

Manual Chemical Reaction Engineering Octave Levenspiel

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Elementary Principles of Chemical Processes Richard M. Felder 2016-10-28 Elementary Principles of Chemical Processes, 4th Edition Student International Version 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.

Chemical and Catalytic Reaction Engineering James J. Carberry 2001-01-01 Designed to give chemical engineers background for managing chemical reactions, this text examines the behavior of chemical reactions and reactors; conservation equations for reactors; heterogeneous reactions; fluid-fluid and fluid-solid reaction systems; heterogeneous catalysis and catalytic kinetics; diffusion and heterogeneous catalysis; and analyses and design of heterogeneous reactors. 1976 edition.

Reaction Kinetics Michael J. Pilling 1999

Fluid Mechanics, Heat Transfer, and Mass Transfer K. S. Raju 2011-04-20 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.

Process Engineering and Industrial Management Jean-Pierre Dal Pont 2013-03-04 Process Engineering, the science and art of transforming rawmaterials and energy into a vast array of commercial materials, wasconceived at the end of the 19th Century. Its history in the roleof the Process Industries has been quite honorable, and techniquesand products have contributed to improve health, welfare andquality of life. Today, industrial enterprises, which are still amajor source of wealth, have to deal with new challenges in aglobal world. They need to reconsider their strategy taking intoaccount environmental constraints, social requirements, profit,competition, and resource depletion. "Systems thinking" is a prerequisite from processdevelopment at the lab level to good project management. Newmanufacturing concepts have to be considered, taking into accountLCA, supply chain management, recycling, plant flexibility,continuous development, process intensification andinnovation. This book combines experience from academia and industry in thefield of

industrialization, i.e. in all processes involved in the conversion of research into successful operations. Enterprises are facing major challenges in a world of fierce competition and globalization. Process engineering techniques provide Process Industries with the necessary tools to cope with these issues. The chapters of this book give a new approach to the management of technology, projects and manufacturing. Contents Part 1: The Company as of Today 1. The Industrial Company: its Purpose, History, Context, and its Tomorrow?, Jean-Pierre Dal Pont. 2. The Two Modes of Operation of the Company – Operational and Entrepreneurial, Jean-Pierre Dal Pont. 3. The Strategic Management of the Company: Industrial Aspects, Jean-Pierre Dal Pont. Part 2: Process Development and Industrialization 4. Chemical Engineering and Process Engineering, Jean-Pierre Dal Pont. 5. Foundations of Process Industrialization, Jean-François Joly. 6. The Industrialization Process: Preliminary Projects, Jean-Pierre Dal Pont and Michel Royer. 7. Lifecycle Analysis and Eco-Design: Innovation Tools for Sustainable Industrial Chemistry, Sylvain Caillol. 8. Methods for Design and Evaluation of Sustainable Processes and Industrial Systems, Catherine Azzaro-Pantel. 9. Project Management Techniques: Engineering, Jean-Pierre Dal Pont. Part 3: The Necessary Adaptation of the Company for the Future 10. Japanese Methods, Jean-Pierre Dal Pont. 11. Innovation in Chemical Engineering Industries, Oliver Potier and Mauricio Camargo. 12. The Place of Intensified Processes in the Plant of the Future, Laurent Falk. 13. Change Management, Jean-Pierre Dal Pont. 14. The Plant of the Future, Jean-Pierre Dal Pont.

CHEMICAL REACTION ENGINEERING, 3RD ED Levenspiel 2006 Market_Desc: · Chemical Engineers in Chemical, Nuclear and Biomedical Industries Special Features: · Emphasis is placed throughout on the development of common design strategy for all systems, homogeneous and heterogeneous · This edition features new topics on biochemical systems, reactors with fluidized solids, gas/liquid reactors, and more on non ideal flow · The book explains why certain assumptions are made, why an alternative approach is not used, and to indicate the limitations of the treatment when applied to real situations About The Book: Chemical reaction engineering is concerned with the exploitation of chemical reactions on a commercial scale. Its goal is the successful design and operation of chemical reactors. This text emphasizes qualitative arguments, simple design methods, graphical procedures, and frequent comparison of capabilities of the major reactor types. Simple ideas are treated first, and are then extended to the more complex.

