Is Considered To Be A Very Useful Approach In This Area Of Technology. Moreover The Inter-Disciplinary Nature Of The Subject Has Been Duely Brought Out.While Teaching Concerned Course(S) In The Undergraduate And Postgraduate Level The Authors Felt The Need Of Such A Book. The Authors Found The Books Available On The Subject Did Not Fulfill The Requirements. No Other Book Was Concerned With All Relevant Concepts. Most Of Them Laid Emphasis Either On Thermodynamic Aspects Or On

Discussing Unit Processes. Transport Phenomena Are Dealt With In Entirely Different Books. Reactor Concepts Were Again Lying In Chemical Engineering Texts. The Authors Tried To Harmonize And Synthesize The Concepts In Elementary Terms For Metallurgists. The Present Book Contains A Brief Descriptive Summary Of Some Important Metallurgical Unit Processes. Subsequently It Discusses Not Only Physical Chemistry Of Metallurgical Reactions And Processes But Also Rate Phenomena Including Heat And Mass Transfer, Fluid Flow, Mass And Energy Balance, And Elements Of Reactor Engineering. A Variety Of Scientific And Engineering Aspects Of Unit Processes Have Been Discussed With Stress On The Basic Principles All Throughout. There Is An Attempt To Introduce, As Much As Possible, Quantitative Treatments And Engineering Estimates. The Latter May Often Be Approximate From The Point Of View Of Theory But Yields Results That Are Very Valuable To Both Practicing Metallurgists As Well As Others.

Essentials of Chemical Reaction Engineering H. Scott Fogler 2010-11-26 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 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.

Lectures in Classical Thermodynamics with an Introduction to Statistical Mechanics Daniel Blankschtein 2021-03-15 This textbook facilitates students' ability to apply fundamental

principles and concepts in classical thermodynamics to solve challenging problems relevant to industry and everyday life. It also introduces the reader to the fundamentals of statistical mechanics, including understanding how the microscopic properties of atoms and molecules, and their associated intermolecular interactions, can be accounted for to calculate various average properties of macroscopic systems. The author emphasizes application of the fundamental principles outlined above to the calculation of a variety of thermodynamic properties, to the estimation of conversion efficiencies for work production by heat interactions, and to the solution of practical thermodynamic problems related to the behavior of non-ideal pure fluids and fluid mixtures, including phase equilibria and chemical reaction equilibria. The book contains detailed solutions to many challenging sample problems in classical thermodynamics and statistical mechanics that will help the reader crystallize the material taught. Class-tested and perfected over 30 years of use by nine-time Best Teaching Award recipient Professor Daniel Blankschtein of the Department of Chemical Engineering at MIT, the book is ideal for students of Chemical and Mechanical Engineering, Chemistry, and Materials Science, who will benefit greatly from in-depth discussions and pedagogical explanations of key concepts. Distills critical concepts, methods, and applications from leading full-length textbooks, along with the author's own deep understanding of the material taught, into a concise yet rigorous graduate and advanced undergraduate text; Enriches the standard curriculum with succinct, problem-based learning strategies derived from the content of 50 lectures given over the years in the Department of Chemical Engineering at MIT; Reinforces concepts covered with detailed solutions to illuminating and challenging homework problems. Proceedings of the 2nd Energy Security and Chemical Engineering Congress Nasrul Hadi Johari 2022-09-21 This book presents selected articles presented at the 2nd Energy Security and Chemical Engineering Congress (ESChE 2021). This collection of proceedings presents the key challenges and trends related to mechanical as well as materials engineering and technology in setting the stage for promoting the sustainable technological solution for the better world. The book discusses recent explorations and findings with regard to mechanical and materials, specifically the thermal engineering and renewable energy areas that are very relevant toward the establishment of sustainable technological solutions. This book benefits academic researchers and industrial practitioners in the field of renewable energy and material engineering for energy applications.

Advances in Chemical Engineering 1956-01-01 Advances in Chemical Engineering
Project Engineering Primer for Chemical Engineers Sampa Chakrabarti 2022-03-21 This book discusses financial, managerial and engineering aspects associated with project engineering. The book is a text/reference book on courses related to project engineering for undergraduate students of Chemical Engineering programmes. The author has utilized her decade-long professional experience with reputed project consultancy organizations and her academic experience in writing this book. The background of project engineering is described with special emphasis on its interdisciplinary nature. Project management techniques are discussed with the help of worked-out examples. It includes multiple choice questions and information regarding relevant courses in different institutes. The book is useful for undergraduate degree and diploma students as well as for fresh graduate engineering trainees in various process consulting organizations.

Multi-Objective Optimization
Advances in Chemical Engineering Guy B. Marin 2005-10-24 The theme of the present volume "Multiscale Analysis" has been introduced about a decade ago and is now reaching a

stage where a first balance can be made and further research directions should be decided. Contributions have been carefully selected to ensure the reader will not be confronted with quantum mechanics at one side of the spectrum nor with chemical plants or even the environment on the other side. Maintaining a strong connection with reality i.e. experimental data was another selection criterion. Experimental validation remains the corner stone of any theoretical development and very powerful experimental techniques are emerging. Areas covered include discussing in depth an important example of experimental techniques. Coming from the medical world, Magnetic Resonance techniques can now provide even quantitative answers to problems our community is faced with. The modeling issue is discussed further. Finally, the limitations of the classic reactor engineering models are outlined. * Original reviews * Leading chemical engineers as authors * Update on biomaterials use * Novel subject on use of biomaterials in drug delivery and gene therapy * Mathematical modeling