Chemical Kinetics Kenneth Antonio Connors 1990 **Chemical Kinetics The Study of Reaction Rates in Solution** Kenneth A. Connors This chemical kinetics book blends physical theory, phenomenology and empiricism to provide a guide to the experimental practice and interpretation of reaction kinetics in solution. It is suitable for courses in chemical kinetics at the graduate and advanced undergraduate levels. This book will appeal to students in physical organic chemistry, physical inorganic chemistry, biophysical chemistry, biochemistry, pharmaceutical chemistry and water chemistry all fields concerned with the rates of chemical reactions in the solution phase.

Tracer Technology Octave Levenspiel 2011-11-18 The tracer method was first introduced to measure the actual flow of fluid in a vessel, and then to develop a suitable model to represent this flow. Such models are used to follow the flow of fluid in chemical reactors and other process units, in rivers and streams, and through soils and porous structures. Also, in medicine they are used to study the flow of chemicals, harmful or not, in the blood streams of animals and man. **Tracer Technology**, written by Octave Levenspiel, shows how we use tracers to follow the flow of fluids and then we develop a variety of models to represent these flows. This activity is called tracer technology.

Fundamentals of Chemical Reaction Engineering Mark E. Davis 2013-05-27 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.

Mass-transfer Operations Robert Ewald Treybal 1980

Chemical Reaction Engineering II

Unit Operations of Chemical Engineering Warren Lee McCabe 1967

Coulson and Richardson's Chemical Engineering R. Ravi 2017-09-26 **Coulson and Richardson's Chemical Engineering: Volume 3A: Chemical and Biochemical Reactors and Reaction Engineering, Fourth Edition**, covers reactor design, flow modelling, gas-liquid and gas-solid reactions and reactors. Captures content converted from textbooks into fully revised reference material Includes content ranging from foundational through technical Features emerging applications, numerical methods and computational tools

The Engineering of Chemical Reactions Lanny D. Schmidt 2009 **The Engineering of Chemical Reactions** focuses explicitly on developing the skills necessary to design a chemical reactor for any application, including chemical production, materials processing, and environmental modeling.

Biological and Bioenvironmental Heat and Mass Transfer Ashim K. Datta 2002-03-21 Providing a foundation in heat and mass transport, this book covers engineering principles of heat and mass transfer. The author discusses biological content, context, and parameter regimes and supplies practical applications for biological and biomedical engineering,

industrial food processing, environmental control, and waste management. The book contains end-of-chapter problems and sections highlighting key concepts and important terminology. It offers cross-references for easy access to related areas and relevant formulas, as well as detailed examples of transport phenomena, and descriptions of physical processes. It covers mechanisms of diffusion, capillarity, convection, and dispersion.

Mathematical Modeling in Chemical Engineering Anders Rasmuson 2014-03-20 A solid introduction, enabling the reader to successfully formulate, construct, simplify, evaluate and use mathematical models in chemical engineering.

Elementary Chemical Reactor Analysis Rutherford Aris 2013-09-03 Elementary Chemical Reactor Analysis focuses on the processes, reactions, methodologies, and approaches involved in chemical reactor analysis, including stoichiometry, adiabatic reactors, external mass transfer, and thermochemistry. The publication first takes a look at stoichiometry and thermochemistry and chemical equilibrium. Topics include heat of formation and reaction, measurement of quantity and its change by reaction, concentration changes with a single reaction, rate of generation of heat by reaction, and equilibrium of simultaneous and heterogeneous reactions. The manuscript then offers information on reaction rates and the progress of reaction in time. Discussions focus on systems of first order reactions, concurrent reactions of low order, general irreversible reaction, variation of reaction rate with extent and temperature, and heterogeneous reaction rate expressions. The book examines the interaction of chemical and physical rate processes, continuous flow stirred tank reactor, and adiabatic reactors. Concerns include multistage adiabatic reactors, adiabatic stirred tank, stability and control of the steady state, mixing in the reactor, effective reaction rate expressions, and external mass transfer. The publication is a dependable reference for readers interested in chemical reactor analysis.

Engineering Flow and Heat Exchange Octave Levenspiel 2014-11-26 The third edition of Engineering Flow and Heat Exchange is the most practical textbook available on the design of heat transfer and equipment. This book is an excellent introduction to real-world applications for advanced undergraduates and an indispensable reference for professionals. The book includes comprehensive chapters on the different types and classifications of fluids, how to analyze fluids, and where a particular fluid fits into a broader picture. This book includes various a wide variety of problems and solutions – some whimsical and others directly from industrial applications. Numerous practical examples of heat transfer Different from other introductory books on fluids Clearly written, simple to understand, written for students to absorb material quickly Discusses non-Newtonian as well as Newtonian fluids Covers the entire field concisely Solutions manual with worked examples and solutions provided

Chemical Reactor Analysis and Design Fundamentals James Blake Rawlings 2012

Elements of Chemical Reaction Engineering H. Scott Fogler 2013-07-29 The book presents in a clear and concise manner the fundamentals of chemical reaction engineering. The structure of the book allows the student to solve reaction engineering problems through reasoning rather than through memorization and recall of numerous equations, restrictions, and conditions under which each equation applies. The fourth edition contains more industrial chemistry with real reactors and real engineering and extends the wide range of applications to which chemical reaction engineering principles can be applied (i.e., cobra bites, medications, ecological engineering)

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.

Chemical Reaction Engineering Octave Levenspiel 1998-09-01 Chemical reaction engineering is concerned with the exploitation of chemical reactions on a commercial scale. Its goal is the successful design and operation of chemical reactors. This text emphasizes qualitative arguments, simple design methods, graphical procedures, and frequent comparison of capabilities of the major reactor types. Simple ideas are treated first, and are then extended to the more complex.

Chemical Reactor Analysis and Design Gilbert F. Froment 1990-01-16 This is the Second Edition of the standard text on chemical reaction engineering, beginning with basic definitions and fundamental principles and continuing all the way to practical applications, emphasizing real-world aspects of industrial practice. The two main sections cover applied or engineering kinetics, reactor analysis and design. Includes updated coverage of computer modeling methods and many new worked examples. Most of the examples use real kinetic data from processes of industrial importance.

Chemical Reaction Engineering L.K. Doraiswamy 2013-07-15 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

Introduction to Chemical Reaction Engineering and Kinetics Ronald W. Missen 1999 Solving problems in chemical

reaction engineering and kinetics is now easier than ever! As students read through this text, they'll find a comprehensive, introductory treatment of reactors for single-phase and multiphase systems that exposes them to a broad range of reactors and key design features. They'll gain valuable insight on reaction kinetics in relation to chemical reactor design. They will also utilize a special software package that helps them quickly solve systems of algebraic and differential equations, and perform parameter estimation, which gives them more time for analysis. Key Features Thorough coverage is provided on the relevant principles of kinetics in order to develop better designs of chemical reactors. E-Z Solve software, on CD-ROM, is included with the text. By utilizing this software, students can have more time to focus on the development of design models and on the interpretation of calculated results. The software also facilitates exploration and discussion of realistic, industrial design problems. More than 500 worked examples and end-of-chapter problems are included to help students learn how to apply the theory to solve design problems. A web site, www.wiley.com/college/missen, provides additional resources including sample files, demonstrations, and a description of the E-Z Solve software.

Chemical Reactor Omnibook- soft cover Octave Levenspiel 2013 The Omnibook aims to present the main ideas of reactor design in a simple and direct way. It includes key formulas, brief explanations, practice exercises, problems from experience and it skims over the field touching on all sorts of reaction systems. Most important of all it tries to show the reader how to approach the problems of reactor design and what questions to ask. In effect it tries to show that a common strategy threads its way through all reactor problems, a strategy which involves three factors: identifying the flow pattern, knowing the kinetics, and developing the proper performance equation. It is this common strategy which is the heart of Chemical Reaction Engineering and identifies it as a distinct field of study.

Chemical Engineering Reference Manual Randall N. Robinson 1987 The chemical PE exam is an eight-hour, open-book test, consisting of 80 multiple-choice problems. It is administered every April and October. The Chemical Engineering Reference Manual is the primary text examinees need both to prepare for and to use during the exam. It reviews current exam topics and uses practice problems to emphasize key concepts. The Chemical Engineering Reference Manual provides a detailed review for engineers studying for the chemical PE exam, preparing them for what they will find on test day. It includes more than 160 solved example problems, 164 practice problems, and test-taking strategy.

Modeling of Chemical Kinetics and Reactor Design A. Kayode Coker 2001 Selecting the best type of reactor for any particular chemical reaction, taking into consideration safety, hazard analysis, scale-up, and many other factors is essential to any industrial problem. An understanding of chemical reaction kinetics and the design of chemical reactors is key to the success of the chemist and the chemical engineer in such an endeavor. This valuable reference volume conveys a basic understanding of chemical reactor design methodologies, incorporating control, hazard analysis, and other topics not covered in similar texts. In addition to covering fluid mixing, the treatment of wastewater, and chemical reactor modeling, the author includes sections on safety in chemical reaction and scale-up, two topics that are often neglected or overlooked. As a real-world introduction to the modeling of chemical kinetics and reactor design, the author includes a case study on ammonia synthesis that is integrated throughout the text. The text also features an accompanying CD, which contains computer programs developed to solve modeling problems using numerical methods. Students, chemists, technologists, and chemical engineers will all benefit from this comprehensive volume. Shows readers how to select the best reactor design, hazard analysis, and safety in design methodology Features computer programs developed to solve modeling problems using numerical methods

Chemical Reactions and Chemical Reactors George W. Roberts 2008-03-14 Focused on the undergraduate audience, Chemical Reaction Engineering provides students with complete coverage of the fundamentals, including in-depth coverage of chemical kinetics. By introducing heterogeneous chemistry early in the book, the text gives students the knowledge they need to solve real chemistry and industrial problems. An emphasis on problem-solving and numerical techniques ensures students learn and practice the skills they will need later on, whether for industry or graduate work.

Introductory Chemical Engineering Thermodynamics J. Richard Elliott 2012-02-06 A Practical, Up-to-Date Introduction to Applied Thermodynamics, Including Coverage of Process Simulation Models and an Introduction to Biological Systems Introductory Chemical Engineering Thermodynamics, Second Edition, helps readers master the fundamentals of applied thermodynamics as practiced today: with extensive development of molecular perspectives that enables adaptation to fields including biological systems, environmental applications, and nanotechnology. This text is distinctive in making molecular perspectives accessible at the introductory level and connecting properties with practical implications. Features of the second edition include Hierarchical instruction with increasing levels of detail: Content requiring deeper levels of theory is clearly delineated in separate sections and chapters Early introduction to the overall perspective of composite systems like distillation columns, reactive processes, and biological systems Learning objectives, problem-solving strategies for energy balances and phase equilibria, chapter summaries, and "important equations" for every chapter Extensive practical examples, especially coverage of non-ideal mixtures, which include water contamination via hydrocarbons, polymer blending/recycling, oxygenated fuels, hydrogen bonding, osmotic pressure, electrolyte solutions, zwitterions and biological molecules, and other contemporary issues Supporting software in formats for both MATLAB®

and spreadsheets Online supplemental sections and resources including instructor slides, ConcepTests, coursecast videos, and other useful resources

U.S. Environmental Protection Agency Library System Book Catalog United States. Environmental Protection Agency. Library Systems Branch 1975

Mass Transfer Anthony L. Hines 1985 A thorough introduction to the fundamentals and applications of microscopic and macroscopic mass transfer.

Understanding Engineering Thermo Octave Levenspiel 1996-01-01 from the literature to show the power, scope, and utility of the subject. Understanding Engineering Thermo concentrates on a broad-based coverage of the first two laws of Thermo. While not intended to be the last word on the subject, this book provides a lively way to master the foundations of this sometimes dry topic. To broaden the book's applicability, Dr. Levenspiel includes thought-provoking problems from diverse fields, such as biology and nuclear energy on up to.

Chemical Process Safety Daniel A. Crowl 2001-10-16 Combines academic theory with practical industry experience Updated to include the latest regulations and references Covers hazard identification, risk assessment, and inherent safety Case studies and problem sets enhance learning Long-awaited revision of the industry best seller. This fully revised second edition of *Chemical Process Safety: Fundamentals with Applications* combines rigorous academic methods with real-life industrial experience to create a unique resource for students and professionals alike. The primary focus on technical fundamentals of chemical process safety provides a solid groundwork for understanding, with full coverage of both prevention and mitigation measures. Subjects include: Toxicology and industrial hygiene Vapor and liquid releases and dispersion modeling Flammability characterization Relief and explosion venting In addition to an overview of government regulations, the book introduces the resources of the AIChE Center for Chemical Process Safety library. Guidelines are offered for hazard identification and risk assessment. The book concludes with case histories drawn directly from the authors' experience in the field. A perfect reference for industry professionals, *Chemical Process Safety: Fundamentals with Applications, Second Edition* is also ideal for teaching at the graduate and senior undergraduate levels. Each chapter includes 30 problems, and a solutions manual is now available for instructors.

Handbook of Industrial Chemistry M. Farhat Ali 2005 The definitive guide for the general chemical analyses of non-petroleum based organic products such as paints, dyes, oils, fats, and waxes. * Chemical tables, formulas, and equations * Covers all of the chemical processes which utilize organic chemicals * Physical properties for the most common organic chemicals Contents: Safety Considerations in Process Industries * Industrial Pollution Prevention and Waste Management * Edible Oils, Fats, and Waxes * Soaps and Detergents * Sugar and Other Sweeteners * Paints, Pigments, and Industrial Coatings * Dyestuffs, Finishing and Dyeing of Textiles * Industrial Fermentation * Pharmaceutical Industry * Agrochemicals * Chemical Explosives * Petroleum Processing and Petrochemicals * Polymers and Plastics Chemical and Bio-process Control James B. Riggs 2007 Key features: Industrially relevant approach to chemical and bio-process control Fully revised edition with substantial enhancements to the theoretical coverage of the subject Increased number and variety of examples Extensively revised homework problems with degree-of-difficulty rating added Expanded and enhanced chapter on model predictive control Self-assessment questions and problems at the end of most sections with answers listed in the appendix Bio-process control coverage: Background and history of bio-processing and bio-process control added to the introductory chapter Discussion and analysis of the primary bio-sensors used in bio-tech industries added to the chapter on control loop hardware Significant proportion of examples and homework problems in the text deal with bio-processes Section on troubleshooting bio-process control systems included Bio-related process models added to the modeling chapter Supplemental material: Visual basic simulator of process models developed in text Solutions manual Set of PowerPoint lecture slides Collection of process control exams All supplemental material can be found at www.che.ttu.edu/pcoc/software

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.*

Fluidization Engineering D. Kunii 2013-10-22 Fluidization Engineering, Second Edition, expands on its original scope to encompass these new areas and introduces reactor models specifically for these contacting regimes. Completely revised and updated, it is essentially a new book. Its aim is to distill from the thousands of studies those particular developments that are pertinent for the engineer concerned with predictive methods, for the designer, and for the user and potential user of fluidized beds. Covers the recent advances in the field of fluidization. Presents the studies of developments necessary to the engineers, designers, and users of fluidized beds.

Chemical Engineering Education 1984

Engineering Flow and Heat Exchange Octave Levenspiel 2016-09-10 The third edition of Engineering Flow and Heat Exchange is the most practical textbook available on the design of heat transfer and equipment. This book is an excellent introduction to real-world applications for advanced undergraduates and an indispensable reference for professionals. The book includes comprehensive chapters on the different types and classifications of fluids, how to analyze fluids, and where a particular fluid fits into a broader picture. This book includes various a wide variety of problems and solutions – some whimsical and others directly from industrial applications. Numerous practical examples of heat transfer Different from other introductory books on fluids Clearly written, simple to understand, written for students to absorb material quickly Discusses non-Newtonian as well as Newtonian fluids Covers the entire field concisely Solutions manual with worked examples and solutions provided